

NP 2

AFRICA PILOT

VOLUME II

**Comprising the west coast of Africa from Bakasi Peninsula to Cape Agulhas;
islands in the Bight of Biafra; Ascension Island; Saint Helena Island; Tristan da
Cunha Group and Gough Island**

**FOURTEENTH EDITION
2004**

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PREFACE

The Fourteenth Edition of the Africa Pilot, Volume II has been prepared by Captain R S Coles, Master Mariner. The United Kingdom Hydrographic Office has used all reasonable endeavours to ensure that this Pilot contains all the appropriate information obtained by and assessed by it at the date shown below. Information received or assessed after that date will be included in *Admiralty Notices to Mariners* where appropriate. If in doubt, see *The Mariner's Handbook* for details of what *Admiralty Notices to Mariners* are and how to use them.

This edition supersedes the Thirteenth Edition (2002), which is cancelled.

Information on climate, currents and ice has been based on data provided by the Meteorological Office, Exeter.

The following sources of information, other than UKHO Publications and Ministry of Defence papers, have been consulted:

British

Lloyd's Register Fairplay Ports and Terminals Guide 2003/2004
Lloyd's List Ports of the World 2004
Lloyd's Shipping Statistics 2003
The Statesman's Year Book 2004
Whitaker's Almanack 2004

French

Instructions Nautiques C5 Afrique (Côte Ouest) 2001
Fascicule No 1 de Corrections C5 2004

South African

SAN HO-21 South African Sailing Directions 1999
SAN HO-22 South African Sailing Directions 2002

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PREFACE
to the Thirteenth Edition (2002)

The Thirteenth Edition of the Africa Pilot, Volume II has been prepared by Captain R D W Tyzack, Master Mariner, from the latest information received in the United Kingdom Hydrographic Office to the date given below.

This edition supersedes the Twelfth Edition (1977), and supplement No 11 (1999) which are cancelled.

Information on climate, currents and ice has been based on data provided by the Meteorological Office, Bracknell.

The following sources of information, other than UKHO Publications and Ministry of Defence papers, have been consulted:

Fairplay Ports Guide 2000/2001
Lloyds Maritime Guide 2000/2001
Lloyds Ports of the World 2001
The Statesman's Year Book 2001
Whitaker's Almanack 2001

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EXPLANATORY NOTES

Admiralty Sailing Directions are intended for use by vessels of 12 m or more in length. They amplify charted detail and contain information needed for safe navigation which is not available from Admiralty charts, or other hydrographic publications. They are intended to be read in conjunction with the charts quoted in the text.

This volume of the Sailing Directions will be kept up-to-date by the issue of a new edition at intervals of approximately 3 years, without the use of supplements. In addition important amendments which cannot await the new edition are published in Section IV of the weekly editions of *Admiralty Notices to Mariners*. A list of such amendments and notices in force is published in the last weekly edition for each month. Those still in force at the end of the year are reprinted in the *Annual Summary of Admiralty Notices to Mariners*.

This volume should not be used without reference to Section IV of the weekly editions of Admiralty Notices to Mariners.

CD-ROM

Status. A compact disc is provided at the back of this volume. The paper publication of Sailing Directions satisfies the requirements of Chapter V of the International Convention for the Safety of Life at Sea. The CD version does not satisfy these requirements and should only be used in conjunction with the paper publication and any amendments affecting the paper publication. Where any discrepancy exists between data on the CD and in the paper publication of Sailing Directions, the paper publication (inclusive of amendments) is to be relied upon.

Disclaimer. Whilst the UKHO has made all reasonable efforts to ensure that the data on the CD was accurate at the time of production, it has not verified the data for navigational purposes and the CD is not suitable, and is not to be relied upon, for navigation. The use of the CD for this purpose is at the user's own risk. The UKHO accepts no liability (except in the case of death or personal injury caused by the negligence of the UKHO) whether in contract, tort, under any statute or otherwise and whether or not arising out of any negligence on the part of the UKHO in respect of any inadequacy of any kind whatsoever in the data on the CD or in the means of distribution.

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References to hydrographic and other publications

The Mariner's Handbook gives general information affecting navigation and is complementary to this volume.

Ocean Passages for the World and *Routeing Charts* contain ocean routeing information and should be consulted for other than coastal passages.

Admiralty List of Lights should be consulted for details of lights, lanterns and fog signals, as these are not fully described in this volume.

Admiralty List of Radio Signals should be consulted for information relating to coast and port radio stations, radio details of pilotage services, radar beacons and radio direction finding stations, meteorological services, radio aids to navigation, Global Maritime Distress and Safety System (GMDSS) and Differential Global Positioning System (DGPS) stations, as these are only briefly referred to in this volume.

Admiralty Maritime Communications is a comprehensive guide on all aspects of maritime communications for the yachtman and small craft user. It provides general information on Global Maritime Distress and Safety System (GMDSS), the management of VHF, Maritime Safety Information, NAVTEX, Inmarsat and Radio Facsimile, and detailed information and procedures for marinas and harbours used by small craft.

Annual Summary of Admiralty Notices to Mariners contains in addition to the temporary and preliminary notices, and amendments and notices affecting Sailing Directions, a number of notices giving information of a permanent nature covering radio messages and navigational warnings, distress and rescue at sea and exercise areas.

The International Code of Signals should be consulted for details of distress and life-saving signals, international ice-breaker signals as well as international flag signals.

Remarks on subject matter

Buoys are generally described in detail only when they have special navigational significance, or where the scale of the chart is too small to show all the details clearly.

Chart index diagrams in this volume show only those Admiralty charts of a suitable scale to give good coverage of the area. Mariners should consult NP 131 *Catalogue of Admiralty Charts and Publications* for details of larger scale charts.

Chart references in the text normally refer to the largest scale Admiralty chart but occasionally a smaller scale chart may be quoted where its use is more appropriate.

Firing, practice and exercise areas. Except for submarine exercise areas, details of firing, practice and exercise areas are not mentioned in Sailing Directions, but signals and buoys used in connection with these areas are sometimes mentioned if significant for navigation. Attention is invited to the Annual Notice to Mariners on this subject.

Names have been taken from the most authoritative source. When an obsolete name still appears on the chart, it is given in brackets following the proper name at the principal description of the feature in the text and where the name is first mentioned.

Tidal information relating the daily vertical movements of the water is not given; for this *Admiralty Tide Tables* should be consulted. Changes in water level of an abnormal nature are mentioned.

Time difference used in the text when applied to the time of High Water found from the *Admiralty Tide Tables*, gives the time of the event being described in the Standard Time kept in the area of that event. Due allowance must be made for any seasonal daylight saving time which may be kept.

Wreck information is included where drying or below-water wrecks are relatively permanent features having significance for navigation or anchoring.

Units and terminology used in this volume

Latitude and Longitude given in brackets are approximate and are taken from the chart quoted.

Bearings and directions are referred to the true compass and when given in degrees are reckoned clockwise from 000° (North) to 359° Bearings used for positioning are given from the reference object.

Bearings of objects, alignments and light sectors are given as seen from the vessel.
Courses always refer to the course to be made good over the ground.

Winds are described by the direction from which they blow.

Tidal streams and currents are described by the direction towards which they flow.

Distances are expressed in sea miles of 60 to a degree of latitude and sub-divided into cables of one tenth of a sea mile.

Depths are given below chart datum, except where otherwise stated.

Heights of objects refer to the height of the structure above the ground and are invariably expressed as "... m in height".

Elevations, as distinct from heights, are given above Mean High Water Springs or Mean Higher High Water whichever is quoted in *Admiralty Tide Tables*, and expressed as, "an elevation of ... m". However the elevation of natural features such as hills may alternatively be expressed as "... m high" since in this case there can be no confusion between elevation and height.

Metric units are used for all measurements of depths, heights and short distances, but where feet/fathoms charts are referred to, these latter units are given in brackets after the metric values for depths and heights shown on the chart.

Time is expressed in the four-figure notation beginning at midnight and is given in local time unless otherwise stated. Details of local time kept will be found in *Admiralty List of Radio Signals Volume 2*.

Bands is the word used to indicate horizontal marking.

Stripes is the word used to indicate markings which are vertical, unless stated to be diagonal.

Conspicuous objects are natural and artificial marks which are outstanding, easily identifiable and clearly visible to the mariner over a large area of sea in varying conditions of light. If the scale is large enough they will normally be shown on the chart in bold capitals and may be marked "conspic".

Prominent objects are those which are easily identifiable, but do not justify being classified as conspicuous.

ABBREVIATIONS

The following abbreviations are used in the text.

Directions

N	north (northerly, northward, northern, northernmost)	S	south
NNE	north-north-east	SSW	south-south-west
NE	north-east	SW	south-west
ENE	east-north-east	WSW	west-south-west
E	east	W	west
ESE	east-south-east	WNW	west-north-west
SE	south-east	NW	north-west
SSE	south-south-east	NNW	north-north-west

Navigation

AIS	Automatic Identification System	Satnav	Satellite navigation
CVTS	Co-operative Vessel Traffic System	TSS	Traffic Separation Scheme
DGPS	Differential Global Positioning System	VDR	Voyage Data Recorder
GPS	Global Positioning System	VMRS	Vessel Movement Reporting System
ITCZ	Intertropical Convergence Zone	VTC	Vessel Traffic Centre
Lanby	Large automatic navigation buoy	VTs	Vessel Traffic Services
MCTS	Marine Communications and Traffic Services Centres	VTMS	Vessel Traffic Management System
ODAS	Ocean Data Acquisition System		

Offshore operations

ALC	Articulated loading column	FPU	Floating production unit
ALP	Articulated loading platform	FSO	Floating storage and offloading vessel
CALM	Catenary anchor leg mooring	PLEM	Pipe line end manifold
CBM	Conventional buoy mooring	SALM	Single anchor leg mooring system
ELSBM	Exposed location single buoy mooring	SALS	Single anchored leg storage system
FPSO	Floating production storage and offloading vessel	SBM	Single buoy mooring
		SPM	Single point mooring

Organizations

EU	European Union	IMO	International Maritime Organization
IALA	International Association of Lighthouse Authorities	NATO	North Atlantic Treaty Organization
IHO	International Hydrographic Organization	RN	Royal Navy
		UKHO	United Kingdom Hydrographic Office

Radio

AIS	Automatic Identification System	Navtex	Navigational Telex System
DF	direction finding	RT	radio telephony
HF	high frequency	UHF	ultra high frequency
LF	low frequency	VHF	very high frequency
MF	medium frequency	WT	radio (wireless) telegraphy
MMSI	Maritime Mobile Service Identity		

Rescue and distress

AMVER	Automated Mutual Assistance Vessel Rescue System	JRCC	Joint Rescue Cooperation Centre
EPIRB	Emergency Position Indicating Radio Beacon	MRCC	Maritime Rescue Co-ordination Centre
GMDSS	Global Maritime Distress and Safety System	MRSC	Maritime Rescue Sub-Centre
		SAR	Search and Rescue

Tides

HAT	Highest Astronomical Tide	MHWS	Mean High Water Springs
HW	High Water	MLHW	Mean Lower High Water
LAT	Lowest Astronomical Tide	MLLW	Mean Lower Low Water
LW	Low Water	MLW	Mean Low Water
MHHW	Mean Higher High Water	MLWN	Mean Low Water Neaps
MHLW	Mean Higher Low Water	MLWS	Mean Low Water Springs
MHW	Mean High Water	MSL	Mean Sea Level
MHWN	Mean High Water Neaps		

ABBREVIATIONS

Times

ETA	estimated time of arrival	UT	Universal Time
ETD	estimated time of departure	UTC	Co-ordinated Universal Time

Units and miscellaneous

°C	degrees Celsius	kHz	kilohertz
DG	degaussing	km	kilometre(s)
dwt	deadweight tonnage	kn	knot(s)
DZ	danger zone	kW	kilowatt(s)
feu	forty foot equivalent unit	m	metre(s)
fm	fathom(s)	mb	millibar(s)
ft	foot (feet)	MHz	megahertz
g/cm ³	gram per cubic centimetre	mm	millimetre(s)
GRP	glass reinforced plastic	MW	megawatt(s)
grt	gross register tonnage	No	number
gt	gross tonnage	nrt	nett register tonnage
hp	horse power	teu	twenty foot equivalent unit
hPa	hectopascal		

Vessels and cargo

CDC	Certain Dangerous Cargo	MV	Motor Vessel
HMS	Her (His) Majesty's Ship	MY	Motor Yacht
HSC	High Speed Craft	POL	Petrol, Oil & Lubricants
LASH	Lighter Aboard Ship	RMS	Royal Mail Ship
LHG	Liquefied Hazardous Gas	Ro-Ro	Roll-on, Roll-off
LNG	Liquefied Natural Gas	SS	Steamship
LOA	Length overall	ULCC	Ultra Large Crude Carrier
LPG	Liquefied Petroleum Gas	VLCC	Very Large Crude Carrier

GLOSSARY

Afrikaans terms and words found on charts and in Sailing Directions.

AFRIKAANS

Afrikaans *English*

aanlêplek	wharf
bach	small, or nook or corner
baai	bay
baaitjie	cove
baggerbank	spoil ground
baken	beacon
bank	bank
berg	mountain
berge	mountains, mountain chain
blinder	submerged rock
blou	blue
boei	buoy
boot	boat
branding	surf
branders	breakers
breekwater	breakwater
buffel	buffalo
deurvaart	passage
diepte	depth
dok	dock
dooiety	neap tide
dorp	village
droog	dry
drywend	afloat
duiker	cormorant
duin	dune
eb	ebb
eiland	island
eilandjie	islet
eskarp	escarpment
fontein	spring
geel	yellow
gestrand	aground
gety	tide
gevaar	danger
golf	wave
groen	green
hawe	harbour, port
hawehoof	mole
hawekom	basin
heuvel	hill
hindernis	obstruction
hoek	corner
hoog	high
hoogte	height, elevation
hout	wood
jakkals	jackal
kaai	jetty, wharf, quay
kaap	cape, headland
kabellengte	cable
klip	stone
kloof	gorge
knoop	knot
koers	course
kompass	compass
kop	hill
koppie	hillock
krans	cliff

Afrikaans *English*

kus	coast, shore
laag	low
land	land
landteken	landmark
leeu	lion
leimerk	leading mark
magneties	magnetic
malgas	gannet
mast	mast
meer	lake
meerplek	mooring
merk	mark
mis	fog
modder	mud
moeras	swamp
mossel	mussel
nek	col, pass
newel	mist
noord	north
olifant	elephant
ondersee berg	seamount
onderwater	submerged
oorspoel	awash
oos	east
op land	ashore
peiling	bearing
piek	peak
pier	pier
pikkewyn	penguin
pelikaan	pelican
punt	point
radiobaken	radiobeacon
reën	rain
rivier	river
riviermonding	estuary
rob	seal
rollers	rollers
rooi	red
rots	boulder, rock
sand	sand
sandbank	bar
see	sea
seegrass	kelp
seemeer	lagoon
seemyl	mile
seekaart	chart
seewarts	offshore
skeep	ship
skeepswerf	dockyard
skiereland	peninsula
snellheid	speed
springty	spring tide
stad	city, town
stilwater	slack water
stormwind	gale
strand	beach, shore
stroom	current
suid	south
swart	black

GLOSSARY

AFRIKAANS (continued)

Afrikaans *English*

tafel table
teken mark
toring tower

vaam fathom
vaarwater fairway
vallei valley
vis fish
vlakwater shoal
vlei marsh
vloed flood
vloedbos mangrove
voorgebergte bluff

Afrikaans *English*

voorstrand foreshore
vuurtoring lighthouse

wal embankment
walvis whale
werweling eddy
wes west
wit white
wolk cloud
wrak wreck
yster iron



GLOSSARY

FRENCH

French *English*

abri, abrité	shelter, sheltered
aigu, -e	pointed, sharp
aiguille	needle
amer	landmark, beacon
amont	upstream, landward
apponement	landing stage
anse	bay, cove
argile	clay
arrière-port	inner port
asséchant	drying
aval	downstream, seaward
avant-port	outer port
azur	blue

baie	bay
balise	beacon
baliser	to mark
banc	bank
barre	bar
bas, -se	low
basse	shoal
basse mer	low water
bassin	basin, dock
bassin à flot	wet basin
batterie	battery
blanc, -he	white
bleu, -e	blue
bois	woods
bouche	mouth of a river
boue	mud
bouée	buoy
brisant, brisants	shoal, breakers
brise-lames	breakwater
brouillard	fog
brume	mist
butte	knoll, mound

caboteur	coaster
cale	ramp, slip
canal	canal, channel
cap	cape, headland
carré, -e	square
chaîne	chain, range of mountains
champ-de-tir	firing range
chantier	dockyard
château	castle
château d'eau	water tower
chausée	bank, causeway
chenal	channel
clocher	steeple, belfry
col	neck, mountain pass
colline	hill
côte	coast
courant	current, stream
couvent	convent
crête	ridge, crest
crique	creek
croix	cross

darse	basin
débarcadère	wharf, landing place
découvrant	uncovering, drying
détroit	strait, narrow
déversoir	weir
digue	mole, breakwater
douane	customs

French *English*

droit	right (side)
duc d'albe	dolphin
dur, -e	hard
échouage	beaching
écluse	lock of a canal or basin, sluice
écueil	rock, reef
église	church
épave	wreck
épi	short mole, spur
est	east
estuaire	estuary
étale	slack water
étier	a creek which can receive small vessels

falaise	cliff
flèche	spire
fleuve	river, stream
flot	flood tide
forêt	forest
fosse	ditch, a deep

gabare	lighter
galets	shingle
gauche	left (side)
golfe	gulf
goulet	inlet, narrow entrance
grand, -e	great
gravier	gravel
grève	sandy beach
gris, -e	grey
gros, -se	coarse, large
guérite	watch-tower, turret
guet	lookout

haut, -e	high, tall
haut-fond	a shoal
hauturier	deep-sea
havre	haven

île	island, isle
îlot	islet

jaune	yellow
jetée	jetty
jusant	ebb tide

lac	lake
lamanage	inshore pilotage
large	broad, wide

maison	house
marais	swamp, marsh
marée	tide
menhir	a large raised stone
mer	sea
méridional, -e	southern
milieu	middle
môle	mole, pier
mont, montagne	mount, mountain
morte-eau	neap tide
mouillage	anchorage
moulin	mill
mur	wall
musoir	mole, pierhead

FRENCH (continued)*French* *English*

neuf, -ve new
 nez nose, promontory
 noeud knot
 noir, -e black
 nord north
 nouveau, -el, -elle new

occidental, -e western
 oriental, -e eastern
 ouest west

passee passage, pass
 pertuis opening or strait
 petit, -e small
 phare lighthouse
 pic peak
 pierre stone
 pignon gable
 pin pine or fir tree
 plage shore, beach
 plaine plain
 plat, -e flat, level
 plateau table land, or flat below water
 pleine mer high water
 pointe point
 pont bridge, deck
 port port, harbour
 presqu'île peninsula

quai quay, wharf

rade road, roadstead
 raz race, violent tidal stream
 récif reef
 redoute redoubt, fort

French *English*

ressac surf
 rivage shore
 rive bank of river
 rivière river
 roche rock
 rocher rock generally above water
 rond, -e round
 rouge red
 roux, rousse reddish
 ruisseau rivulet

sable sand
 sablon fine sand
 saline salt water lagoon, salt works
 septentrional, -e northern
 sommet summit
 sud south

tenue holding ground
 terre-plein levelled ground, platform
 tertre hillock, knoll
 tête head
 torrent stream, torrent
 tour tower
 tourelle small tower, turret
 traverse shallow ridge across channel or river

val narrow valley
 vallée valley
 vasière mudbank
 vert, -e green
 vieil, vieille, vieux old, ancient
 village village
 ville town
 vive-eau spring tide

PORTUGUESE AND SPANISH

Portuguese (P), and Spanish (S) terms and words found on charts and in the Sailing Directions

<i>Foreign word</i>	<i>Language</i>	<i>English meaning</i>	<i>Foreign word</i>	<i>Language</i>	<i>English meaning</i>
a, as	P	the (fem)	cala	S, P	narrow cove, fiord
abra	S, P	cove, creek, haven	caleta	S	cove
acantilados	S, P	cliffs	camino	S	road
adentro	S, P	inner, inside	canto	S, P	bluff
aduana	S, P	customs house	capela	P	chapel
afuera	S	outer, outside	capilla	S	chapel
aguada	S, P	watering place	carreira	P	narrow channel, slipway
aguado	S	sharp, pointed	carrera, carreiro	S	narrow channel, passage
aguas muertas	S	neap tide	casa	S, P	house
aguas vivas	S	spring tide	castelo	P	castle
aguja	S	needle	castillo	S	castle
albufera	S, P	lagoon, pond	castro	S	headland, hillock surmounted by ruins
aldea	S	village	catedral	S, P	cathedral
aldeia	P	hamlet	cayo	S	cay
alto	S, P	height	cerrito	S	hillock
altura	S, P	height	cerro	S, P	hill
amarelo	P	yellow	chico	S	small
amarillo	S	yellow	cidade	P	city, large town
amarradero	S	mooring, dolphin	ciadela	P	citadel
ancho	S, P	wide, broad	cima	S, P	summit, crest
ancladero	S	anchorage	cinzento	P	grey
ancón	S	open bay, roadstead	ciudad	S	city, town
ancoradouro	P	anchorage	ciudadela	S	citadel
angostura	S, P	narrows	colina	S, P	hill, hillock
angra	P	creek, bay	collado	S	hillock, elevation
apetrachamento	P	stores, marine chandlery	concha	S, P	cove
archipiélago	S	archipelago	cono	S, P	cone
areia	P	sand	convento	S, P	convent
arena	S	sand	cordillera	S	mountain range
arenal	S	extensive area of sand	coroa	P	sandy head
arrecife	S, P	reef	corona	S	crown, summit
arroyo	S	stream, rivulet	corriente	S	current
astillero	S	shipyard	costa	S, P	coast
atalaia	P	lookout, watchtower	coto	S	summit
atalaya	S	lookout, watchtower	cruz	S, P	cross
atraque	S	berth	cueva	S	cave
avitallamento	P	victualling	cuña	S	quoin, wedge
azul	S, P	blue	cuspid	S	summit
bacia	P	basin	dársena	S	basin, dock, backwater
bahía	S	bay	dentro	P	inner
baía	P	bay	desembarcadero	S	landing place
baixa	S, P	shoal	desembarcadouro	P	landing place
baixo (adj)	P	shoal	desembocadura	S	mouth of a river
bajamar (BM)	S	low water (LW)	dique	S, P	mole, dock, embankment, levee
bajo	S	shoal, below, under, low	doca	P	dock
balisar	P	beacon	doca de marés	P	tidal basin
baliza	S	beacon	doca de flutação	P	wet dock
banco	S, P	bank	draga	S	dredger
barlovento	P	windward	duna	S, P	dune
barra	S, P	bar	duque de alba	S	dolphin
barranco	S	precipice, ravine	el	S	definite article (masc)
batería	S, P	battery	embarcadero	S	wharf, landing
blanco	S	white	embocadura	S	mouth
boca	S, P	mouth, entrance	enfilación	S	transit
boquerón	S	wide mouth, opening or entrance	enseada	P	bay, bight, cove
boquette	S	narrow entrance, gap	ensenada	S	bay
boia	P	buoy	entrada	S, P	entrance, fairway
boya	S	buoy	ermida	P	hermitage
branco	P	white	ermita	S	hermitage
brazo	S	arm (of the sea)	esclusa	S, P	lock (canal or basin)
bruma	S	fog	escollo	S	shallow rock, reef awash
buque	S	ship	espigão	P	projecting point
cabeza	S	shoal head	espigón	S	spur, arm of mole
cabezo	S	shoal head, summit	esporão	P	groynes
cabo	S, P	cape	estacada	P	pier, projecting wharf, mole
cais	P	quay or wharf	estaleiro	P	shipyard

PORTUGUESE AND SPANISH (continued)

Foreign word Language English meaning

este	S, P	east
esteiro	P	creek
estero	S	creek
estrecho	S	strait, narrows
estreito	P	strait, narrows
estribor	S	starboard hand
fango	S	mud
farallón	S	stack, steep rocky islet
farilhão	P	stack, steep rocky islet
faro	S	lighthouse
fondeadero	S	anchorage
fortaleza	S, P	fortress
fora	P	outer
forte	S, P	fort
freo	S	strait
frontón	S	wall-like cliff
fuerte	S	fort
fundeadoiro	P	anchorage
garganta	S	narrow passage, sound
garita	S	sentry box, hut, lookout
golfo	S, P	gulf
gran, grande	S, P	large, great, big
gris	S	grey
grupo	S	group
herradura	S	horseshoe-shaped bay
iglesia	S	church
igreja	P	church
ilha	P	island
ilhéu	P	islet
ínsua	S, P	small islet or rock
isla	S	island
isleta	S	islet
islote	S	small barren islet, skerry
istmo	S, P	isthmus
la, las	S	definite article (fem)
lago	S, P	lake
lagoa	P	small lake, marsh
laguna	S, P	lagoon
laja	S	flat rock
laje	P	flat rock
lancha de socorro	S	lifeboat
lastra	S	rocky ledge
laxe	S	rock
levante	S, P	eastern
lodo	S	mud
loma	S	hillock, knoll
lomo	S	ridge
los	S	definite article (masc)
malecón	S	quay, mole
mar	S, P	sea
maré	P	tide
mareia	S	tide
margen	S, P	shore, river bank
marisma	S	marsh
mata	P	forest, wood, thicket
médano	S	dune, sandhill
medio	S	middle
meridional	S, P	southern
mesa or meseta	S	tableland, plateau
mogote	S	hummock
molhe	P	mole, pier
montaña	S	mountain

Foreign word Language English meaning

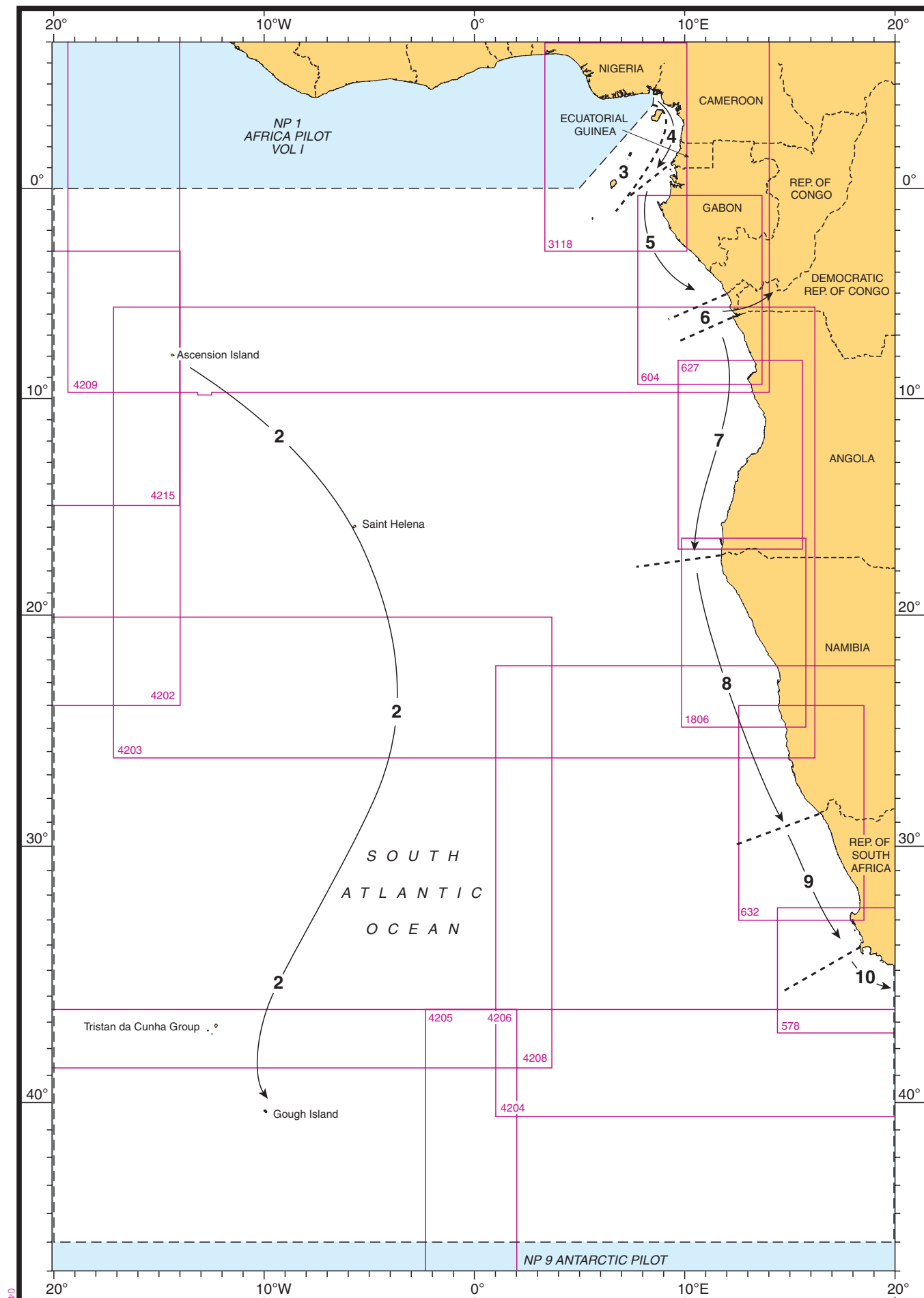
montanha	P	mountain
monte	S, P	mount, mountain
montículo	S	knoll
morro	S, P	headland, bluff, head of breakwater
muelle	S	pier, jetty, mole
naufugio	S	wreck
naufágio	P	wreck
negro	S, P	black
niebla	S	fog
norte	S, P	north
o, os	P	definite article (masc)
occidental	S, P	western
oeste	S, P	west
oriental	S, P	eastern
orilla	S	shore, edge, river bank
palheiros	P	fishing village
palo	S	mast, spar
pan de açúcar	S	sugarloaf
pantano	S	swamp, marsh
parcel	P	reef, shoal
paredão	P	seawall
pasaje	S	passage, ferry
paso	S	pass
pedra	P	stone, rock
pedregal	S	stony or rocky patch
peña	S, P	rock
penasco	S	large rock
península	S, P	peninsula
peñón	S	rocky mountain
pequeno	P	small
pequenho	S	small
pescado	S	fish
petón	S	pinnacle rock
picacho	S	sharp peak
pico	S, P	peak
piedra	S	stone, rock
piloto	S, P	pilot (official)
placer	S	shoal
playa	S	beach
pleamar (PM)	S	high water (HW)
población	S	town
poblado	S	village
poniente	S	western
ponta	P	point (of land)
pontal	P	promontory, point
ponte	P	bridge, pier
ponté-cais	P	pier, jetty
portinho	P	small port or harbour
porto	P	port, harbour
povoa	P	large town
povoação	P	village
pozo	S	well, deep hole in seabed or river
práctico	S	pilot
praia	P	beach
preto	P	black
promontorio	S	promontory
promontório	P	promontory
puebla	S	village
pueblecito	S	small town, village
pueblo	S	town
puente	S	bridge
puerto	S	port, harbour
punta	S	point
puntal	S	narrow point

PORTUGUESE AND SPANISH (continued)

<i>Foreign word</i>	<i>Language</i>	<i>English meaning</i>
quebrada	S, P	ravine, gully, cut, gap
quebra-mar	P	breakwater
rada	S	roadstead
rampa	P	ramp, boat-slip
regato	S	torrent, stream
remolcador	S	tug
restinga	S, P	reef, spit
ria	P	inlet, estuary
rfa	S	inlet, estuary
riachuelo	S	rivulet
ribera	S	shore, river bank
ribero	P	brook
rio	P	river
río	S	river
roca	S	rock
rocha	P	rock
rocalloso	S	pebbly, stony
rochedo	P	rocky place
rochel	S	rocky patch
rocher	P	rock, rocky place
rodal	S	shoal, usually rocky and of some extent
rojo	S	red
rompeolas	S	breakwater
rompientes	S	breakers
roquerio	S	rocky shoal
salinas	S	salt pans
san, santo, santa	S	saint

<i>Foreign word</i>	<i>Language</i>	<i>English meaning</i>
são, santo, santa	P	saint
seno	S	bight, sound
septentrional	S, P	northern
serra	P	mountain range
serriana	S	mountain ridge
sierra	S	mountain range
sotavento	S, P	leeward
sucio	S	foul
sud, sur	S	south
sul	P	south
surgidero	S	anchorage
tenedero	S	holding ground, anchorage
torre	S, P	tower
touza	S	rock (usually lying off a larger feature)
vado	S	ford
vale	P	valley
valle	S	valley
varadero	S	slipway
varadouro	P	landing
verde	S, P	green
viejo	S	old
vigia	S, P	lookout
vila	P	town, village, villa
villa	S	town, villa
villorio	S	hamlet
volcán	S	volcano
volcão	P	volcano

Chapter Index Diagram



0405

NP 2

LAWS AND REGULATIONS APPERTAINING TO NAVIGATION

While, in the interests of the safety of shipping, the United Kingdom Hydrographic Office makes every endeavour to include in its hydrographic publications details of the laws and regulations of all countries appertaining to navigation, it must be clearly understood:

- (a) that no liability whatever will be accepted for failure to publish details of any particular law or regulation, and
- (b) that publication of details of a law or regulation is solely for the safety and convenience of shipping and implies no recognition of the international validity of the law or regulation.

AFRICA PILOT VOLUME II

CHAPTER 1

NAVIGATION AND REGULATIONS COUNTRIES AND PORTS NATURAL CONDITIONS

NAVIGATION AND REGULATIONS

LIMITS OF THE BOOK

Chart 4021

Area covered

1.1

- 1 This volume contains sailing directions for the E portion of the South Atlantic Ocean contained within the limits defined below:

	Lat N	Long E
From Bakasi Peninsula	4°30'	8°30'
	Lat S	Long E
To close W of Cape Agulhas	34°50'	20°00'
Thence S to position	45°00'	20°00'
	Lat S	Long W
Thence W to position	45°00'	20°00'
Thence N to position	00°00'	20°00'
	Lat S	Long E
Thence E along the equator to position	00°00'	5°00'
	Lat N	Long E
Thence NE to position	4°00'	8°23'
Thence N to position	4°19'	8°23'
Thence NE to Bakasi Peninsula	4°30'	8°30'

- 2 The above area includes the islands in the Bight of Biafra; Bioco (Macias Nguema Biyogo or Fernando Póo), Ilha do Príncipe, São Tomé, Pagalu (Isla de Annobón), also Ascension Island, Saint Helena, Tristan da Cunha Group, and Gough Island.

NAVIGATIONAL DANGERS AND HAZARDS

Coastal conditions

1.2

- 1 Navigation along the coast of W Africa requires to be carried out with all due caution, as the tracks between the salient points are in general long, and in the S especially, must be traversed during frequent periods of thick weather and gales, with vessels under the influence of currents, the rate and direction of which are uncertain.
- 2 In all cases maximum use should be made of all aids to navigation. In poor visibility, and despite the good coverage of navigational aids, it is advisable when approaching the coast to make full use of the echo sounder.
- In the S part of the area covered by this volume, weather conditions in winter when storms and fog are experienced, place heavy demands on vessels and mariners.

Navigation amongst kelp

1.3

- 1 It should be an invariable rule never to pass over kelp. In general, by keeping clear of kelp, danger is avoided but this must not prevent attention to sounding, as the rule sometimes fails. Kelp is always a sign of danger, and unless the spot where it grows has been carefully sounded, it is not safe for a vessel to pass through it. A good lookout should be kept from aloft. A heavy surge will occasionally tear the kelp away from the rocks and a moderate tidal stream or current will ride it under water, when it will not be seen. When passing on the side of a patch of kelp from which the stems stream away with the current, care should be taken to give it a wide berth because the kelp showing with a strong tide is on one side of and not over the rocks. The least depth will usually be found in a clear spot in the middle of a thick patch of fixed kelp.

- 2 It should be noted that kelp which is not attached to rock floats on the water in heaps, whereas kelp attached to rocks streams away level with the surface and the leaves give an occasional flap.

Live kelp usually indicates depths of less than 18 m (60 ft).

Abnormal refraction

1.4

- 1 Extraordinary refraction, which may be sufficient to produce mirage, occurs at times near the coast, especially near the coast of Namibia and the Republic of South Africa. This refraction is likely to cause errors when using a sextant.

TRAFFIC AND OPERATIONS

Traffic

Shipping

1.5

- 1 The main through routes in the area covered by this volume are the routes from ports in NW Africa to the Cape of Good Hope, and these, together with transatlantic routes for traffic between N and S America and ports in this area, are described in *Ocean Passages for the World*.

Caution. A number of seamounts, dangerous to deep-draught vessels, lie close to some of the main routes, see 1.186 and 2.4.

Routeing measures

1.6

- 1 **Traffic separation schemes off the coast of the Republic of South Africa.** Traffic separation schemes have been established as follows:

Approaches to Saldanha Bay (9.107).

Approaches to Table Bay (9.186).

These schemes have not been adopted by IMO. However, within the schemes, Rule 10 of *The International Regulations for Preventing Collisions at Sea (1972)* applies.

For further information see *Annual Summary of Admiralty Notices to Mariners* Annual Notice No 17, *The Mariner's Handbook* and IMO publication *Ship's Routeing*.

1.7

- 1 **Rules for the navigation of laden tankers off the coast of the Republic of South Africa.** See Appendix I.

Fishing

General remarks

1.8

- 1 Commercial, and pleasure fishing takes place off the whole of the coast covered by this volume.

Crayfish trap fishing takes place S of Lüderitz Bay (26°36'5S, 15°08'5E).

Anticipated concentrations of fishing vessels or small craft are mentioned in the text.

International Commission for South-East Atlantic Fisheries (ICSEAF)

1.9

- 1 This commission has introduced an inspection service for the prime purpose of controlling trawl net mesh size.

The area concerned, within the limits of this volume is contained between line drawn from Ponta Padrão Light (6°04'7S, 12°19'6E), NW to 6°00'0S, 12°00'0E, thence W to 6°00'0S, 20°00'0W, thence S to 50°00'0S,

20°00'0W, thence E to 50°00'0S, 40°00'0E. See also *Africa Pilot Volume III* and *Antarctic Pilot*.

For signal shown by inspection vessels see 1.46.

Dangerous marine animals

1.10

- 1 Several forms of dangerous marine animals inhabit the waters covered by this volume. Certain invertebrates, several fishes, and one species of sea snake are venomous and potentially lethal. Other forms possessing strong jaws and sharp teeth are capable of inflicting serious wounds. One species, an electric ray, can deliver a powerful electric shock. Still other marine animals contain poisons which, when ingested, may cause serious internal illness.

- 2 Venomous marine vertebrates are most abundant in tropical coastal waters. Jellyfish, such as the Portuguese man-of-war, and lion's mane, are occasionally present in large numbers in open sea waters where they drift with the current or the wind. Contact with the tentacles of these jelly fish results in a painful sting, which may occasionally be fatal.

- 3 Stinging corals, cone shells, and sea urchins lying on the bottom are a threat to collectors, waders and swimmers. Handling or stepping on any of these species may result in painful injuries. Stingrays, some of which attain large size, are usually buried in sandy or other soft bottoms. These kite-shaped fish have their tails armed with one or more spines which can inflict serious injuries on anyone who steps on them. Several kinds of poisonous catfish and scorpion fish also inhabit the tropical waters of this area. Caution should be exercised when handling them since their dorsal and pectoral spines may inject a powerful venom.

- 4 Wound-inflicting animals such as sharks and barracudas are mostly inhabitants of warm waters. They may be present anywhere in the open seas but predominantly frequent river mouths, coral reefs and rocky outcrops. The maneater, bonito, hammerhead, tiger, blue, sand, and several kinds of grey sharks are most likely to attack man. Moray eels, though not likely to attack unless provoked, are particularly abundant in reefs and rocky outcrops of the warm waters of this area.

- 5 Crocodile may inhabit estuarine and swampy regions in tropical and sub-tropical areas and may even be seen swimming along coastal stretches.

The shock generated by the electric ray is unpleasant in the extreme. These rays are common in sheltered estuarine waters where they spend much of their time partially buried in the bottom.

Sea food poisoning may be avoided by taking advice locally, or from a doctor. At certain times and in some regions in this area, turtle and shellfish have been implicated in sea food poisoning.

Exercise areas

Naval exercises

1.11

- 1 Naval exercises may take place in the waters covered by this volume. They are mentioned at the appropriate place in the text. Notice of exercises giving limits of the area, nature and duration of the exercise, and specified navigation rules, are promulgated by local *Notices to Mariners* and by radio navigation warnings. For signals used by warships, see 1.44.

For general information on such areas see *Annual Summary of Admiralty Notices to Mariners*.

Firing practice

1.12

- 1 Gunnery and bombing practice may take place in the waters covered by this volume. They are mentioned at the appropriate place in the text if indicated on the chart. Notice of firing practices, giving the limits of the area, nature and duration of the practice, and specified navigation rules, are promulgated by local *Notices to Mariners* and radio navigation warnings. For limits and details of areas in the Republic of South Africa see Appendix III.

- 2 For general information on such areas see *Annual Summary of Admiralty Notices to Mariners*.

Range authorities are responsible that no risk is caused to vessels, but should a vessel find herself unexpectedly in a practice area, she should maintain course and speed, or if compelled to alter course for navigational reasons, she should clear the area as quickly as possible.

For signals used by warships, see 1.44.

Submarine exercises

1.13

- 1 Submarines may exercise in the area covered by this volume. Notice of exercises is given only in exceptional circumstances and therefore mariners should keep a good look-out for submarines.

The Mariner's Handbook and *Annual Summary of Admiralty Notices to Mariners* give general information on the characteristics of British submarines and visual signals used to denote their presence; in general, other countries conform to this method of signalling.

Marine exploitation

Oil and gas fields

1.14

- 1 Offshore oil and gas exploration and production is carried out in coastal and deep-water areas covered by this volume, in particular within Bight of Biafra and along the coasts of Cameroon, Equatorial Guinea, Gabon, Congo and Angola.

Production platforms and associated structures, including tanker moorings and storage tankers, generally exhibit Morse (U) lights, aircraft obstruction lights and also sound fog signals. They are sometimes marked by buoys.

- 2 Unauthorised navigation is prohibited within 500 m of all such structures, including storage tankers which can swing about their moorings. Tankers manoeuvring in the vicinity of platforms should be given a wide berth.

For further information see *The Mariner's Handbook*.

Pipelines

1.15

- 1 **Caution.** Gas from a damaged oil or gas pipeline could cause an explosion or other serious hazard. Pipelines are not always buried and their presence may effectively reduce the charted depth by as much as 2 m. Where pipelines are close together, only one may be charted. Mariners should not anchor or trawl in the vicinity of a pipeline; they risk prosecution if damage is caused.

For further information see *The Mariner's Handbook*.

Wellheads

1.16

- 1 Mariners are warned that charted information about the presence of submerged wellheads and other underwater obstructions may be incomplete and therefore special caution must be exercised by vessels when navigating in areas of offshore oil and gas activity.

Production wells and suspended wells generally project well above the level of the seabed. For further information see *The Mariner's Handbook*.

Helicopter operations

1.17

- 1 Any ship may need to make use of helicopters either as a matter of routine or in an emergency. Embarkation of pilots, delivery of essential stores or changing crew by helicopter are already routine operations for large tankers or bulk carriers off certain ports. These vessels either carry their own company handbook on helicopter operations, or one issued by the International Chamber of Shipping. However, in an emergency any vessel may be called upon to operate with helicopters. For further information see *Annual Summary of Admiralty Notices to Mariners* and *The Mariner's Handbook*.

CHARTS

General information

1.18

- 1 For the coast of Africa covered by this volume, the only national charting authority, other than the former colonial powers, is the Republic of South Africa. The latter produces modern charts for the coastal areas of Namibia and the Republic of South Africa. Many of these, although based on older Royal Navy and South African Navy hydrographic surveys have been modernised, and the British Admiralty charts are now being brought into line with them.

- 2 In the coastal areas of former colonial territories, the largest scale charts are those published by the following countries:

France for Cameroon, Gabon, and Republic of Congo.
Spain for Equatorial Guinea, Isla Pagalu and Bioco.
Portugal for São Tomé, Príncipe, Angola and the Democratic Republic of the Congo (formerly Zaïre).

- 3 Orthography throughout the whole area presents a problem, as every country has changed its form of government and in many cases consequential changes of names have followed. Names on charts may not therefore always be the latest and where applicable the old and new names are given in Sailing Directions.

- 4 Chart maintenance for most minor ports depends upon data received from local authorities which varies considerably from country to country. Information is often based only on reports from ships. Charts and publications may therefore not be up to date. Mariners are advised to navigate with caution and seek information also from other sources that may be available to them.

- 5 Knowledge of many of the charted offshore banks and dangers has been built up over the years by many ship reports. Few of these features have been properly surveyed by modern methods. Many areas outside the charted banks have yet to be examined, and it is probable that other significant features remain as yet uncharted. See also article on the use of charts in *The Mariner's Handbook*.

Admiralty charts

1.19

- 1 British Admiralty charts covering the area of these Sailing Directions are adequate for use on passage, for entry into the principal ports and harbours, and to reach a required pilot station.

Charts are based on the most recent information received from regional charting authorities.

Foreign charts

1.20

- 1 In certain areas, where the British Admiralty Charts show insufficient detail for navigating close inshore or within inland channels, these Sailing Directions have been written using foreign charts. The text has been written on the assumption that mariners wishing to navigate these waters will have provided themselves with suitable charts on which to do so.

Datums

Horizontal datum

1.21

- 1 In areas covered by modern surveys, British Admiralty charts are referred to WGS84 (World Geodetic System 1984). Elsewhere charts may be undefined.

Vertical datum

1.22

- 1 **Depths.** On recent British Admiralty charts, the chart datum used is LAT. On other charts reference should be made to the title notes on the chart.
Drying heights on British Admiralty charts are shown as being above chart datum.
Elevations. British Admiralty charts — MHWS or MHHW. South African charts — MSL.

NAVIGATIONAL AIDS

Lights

1.23

- 1 Navigational lights are the responsibility of the appropriate national authorities.
Major lights are those with a nominal range of 15 miles or more.
Light structures only are described in this volume; for further details see *Admiralty List of Lights and Fog Signals Volume D*.

Landmarks

1.24

- 1 Caution is necessary when evaluating the descriptions given in this volume concerning landmarks, such as trees, many of which date from surveys of 1825 onwards, and the colour and shape of buildings. New buildings may have been erected and old trees or houses destroyed, so that marks, which may at one time have been conspicuous on account of their isolation, shape or colour, may no longer exist or may now be difficult to identify.

Buoys

IALA Maritime Buoyage System

1.25

- 1 The IALA Maritime Buoyage System Region A (red to port) is in use throughout the area covered by this volume.
For full details of the system see *The Mariner's Handbook* and *IALA Maritime Buoyage System* (NP735).
Radar reflectors are not charted; it can be assumed that most buoys are fitted with radar reflectors.

PILOTAGE

General

1.26

- 1 Information on pilotage procedures at individual ports is given in the text at the port concerned. See also *Admiralty List of Radio Signals Volume 6(3)*.

RADIO FACILITIES

Position fixing systems

Satellite navigation systems

1.27

- 1 **Global positioning system.** The Navstar Global Positioning System (GPS), a military satellite navigation system owned and operated by the United States Department of Defense, provides world-wide position fixing.
The system is referenced to the datum of the World Geodetic System 1984 (WGS84) and therefore positions obtained must be adjusted, if necessary, to the datum of the chart being used.
- 2 **Global Navigation Satellite System.** The Russian Global Navigation Satellite System (GLONASS) is similar to GPS in that it is a space-based navigation system which provides world-wide position fixing.
The system is referenced to the Soviet Geocentric Co-ordinate System 1990 (SGS-90) and as for GPS positions must be adjusted, if necessary, to the datum of the chart being used.
- 3 **DGPS.** Differential GPS compares the position of a fixed point, referred to as the reference station, with positions obtained from a GPS receiver at that point. The resulting differences are then broadcast as corrections to suitable receivers to overcome the inherent limitations of GPS. For a list of reference stations within the limits of this volume see *Admiralty List of Radio Signals Volume 2*.
- 4 **Caution.** Satellite navigation systems are under the control of the owning nation which can impose selective availability or downgrade the accuracy to levels less than that available from terrestrial radio navigational systems. Therefore satellite based systems should only be utilised at the user's risk.
For full details on the above systems see *Admiralty List of Radio Signals Volume 2*.

Racons

1.28

- 1 Those racons which are pertinent to coastal and inshore navigation are included within the navigational text. See also *Admiralty List of Radio Signals Volume 2*.

Radio stations

1.29

- 1 For full details on all radio stations which transmit in the area covered by this volume see *Admiralty List of Radio Signals Volume 1*.

Radio navigational warnings

Long range warnings

1.30

- 1 The area covered by this volume lies within the limits of NAVAREAS II and VII and in addition HYDROLANT long range warning services.
NAVAREA II warnings are issued by Epsom Brest, 13 Rue du Chatellier, BP 30316, 29603 Brest Cedex, France, through:

- a) Douala (TJC).
 - b) SafetyNET (Enhanced Group Calling International SafetyNET).
- 2 NAVAREA VII warnings are issued by Hydrographic Office, Republic of South Africa, Private Bag XI, Tokai 7966 Cape Town, South Africa, through:
- a) Cape Town (ZSC).
 - b) Walvis Bay (V5W).
 - c) SafetyNET (Enhanced Group Calling International SafetyNET).
- 3 HYDROLANTS are broadcast by Boston, USA.
For broadcast details see *Admiralty List of Radio Signals Volume 3(1) and 3(2)*.

Coastal warnings

1.31

- 1 Coastal warnings are issued and broadcast by national coast radio stations. For broadcast details see *Admiralty List of Radio Signals Volume 3(1)*.

Local warnings

1.32

- 1 Local warnings cover the area within the limits of jurisdiction of a harbour or port authority and may be issued by those authorities. They may be issued in the national language only and supplement the coastal navigational warnings by giving information which the ocean-going ship may normally not require. For broadcast details see *Admiralty List of Radio Signals Volume 3(1)*.

Radio weather reports

METAREA II and VII warnings/bulletins

1.33

- 1 The World Meteorological Organization (WMO) has established a global service for the broadcast of high seas weather warnings and routine weather bulletins, through the Enhanced Group Calling International SafetyNET Service. METeorological service AREAS (METAREAS) are identical to the 16 NAVAREAS within the World-Wide Navigational Warning Service (WWNWS).
- 2 Each METAREA has a designated National Meteorological Service responsible for issuing high seas weather warnings and bulletins. The designated authorities are not necessarily in the same country as the NAVAREA co-ordinators. Weather Warnings and routine bulletins are broadcast through:
- a) National coast radio stations.
 - b) SafetyNET (Enhanced Group Calling International SafetyNET).
- For broadcast details see *Admiralty List of Radio Signals Volume 3(1)*.

Meteorological broadcasts by radio-facsimile

1.34

- 1 The area covered by this volume lies within the radio-facsimile broadcast coverage area of national coast radio-facsimile stations. For broadcast details see *Admiralty List of Radio Signals Volume 3(1)*.

National weather services

1.35

- 1 For broadcast details see *Admiralty List of Radio Signals Volume 3(1)*.

Telephone/telefax weather information services

1.36

- 1 Weather information for the area covered by this volume is available through the telephone and telefax. For details see *Admiralty List of Radio Signals Volume 3(1)*.

Internet weather services

1.37

- 1 Weather information for the area covered by this volume is available through the Internet. For details see *Admiralty List of Radio Signals Volume 3(1)*.

Radio medical advice

1.38

- 1 Mariners may obtain medical advice by radio from the International Radio-Medical Centre (CIRM) in Rome. For further information, and for details of the coast radio stations see *Admiralty List of Radio Signals Volume 1(1)*.

Distress and rescue

1.39

- 1 See 1.48.

REGULATIONS

International

Submarine cables and pipelines

1.40

- 1 Mariners are warned that every care should be taken to avoid anchoring or trawling in the vicinity of submarine cables or pipelines on account of the serious consequences which would result from fouling them. See 1.15 and *The Mariner's Handbook* for information on the *International Convention for the Protection of Submarine Cables*.

Pollution

1.41

- 1 The International Convention for the Prevention of Pollution from Ships 1973 was adopted by the International Conference on Marine Pollution convened by IMO in 1973. It was modified by the Protocol of 1978 relating thereto and adopted by the International Conference on Tanker Safety and Pollution Prevention convened by IMO in 1978. The convention, as modified by the protocol, is known as *MARPOL 73/78*.

The convention consists of 6 annexes. Annex I (Oil), Annex II (Noxious Liquid Substances in Bulk), Annex III (Harmful Substances carried at Sea in Packaged Form) and Annex V (Garbage from Ships) are mandatory; Annex IV (Sewage from Ships) and Annex VI (Air Pollution) are optional.

Under the convention, a Master has the duty to report pollution incidents or damage and breakdowns affecting the safety of his vessel to the coastal authorities. Specific instructions on reporting are given in *Admiralty List of Radio Signals Volume 1(1)*.

MARPOL 73/78 and Annexes are described in detail in *The Mariner's Handbook*.

National regulations

General information

1.42

- 1 **Waste.** Facilities for the disposal of oily waste and garbage, where known, are described in the text under the appropriate port.

Republic of South Africa

1.43

- 1 **Merchant Shipping (Maritime Security) Regulations 2004.** Under these regulations an ETA report, drafted in

accordance with the ISPS code, must be transmitted to MRCC Capetown at least 96 hours prior to arrival. The report should be sent by telex via Capetown Radio. See *Admiralty List of Radio Signals Volume 1*.

Other regulations. See Appendix II.

SIGNALS

National signals

South African firing ranges and exercise areas

1.44

- 1 Shore batteries display red flags by day and red fixed or flashing lights by night when firing practices are in progress.

All range safety craft, vessels towing targets, and control launches for radio-controlled targets display a large red flag at the masthead and, in addition, a painted canvas strip 2 m by 1 m with red and white chequers placed on the foredeck or cabin top.

Ships and aircraft carrying out night firing exercises may illuminate with bright red or orange flares. By day, ships display a red flag.

South African submarines

1.45

- 1 The signal displayed by South African warships to indicate their submarines, which may be submerged and in the vicinity, and the signals used by the South African submarines when submerged, are the same as those described in *Annual Summary of Admiralty Notices to Mariners* Annual Notice No 8.
- 2 South African submarines may be met on the surface at night, particularly in the vicinity of Saldanha Bay, Cape Town, Houtbaai and Simon's Bay. Submarines may exhibit an amber quick flashing light showing approximately eighty flashes per minute. See also *The Mariner's Handbook* for caution regarding submarines' navigation lights.
- 3 South African submarines are fitted with one indicator buoy which can be released if the submarine is unable to surface; it is cylindrical, about 0.6 m in length and 0.2 m in width, painted orange and surmounted by an aerial.

International Commission for South-East Atlantic Fisheries (ICSEAF) — signal

1.46

- 1 For information about the Commission see 1.9.



Fisheries Inspection Pennant

Visual storm warning signals

1.47

- 1 These signals are used in the following countries:
Gabon.
Equatorial Guinea.

Angola.

Republic of South Africa — signals for a gale or storm expected in NW, SW, NE and SE quadrants are shown at Cape Town.

DISTRESS AND RESCUE

General information

Radio monitoring

1.48

- 1 Mariners are reminded that active GMDSS receivers together with a continuous watch on the VHF radio distress frequency are most important factors in the arrangements for the rescue of people in distress at sea.

Global Maritime Distress and Safety System

1.49

- 1 The Global Maritime Distress and Safety System (GMDSS) enables Search and Rescue authorities on shore, in addition to shipping in the immediate vicinity of a vessel in distress, to be rapidly alerted to an incident so that assistance can be provided with the minimum of delay.

Details of the GMDSS and the associated coast radio stations are given in *Admiralty List of Radio Signals Volume 5*.

Ship reporting systems

Automated Mutual-assistance Vessel Rescue System (AMVER)

1.50

- 1 The Automated Mutual Assistance Vessel Rescue System (AMVER) provides world-wide cover and is operated by the USCG. Details are given in *Admiralty List of Radio Signals Volume 1(1)*. Merchant vessels of all nations making offshore voyages are encouraged to send movement reports and periodic position reports to the AMVER Centre. US Maritime Administrative regulations require certain US flag vessels and foreign flag "War Risk" vessels to report and regularly update their voyages to the AMVER Centre.

South Africa

1.51

- 1 **South African Ship Reporting System (SAFREP)**, is a ship reporting system established in accordance with the International Convention for the Safety of Life at Sea (SOLAS) 1974 and IMO resolution A851 (20). See *Admiralty List of Radio Signals Volume 1(1)*.

Rescue services

Maritime Search and Rescue Regions

1.52

- 1 The entire area described in this volume is covered by several Maritime Search and Rescue Regions. The coastal waters of the mainland are covered by Cameroon SRR, Angola SRR and South Africa SRR. For further details see *Admiralty List of Radio Signals Volume 5*.

General arrangements for Search and Rescue (SAR) are described in *Annual Summary of Admiralty Notices to Mariners* and the IAMSAR Manual.

Namibia

1.53

- 1 The Sea Rescue Service of Namibia is a voluntary organisation and operates inshore lifeboats at Walvis Bay and Swakopmund.

South Africa

1.54

- 1 In a SAR situation assistance may be provided by aircraft, helicopters and ships of the South African armed forces. In addition, deep-sea rescue tugs are available.

- 2 **National Sea Rescue Institute** is a voluntary organisation with lifeboat stations at the following locations:

Saldanha Bay
Table Bay
Bakeoven
Houtbaai
Kommetjie
Simon's Town
Strandfontein (Valsbaai)
Gordon's Bay
Hermanus.

The majority of the fleet consists of Inshore Rescue Boats (IRBs) but long-range boats are based at Table Bay and Gordon's Bay.



COUNTRIES AND PORTS

SAINT HELENA AND DEPENDENCIES

Description

1.55

- 1 Saint Helena and Dependencies is a British colony, consisting of the following widely scattered islands in the South Atlantic Ocean:

Saint Helena Island (15°57'S, 5°52'W) (2.37), the administrative centre.

Ascension Island (07°55'S, 14°22'W) (2.10) 703 miles NW of Saint Helena Island.

Tristan da Cunha Group (37°15'S, 12°30'W) (2.60) 1312 miles SSW of Saint Helena Island.

Gough Island (40°20'S, 10°00'W) (2.97) 230 miles SE of Tristan Island.

Saint Helena lies about 1200 miles off the W coast of Africa. The capital and only port is Jamestown.

National limits

1.56

- 1 Saint Helena and Dependencies lays claim to a 12 mile territorial sea and a 200 mile fishing zone. For further details see *Annual Summary of Admiralty Notices to Mariners*, Annual Notice No 12 and also *The Mariner's Handbook*.

Ascension Island

Description

1.57

- 1 Ascension Island (07°55'S, 14°22'W) (1.55) lies 703 miles NW of Saint Helena Island. For further information including directions see 2.10.

History

1.58

- 1 Ascension Island was discovered on Ascension day, 20th May 1501, by João de Nova Gallego, a Portuguese, and was visited two years later by Alphonzo d'Albuquerque, who gave to it its present name.

In the year 1815, the British Government took possession of the island and in 1821 it was garrisoned by a company of Royal Marines.

- 2 The first buildings were erected near the present landing place, but there is no doubt that better landing facilities would have been available had a site at Comfortless Cove been chosen, though the ground in its vicinity is not suitable for the foundation of a settlement.

- 3 Improvements were made, and in 1827 roads, along which water was conveyed to the garrison, were constructed to the several springs. In 1830, the collection of Government buildings and wooden houses was given the name Georgetown, at which time the garrison consisted of 100 marines and 50 Kroomen from the coast of Africa. By the end of March, 1833, the island had been fortified at all accessible points, and the establishment numbered nearly 300 persons.

- 4 In 1922 the garrison was withdrawn and the control of the islands which up till then had been directly under the Admiralty, was transferred to the Colonial Office.

Government

1.59

- 1 The island is administered by an Administrator who is responsible to the Governor of Saint Helena and there is a Council.

No person is allowed to land on the island without permission of the Administrator, nor to reside there without the authority of the Governor of Saint Helena.

Population

1.60

- 1 In 1993, the estimated population was 1117 excluding military personnel.

Language

1.61

- 1 The language spoken is English.

Flora

1.62

- 1 The soil produced by the decomposition of the volcanic matter is rich and productive, though only a portion of it is cultivated. At the agricultural station various kinds of moss, grass, heath, and flowers have been successfully planted, so that the botany of Ascension boasts of about 170 varieties.
- 2 Fruits such as pineapples, gooseberries, and plantains, have been successfully cultivated; and potatoes, onions, carrots, peas, French beans, and almost every esculent vegetable, have also been produced. The castor-oil plant thrives on Green Mountain and crops of maize have been raised.

Fauna

1.63

- 1 Horses, mules, cows, sheep, and asses have been imported at various times; the asses now run wild. Cats are numerous, but instead of destroying the rats, they prey on the sea-fowl that frequent the island to lay their eggs. Goats, rats, and land crabs, being enemies to cultivation, are destroyed whenever the opportunity offers, and may ultimately be exterminated.

- 2 Insects are not troublesome. There are some mosquitoes (*Stegomyia*) and a few scorpions and centipedes; after heavy rains, crickets abound. A small blue mountain butterfly is sometimes seen.

- 3 The indigenous birds include the man-of-war bird, black and white, measuring sometimes as much as 2.1 m between the tips of its wings; two kinds of gannet, two of petrel, and the boatswain bird. The sooty tern or wide awake (*Sterna fuliginosa*) visits the island in great numbers during the laying season, which is irregular and only occurs about three times in two years. Their eggs are considered by some to be a delicacy resembling those of the plover, but though the bird is small, the egg is nearly as large as that of the common fowl.

1.64

- 1 There is an abundance of excellent fish to be caught among the rocks throughout the year, such as rock-cod, mullet, conger-eel, cavalhões. The best place for fishing is on the reef near the anchorage. Cray-fish are also caught, near the mouths of the caverns among the rocks near English Bay. Oysters are abundant but are small; they are of the rock type and are excellent eating.

- 2 **Caution.** Small fish about 15 cm in length, known as "Black fish", swim around an anchored vessel in large shoals, eating anything thrown into the water within seconds. They will only attack humans if these have an open cut or wound letting blood into the water. Caution should be exercised in these waters.

1.65

- 1 **Turtle.** Ascension Island, especially South West Bay (7°58'S, 14°25'W), is visited by the sea-turtle between

November and June and it is supposed that during the above period each female makes three or four nests. This animal remains off the coast until 80 to 150 eggs are fit to be deposited in the sand, and then lands on the beach between the hours of 2200 and 0400. She then proceeds sometimes as far as 150 m above high-water mark, digs a large pit about 3 m in diameter, and 80 cm deep, in which the eggs are deposited and carefully covered over with sand; the process of incubation being left to nature.

- 2 In nine or ten weeks the young turtle breaks out, and working its way through the sand, immediately takes to the sea, after which it is never seen again until it is full grown. Should this short journey, however happen in daylight, many of the young animals are picked up and devoured by the man-of-war birds, who are hovering over the turtle nests.
- 3 During the height of the season, some 50 or 60 turtle may be turned of a night when they come to deposit their eggs in the sand. On such occasions men are stationed during the night in the bays they frequent to turn them over on their backs in which position they are perfectly helpless and they are then transferred to ponds in the town formed for their reception. The turtle when fully mature weighs from 180 to 360 kg; but it is worthy of remark that no male turtle ever make their appearance on the beach. At times the turtle seem almost to forsake the island, as, for instance, in the season of 1874, when only 65 were taken altogether.
- 4 Turtle may be purchased, but the turning of the turtle by strangers is strictly prohibited; and any person guilty of a breach of this regulation is subject to a heavy penalty.

Saint Helena Island

Description

1.66

- 1 Saint Helena Island (15°57'S, 5°02'W), in the South Atlantic Ocean lies 703 miles SE of Ascension Island. For further information including directions see 2.37.

History

1.67

- 1 There is an abundance of interesting historical and descriptive records concerning Saint Helena. The archives of the Administration from 1678 are preserved at the castle; among them being the original of the instrument "The Laws and Constitution of the Island of Saint Helena" issued by Charles II in 1681.
- 2 Saint Helena was discovered on 21st May, 1502, the anniversary of Saint Helena, the mother of the Emperor Constantine, by João de Nova Gallego, Commodore of a Portuguese Squadron returning from India; but the Portuguese made no attempt to colonise it, being content to use it as a place of "refreshment" for their ships.
- 3 In 1513 it became the voluntary abode of Fernando Lopez, a Portuguese nobleman, who was being brought back in disgrace from India.
The discovery of the island is said to have been kept a secret until Sir Thomas Cavendish, returning home from his famous voyage round the world, anchored there in 1588.
- 4 The Dutch laid claim to the island in 1633, but never occupied it; historical records indicate that this was the case until the beginning of the permanent occupation by the English East India Company in 1659. The Dutch seized the island in 1672 but on the evening of 14th May, 1673, Captain (afterwards Sir Richard) Munden surprised and recaptured the place and it reverted by conquest to the possession of the British Crown.

1.68

- 1 In December, 1673, a new charter was granted to the East India Company, and with the exception of the term of Napoleon's exile, the island continued under the Company's administration until 1834, when it was brought under the direct control of the crown.
- 2 Saint Helena is famous in history as the scene of the Emperor Napoleon's exile and death, for it was on the 15th October, 1815, that he arrived in HMS *Northumberland*, and on the 5th May, 1821 that he died in captivity at Longwood. His body was interred in Sane Valley, beneath a group of willows, his favourite haunt during his lifetime. It was exhumed, for conveyance to France, on the 15th October, 1840, when the remains appeared almost untouched by the hand of time. The house occupied by the Emperor and the site of his tomb are now in charge of the French government, who were granted the freehold in 1858.

Government

1.69

- 1 There is a Legislative Council consisting of a Governor, 2 ex-officio members and 12 elected members.
The Governor resides at Plantation House, Saint Helena (2.37).

Population

1.70

- 1 In 2000, the estimated population was 5006.

Language

1.71

- 1 The language spoken is English.

Physical features

1.72

- 1 Saint Helena Island is of volcanic origin, and consists of numerous rugged mountains, the highest rising to 820 m, interspersed with picturesque ravines. It is believed to date from pre-glacial times, probably pre-pliocene. Limestone is found in different parts of the island, gypsum near Prosperous Bay and cornelian in Turk's Cap Bay. Honeycombed basalt and red tufa, which latter affords excellent building material, exist in large quantities. A layer of fossil shells, univalves, has been discovered near Flagstaff Hill at an altitude of about 600 m.

Flora

1.73

- 1 The botany of Saint Helena is interesting, affording nearly 60 species of indigenous trees and plants, including the tallow tree and ferns of great beauty. In the grounds in the vicinity of Plantation House, the oak, eucalyptus, Cape yew, bamboos, aloe, pine, etc; flourish together. A large proportion of the area which once was covered with a luxuriant growth of ferns and a variegated assortment of indigenous vegetation has been planted with phornium tenax, the New Zealand flax, from which is obtained the fibre, which, until recently was the colony's chief article of export.
- 2 On approaching the sea, vegetation gradually disappears, the summits of the hills within 1½ miles of the coast being almost barren, excepting a scanty growth of samphire. In the valleys, however, where water can be procured, the gardens produce an abundance of fruit and vegetables, especially bananas and pumpkins. The island appears favourable to the cultivation of coffee, particularly in the valley S of the main ridge, which are well irrigated and extremely fertile.

Fauna

1.74

- 1 The ravines are the resort of numerous coveys of red-legged partridge, and pheasant frequent the thick cover on the higher ridges. An indigenous bird resembling the sandlark, with long legs and grey body and wings, called by the islanders the "wire bird", is also found. Doves, Java sparrows, amaduvades, and canaries inhabit the gardens, the last mentioned being remarkable for the richness of their tone.
- 2 The rocky islets round the coast swarm with seabirds, particularly the beautiful white bird (*Procellaria nivos*a); and the man-of-war bird and tropical birds are to be seen wheeling in their flight high above the lofty pinnacles of the island. Sea-fowl deposit immense quantities of eggs on the island, which in the fall of the year are collected for food. The shores abound with fish, to the extent of about 70 species; among these mackerel and albacore are peculiarly abundant and form the principal food of the poorer inhabitants; some varieties of fish are, however, very unwholesome.
- 3 Sharks are occasionally captured; and during the month of August schools of whales (black fish) are frequently seen. No snakes or reptiles, except a few centipedes and scorpions, are found on the island. Turtle visit the island, and among the shell-fish, oysters and two kinds of lobster are found.

Industry and trade

1.75

- 1 The economy is dependent on UK and EU aid. The only significant export is canned and frozen fish. In 1995, 818 tonnes of fish were caught. Other exports are a small amount of high quality coffee and cottage industry products.

Tristan da Cunha Group

Description

1.76

- 1 Tristan da Cunha group (37°15'S, 12°30'W). For further information, including directions, see 2.60.

History

1.77

- 1 The group was discovered by Admiral Tristão de Cunha, a native of Portugal, and was named after him in 1506. It was explored and described by the Dutch in 1643, and by the French in 1767. Captain Patten of the American ship *Industry*, and a part of his crew, resided temporarily on Tristan Island, engaged in collecting seal skins from August 1790 to April 1791. Captain Heywood, HMS *Nereus*, who visited the island in January, 1811, found three Americans there who then proposed to remain for a few years collecting seal skins and oil for sale to vessels touching at the island. One of these men, Jonathan Lambert by name, by a curious edict, declared himself the proprietor of the island on the 4th February, 1811. He cleared a quantity of land and planted various seeds, some of which were supplied to him by the American Consul at Rio de Janeiro. The whole, however, was afterwards abandoned, and formal possession was taken in the name of the British Government on the 14th August, 1816, by a detachment of troops sent from the Cape of Good Hope in HMS *Falmouth*.

- 2 During the incarceration of Napoleon at Saint Helena a detachment of artillery was stationed on Tristan Island, and on its withdrawal, in the latter part of 1817, one of the detachment, Corporal William Glass, who died in 1853, and two seamen of the Saint Helena squadron, obtained leave to remain on the island. These were joined by men engaged in whaling and shipwrecked mariners. The present inhabitants are descended from them, though many families have left the island from time to time.

- 3 Tristan Island was surveyed by Captain Denham, RN, FRS., HMS *Herald*, in 1852; Inaccessible and Nightingale Islands were partially surveyed by Captain Nares, RN, and other officers of HMS *Challenger* in 1873.

By Letters Patent dated 12th January 1938, Tristan, Nightingale, Inaccessible, and Gough Islands were declared to be dependences of Saint Helena.

1.78

- 1 In 1942 Tristan was commissioned by the Admiralty as HMS *Atlantic Isle*, and a meteorological and radio station was set up. At the end of the war these stations were taken over by the South African government.

In January 1949, the Tristan da Cunha Development Company established a fishing industry, backed by the Colonial Development Corporation.

The only indication of volcanic activity during the residence on Tristan Island of Governor Glass was a slight earthquake which occurred about the year 1849. The eruption of 1961 was entirely unexpected.

- 2 On about 6th August 1961, a series of localised earth tremors started which culminated, on 8th and 9th October 1961, with the upsurge or extrusion of a tholoid of solid incandescent lava or plug of solid rock, red-hot beneath the surface, on the site of a diamond-shaped beacon in position about 6 cables ESE of Herald Point. The plug was about 30 m in height. Within about 24 hours, and on the arrival of HMS *Leopard* on 13th October, the plug was 73 m in height. Photographs taken by the Master of MV *Tristania*, on 20th October showed the tholoid to be about 120 m in height. By 27th October the canning factory had disappeared beneath a mass of lava. On 6th December 1961, the Master of SS *Ashbank* reported that the volcano was erupting violently and that lava was visible 20 miles at night. By October 1962, the lava field had extended up to 3 cables seaward beyond the original coastline on a front of about 5 cables between positions about 8 and 1½ cables W of The Ridge engulfing former Falmouth Bay and Quest Bay. The E part of the lava rose to an elevation of about 5·0 m, and the W part to about 0·3 m.

- 3 Before this eruption it had been assumed that the volcano was extinct, and when it occurred the community took refuge on Nightingale Island whence they were rescued by the Dutch vessel *Tjisadane* and eventually arrived for temporary refuge in England.

The majority of the islanders had returned by 1963.

Government

1.79

- 1 An Administrator was appointed at the end of 1948 and a body of basic law brought into operation. The Island Council, which was set up in 1932, consists of a Chief Islander, three nominated and eight elected members (including one woman), under the chairmanship of the Administrator.

Physical features

1.80

- 1 The group is of volcanic origin.

Flora

1.81

- 1 The islands possess a fairly extensive flora, in which many species of ferns, lichens and mosses are of special interest; about one-fifth of Tristan itself is densely wooded with the island tree, *Phylica Nitida*, resembling a large juniper, in spite of the amount cut for fuel. Many kinds of fruit trees and other plants have been introduced, apples being especially successful. A plant formerly used as a substitute for tea, invariably springs up after a crop of potatoes, which latter is the staple food. A plant carrying edible red berries somewhat resembling insipid cranberries in taste, as well as wild celery, grows everywhere.

Fauna

1.82

- 1 The Tristan de Cunha Group is the major breeding centre for oceanic birds in the South Atlantic. Many sea-birds, including the wandering albatross, visit the islands and can be seen, especially at dusk, flocking in vast numbers from all parts of the horizon. The interesting bird life includes the Lesser Noddy, the Frigate Bird and the Southern Black-backed Gull.
- 2 The only land birds are a species of thrush and a bunting, though strays such as herons, gallinules and sandpipers occur sporadically. However, the Gough Island moorhen has been introduced on Tristan Island, to replace a flightless moorhen which became extinct in the 19th century.
There are no reptiles, and very few insects.
- 3 White whales, sea elephants and fur seals are found in the waters of the group; whales are generally in the vicinity from July to October. The islands are frequented by mackerel, rock cod and other fish. Crayfish are abundant. The blue shark abounds, and the islanders of Tristan deem it unsafe to bathe in the sea. There are no fresh water fish.
- 4 The only mammals are found on Tristan Island.
Wild life on the islands is protected by ordinance.

CAMEROON

Description

1.83

- 1 Cameroon comprises the former French Cameroun territory and the Southern province of the former British Cameroons Mandated Territory.
The Republic of Cameroon is bordered on the W by Nigeria and the Bight of Biafra, on the E by Chad Republic and Central African Republic and on the S by Republic of the Congo, Gabon, and Rio Muni Province of Equatorial Guinea.
The president resides in Yaoundé (3°51'N, 11°39'E), which is not only the capital city of the republic and the seat of government but is also a centre for the export of timber, cocoa, coffee and vegetable oils.
- 2 A citizen of the country is known as a Cameroonian, and the adjectival form is the same.
The many variations in spelling of the word Cameroon may be explained in the context of the former occupying powers or geographical discoveries, Camarofies being the Spanish version, Kamerun the German, Cameroun the French, and Cameroon or Cameroons the English. All will be found on foreign charts of the region.
The total area of the Republic is 475 400 square km.

National limits

1.84

- 1 For the limits of the Territorial Sea and the Fisheries Zone claimed by Cameroon see *Annual Summary of Admiralty Notices to Mariners*, Annual Notice No 12 and also *The Mariner's Handbook*.

History

1.85

- 1 There is no distinct account of the discovery of Rivière Cameroon by Europeans, but it may be presumed to have been visited about the same time as Bioco (Fernando Póo) (1.93), that is, in about 1471. The name, derived from the Portuguese "Camarões", or prawns, was certainly bestowed upon it by one of the early explorers of that nationality.
An English Baptist Mission was established in the Cameroons in 1845, and in 1858 another body of members of the same mission, who had been working in Bioco, settled at Limbe, though the acquisition was not then formally recognised by Great Britain. Until the proclamation of the German Protectorate by Nachtigal on 12th July 1884, the Cameroons though visited by merchants and missionaries, did not come into the possession of any European power.
- 2 On 18th February 1916, the territory was taken from Germany by British and French troops. The greater portion of the territory was, in 1919, placed under French administration, the remainder being mandated to Great Britain. The British portion consisted of two parts, and at a plebiscite held in February 1961 the N portion decided in favour of joining the Federation of Nigeria, and the S part, which included Buea (4.60), the capital, and the ports of Limbe and Tiko, joined the Republic of Cameroon. On 1st October 1961, the Federal Republic of Cameroon was proclaimed.
On 20th May 1972, as a result of a national referendum, the creation of a unitary, bi-lingual and pluricultural state, known as the United Republic of Cameroon was overwhelmingly approved and came into force on 2nd June 1972. In 1984 the country was re-named the Republic of Cameroon.

Government

1.86

- 1 An independent Republic whose present constitution, formed in 1972, provides for a President as Head of Government and Chief of State, who is elected for a 5-year term of office.
Legislative—Unicameral National Assembly elected by universal adult suffrage, consists of 180 members each serving a 5-year term of office. There are 10 provinces each with its own Governor. Each province is divided administratively into divisions and sub-divisions.
The two provinces of East Cameroon (formerly French) and West Cameroon (formerly British) with Buea as capital have their own assemblies (East, 100 members; West, 37 members) and Cabinets. Both premiers are appointed by the Federal President.

Population

1.87

- 1 In 2000 the estimated population was 15.13 million.

Language

1.88

- 1 Cameroon is a region where great movement of peoples has occurred. The distribution of races and tribes is therefore a very complicated problem which, in the present state of the evidence is far from resolution.

The bulk of the population consists of Sudan and Bantu negroes. The line between these corresponds with fair closeness to the line between the N savanna and the S forest country, though the boundary is not very strongly marked.

In Cameroon the Bantu, whose languages are much more closely related to each other than are those of the Sudan negroes, fall into an older and a younger group. The first consists of the Bakoko and Bakundu groups in the SW and the Maku group in the SE; the second, which intervenes between the two sections of the first, consists of the Fang group. The Bangalla language is widely spoken in the SE.

- 2 The relation of the Sudan tribes to each other is very obscure, and their languages differ widely. They mostly inhabit the country S of Lake Chad and stretch across the territory in the interior. Some large tribes live in the open plains and high lands, and some small groups have been driven into the more inaccessible parts of the mountains.

The so called Pygmies share the forest regions with the Bantus. These people, called Bagielli, Babinga, Bumanjok, and Bomassa in various places, may represent the remains of an earlier population. Their numbers are small and probably decreasing. Little is known of their language.

After the Bantu and Sudan tribes, the most important peoples are the Fulbe and the Hausa.

Physical features

1.89

- 1 The republic falls into a number of distinctive physical divisions. The Western province varies remarkably, from the coastal mangrove swamps and thick forest belts to the grasslands at heights of 1220 to 2134 m and over.

In the Eastern province the Cameroon plateau, the largest and most important division, covering the greater part of the centre and S of the territory, rises from some 610 m to elevations on the W boundary of from 1220 to 3050 m. The coastal region, situated between the W edge of this plateau and the sea, is traversed by numerous rivers, though rapids in most cases prevent the latter from being fully utilised. The lowlands of the Sanga Basin are situated in the extreme SE. The hill country of the Adamewa region skirts the central plateau on its N side at elevations of from 457 to 610 m and the Lake Chad Basin lies in the extreme N.

Flora

1.90

- 1 There are mangrove swamps along the greater part of the coast extending sometimes 20 miles inland; pandanus and raffia palms grow on the lowlands, and higher up forests of large trees are matted together by a tangled network of small creepers, beyond which is a plateau covered with high, reedy, and hard grasses. The cultivated plants are coconuts, oil palms, bananas, yams, ground nuts, sweet potatoes, cassava, and especially colcoasia, the taro of the South Sea Islands, also cocoa, coffee, rubber, and kola.

Fauna

1.91

- 1 Wild Boars have been found in the marsh lands, as well as pelicans, herons, snipe, and other birds.

In the large rivers there are hippopotami and crocodiles, tortoises, and crabs, whilst on the banks snakes are encountered.

In the forest proper, herds of elephants, antelopes, and buffalo exist, and monkeys, squirrels and pigs are to be

found. Guinea fowl and pheasants, also mosquitoes, sand flies, and ants abound.

- 2 Every fourth year, in the months of August and September, Rivière Cameroun and neighbouring estuaries swarm with little yellow shrimps of the *thallassina* species, so closely packed that they are caught in baskets.

The rivers are full of fish, many of them quite good to eat, among them being Nile perch.

Industry and trade

1.92

- 1 The principal exports are cocoa, palm kernels, timber, coffee, bananas, ground nuts and rubber.

The principal imports are transport equipment, agricultural and industrial machinery, consumer products, food, drink and tobacco.

EQUATORIAL GUINEA

Description

1.93

- 1 República de Equatorial Guinea, known as Equatorial Guinea, became independent on 12th October 1968, after having been a Spanish colony (Territorios Españoles del Golfo de Guinea) until 1959.

The republic consists of two provinces; the island of Bioco (3.8), formerly Macias Nguema Biyogo or Fernando Póo, together with Pagalu, formerly Annobón (3.151), in Bight of Biafra, and the continental province of Río Muni including Isla de Mandyi and Islote Elobey Grande (4.247). Río Muni province is bounded on the N by Republic of Cameroon and on E and S by Republic of Gabon.

- 2 The majority of the population of Río Muni Province comes from the Fan race, called Pamué by Spaniards. They are of strong and vigorous stock. The language is basically Bantu.

In Bioco, the people belong to two groups, the Bubi, of Bantu stock who occupy the interior; and the Porto on the coast.

Pagalu is inhabited solely by a small community of negroes who have been on the island for about four centuries.

- 3 Parts of the coastal settlements of Río Muni Province are malarious. Anti-malarial precautions may be necessary. Pagalu is without doubt far healthier than the other islands in Bight of Biafra. This is attributed to the sea temperature being somewhat lower than farther N, and to the absence of marshy land and stagnant waters.

The total area of Equatorial Guinea is 28 051 square km.

The capital is at Malabo (3.40), formerly Santa Isabel, on Bioco.

National limits

1.94

- 1 For the limits of Territorial Sea and Fisheries Zone claimed by the country see *Annual Summary of Admiralty Notices to Mariners*, Annual Notice No 12 and *The Mariner's Handbook*.

History

1.95

- 1 In 1778, Portugal ceded to Spain the two islands of Fernando Póo and Annobón, together with certain rights over ports in the Gulf of Guinea. Fernando Póo, had been discovered by Fernão do Po, a Portuguese nobleman, in 1471, and Annobón on New Year's day of the following year by the Portuguese navigators Escobar and Santarem. In 1827, the Spanish Government permitted the British to

form an establishment at Fernando Póo for the purpose of supplying provisions and stores to the British squadron under Captain Fitzwilliam Owen employed in suppressing the slave trade. A settlement was accordingly formed on the N side of the island at Port Clarence, subsequently re-named Santa Isabel by the Spaniards; but about 1843, in consequence of the unhealthy nature of the climate and the expressed wishes of the Spanish Government, the establishment was abandoned, and the whole island reverted to the possession of Spain. In 1843 Spain placed these islands together with the neighbouring district on the main-land, under her protection; and the boundaries of continental Spanish Guinea were settled in 1900.

From 1959 to 1963 the territory was made into two Spanish provinces with a status comparable to the metropolitan provinces. From 1964 to 1968 this Equatorial Region became an autonomous entity still retaining the status of two Spanish provinces but with a certain amount of self-government. On 11th. August 1969 full independence was granted.

Government

1.96

In 1991 the institution of multi-party democracy was approved and a law to this effect was passed in January 1992. A parliament, the National Assembly, has 80 seats.

Population

1.97

In 2000 the estimated population was 452 000.

Language

1.98

The official language is Spanish, but local dialects are greatly used. "Pidgin English" is the common language in Bioco.

A citizen of the country is known as an Equatorial Guinean and the adjectival form is "of Equatorial Guinea".

Physical features

1.99

Natural resources include hydro electric plants, oil and some small-scale alluvial gold production.

Flora

1.100

In 1995 forests covered 1.78 m ha of the land area.

Fauna

1.101

Tuna and shellfish are caught. The total catch in 1995 was estimated to be 3 800 tonnes.

Industry and trade

1.102

Oil production is now the major activity. Food processing is also being developed.

SÃO TOMÉ E PRÍNCIPE

Description

1.103

The islands of São Tomé and Príncipe lie about 120 and 126 miles W respectively of the coast of Africa, within the Bight of Biafra.

Together with the islets of Pedras Tinhosa off Príncipe and Ilhéu Gago off São Tomé, the groups form the Independent Republic of São Tomé e Príncipe.

The islands have a total area of 964 sq km.

National limits

1.104

For the limits of Territorial Sea and Fisheries Zone claimed by the country see *Annual Summary of Admiralty Notices to Mariners*, Annual Notice No 12 and *The Mariner's Handbook*.

History

1.105

The islands of Príncipe and São Tomé are said to have been discovered by João de Santarem and Pedro d'Escobar in about the years 1470 or 1471, and constituted a Portuguese Province under a Governor from 1522. The first-named island was called after the Prince, eldest son of King Alfonso V, and the second received its name from the fact that it was discovered on St Thomas's day.

On the 12th July 1975 the province was formally granted independence by Portugal.

Government

1.106

Since April 1995 Príncipe has enjoyed internal self-government, with a 5-member regional government and an elected assembly.

Population

1.107

In 2000 the estimated population was 149 000.

Language

1.108

The official language is Portuguese. Lingua São Tomé, a Portuguese creole, and Fang, a Bantu, are the spoken languages.

Physical features

1.109

Volcanic in origin, these islands are remarkable for their needle-shaped peaks, luxuriant vegetation and dense forests. Consequently the islands are not healthy, although Ilha do Príncipe has been cleared of tsetse fly.

Flora

1.110

In 1995 forests covered 56 000 ha, or 76% of the land area.

Fauna

1.111

There are rich tuna shoals. Estimated total catch in 1995 was 2 800 tonnes.

Industry and trade

1.112

Main exports are cocoa, copra, coffee, bananas and palm oil.

GABON

Description

1.113

The Republic of Gabon, also known as The Gabonese Republic, formerly a French colony, became independent on 17th August 1960 having previously been one of the four territories of French Equatorial Africa, and, from 1958 an autonomous republic within the French Community.

- 2 Located astride the Equator it has an area of 103 000 square miles and comprises the entire drainage basin of Fleuve Ogooué, which is one of the great rivers of Africa, being over 550 miles in length. Rising in the Republic of Congo, near Zanaga, it bisects the country and enters the sea in a large delta around Cap Lopez (0°37'S, 8°43'E). Much of the country is covered with dense equatorial forest, and there is heavy rainfall. Monts du Chaille rise to an elevation of about 1900 m in the S part of the country, about 200 miles inland.

- 3 The country is bounded on the N by Río Muni Province of Equatorial Guinea and by the Republic of Cameroon, and on the E and S by the Republic of Congo.

The country is rich in minerals including manganese and uranium. There are also onshore and offshore oilfields.

The capital is Libreville.

National limits

1.114

- 1 For the limits of Territorial Sea and Fisheries Zone claimed by the country see *Annual Summary of Admiralty Notices to Mariners*, Annual Notice No 12 and *The Mariner's Handbook*.

History

1.115

- 1 Between the 16th and 18th centuries, the Fang and other peoples in the region of the present-day Gabon were part of a federation of Chiefdoms. Colonized by France around 1849 the territory was annexed to French Congo in 1888. The country became a separate colony in 1910 as one of the four territories of French Equatorial Africa. Gabon became an autonomous republic within the French Community on 28th November 1958 and achieved independence on 17th August 1960.

Government

1.116

- 1 The 1991 constitution provides for an Executive President directly elected for a five year term, renewable only once. The head of government is the Prime Minister who appoints a Council of Ministers. There is constitutional provision for the formation of an upper house.

Population

1.117

- 1 In 2000 the estimated population was 1 230 000.

Language

1.118

- 1 French is the official language.

Flora

1.119

- 1 In 1995, equatorial forests covered 17·86 m ha, or 69·3% of the total land area.

Industry and trade

1.120

- 1 Most manufacturing is based on the processing of food, timber and mineral resources, cement and chemical production and oil refining. Sugar cane is the principal cash crop.

The main exports are natural gas and crude oil, timber and wood products, manganese and uranium.

Tourism is encouraged and has greatly expanded in recent years.

REPUBLIC OF THE CONGO

Description

1.121

- 1 Republic of the Congo lies between Gabon on the W and the Democratic Republic of the Congo on the E, the River Congo and its tributary Rivière Oubangui forming most of the E boundary. On the NE side it adjoins the Central African Republic and to the NW the Federal Republic of Cameroon. There is a short Atlantic coastline, about 80 mile in length extending SE to the mouth of Rivière Massabi (5°04'S, 12°01'E). The principal port is Pointe-Noire (4°46'S, 11°50'E).

The area of the Republic is 341 821 square km.

The capital is Brazzaville (4°15'S, 15°20'E), formerly the capital of French Equatorial Africa, and is situated on the N bank of the River Congo, at the SW end of Pool Malebo (4°10'·0S, 15°30'·0E) (6.98). It is a busy river port.

National limits

1.122

- 1 For the limits of Territorial Sea and Fisheries Zone claimed by the country see *Annual Summary of Admiralty Notices to Mariners*, Annual Notice No 12 and *The Mariner's Handbook*.

History

1.123

- 1 The Portuguese first reached the mouth of the Congo in the 15th century. First occupied by France in 1882, the Congo became a territory of French Equatorial Africa from 1910 to 1958, and then a member state of the French Community on 28th November 1958, and was proclaimed fully independent on 15th August 1960. A number of coups d'états followed. Free elections were restored in 1992.
- 2 Violence erupted in 1997 and civil war lasted 4 months, concentrated on the capital. In October 1997 General Sassou-Nguesso proclaimed victory, and was sworn in as president.

Government

1.124

- 1 A new constitution came into force in August 2002 having been approved by a majority of the electorate. Under the constitution, the president serves a seven-year term of office and has the powers to appoint and dismiss ministers. There is a two-chamber assembly consisting of a house of representatives and a senate. The position of prime minister was abolished.

Population

1.125

- 1 In 2000, the estimated population was 2 980 000.

Language

1.126

- 1 French is the official language. Kongo languages are widely spoken.

Physical features

1.127

- 1 Republic of Congo geographically belongs in part to a region of coastal mountains and partly to the central basin of the Congo. Most of the N part of the country is covered with dense forest, and there is a heavy annual rainfall. Rivière Sangha (6.98), one of the principal tributaries of River Congo runs through the NE part of the country.
- 2 Natural resources include petroleum, timber, potash, lead, zinc, uranium, phosphates and natural gas.

Flora

1.128

- 1 In 1995, equatorial forests covered 19.54 m ha, or 57.2% of the total land area.

Industry and trade

1.129

- 1 There is a growing manufacturing sector located in the four major towns producing processed foods, textiles, cement, metal goods and chemicals.
The main exports are crude oil, lumber, plywood, sugar, cocoa, coffee and diamonds. Imports are intermediate manufactures, capital equipment, construction materials, foodstuffs and petroleum products.

DEMOCRATIC REPUBLIC OF THE CONGO

Description

1.130

- 1 The Democratic Republic of the Congo, formerly Zaire, was proclaimed on 27th October 1971. Before Zaire it had been called the Congolese Republic and before that the Belgian Congo.
- 2 The country is bounded on the N by the Central African Republic, NE by Sudan, E by Uganda, Rwanda, Burundi, and Lake Tanganyika, S by Zambia, SW by Angola and NW by the Republic of the Congo. It possesses a 37 km stretch of coastline giving access to the Atlantic Ocean and having the Angolan enclave of Cabinda to the immediate N, and Angola itself to the S.
- 3 The total area of the Republic, which is one of the largest countries in Africa, is estimated to be 2 344 885 square km.
The capital is Kinshasa (4°20'S, 15°19'E).

National limits

1.131

- 1 For the limits of Territorial Sea and Fisheries Zone claimed by the country see *Annual Summary of Admiralty Notices to Mariners*, Annual Notice No 12 and *The Mariner's Handbook*.

History

1.132

- 1 In 1482, Diego Cão set out from the Portuguese settlement of El Mina, on the Gold Coast, to continue the examination of the W coast of Africa; in so doing he crossed the equator and, discovering the River Congo, obtained for himself well-deserved renown.
- 2 The earliest European country to form relations with the Congo was Portugal; after Diego Cão's discovery of the mouth of the river in 1485, and his ascent to the foot of Kisi Rapids, which he recorded by an inscription carved on the face of a rock high above the water level, a formal embassy was sent to the local King in 1490.
- 3 The Portuguese discoverer conferred the name of Congo on the river from the name of the country through which it flows, but he afterwards found that by the natives it was called Nzadi, which the Portuguese rendered as Zaire, and both names have since been used by different authorities depending upon which part of the river to which it refers, or the nationality of the user. Local inhabitants know it as Moienza Nzadi, or the river which absorbs all rivers.
- 4 Between the year 1874 and 1877, the River Congo was traced from its source by the great African traveller HM Stanley (6.98). Up to the year 1878, the mouth of the river was under no European jurisdiction; British, French, Dutch,

and Portuguese commercial posts were established on it for trading purposes, but outside their limits anarchy prevailed. In 1878, HM Stanley arrived in Europe having completed his great journey to solve the problem of the actual course of the Congo, and Leopold II, of Belgium, created Comité d'Etudes du Haut-Congo. In 1885, that monarch assumed the sovereignty and proclaimed the neutrality of the independent Congo State. But in 1908, the territory was annexed by Belgium and became a colony of that kingdom, and remained as such until it became independent on 30th June 1960.

- 5 After a period of internal struggles, intervention by the United Nations and a national referendum a presidential regime was established in 1966. This was revised in 1971, and the country was renamed Zaire. Civil war between 1996 and 1997 led to a coup d'état and the replacement of notorious President Mobutu by Laurent Kabila, who changed the name of the country to the Democratic Republic of the Congo. However, armed conflict, largely of tribal origin, and which involved incursions by the forces of neighbouring countries continued until February 2001 when the UN Security Council approved a peace plan and the employment of 3000 UN-sponsored peacekeepers. By the end of 2002, relative peace and economic stability had been restored to the country.

Government

1.133

- 1 The first democratic elections since independence was declared in 1960 are due to take place in 2005.

Population

1.134

- 1 In 2000 the population was 51 750 000.

Language

1.135

- 1 The official language is French and business is conducted in that language. The most important regional languages are Kiswahili in the E, Tshiluba in the S and Kikongo in the area between Kinshasa and the coast. Lingala has become the most common language after French.

Physical features

1.136

- 1 Practically the whole region drains to the River Congo, and the chief means of access is from the Atlantic coast, but the river does not give that unity to the country which might be expected as both it and its tributaries are in certain parts of their courses interrupted by falls. The low plateau which forms the basin of central Congo lies between the highlands of E Africa and the coastal ranges of W Africa. It is bordered to the S by Shaba (Katanga), a continuation of the high veldt of South Africa and Rhodesia, and to the SW by the lower lands of the Angola plateau. In the E it rises to the mountains bordering the Great Rift Valley in which lie Lakes Albert, Edward, Kivu and Tanganyika and in the NE to a lower plateau which forms the divide between the waters of the Nile and those of River Congo.
- 2 The Democratic Republic of the Congo consists in reality of two distinct parts which differ vastly from one another in appearance and climate. There is the valley of the main river from Pool Malebo (6.98) to Stanley Falls, together with the lower reaches of the principal tributaries, which is distinctly tropical in character. The other part consists of open fertile country which rises from the Kasai,

Sankuru and Lomami rivers as they flow SE to culminate in the high plateau of Southern Shaba.

Industry and trade

1.137

- 1 The chief agricultural products are maize, rice, bananas, oil-palms, cotton, rubber, ivory, and coffee and animal and vegetable fats and oils. Most of the above, together with a large quantity of timber, are exported. Mining flourishes, the chief minerals being copper, diamonds, gold, silver, tin, cobalt, manium, germanium, zinc and iron. There are also offshore oilfields.

The principal imports are provisions, machinery, cotton goods and fuel oil.

ANGOLA

Description

1.138

- 1 Angola is a massive country; after the Democratic Republic of the Congo, it is the largest country in Africa, S of the Sahara and has an area of 1 246 700 square km. It is bounded on the N and NE by the Democratic Republic of the Congo, on the SE by Zambia and on the S by Namibia. It has an Atlantic coastline of over 1000 miles, including that of the Province of Cabinda (1.130), which is separated from the main part of Angola and which has an area of 7270 square km lying N of the mouth of River Congo in an enclave between the Republic of the Congo and the Democratic Republic of the Congo.
- 2 The lowlands are on the whole less healthy than the uplands. Sleeping sickness has been fairly common at times along the coast as far S as São Félix de Benguela (12°35'S, 13°24'E) but no evidence exists that it has ever been endemic on the plateau heights of over 1070 m. Malaria is prevalent in the lowlands and along the coast, and during the rainy season it is not uncommon in some parts of the uplands. Blackwater fever exists, leprosy in a mild form is rather common and smallpox has often proved a scourge. Pleurisy and pulmonary diseases are endemic, and a disease known as Katumbu, somewhat similar in its symptoms to whooping cough, is common amongst children.
- 3 The area of the country is 1 246 700 square km. Luanda is the capital.

National limits

1.139

- 1 For the limits of Territorial Sea and Fisheries Zone claimed by the country see *Annual Summary of Admiralty Notices to Mariners*, Annual Notice No 12 and *The Mariner's Handbook*.

History

1.140

- 1 The mouth of River Congo was first made known to Europeans by the voyage of Diego Cão in 1485. At the S point of the entrance to the river he erected the first padrão, a stone column surmounted by a cross, which King Joao II had ordered to be set up on newly-discovered lands, and from which that point obtained the name it still bears.

- 2 Angola became a Portuguese dependency in 1574 but it was not until 1597 that serious attempts were made to colonise the country. About the year 1627 all attempts at development were suspended by the war waged by the rebel Queen of Angola against the Portuguese from Luanda. In 1648, however, her Dutch allies were expelled and the country remained in the possession of Portugal, until it was granted independence by Portugal on 11th November 1975, under the name of the People's Republic of Angola. Between 1975 and 2002, the country was stricken by civil war.

Government

1.141

- 1 Under the constitution adopted at independence, the sole legal party was the MPLA (People's Movement for the Liberation of Angola). In 1990, however, the MPLA announced that the Constitution would be revised to permit opposition parties. There is a 220-member National Assembly with an executive President elected for renewable terms of 5 years, who appoints a Council of Ministers.

Population

1.142

- 1 In 2000, the estimated population was 12 780 000.

Language

1.143

- 1 Portuguese is the official language. Bantu and other African languages are spoken.

Physical features

1.144

- 1 Two thirds of Angola is a plateau, the altitude of which compensates for latitude in terms of climate making it temperate for living. The average height is 1050 to 1350 m with higher ranges and massifs reaching more than 2000 m. The highest point in Angola is Mount Moco, at an elevation of 2620 m in the Huambo District. Other peaks are Mount Mepo, 2583 m in Benguela District and Mount Vavéle 2479 m in the Cuanza Sul District.
- 2 Through the central part of the inland plateau runs the watershed of the Angolan rivers. The coastal plain on the Atlantic is separated from this plateau by a sub-plateau zone which varies in breadth from about 100 miles in the N, to about 15 miles in the centre and S where an escarpment 1000 m in elevation provides splendid views of Serra da Chala. The Namib Desert occupies the coastal plain well N of Namibe, formerly Moçâmedes.
- 3 Towards the Kwango basin in Zaire a sedimentary hollow forms the Cassange depression in which cotton is grown. The NW section of the Angolan plateau has jungle-covered mountains which are ideal for coffee growing. The Mayombe Range in Cabinda Enclave is covered by equatorial jungle.
- 4 Except for Rio Cuanza (7.148) which is navigable as far as Donado, 120 miles upstream and which played a major point in opening up the interior of the Ngola Kingdom, most of the rivers of Angola which flow into the Atlantic Ocean are of little use as waterways. Those which rise upon the margin of the plateau are little more than mountain torrents and those which flow from the interior are so interrupted by rapids that they are seldom navigable for any considerable distance. In the middle of the province are the Cubango and Cuito, both reported to be navigable;

and in the N part are two important rivers, the Kwango and the Kassi, both of which are tributaries of the Congo.

- 5 Natural resources include oil, diamonds, granite, marble, iron ore, phosphate, manganese and copper.

Flora

1.145

- 1 Except in Cabinda, where it is covered by herbaceous plants, the coast lands of Angola are as a rule badly watered and unfertile. Under and on the escarpment there is generally a luxuriant vegetation; the baobab grows everywhere and African mahogany abound, also rubber-producing plants and sansevieria are found. On the plateau, the greater part is covered by common African grass, the baobab grows everywhere and African mahogany and other timber trees are common. In the S and more arid region, the baobab and spiny acacias are the chief trees. Of commercial importance are African mahogany; several plants from which rubber is obtained; *Eriodendron anfractuosum* from which kapok is obtained; *Sansevieria Cylindrica* from which fibre is obtained; the oil palm; and *Coffea arabica*, a coffee which is native to Angola. Grass varies greatly in quality. In many of the higher parts of the plateau, where rainfall is fairly abundant, it is too rank, and cattle refuse to eat it. As a rule the best pasturage is to be found at elevations below 1000 m.
- 2 In 1995, equatorial forests covered 222 000 square km, or 17.8% of the total land area.

Fauna

1.146

- 1 On the coastal plains of Angola there are few animals, except in the river valleys, where antelopes, gazelles, and similar animals are found; monkeys and parrots are common in the woods, and the hyena sometimes wanders down from the hills. In the forests on the escarpment leopard, and zebra are common and the elephant is found; big game is plentiful, and in the higher districts wild pigs and goats are numerous. On the plateau, savanna conditions prevail over considerable areas, and the fauna resembles that found in similar regions in other parts of Africa. Elephants exist in large numbers and in the N appear to be increasing; in the S large herds roam over the veldt in the land around Rio Cunene, and there are some rhinoceros. Both these animals are protected and are not to be shot. Angola is famous for the giant sable, the antelope with the longest horn of any game animal, but it is also protected. Buffalo, antelopes, leopards, wolves, and jackals appear to be common over the greater part of the plateau. In the S gensbok are met in considerable numbers roaming over the Namib desert, as are two kinds of zebras. The cape buffalo are fairly numerous along the lowland rivers such as the Caporôlo, and in the N near Luanda. The red dwarf variety, or bush-cow, hold their own in the swamps and thick vegetation of the more tropical part of the country. Gnu, hartebeest, tsessebe, roan and eland and black-faced impala are other animals which are found.
- 2 Hippopotami, crocodiles, and alligators frequent many of the rivers; pythons, cobras, and other kinds of venomous snakes are common in various parts of the country. The rivers abound in fish, one variety, the bagre, being much esteemed as a native food.
- 3 The tsetse fly which causes sleeping sickness, the anopheles mosquito which carries malaria, and the salalé or white ant destructive to crops, trees, and buildings, are all

found on the lowlands. The white ant is also common on the plateau; in many of the old ant hills in that region wild bees have established themselves and wax is collected therefrom.

- 4 National game reserves have been established and include The Parque Nacional de Quiçama (7.136) S of Luanda, the Parque Nacional da Cameia, in the E part of the country E of the town of Luso, and the Iôna National Park on the coast close N of Rio Kunene.

Industry and trade

1.147

- 1 The principal manufacturing branches are foodstuffs, textiles and oil refining. Main exports are crude oil, diamonds, refined oil and gas. Imports are textiles, machinery, coal and foodstuffs.
- Much of the power comes from hydroelectric generating stations.

NAMIBIA

Description

1.148

- 1 Namibia lies approximately between the latitudes of 17°S and 29°S and is bounded on the W by the South Atlantic Ocean, N by Angola, which for a considerable distance is separated from Namibia by Rio Kunene and River Okovango, NE by Zambia, E by Botswana and S by Orange River, which is also the boundary with the Republic of South Africa.
- The Caprivi Strip, about 300 km in length, extends E up to the Zambezi River, projecting into Zambia and Botswana and touching Zimbabwe.
- 2 The country inland between Rio Kunene and Palgrave Point (20°27'S, 13°15'E) forms the Kakaoland Homeland the administrative centre of which is Opuwo, whilst S of Palgrave Point to Swakopmund is Damaraland.
- The inhabitants, other than those of European origin, form three distinct ethnic groups.
- 3 a) The original inhabitants; Bushmen, Namas and Damaras:
 - Bushmen are found in the N districts. They are basically hunters and are able to survive under desert conditions in which few other races could exist.
 - The Namas are found mainly in the S districts.
 - The Damaras are found in the central districts, those living in the hills being known as Bergdamaras.
- 4 b) Bantu migrations from the N; Ovambos and Hereros.
 - The Ovambos, consisting of a number of tribes ruled by their own chiefs or councils, under the guidance of a Native Commissioner, are found in the homelands of the Kaokoveld, Ovamboland and Okavangoland including the Caprivi Strip. These territories lie along the N border. They are primarily an agricultural race but many find employment in the mines or industry.
- 5 The Hereros are now mostly found in the central districts, in and around Windhoek. They are a pastoral people who formerly owned enormous herds of cattle. Their tribal organisation completely disappeared under German colonisation and they were scattered throughout the country on farms and in the different towns where they formed the

ordinary source of labour. The Hereroes make excellent herdsmen.

- 6 c) Migrations from the S; Oorlains and Basters:
These are coloured races, descendants of whites and Hottentots or Namas who originally crossed the Orange River to escape persecution in Cape Colony. The Basters, a peace-loving race, live mostly in the Reheboth District S of Windhoek and are breeders of cattle.
- 7 Malaria is endemic in the N districts, but otherwise the climate is generally healthy. Low humidity over most of the interior, combined with the effects of mica dust, is apt to cause ear, nose, and throat infection. Polarised or dark glasses should be worn.
The capital is Windhoek.

National limits

1.149

- 1 For the limits of Territorial Sea and Fisheries Zone claimed by the country see *Annual Summary of Admiralty Notices to Mariners*, Annual Notice No 12 and *The Mariner's Handbook*.

History

1.150

- 1 In 1884, South West Africa was declared a German protectorate. Germany then introduced racial segregation and the exploitation of the diamond mines began. In 1915 the Union of South Africa occupied German South West Africa, and on 17th December 1920 the League of Nations entrusted the territory as a Mandate to the Union of South Africa. After World War II, South Africa applied for its annexation to the Union and continued to administer the territory in defiance of various UN resolutions. In June 1968, the UN changed the name of the territory to Namibia. Independence was achieved on 21 March 1990.

Government

1.151

- 1 On 9th February 1990, with a unanimous vote, the Constituent Assembly approved the Constitution which stipulated a multi-party republic, an independent judiciary and an executive President who may serve a maximum of two 5-year terms.

Population

1.152

- 1 In 2000, the estimated population was 1 730 000.

Language

1.153

- 1 English is the official language. Afrikaans and German are also spoken.

Physical features

1.154

- 1 The country consists of a gently rising, sandy, coastal belt, a high interior plateau reached at a distance of from 60 to 100 miles from the coast, and a gently falling E strip

of sandy country that merges into the level expanse of the Kalahari Desert. The highest part is found in Damaraland where elevations of 2482 m in the Auas Range are attained. The whole S part, and much of the E is barren and desert, but extensive boring operations for water have been carried out, in many cases successfully. The coast from Cabo Negro to beyond Ichabo Island, off Lüderitz Bay, is a desert region of arid sands, though at times heavy dews are experienced.

Flora

1.155

- 1 The flora of Namibia are surprisingly varied for a predominantly dry country.
The baobab tree is found in the Kaokoveld and acacia species grow, in dry river beds, throughout the country.
After rains the central plateau is prolific with orange leonotis and pink nerine lilies. In the desert coastal areas succulents, include euphorbias and large Kokerboom (*aloe dichotoma*). Two edible melons, the t'samma and the narra, have often been the means of saving travellers from a thirsty death.
- 2 *Welwitschia mirabilis* is found in certain areas of the Namib Desert, N of Walvis Bay; thought to live for many hundreds of years, these are probably the oldest plants in existence. Carbon dating indicate that these plants existed 200 million years ago.

Fauna

1.156

- 1 There are two proclaimed Game Reserves in Namibia. The animal inhabitants of the Etosha Game Park in the N, include lion, elephant, leopard, cheetah, rhinoceros, giraffe, ostrich, zebra, jackal, and many other species of antelope. The best time to visit is between June and October. Namib Desert Park, SE of Walvis Bay, bordering on the prohibited diamond area supports oryx, springbok, ostrich and zebra.
Apart from the game parks, there are many areas where antelope may be encountered.
Seals are plentiful on many of the headlands, particularly in the Cape Cross area. Flamingo are found in many of the lagoons, and river mouths.
Seabirds and penguins abound and the gathering of guano is an industry.

Industry and trade

1.157

- 1 The chief exports of Namibia are diamonds, uranium and other minerals, fish, meat products, cattle and small stock animals. The chief imports are machinery, foodstuffs, textiles and fertilisers.
Namibia is essentially a stock-raising country. The absence of water rendering agriculture, except in the N and NE portions, almost impossible. Generally, the S half of the territory is suited for the raising of small stock, while the central and N portions are better fitted to cattle.
- 2 The staple industry is diamond mining, which is carried out along the coast from Conception Bay to Orange River inshore and off the coast. The fields are alluvial and the deposit shallow. The stones are small but of good quality. Irrigation is carried out from Rio Kunene.
Intensive fishing is carried out at Walvis Bay.

REPUBLIC OF SOUTH AFRICA

Description

1.158

- 1 The Republic of South Africa is bounded on the N by Namibia, Botswana, and Zimbabwe; NE by Mozambique and Swaziland; E by the Indian Ocean; and S and W by the South Atlantic; with Lesotho forming an enclave.

The Cape of Good Hope is in reality a small promontory, at the S end of the Cape Peninsula, which forms the SW extremity of the continent of Africa.

- 2 The coast of Northern and Western Cape Provinces lies between the parallels of 28°38'S and 34°50'S, and the meridians of 16°27'E and 23°45'E.

The coast of Western Cape Province E of Cape Agulhas (34°50'S, 20°01'E) is described in *Africa Pilot Volume III*.

National limits

1.159

- 1 For the limits of Territorial Sea and Fisheries Zone claimed by the country see *Annual Summary of Admiralty Notices to Mariners*, Annual Notice No 12 and *The Mariner's Handbook*.

History

1.160

- 1 The Cape of Good Hope was discovered in 1486, by Bartholemeu Dias, who named it Cabo Tormentoso, or Stormy Cape; but King João II of Portugal, convinced that it was the turning point of the long-desired route to India, gave it the name of Boa Esperanca, or Cape of Good Hope; his convictions were confirmed eleven years later by Vasco de Gama, who then rounded the cape and landed in what is now known as Natal.

- 2 In the year 1652, the territory was colonised by the Dutch East India Company under Van Riebeck, and continued in their possession until 1795, when the British Government took possession. But at the peace of Amiens in 1802 the Colony was ceded to its former possessors. In 1806 it was again taken by the British and its possession confirmed at the general peace in 1814. On 31 May 1910, the Cape Colony, together with Natal, Orange Free State and Transvaal, was merged into the Union of South Africa. In 1961 the country became a republic.

Government

1.161

- 1 A new constitution tasked with producing a multiracial form of parliament was signed into law in 1996. The legislature comprises a directly-elected National Assembly and an indirectly-elected National Council of Provinces. The President is elected by parliament for a 5-year term.

Population

1.162

- 1 In 2000, the estimated population was 46 260 000.

Language

1.163

- 1 The official languages of the Republic of South Africa are English and Afrikaans.

Physical features

1.164

- 1 The country directly S of the Orange River consists of a series of three terraces divided by mountain ranges varying in elevation from 1200 m to 2438 m, and rising gradually in a series of open sterile plains from the river as far as the parallel of latitude of 32°00'S, whence it gradually declines from N to S. The culminating point is the Spitz Kop or Compass Berg. The passages from one plateau to another are by well-made passes through the narrow and difficult gorges or kloofs. One of these plateaux is known as the Great Karroo, and is 300 miles in length, E and W, with a breadth of 70 miles; its chief characteristic is the absence of running water during the greater part of the year, so that during that time it is, as its name implies, a dry barren district, but immediately after heavy rain the whole area is covered by a profuse and varied vegetation. The country to the N is still more elevated and forms part of the great South African Plateau. For the most part, the Western Cape Province receives an abundant water supply, is well-wooded, and extremely fertile.

Flora

1.165

- 1 South Africa is greatly destitute of forest except in the lower valleys and coastal regions. In the plains, the fleshy, leafless, contorted species of kopsias, mesembryanthemums, aloes, and other succulent plants are found, and there is also some valuable timber namely yellow pine (*Podocarpus elongatus*), stinkwood (*Ocotea*), sneezewood or Cape ebony (*Pteroxylon utile*), and ironwood. Extensive miniature woods or heaths are found in endless variety, covered throughout the greater part of the year with innumerable blossoms, red being prevalent; alfa, the most abundant of all the grasses, grows in the plateau of the Atlas range.

Fauna

1.166

- 1 The wide variety of indigenous animals have been reduced, in some cases almost to extinction, by indiscriminate hunting and by the spread of rural development and industrial areas.
- 2 A number of National Parks have now been constituted in different parts of the Republic with a view to conserving the most valuable species. Within the limits of this volume, one such is the Kalhari National Park which contains large herds of gemsbok (oryx), as well as lion and many other species.
- 3 The ostrich, the secretary bird, the francolin, and the guinea fowl are common, while the weaver bird is found in the southern part. Amongst reptiles are a number of venomous snakes. The bite of the tsetse fly is fatal to most animals.

Industry and trade

1.167

- 1 Farming together with the mining of gold and other minerals are the mainstays of the economy of the Republic. Other industries include automobile assembly, metals, machinery, textiles, chemicals, fertilizer, natural gas processing, forestry products, fishing, wines and tourism.
- 2 The Republic has important trading links with Europe, Asia, Africa and North America.
- 3 The SW part of Western Cape Province produces grain and wine and in the SE there is hardwood forest. Nearly all

the wine produced comes from an area within 250 km of Cape Town, in the coastal belt and in the Little Karoo.

1.168

- 1 **Guano.** This fertiliser is obtained from a number of Proclaimed Guano Islands situated on the W and S coasts of the Republic of South Africa. Regulations regarding these islands are promulgated in proclamation No 158 of 1937, which states that landing on the islands without a permit is prohibited, and also that, in the territorial waters of the Republic, it is forbidden to kill or disturb seabirds or to take their eggs. The killing or capture of seals is also prohibited, except at certain times of the year with the necessary permit.

- 2 The islands are as follows:

Elephant Rock (Olifants River).
 Penguin Island (Lambert's Bay).
 Paternoster Rocks (Cape Columbine).
 Jacob's Rock.
 Vondeling Island.
 Skaap Island.
 Meeu Island.
 Malgas Island.
 3 Marcus Island.
 Jutten Island (Saldanha Bay).
 Dassen Island.
 Robbesteen Island (Melkbos Point).
 Duikerklip (Hout Bay).
 Seal Island (False Bay).
 Geyser Island.
 Dyer Island (Danger Point).
 Quoin Rock (Quoin Point).

PRINCIPAL PORTS, HARBOURS AND ANCHORAGES

Ascension Island

1.169

Clarence Bay (2.24) (7°55'3S, 14°24'6W).	Open anchorage.
English Bay (2.35) (7°53'5S, 14°23'0W).	Anchor, secure stern to shore.

Saint Helena

1.170

Jamestown Bay (2.47) (15°55'3S, 5°43'2W).	Open anchorage.

Tristan da Cunha

1.171

Edinburgh Anchorage (2.74) (37°03'5S, 12°18'7W).	Open anchorage.

Inaccessible Island

1.172

Carlisle Bay (2.87) (37°17'S, 12°40'W).	Open anchorage.

Gough Island

1.173

Anchorage (2.108) (40°19'S, 9°57'W).	Open anchorage.

Equatorial Guinea

1.174

Puerto de Malabo (3.40) (3°45'5N, 8°46'8E).	Large port.
K5 Oil Centre (3.68) (3°45'8S, 8°44'7E).	Supply base for offshore terminals.
Punta Europa Terminal (3.74) (3°47'0N, 8°43'5E).	Offshore terminal.
Zafiro and Serpentina Terminals (3.81) (3°51'2N, 8°06'5E).	Oil terminals.
Bahía de Luba (3.19) (3°29'0N, 8°34'0E)	Minor port and supply base for offshore terminals.
Isla Pagalu (3.151) (1°26'0S, 5°38'0E).	Open anchorage.
Bata (4.204) (1°52'0N, 9°46'0E).	Minor port.
Río Benito (4.212) (1°35'5N, 9°37'3E).	Anchorage port.
Ceiba Terminal (4.220) (1°24'6N, 9°13'7E).	Oil terminal.
Cogo (4.265) (1°05'0N, 9°41'0E).	Anchorage port.

São Tomé e Príncipe

1.175

Ilha do Príncipe

Baía de Santo António(3.99) (1°39'5N, 7°27'0E).	Open anchorage.

Ilha de São Tomé

São Tomé (3.141) (0°20'7N, 6°44'0E)	Minor port.

Republic of Cameroon

1.176

Kole Oil Terminal (4.12) (4°13'5N, 8°33'5E).	Oil terminal.
Moudi Marine Terminal (4.18) (4°07'0N, 8°29'1E).	Oil terminal.
Limboh Terminal (4.59). (4°00'2N, 9°07'6E).	Oil terminal.
Limbe (4.60) (4°00'6N, 9°12'8E).	Anchorage port.
Tiko Port (4.84) (4°04'0N, 9°23'9E).	Minor port.
Douala (4.118) (4°03'0N, 9°42'0E).	Major port.
Kribi (4.167) (2°56'2N, 9°54'6E).	Minor port.
Kome-Kribi 1 Marine Terminal (4.188) (2°55'3N, 9°48'1E).	Oil terminal.
Ebome Terminal (4.189) (2°48'5N, 9°49'3E).	Oil terminal.

Gabon**1.177**

Libreville (5.24) (0°24'N, 9°27'E).	Anchorage.
Owendo (5.37) (0°17'0N, 9°30'4E).	Large port. (Port for Libreville).
Port Gentil (5.95) (0°43'S, 8°47'E).	Major port.
Cap Lopez Oil Loading Terminal (5.130) (0°37'9S, 8°43'2E).	Oil terminal.
Oguendjo Terminal (5.168) (1°27'S, 8°55'E).	Oil terminal.
Tchatamba Terminal (5.181) (2°04'7S, 9°09'4E).	Oil terminal.
Gamba Oil Terminal (5.199) (2°51'6S, 9°58'2E).	Oil terminal.
Lucina Terminal (5.212) (3°39'6S, 10°46'2E).	Oil terminal.
Etame Terminal (5.217) (3°45'3S, 10°31'5E).	Oil terminal.

Republic of the Congo**1.178**

Yombo Terminal (5.223) (4°27'4S, 11°06'3E).	Oil terminal.
Pointe-Noire (5.244) (4°47'S, 11°50'E).	Large port.
Djeno Terminal (5.282) (4°56'4S, 11°54'0E).	Oil terminal.
N'Kossa Terminal (5.292) (5°15'8S, 11°36'1E).	Oil terminal.

Angola**1.179**

Kuito Terminal (6.9) (5°27'9S, 11°30'3E).	Oil terminal.
Malongo (6.31) (5°23'5S, 12°11'8E).	Supply base for offshore terminals.
Takula Terminal (6.38) 5°13'2S, 11°48'7E.	Oil terminal.
Malongo Terminals (6.43) (5°28'5S, 11°59'0E).	Oil terminals.
Futilla Terminal (6.49) (5°27'5'S, 12°10'6E).	Oil terminal.
Cabinda (6.58) (5°33'S, 12°11'E).	Anchorage port.
Soyo — Kwanda (6.110) (6°07'3S, 12°19'3E).	Supply base for offshore terminals.
Xikomba Terminal (7.9) (6°02'7S, 11°01'5E).	Oil terminal.
Kizomba A Terminal (7.14) (6°19'2S, 11°03'2E).	Oil terminal.
Girassol Terminal (7.19). (7°39'1S, 11°40'8E).	Oil terminal.

Lombo East Terminal (7.30) (6°50'0S, 12°21'6E).	Oil terminal.
Palanca Terminal (7.37) (6°58'0S, 12°24'2E).	Oil terminal.
Canuku Terminal (7.44) (7°05'7S, 12°28'2E).	Oil terminal.
Kiame Terminal (7.50) (7°20'8S, 12°24'0E).	Oil terminal.
Porto do Ambriz (7.69) (7°50'0S, 13°06'2E).	Supply base for offshore terminals.
Porto de Luanda (7.83) (8°47'8S, 13°15'0E).	Major port.
Porto Amboim (7.142) (10°43'7S, 13°45'1E).	Small port.
Porto do Lobito (7.163) (12°20'8S, 13°32'9E).	Major port.
Porto Saco (7.244) (15°07'7S, 12°08'1E).	Small port.
Porto de Namibe (7.245) (15°11'7S, 12°09'0E).	Small port.

Democratic Republic of the Congo**1.180**

Moanda Terminal (6.91) (5°58'0S, 12°08'3E).	Oil terminal.
Banana (6.149) (6°01'S, 12°24'E).	Medium port.
Boma (6.157) (5°51'5S, 13°03'3E).	Small port.
Ango-Ango (6.164) (5°50'7S, 13°26'1E).	Small port.
Matadi (6.171) (6°49'2S, 13°27'5E).	Medium port.

Namibia**1.181**

Walvis Bay (8.41) (22°57'0S, 14°30'0E).	Major port.
Lüderitz (8.119) (26°38'5S, 15°09'4E).	Major port.

Republic of South Africa**1.182**

Port Nolloth (9.21) (29°14'8S, 16°52'0E).	Small port.
Lambert's Bay (9.65) (32°05'5S, 18°18'5E).	Small fishing port.
Saldanha Bay (9.116) (33°02'7S, 17°58'1E).	Major port.
Cape Town (9.207) (33°55'5S, 18°25'7E).	Major port.
Houtbaai (10.39) (34°03'5S, 18°21'5E).	Small fishing port.
Simon's Town (10.69) (34°11'8S, 18°26'0E).	Naval base.

PORT SERVICES - SUMMARY**Docking facilities****1.183**

- / Ports with docking facilities and, where available the largest vessel that can be accommodated are as follows:
- Douala. Floating dock, 10 000 tonne lift capacity, with a length of 130 m (4.153).
 - Cape Town. Sturrock Dry Dock, with a length of 360 m (9.247).
 - Simon's Town. Selborne Drydock, 237.7 m in length (10.99).

Deratting**1.184**

- / Deratting can be carried out and Deratting Exemption Certificates can be issued at the following places in

accordance with Article 17 of the *International Sanitary Regulations*:

Ascension Island (2.33).
 Saint Helena Island (2.54).
 São Tomé (3.147).
 Douala (4.154).
 Cabinda (6.76).
 Matadi (6.193).
 Luanda (7.118).
 Porto do Lobito (7.194).
 Namibe (7.252).
 Porto Tombua (7.259).
 Walvis Bay (8.77).
 Cape Town (9.248).

Measured distance**1.185**

/ Porto de Luanda (7.104).
 Porto do Lobito (7.183).



NATURAL CONDITIONS

MARINE TOPOGRAPHY

Seabed

1.186

- 1 The Mid Atlantic Ridge includes the islands of Ascension and Saint Helena and passes close to the Tristan da Cunha group of oceanic islands and Gough Island. It is joined in the vicinity of Tristan da Cunha by Walvis Ridge which extends in a NE direction to join the coast of Africa near Cape Frio (18°26'S, 12°00'E). There are several banks along Walvis Ridge including Valdivia Bank (2.6), which has a least reported depth of 23 m over it. A third ridge, Biafra Ridge, trends SW from the Bight of Biafra.

- 2 Between these ridges is the Angola Basin, mostly over 5000 m in depth and possessing a generally flat and featureless bottom, except to the N where there are a series of seamounts, including Dampier Seamount (2.4).

The Cape Basin, bounded by Walvis Ridge to NW and Agulhas Ridge to the SE, is irregular in depth and includes the notable Vema Seamount (2.5) which rises from general depths of 4700 m to attain a least depth of 7 m.

The basins normally consist of inorganic red clay or the organic oozes that have been derived from decayed pelagic and benthic organisms.

- 3 The Continental Shelf off the W coast of S Africa is generally very narrow, with long stretches being less than 50 miles in width, while it virtually disappears between latitudes 13°S and 16°S. Locally, such as the mouths of Congo and Orange Rivers, and off Walvis Bay it widens to between 70 and 100 miles. Sand predominates along the shelf, often occurring over rock inshore, while mud is dominant beyond the shelf and forms occasional patches on the shelf. The Congo Submarine Canyon crosses the entire shelf in an E to W direction and around the mouth of River Congo bottom sediments are muddy.

Volcanic activity

1.187

- 1 A number of centres of volcanic activity exist within this area. Sub aerial eruptions have occurred in the last 60 years at Cameroon Mountains and Tristan da Cunha (2.74).

Submarine volcanic activity has been reported from the Mid Atlantic Ridge between latitudes 10°N and 5°S, near Saint Helena and Tristan da Cunha. It has occurred at Walvis Bay also. See 8.56.

Seismic activity

1.188

- 1 Within the limits of this volume are areas of relatively infrequent and weak seismic activity. Earthquakes occur more frequently along the Mid Atlantic Ridge, particularly in the vicinity of the equator between 12°W and 25°W. Earthquakes have been reported in S Namibia and the Republic of South Africa.

Local magnetic anomalies

1.189

- 1 Local magnetic anomalies have been reported as follows:
 - Baía de Santo António (3.99).
 - Baía dos Tigres (7.263).
 - Cap Cameroun (4.79).
 - Cape Columbine (9.11).
 - Edinburgh Anchorage (2.69).
- 2 Ewing Seamount (2.7).
- Fernão Dias (3.117).
- Munden's Point (2.40).

Ponta das Palmeirinhas (7.125).

Ponta Praião (3.117).

CURRENTS, TIDAL STREAMS AND FLOW

Currents

General

1.190

- 1 The currents in the area covered by this volume lie within the eastern half of the general counter-clockwise circulation of water in the South Atlantic. There are seasonal variations, which are locally important but the main features are readily recognisable in all seasons.

See Current Diagrams 1.190.1 and 1.190.2.

Southern Ocean Current

1.191

- 1 To the S of about 40° to 42°S, the Southern Ocean Current flows E and passes S of both the African and South American continents. The current is the result of the predominance of W winds at these latitudes but the winds are more variable in direction in the vicinity of deep E-moving depressions. The boundary between the warmer South Atlantic Current (1.192) and the colder Southern Ocean Current lies between 40° and 42°S. The current sets ENE with an average rate of around ½ to ¾ kn. To the E of about 5°E one branch on the N flank of the flow sets N with the main flow continuing E. The constancy of this current is thought to be low to moderate.

South Atlantic Current

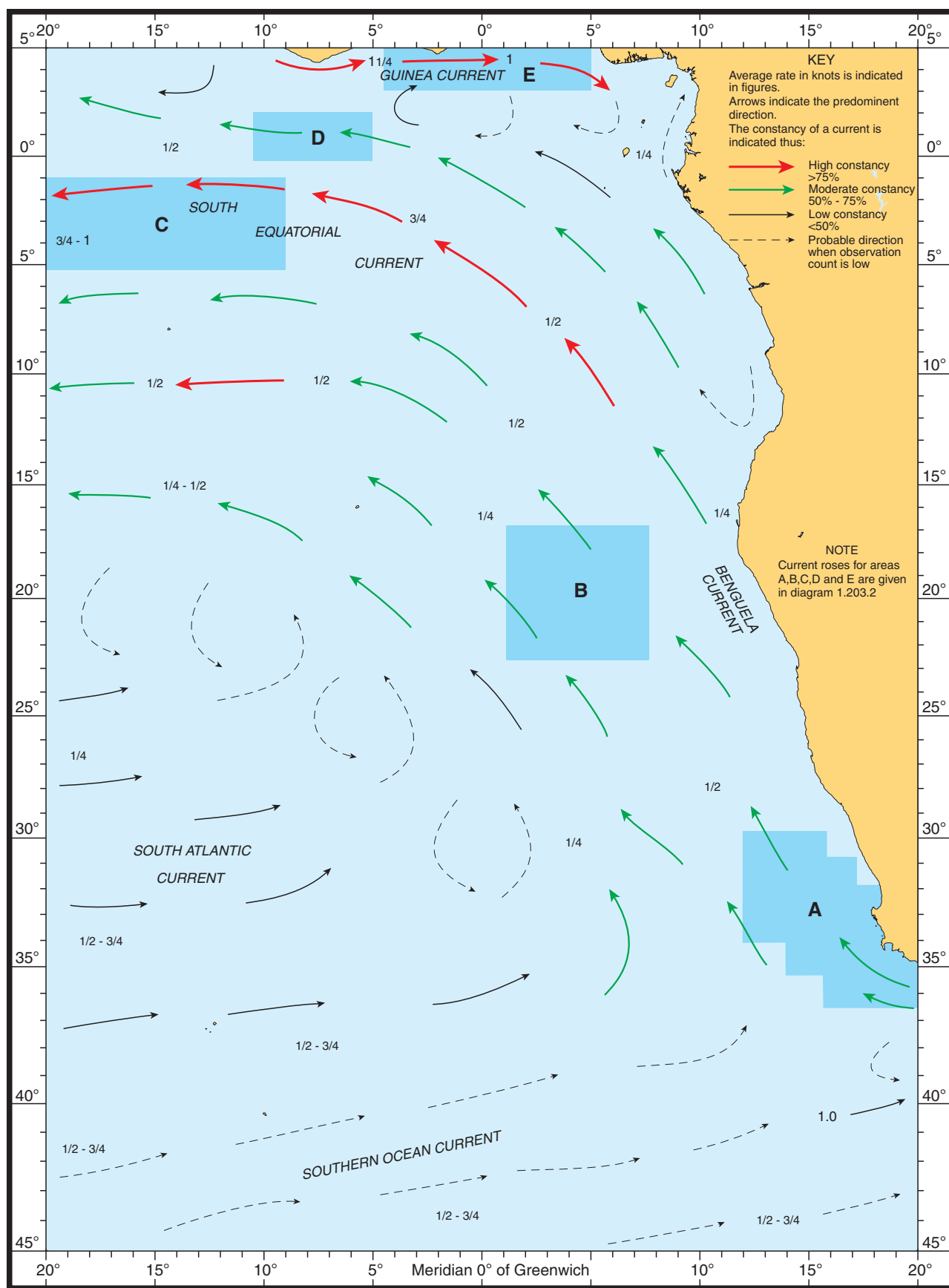
1.192

- 1 The northern limit of the South Atlantic Current is ill defined, as the flow becomes progressively weaker towards the N and E. The S limit of this E setting current is more marked between 40° and 42°S since it forms the boundary between waters originating from the warm S setting Brazil Current, (see *South America Pilot Volume I*) and the colder E setting Southern Ocean Current. The average rate is between ½ and ¾ kn but decreases to around ¼ kn towards the N and E, and where its constancy is low.

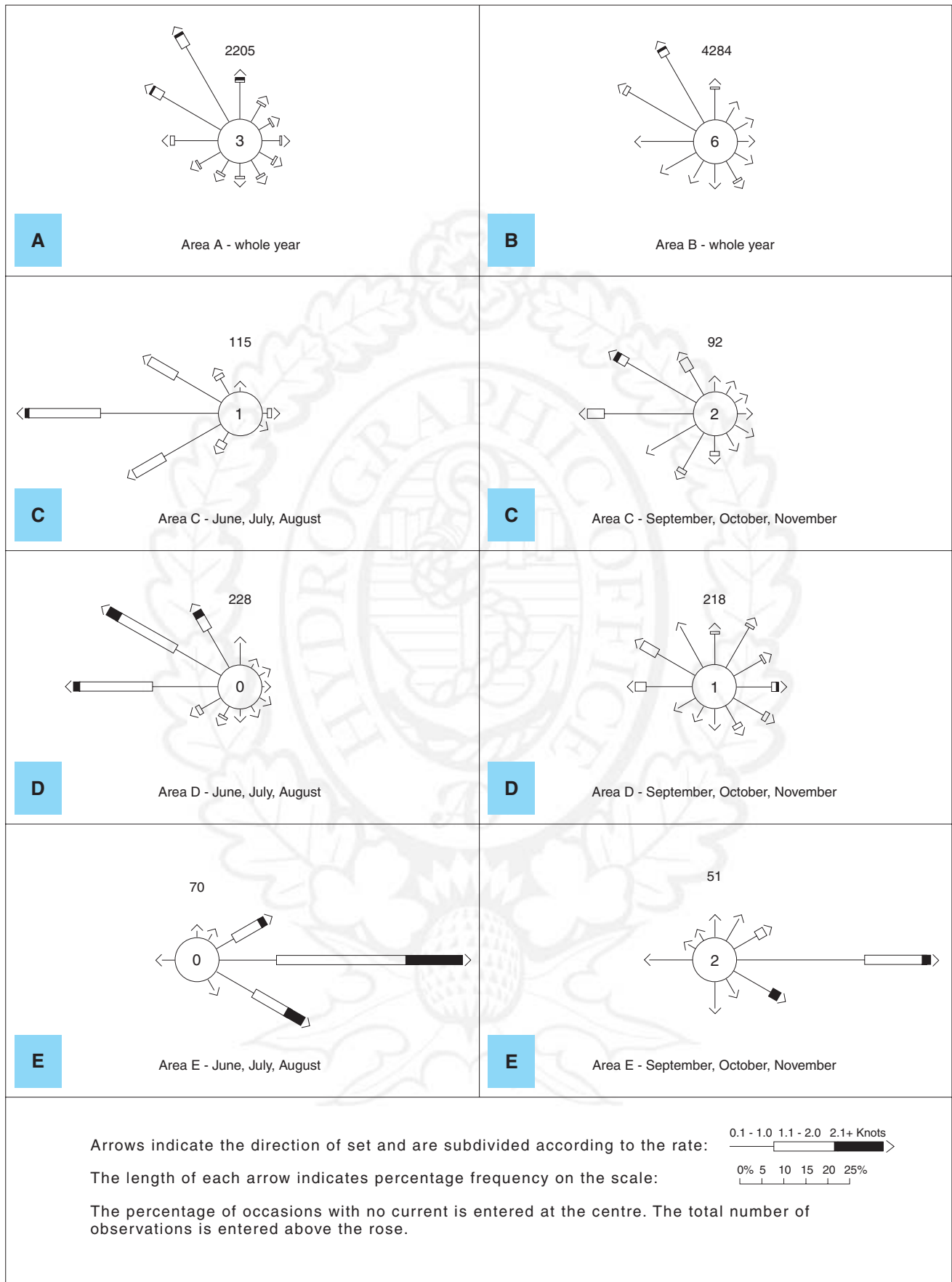
Benguela Current

1.193

- 1 The prevailing winds from Cape Town to near the Equator are S to SE and give rise to the NW setting Benguela Current. This current is associated with upwelling; where the surface water, being moved away from the coast, is replaced by colder sub-surface water. Due to the upwelling, the sea surface temperature between 18°S and Cape Town is noticeably lower near the coast than the open ocean water at the same latitudes. Although there is some inflow of water due to the Southern Ocean, South Atlantic and the Agulhas Currents, the majority of the surface water flow that makes up the Benguela Current comprises the cold water resulting from the upwelling near the coast.
- 2 The constancy of the Benguela Current is moderate and with an average rate of around ¼ to ½ kn. Occasionally SE setting currents near the coast occur, which can result in a cessation of the upwelling and therefore higher coastal sea surface temperatures. The variability of the Benguela Current increases near the coast to the N of 15°S where there are probably numerous eddies. River outflows may enhance the rate of the NW setting current, particularly



Predominant surface currents for the year (1.190.1)



from the Congo River. The average rate to the NW of the mouth of the Congo may reach 2 kn at times and is noticeable by its yellow, olive-green colour which may be perceptible up to 300 miles offshore. N of the Equator the remnants of the Benguela Current sets N or NNE close to the coast between Cap Lopez and Douala.

South Equatorial and Guinea Currents

1.194

- 1 The W setting South Equatorial Current and the E setting Guinea Current, both obtain their highest rates in June or July and lie relatively close to each other (see the current roses for areas C, D and E for the months of June, July and August) with the N flank of the South Equatorial Current reaching its most N limit at around 2° to 3°N. Between September and November the N flank of the South Equatorial Current moves S and the S flank of the Guinea Current may extend S at times to near the Equator (see the current roses for areas C, D and E for the months September, October and November). Average rates of both currents are lowest during this period but occasional rates of 2 kn have been recorded.

Currents in the Bight of Biafra

1.195

- 1 Current data from the Bight of Biafra is very sparse. The set of the current and its rate are likely to be very variable at times. A branch of the Guinea Current sets E into the Bight with rates up to 1½ kn along the N coast of Bioco. Water also flows N into the Bight along the coasts of Equatorial Guinea and Cameroon. Outflow from the Bight is likely to be towards the SW but much of the outflow may be sub-surface with the highly saline water from the Guinea Current sinking below that of the less saline water of the Benguela Current.

Tidal streams

1.196

- 1 Along the coast covered by this volume the tide is semi-diurnal with two HW and two LW a day. The range of the tide is comparatively small, only exceeding 1.8 m at mean springs in a few of the river estuaries and even in them it does not exceed 2.7 m. The time of HW at places on the coast gets slightly earlier as one proceeds S, but the time differences (except for places well up river) are small. HW at the entrance to Rio del Rey (4.29), for example, is only about two hours later than that at Cape Town.
- 2 Because of the small range of tide and of the small differences in the time of HW, and LW, the tidal streams along the coast are generally very slight. Except near river estuaries and a few large and shallow indentations in the coast, the tidal streams are negligible compared with the currents, described above and with other wind-blown currents.
- 3 Tidal streams are appreciable for distances of 5 to 10 miles to seaward of the mouths of the larger rivers, setting towards the river mouth while the tide is rising and away when it is falling. It has been observed in several localities that the tidal stream changes near the bottom some time before it changes at the surface.

Flow

1.197

- 1 In some of the river entrances, tidal streams up to 2 to 3 kn occur. However owing to the effect of the river current, especially in the rainy season, the resulting in-going stream is usually weaker and of shorter duration

than the out-going stream. In fact, during the rainy season, the in-going stream may be hardly perceptible, being reduced to only a few hours of slack water, while the out-going stream may run for 8 to 10 hours and attain a rate of 4 to 5 kn.

SEA AND SWELL

General

1.198

- 1 For definitions of sea and swell, and the terminology used in describing their characteristics, see *The Mariner's Handbook*.

Sea conditions

1.199

- 1 Sea waves can be very variable in direction in the W part of the area between 25° and 35°S. Elsewhere the direction of the sea waves is more constant. The occurrence of combined sea and swell waves of 3.5 m and over, in the summer months (December to February), is generally less than 10% N of around 30°S and W of 5°E and also N of 21°S between 5°E and the African coast. The frequency steadily increases to around 40% of occasions at around 45°S. In winter, combined sea and swell waves of the same magnitude occur on less than 10% of occasions to the N of 20° to 25°S and steadily increases to around 45% of occasions at around 45°S.

Swell conditions

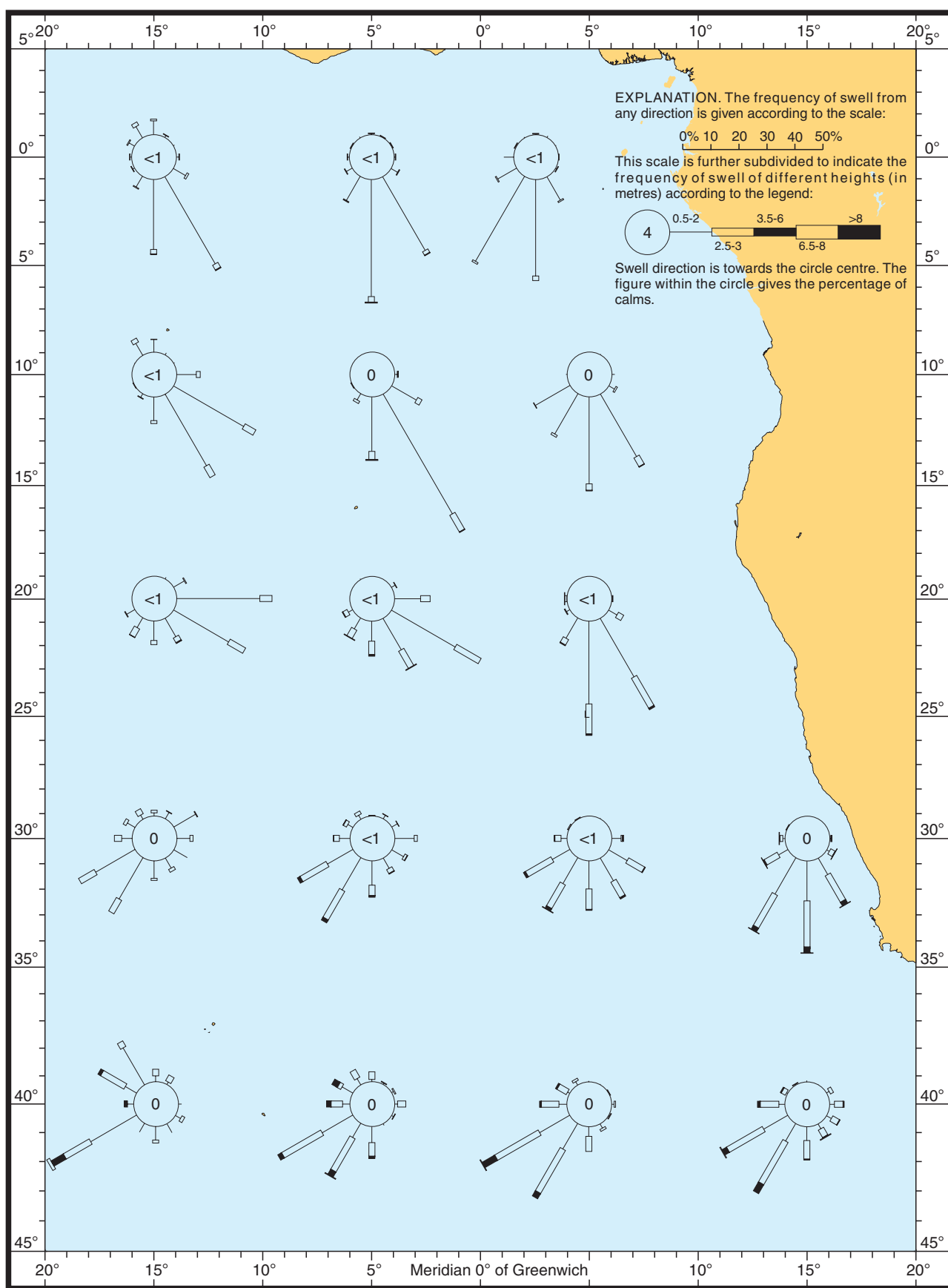
1.200

- 1 Diagrams 1.200.1 and 1.200.2 give swell roses for several areas in January and July. The roses show the percentage of observations recording swell waves for various directions and several ranges of wave height.
- 2 Swells over the open ocean in January are generally less than 2m to the N of about 15°S and are predominantly from between S and SE to the N of around 25°S. To the S of 25°S the swells become progressively more SW and steadily higher. In July, swell heights are slightly higher in the extreme N of the area but are significantly higher, and with a greater frequency of occurrence, in the extreme S of the area.

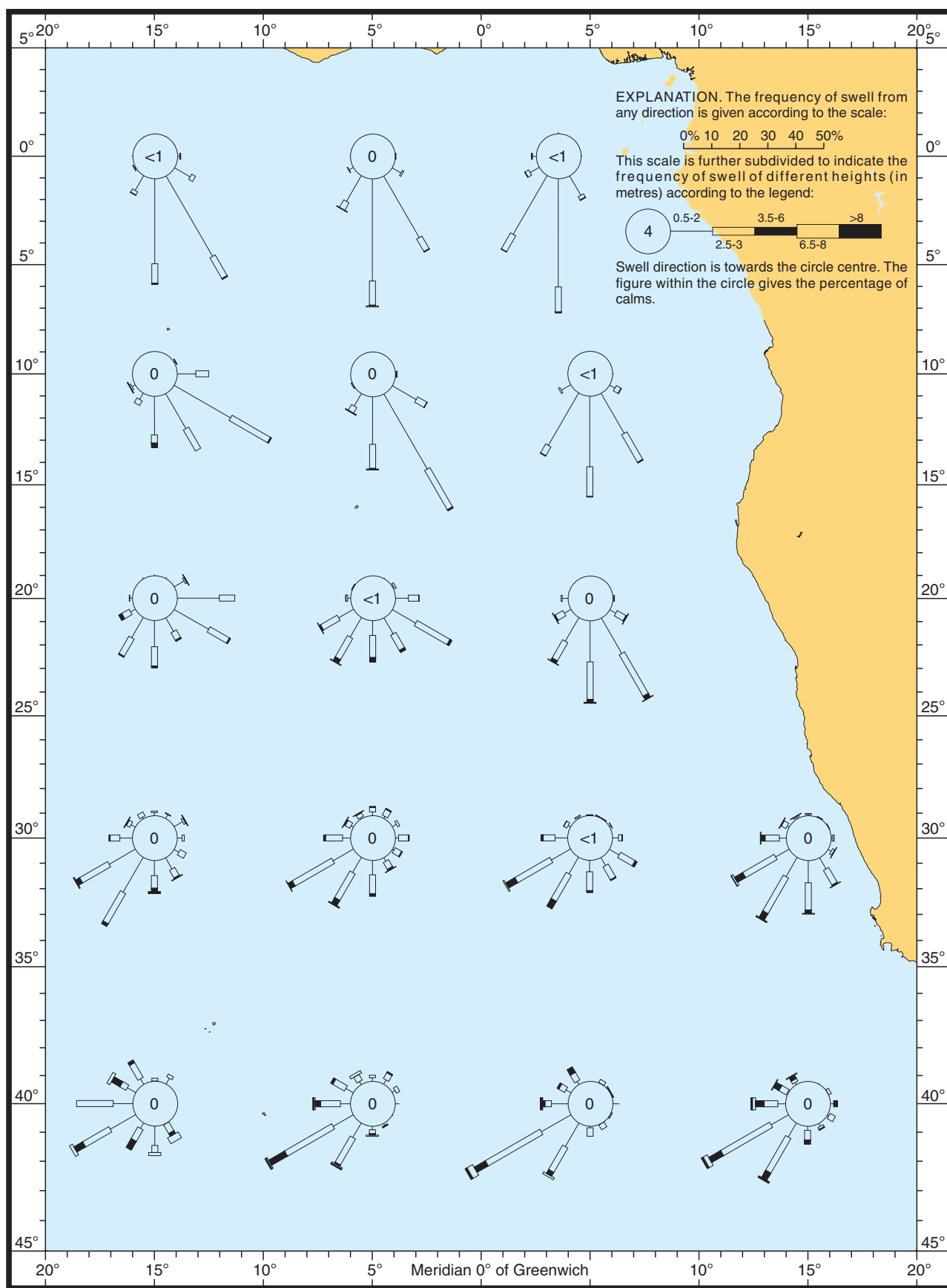
Rollers

1.201

- 1 Rollers, within the area covered by this volume, are swell waves emanating from distant storms in both the North and South Atlantic Oceans and which continue their progress across the South Atlantic until they reach shallow water where they may abruptly steepen, increase in height and sweep inshore. The shallow water may deflect or refract the swell waves so that one bay on a stretch of coast may experience the full violence of the rollers whilst a neighbouring bay may remain calm and unrippled. See *The Mariner's Handbook*.
- 2 The SW coast of Africa and the islands of Ascension and St Helena are particularly well-known for rollers and these are most likely in the months of December, January, July and August but can occur at other times. The arrival of rollers is usually preceded by considerable surf on the beach, by the sea breaking on the headlands of a bay before any swell is perceptible and, from aloft, by large waves like ridges on the surface of the water. Off the SW coast of South Africa rollers most commonly arrive from the SW and off the Namibian coast from the WSW.
- 3 Additional information about rollers affecting Ascension, Saint Helena, and Tristan da Cunha is given in Chapter 2.



Swell distribution - January (1.200.1)



Swell distribution - July (1.200.2)

Abnormal waves

1.202

- 1 Abnormal waves are known to result from a wave/current interaction when waves from the SW move into the opposite flowing Agulhas Current. A focusing of energy occurs and the waves in the current, particularly on the inside edge, can be as much as twice as high as those outside the current. A superposition of different wave groups can result in a very high central wave preceded by a correspondingly deep trough. The situation is particularly dangerous for ships proceeding in a SW direction against the waves, since the wave steepness is increased by the speed of the ship, and the danger is further compounded by the strong SW gales which occur in the area. A number of ships have been damaged and some have sunk as a result of encounters with such waves.
- 2 The coastal region between Richards Bay and East London (*Africa Pilot Volume III*) is generally identified as the most dangerous but that is likely to be because the shipping routes in the area lie along the inshore edge of the Agulhas Current. Such abnormal waves can occur anywhere in the main stream of the Agulhas Current and indeed recent satellite imagery has shown the occurrence of very high waves in the Agulhas Current retroflexion region south of the Agulhas Bank (35°30'S, 21°00'E).
- 3 The best procedure to adopt in such extreme conditions is to move out of the Agulhas Current, that is to move inshore. In addition, speed should be reduced substantially, particularly if proceeding in a SW direction.

SEA WATER CHARACTERISTICS

Density and Salinity

1.203

- 1 For an explanation of density and salinity as applied to sea-water, see *The Mariner's Handbook*.
There is an area of relatively low density and salinity in the Bights of Benin and Biafra due to freshwater run off from the numerous rivers in the region. Within this area a surface density of less than 1.021 g/cm³ and a salinity of less than 34 may be encountered.

Sea surface temperature

1.204

- 1 Diagrams 1.204.1 and 1.204.2 show the mean sea surface temperature for February and August. Minimum temperatures occur in August and maximum in February. The seasonal range is around 4°C across the whole of the area and with the temperatures decreasing more sharply to the S of around 35°C. The effect of the cold water upwelling off the SW coast of Africa is clearly indicated in the sea surface temperature diagrams. Within the area of the Benguela Current the sea surface temperatures may vary by 2° to 4°C from the average.
- 2 Variations between the mean air temperature over the open sea and the mean sea surface temperature is small but may vary by 3° to 5°C along the African coast.

Colour and transparency

1.205

- 1 **Bioluminescence** or phosphorescence is the production of light by living organisms.
Marine luminescent displays may be grouped into three categories:
Sheet type; often appearing as a diffuse glow extending over a large area of the sea surface.

These are caused by various types of one-celled organisms called protozoa.

Spark type; appearing as innumerable flickering points of light. These are caused by small shrimp-like euphausiids.

Globe type; appearing as glowing balls of light. These are caused by jelly fish.

- 2 Many brilliant globe type and sheet type displays have been observed in the area covered by this volume. They are especially intense in equatorial waters of the Atlantic and in the Gulf of Guinea. The principal organism causing luminescence in oceanic waters is *pyrosoma*, a pelagic tunicate. This organism appears in colonies and is brilliantly luminescent. Where *pyrosoma* occurs in very large numbers, the water becomes a field of intense blue-green light at night, and the display frequently extends to the horizon.
- 3 Sheet type displays are most frequent and intense off river mouths such as River Congo. The discoloured waters from this river has been observed some 300 miles to seaward and is often marked by various intensities of luminescence along its leading edge.
- 4 Exceptional displays have been observed in bays along the W coast of South Africa. These displays are usually due to concentrations of a luminescent dinoflagellate called *noctiluca*. When they are in very large numbers, *noctiluca* discolours the water red and may give the water a consistency of syrup. At night the luminescence created may be so intense that shore features are obscured by the glare.
- 5 To the S of the African mainland and in the region of the westerlies wind, displays appear to be less frequent than farther N. Some strong spark-type displays have been observed in colder waters near the Antarctic Convergence Zone.

ICE CONDITIONS

1.206

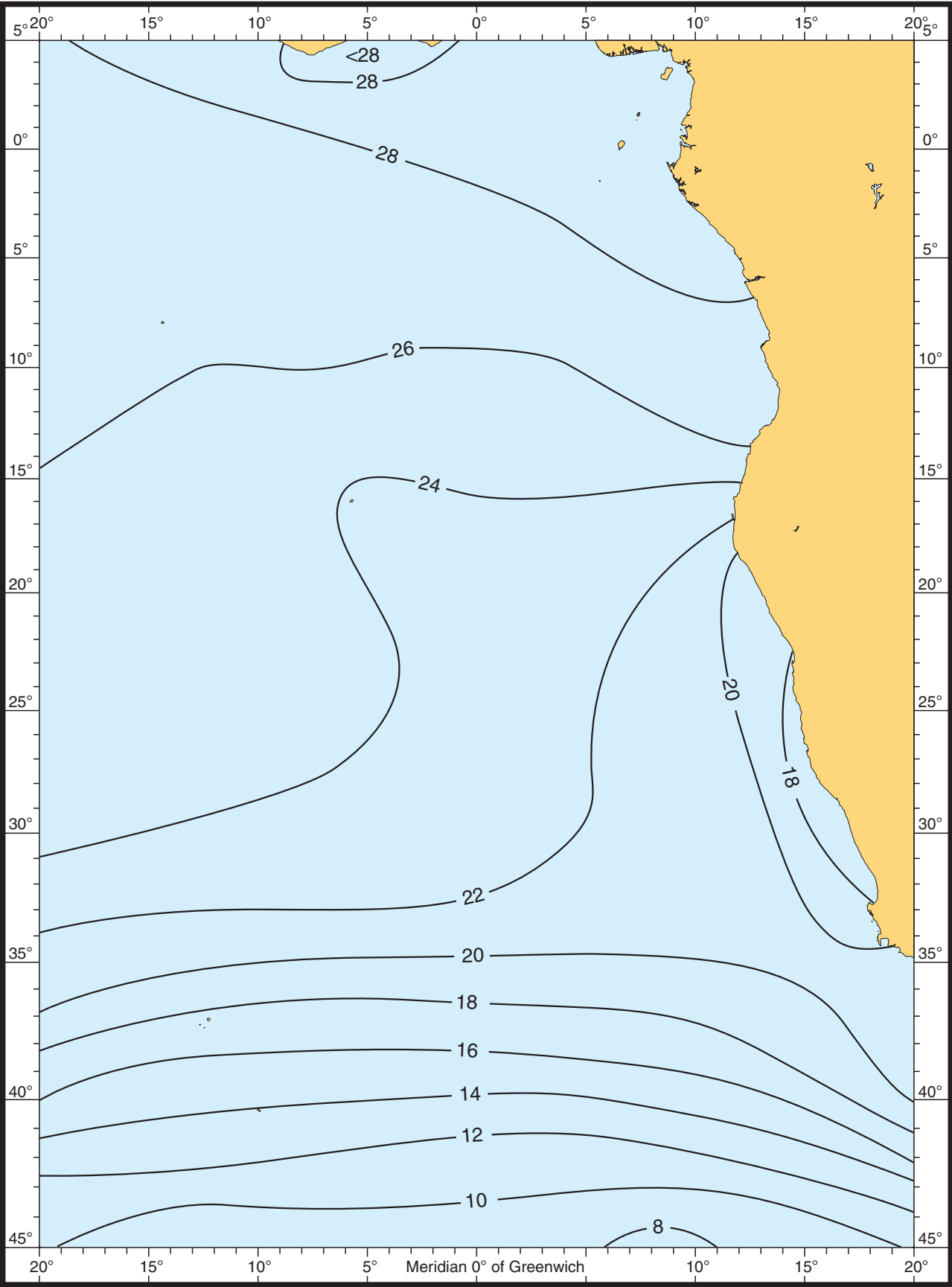
- 1 The limit of Antarctic pack ice always lies well beyond the S boundary of the area covered by this pilot. Icebergs do penetrate the area but by 45°S they are usually spaced far apart and become increasingly rare farther N. During the last century there were records of sightings as far N as 35°S between the longitudes of 18°E and 20°E. Such occurrences must be considered extremely rare but mariners should, nevertheless, not discount the possibility of encountering icebergs when rounding the Cape of Good Hope.
- 2 For a general description of ice at sea together with illustrations see *The Mariner's Handbook*. See also the *Antarctic Pilot*.

CLIMATE AND WEATHER

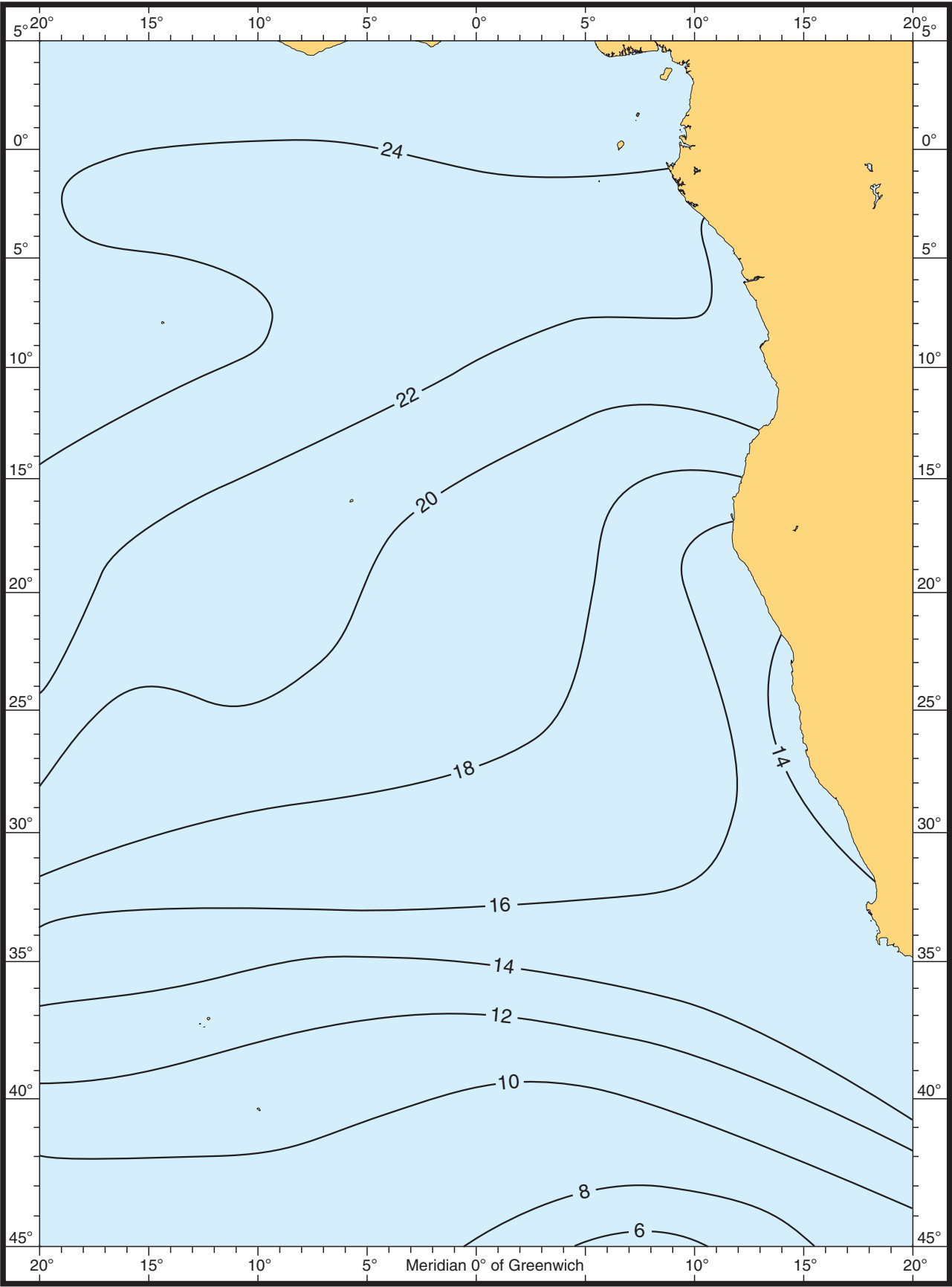
General information

1.207

- 1 The following information on climate and weather should be read in conjunction with the information contained in *The Mariner's Handbook*, which explains in more detail many aspects of meteorology and climatology of importance to the mariner.
Weather reports and forecasts, that cover the area, are regularly broadcast in a number of different languages including English; for details see *Admiralty List of Radio Signals Volume 3(1)*.



Mean sea surface temperature (°C) FEBRUARY (1.204.1)



Mean sea surface temperature (°C) AUGUST (1.204.2)

General conditions

1.208

- 1 The climate is hot and humid in the equatorial zone in all seasons but tropical cyclones do not affect the region. African coastal temperatures steadily decrease S of about 10°S due to the relatively cold Benguela Current and increasing latitude. Along the African coast, rainfall is abundant in the extreme N of the area and steadily decreases to almost totally dry conditions along the Namibian coast. The SW part of Cape Province is usually warm and relatively dry in summer and cool and wet in winter.
- 2 SE Trade Winds dominate the greater part of the area covered by this volume. The exceptions are: the Bight of Biafra, where the winds are mainly S to SW; W of about 1°W between 25° and 35°S, where the winds are very variable; S of around 35°S, where the winds are predominantly from the W.
- 3 Over the oceanic islands covered by this volume, the annual rainfall increases from Ascension Island at around 130mm S to Gough Island which records around 3200mm. Fog is rare in the N but hazy conditions often affect the Bight of Biafra. Sea fog can be a hazard in the vicinity of the Benguela Current between 10° and 30°S and often drifts E over the coast, particularly at night.

Pressure

Average distribution

1.209

- 1 The average pressure distribution at mean sea level in January and July is shown in the accompanying diagrams 1.209.1 and 1.209.2 and illustrate the typical mean pressure fields. The dominant features are the semi-permanent South Atlantic anticyclone, the equatorial trough or doldrums belt in the N and the E to SE moving temperate-latitude depressions in the S.

Variability

1.210

- 1 It is stressed that the diagrams depict the average pressure distribution and that, particularly S of about 30°S, the pressure pattern can be markedly different from the mean due to E to SE moving depressions. Variations between 20° and 35°S are usually a reflection of the intensity of the South Atlantic anticyclone and are generally more gradual. North of about 10°S there is only a small pressure increase of between 3 and 4 hPa (mb) between January and July.

Diurnal variations

1.211

- 1 There is a diurnal variation across the area covered by this volume. It varies from around 3 to 4 hPa (mb) over the land in the extreme N to around 1 to 2 hPa near Cape Town. Pressure maxima occur at 1000 and 2200 local time and minima at 0400 and 1600.

Anticyclones

1.212

- 1 The semi-permanent South Atlantic anticyclone is a dominating feature of the pressure pattern and of the climate of the region. The mean central pressure of the anticyclone in summer (January) is around 1020 hPa (mb) and increases to around 1024 hPa as it moves N from near 30°S to 27°S in winter (July). Variations on the N flank of the anticyclone are usually small but to the S variations can

be much larger due to individual ridges and troughs moving E to SE to S of the main centre.

Depressions

1.213

- 1 Temperate-latitude depressions generally only affect the area to S of around 30°S and the most common of these usually form over the W side of the South Atlantic Ocean to the E of the Rio de la Plata (see *South America Pilot Volume I*). They usually move between E and SE and may rapidly deepen as they move away from the E coast of South America. These deep depressions frequently give rise to strong to gale force winds as they move E to the S of Cape Agulhas, and on occasions the winds may reach storm force. They tend to be more frequent in the autumn, and in summer (January) they usually move E at higher latitudes than in winter (July).
- 2 No tropical cyclones have been recorded in the South Atlantic Ocean.

Fronts

Warm and cold fronts

1.214

- 1 Warm fronts tend to be weak and ill defined but cold fronts are often more active and well defined. See *The Mariner's Handbook* for a full description of warm and cold fronts. Cold fronts, particularly in the autumn, often give rise to strong squally winds and much rain. The intervals between cold fronts, together with their associated depressions, may vary between 1 and 15 days and with great variation in both intensity and duration. Sharp changes in wind direction from N to S together with abundant rainfall may signal the passage of a cold front, while at other times there may be little or no rain and with only a gradual change in wind direction.
- 2 In winter, cold fronts may bring disturbed weather as far N as the Orange River (28°38'S, 16°27'E). Over the open ocean waters in the E they rarely affect areas N of 25°S.

Intertropical Convergence Zone (ITCZ)

1.215

- 1 The equatorial trough or doldrums is a zone of relatively low pressure towards which the winds of the N and S hemispheres converge and where the ITCZ is located. The ITCZ affects the extreme N of the area covered by this volume and within it thundery showers and associated squalls are common.

Winds

Average distribution

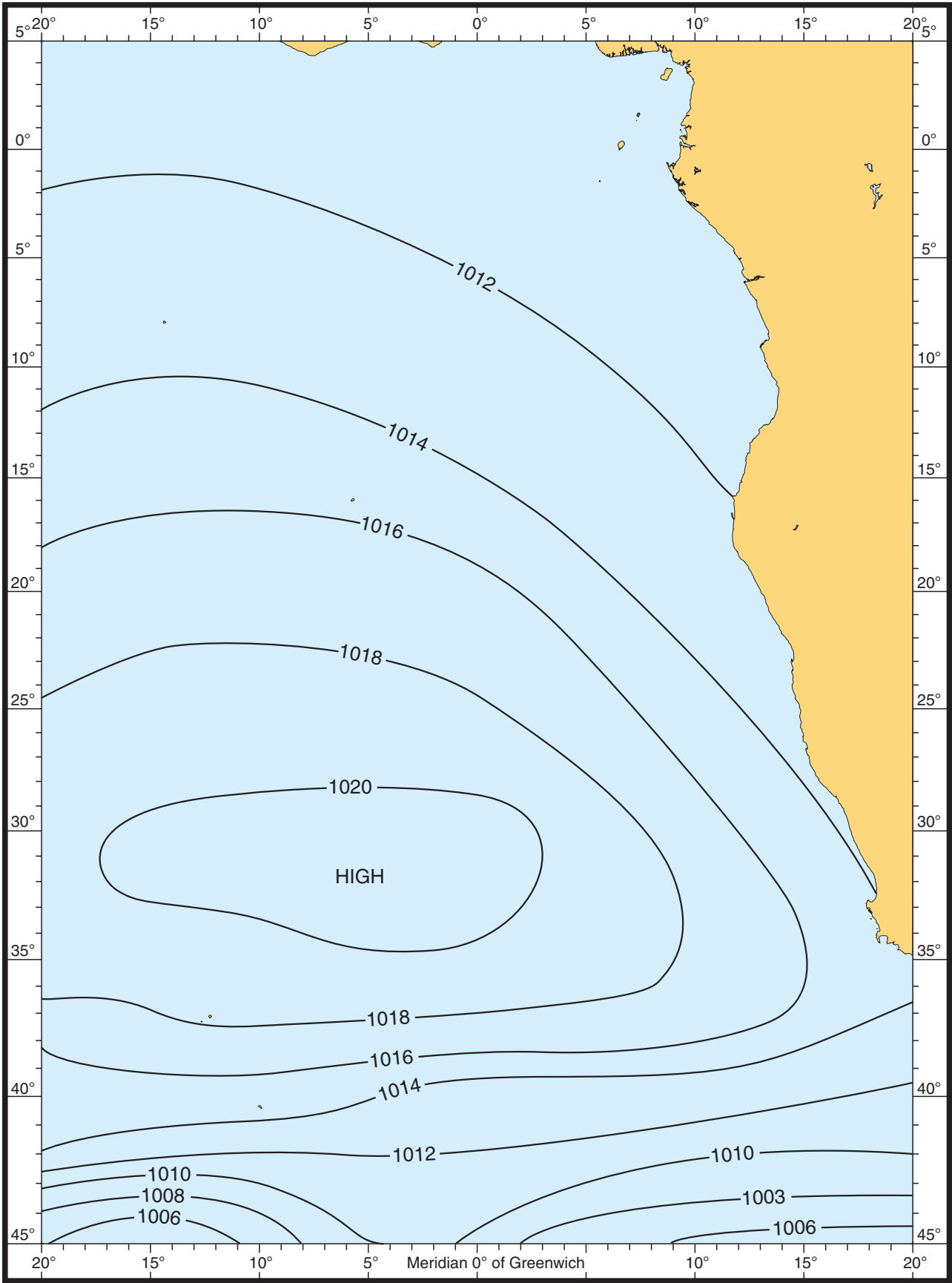
1.216

- 1 Wind roses showing the frequency of wind distribution for the area in January and July are given in diagrams 1.216.1 and 1.216.2.

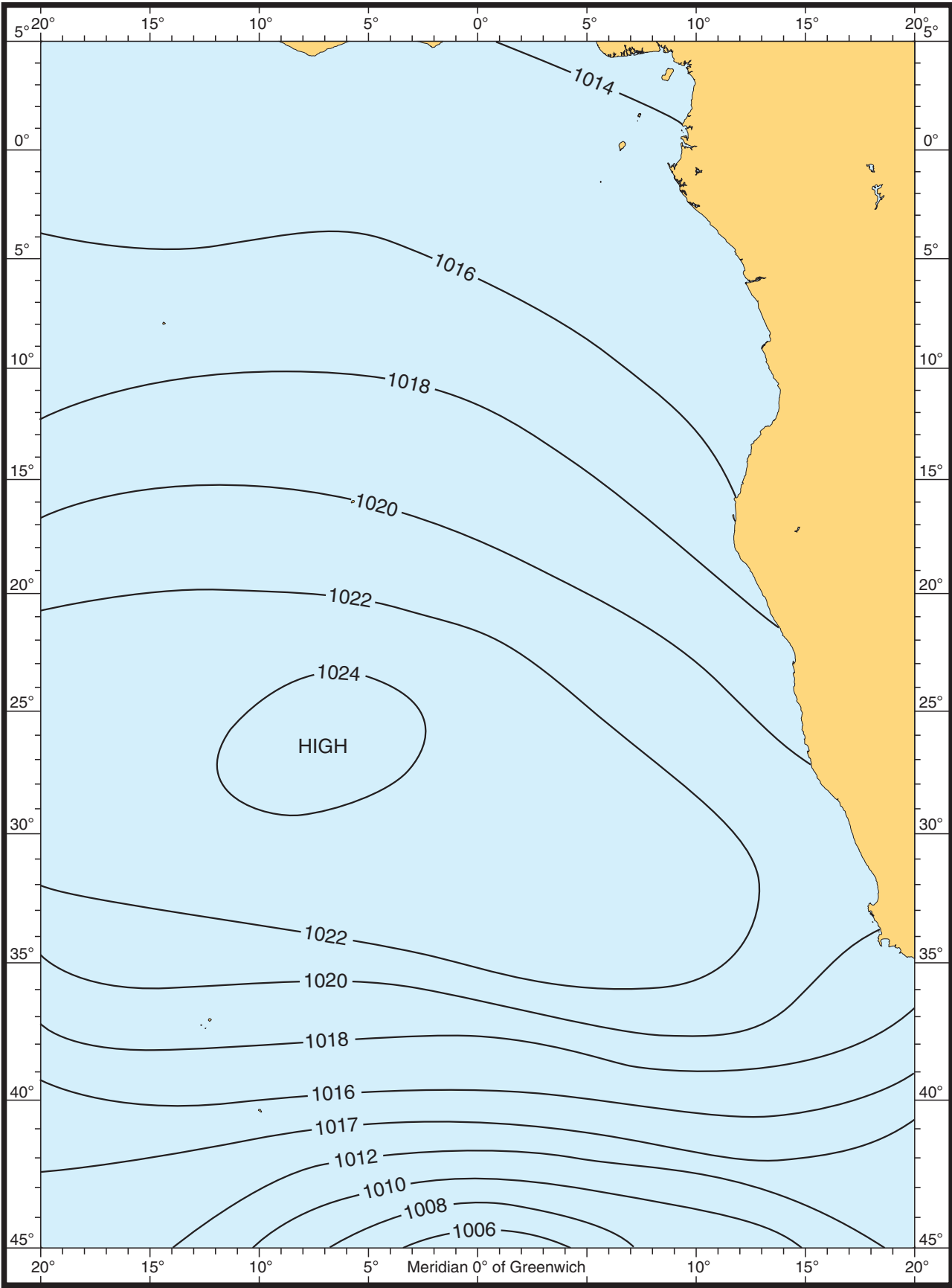
Open Seas

1.217

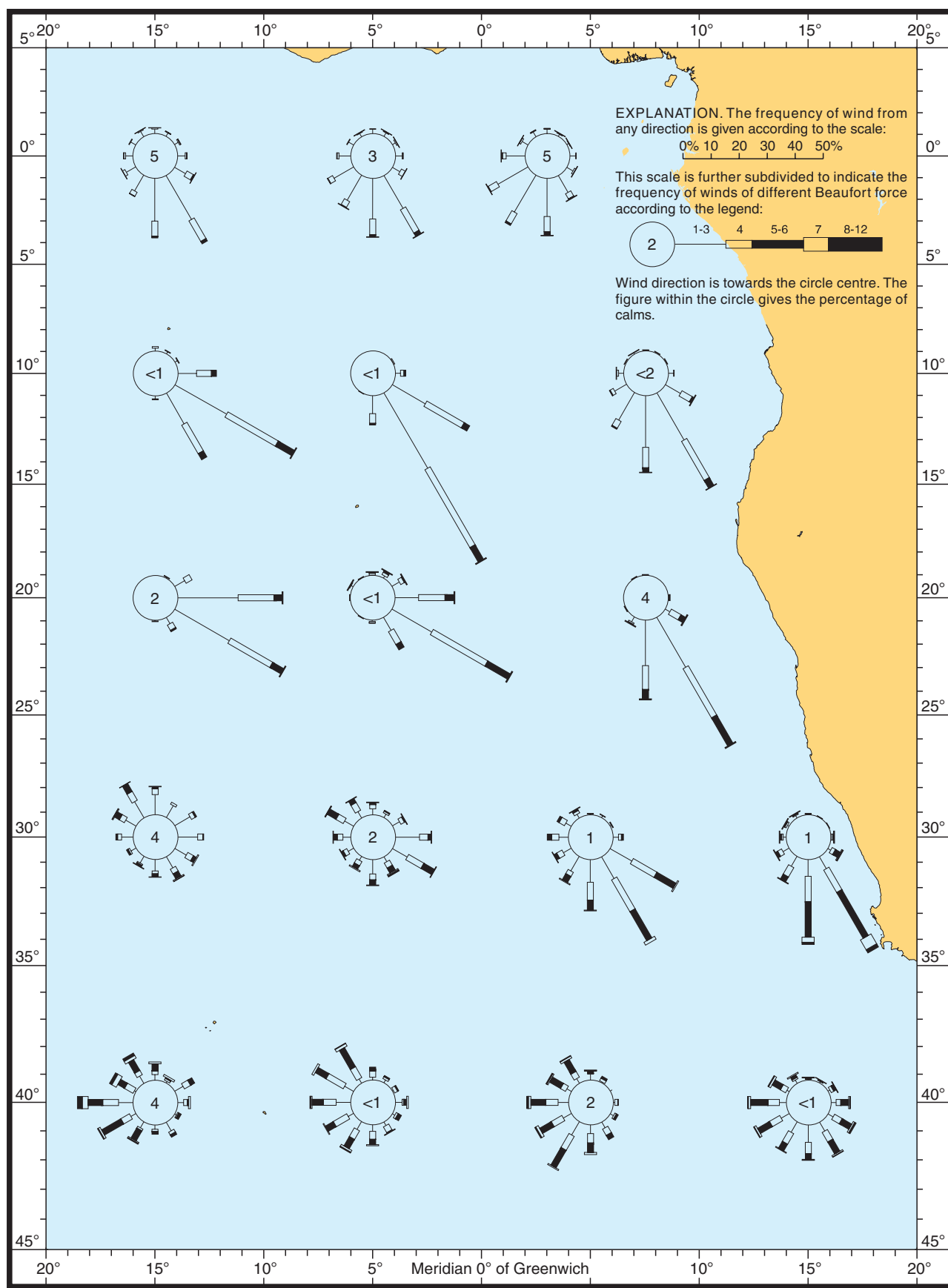
- 1 The SE Trade Winds, which blow from between ESE and SSE, are the predominant winds over most of the area covered by this volume N of around 35°S. There is an increasing frequency of SW winds towards the Bight of Biafra and also of more variable winds to the W of 1°W between 25° and 35°S. South of the South Atlantic anticyclone the predominant winds are from between SW and NW.



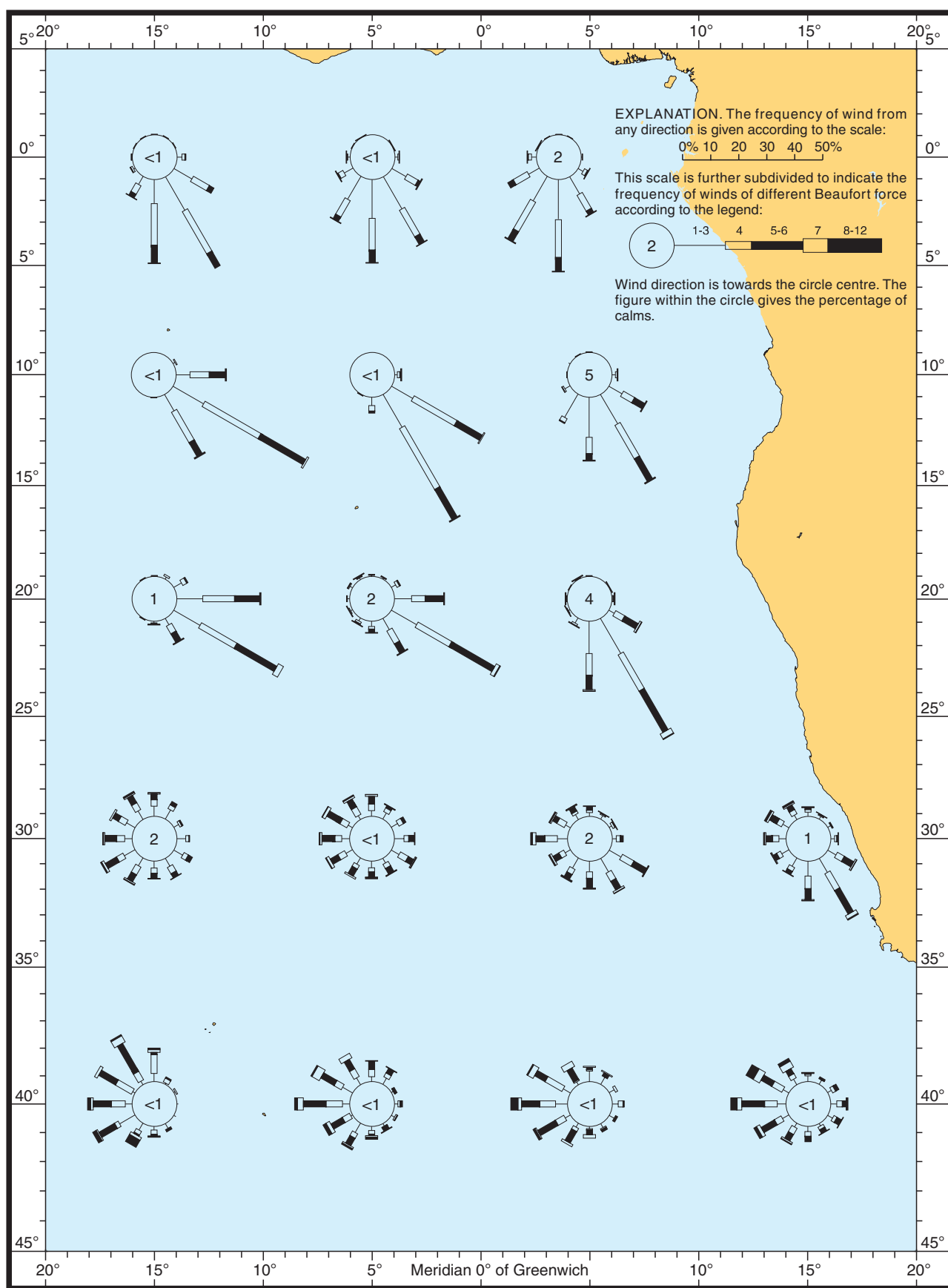
Average barometric pressure - JANUARY (1.209.1)



Average barometer pressure - JULY (1.209.2)



Wind distribution - January (1.216.1)



Wind distribution - July (1.216.2)

Coastal areas

1.218

- 1 Small changes in the direction and strength of the SE Trade Winds, due to an intensification of the South Atlantic anticyclone and a small fall of pressure inland, may result in an increase in wind strength of 10 kn over a wide area. In addition, afternoon sea breezes may strengthen coastal winds, as may coastal deflections around exposed headlands.

There are three main local winds.

- 2 **Harmatten.** This is a dry N to NE wind, which extends seawards over the Bight of Biafra at times between December and early March. This wind often results in a considerable reduction in the visibility due to an increasingly thick layer of haze.
- 3 **Tornadoes.** The local name tornado is given to intense tropical rain storms which develop in the equatorial region between Cameroon and the River Congo. These tornadoes should not be confused with the turbulent phenomena which are common to the southern part of the USA and which carry the same name.
- 4 Tornadoes occur most frequently at the beginning (April/May) and the end of the rainy season (October/November). The storms can be isolated, or, organised in long lines of 50 miles or more and affecting an area between 150 and 500 miles overall. The storms normally travel from E to W but sometimes they form at sea and proceed inshore to the coast.
- 5 Generally tornadoes form inland in the late afternoon and reach the coast in the evening. In coastal waters they often last throughout the night. The barometer gives no indication of the arrival of a tornado. Very oppressive conditions usually precede a dense bank of cumulonimbus in the E or NE. This is followed by sudden squalls, which can result in gusts of 50 kn or more, torrential rain, and reduced visibility. Tornadoes generally last for less than one hour.
- 6 Between the S part of Cameroon and the River Congo, tornadoes tend to be less violent.
- 7 **Berg winds.** These are hot, dusty winds from between E and NE and occur mainly to the S of Angola, and which are similar to the Scirocco winds of N Africa. These winds are often strong and gusty with force 7 winds being recorded at Lüderitz. They usually last for a few hours but may blow intermittently over a period of several days. The temperature, during the period these winds blow may exceed 40°C and the humidity may decrease to less than 20%. These desert winds can occur at any time of the year but are most frequent in winter.

Gales

1.219

- 1 The SE Trade Winds seldom reach gale force between northern Namibia and Cameroon but when sea breezes and coastal deflections reinforce the SE Trade Winds, the wind may reach force 7 during the afternoon in some places. The frequency of winds of force 7 or more steadily increases towards the S of the area (see diagrams 1.219.1 and 1.219.2). In the S of the area, gales are most frequent with winds from between NW and SW but also occur from the SE in January (summer) off the coast of South Africa. Storm force winds, high seas and heavy swells are not uncommon S of 35°S.

Cloud

1.220

- 1 Over the ocean the average cloud amount is around 5 to 6 oktas to the S of around 35°S throughout the year and around 6 oktas near 15°S, 5°E. In the NW of the area, the average cloud amount is usually less than 4 oktas and elsewhere between 4 and 5 oktas, except for the Bight of Biafra where it increases from around 4 to 5 oktas in January to 6 to 7 oktas in July.
- 2 In coastal areas, long spells of clear skies often occur between 20° and 30°S. However, much of the area between the River Congo and Cape Columbine is often obscured by low cloud and mist at times during the night and early morning. This thin cloud sheet and/or sea fog is often called *Cacimbo* in Angola and is most common, between Luanda and Walvis Bay between April and August. See the climatic tables (1.226) for the mean cloud amounts at a number of coastal stations within the area.

Precipitation

General

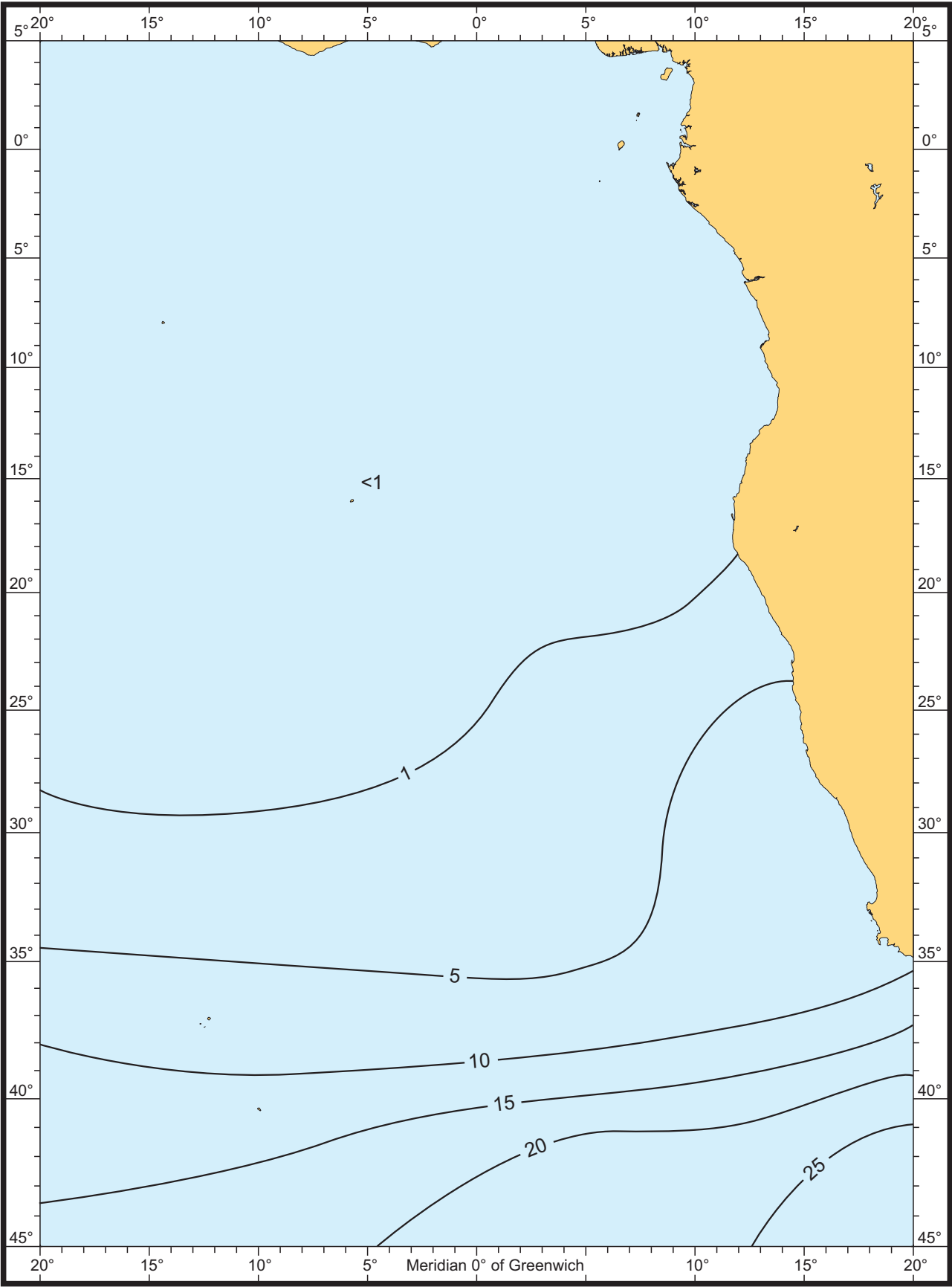
1.221

- 1 There is abundant rainfall in the extreme NE of the area around Douala with an average amount of around 4000mm and with the greatest rainfall occurring between June and October and the least between December and February (See the climatic tables (1.226). Between the equator and Namibia rainfall amounts steadily decrease from around 2000 mm at Port-Gentil to around 15 mm at Walvis Bay and with the greatest rainfall occurring mainly between October and April. To the S of Walvis Bay rainfall amounts steadily increase to around 500 mm near Cape Town and with the highest rainfall in the winter months.
- 2 Rainfall is often torrential during thunderstorms in the NE of the area. In the N, there are large variations in monthly totals from year to year and large tracts of land are some times flooded due to prolonged heavy rain. In the dry zone of Namibia there are frequently prolonged droughts.
- 3 Rainfall distribution over the islands groups show a marked variation with regard to topography, and with the largest falls occurring on windward slopes. Monthly totals can vary widely from year to year depending on the intensity and persistence of the South Atlantic anticyclone. Annual rainfall at Ascension Island is around 130mm and steadily increases towards the S with Gough Island recording around 3200mm.

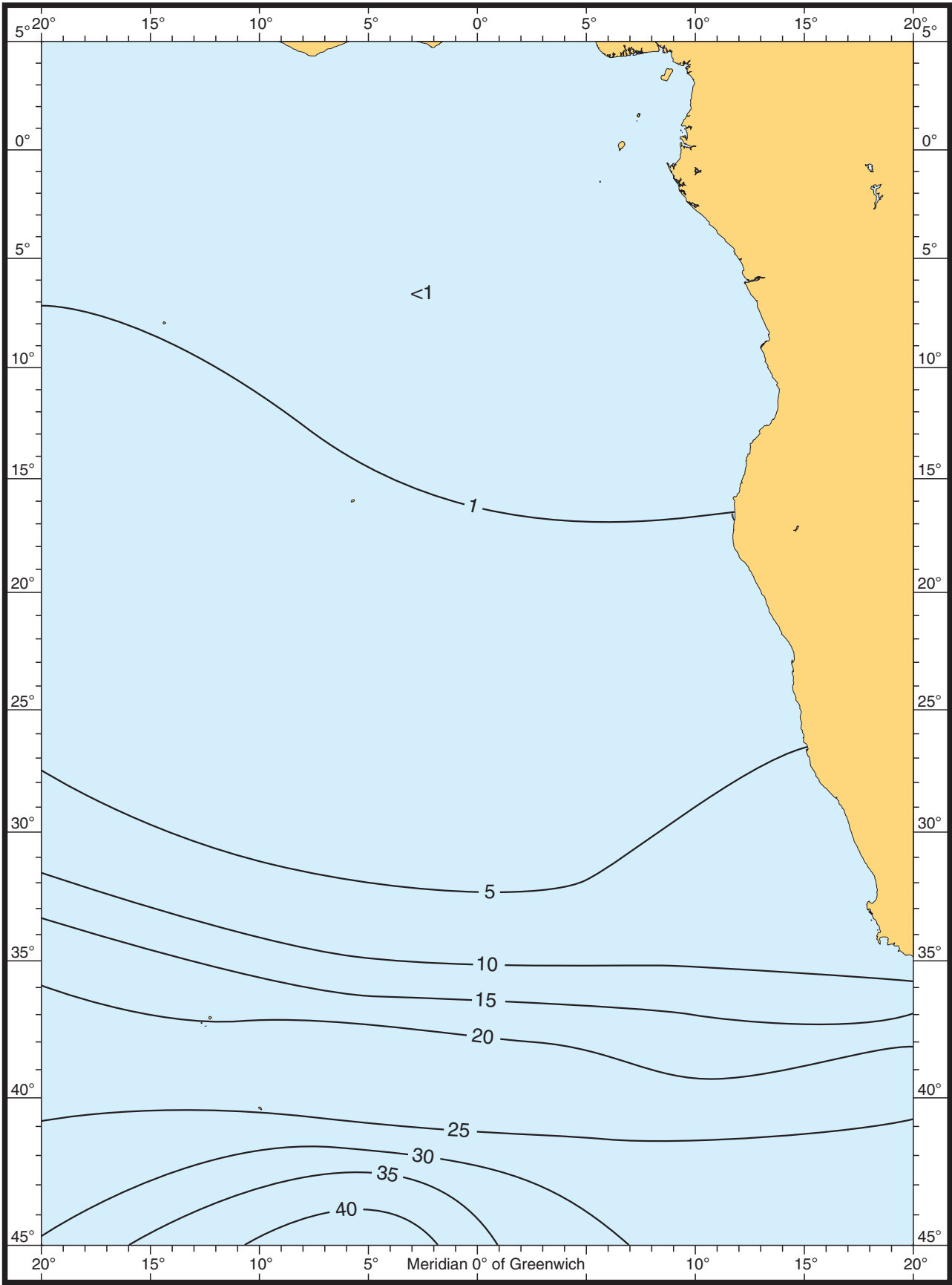
Thunderstorms

1.222

- 1 Thunderstorms are common between Cameroon and N Angola, and many are violent and prolonged. The annual frequency steadily decreases from around 200 in the extreme NE of the area to around 30 in N coastal region of Angola. Thunderstorms are rare in the coastal region of Namibia and with around 3 to 9 per year near Cape Town. Over the oceanic islands, thunderstorms are rare. See the Climatic Tables (1.226) for the mean monthly frequency of thunderstorms at a number of coastal stations within the area.



Percentage frequency of occurrence of winds of force 7 and more - JANUARY (1.219.1)



Percentage frequency of occurrence of winds of force 7 and more - JULY (1.219.2)

Fog and visibility

1.223

- 1 Poor visibility in the Bight of Biafra may at times be caused by dust carried by the *Harmatten* (1.218) N to NE wind, particularly between December and March. In this area, the frequency of occurrence of visibility below 5 miles is around 10% but most of these low visibility reports are due to heavy thundery showers, which occur between June and October.
- 2 Extensive coastal areas to the S of the River Congo are affected by low cloud and/or sea fog and is the result of the warm over lying air being cooled by the cold Benguela Current. The low cloud and/or sea fog usually thickens overnight then lifts and burns off during the morning but may persist further offshore and around exposed headlands. This fog/low cloud is called *Cacimbo* in Angola and is intensified by the upwelling of cold water associated with the Benguela Current. The *Cacimbo* is most common off Angola between May and August but may form in coastal waters between 20° and 30°S in any month. Further S it is most frequent between December and April.
- 3 Over the ocean fog is rare N of 30°S, occurring on less than 2% of occasions. The frequency increases to around 6% to the S of 40°S although fog data is sparse.

Air temperature

1.224

- 1 Over the ocean in February, the mean air temperature decreases from around 28°C in the NE of the area to around 12° to 13°C in the extreme S. In August, usually the coolest month, the mean air temperature in the extreme N of the area is between 24° and 25°C and in the extreme S between 9° and 10°C. There is a noticeable drop in air temperature in coastal waters between 20° and 30°S due to the cold Benguela Current, with mean temperatures of around 18°C in February and 13°C in August. In all months, the mean air temperature over the ocean is usually within 1°C of the corresponding sea surface temperature but may vary by 3° to 5°C near the African coast.
- 2 In coastal areas, in February, the average daily maximum temperature is around 33°C in the N, and between 20° and 24°C in the S. In August the average daily maximum temperatures are 28°C in the N, and between 16° and 18°C in the S. Maximum temperatures usually occur around late morning before sea breezes set in and minimum just before sunrise. Whenever hot dry E winds reach the coast temperatures may on occasions reach around 40°C, particularly in the coastal areas of Namibia and S Angola.

- 3 Over the oceanic islands, the annual average daily maximum temperature on Ascension Island varies between 27° and 31°C and on Gough Island between 11° and 18°C.

Humidity

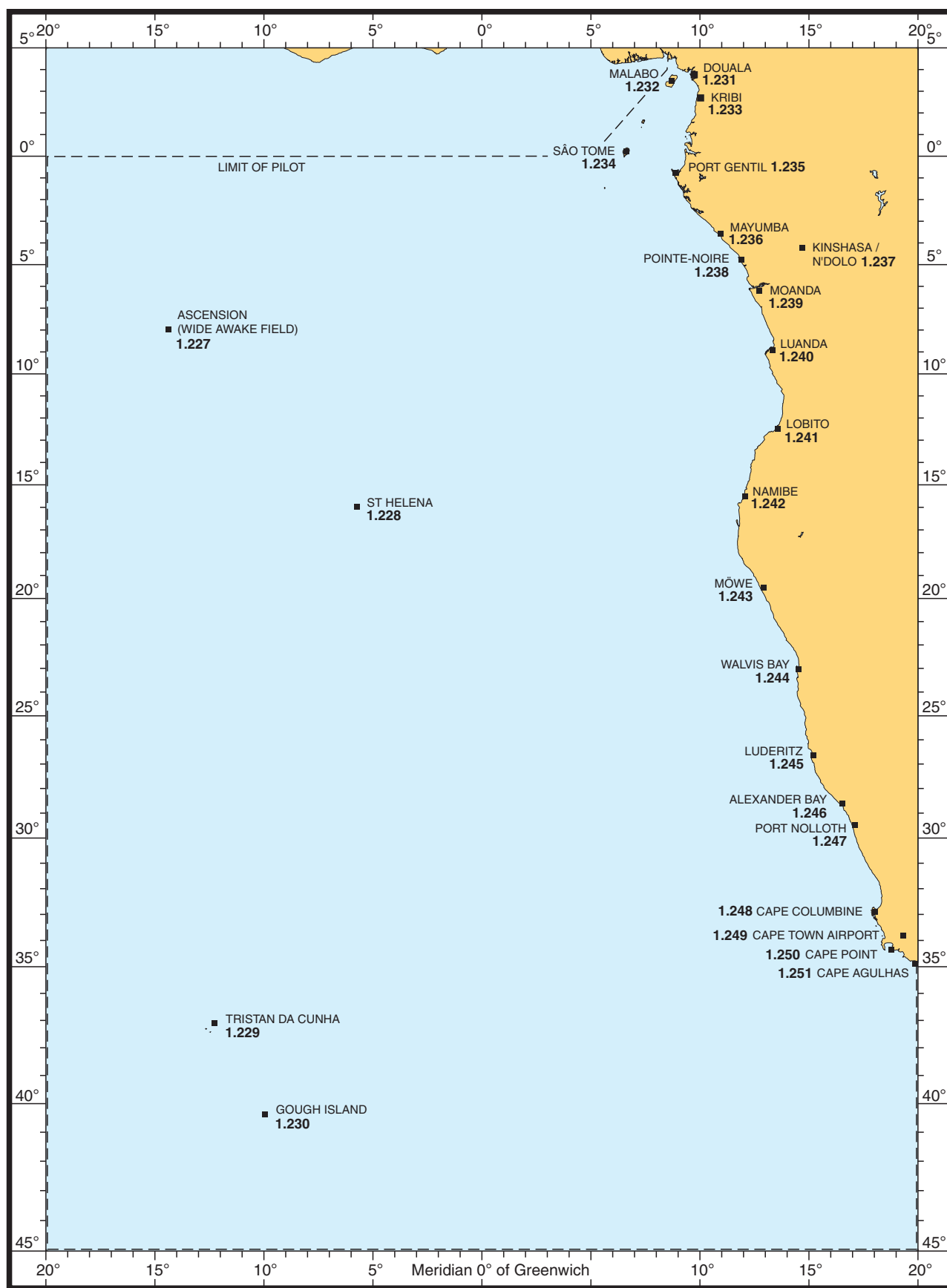
1.225

- 1 Humidity is closely related to air temperature and generally decreases as the temperature increases. During the early morning, when the air temperature is normally at its lowest, the humidity is generally at its highest, and falls to a minimum in the afternoon.
- 2 Over the ocean the mean value of the humidity in January is around 82% in the extreme NW of the area and 79% in the extreme NE. It then decreases to around 75% at around 20°S then 73% near 27°S, then increases to around 80% towards the extreme SW of the area. In the region of the Benguela Current the humidity averages around 82%. In July the mean humidity is around 80% in the extreme NW of the area and 83% in the extreme NE. It then decreases to around 75% at around 6°S, 72% at 20°S, then increase again to 75% at around 35°S and to 80% at about 43°S. In the region of the Benguela Current the mean humidity is around 81%.
- 3 When dry hot E to NE Berg winds affect coastal areas to the S of Angola, the humidity may fall to less than 20%.

CLIMATIC TABLES

1.226

- 1 The tables 1.227 to 1.251 give data for several coastal stations (see diagram 1.226) that regularly undertake weather observations. Some of these stations have been re-sited and so the position given is the latest available. It is emphasised that these data are average conditions and refer to the specific location of the observing station and therefore may not be totally representative of the conditions over the open sea or in approaches to ports in their vicinity.
- 2 The following comments briefly list some of the differences to be expected between conditions over the open sea and the nearest reporting station. See *The Mariner's Handbook* for further details.
 - Wind speeds tend to be higher at sea than on land, although funnelling in narrow inlets can result in an increase in wind strength.
- 3 Precipitation along mountainous wind-facing coasts can be considerably higher than offshore. Similarly precipitation in the lee of high ground is generally less.
 - Air temperature over the sea varies less than over the land.
 - Topography has a marked effect on local conditions.



Location of climatic stations (1.226)

1.227

WMO No 61902

WIDE AWAKE FIELD (ASCENSION ISLAND) (7° 58' S, 14° 24' W) Height above MSL – 79 m
Climatic Table compiled from 18 to 30 years observations, 1960 to 2000

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																		Mean wind speed		Number of days with				
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0600	1500	0600	1500	Average fall	No. of days with 0.1mm or more	0600										1200								0600	1500	Gale	Fog	Thunder		
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm							
January	hPa 1013	°C 29	°C 23	°C 30	°C 22	% 80	% 63	Oktas 4	Oktas 4	mm 6	mm 4	⊕	⊕	62	38	⊕	0	0	0	0	⊕	0	31	67	1	0	0	0	0	⊕	0	11	17	1	⊕	⊕
February	1013	30	24	31	23	81	63	3	3	5	3	1	1	58	39	1	0	0	⊕	⊕	0	0	27	72	1	⊕	0	⊕	0	⊕	11	16	1	⊕	0	
March	1012	31	25	31	24	80	64	3	4	27	5	⊕	⊕	57	41	1	0	⊕	0	⊕	0	⊕	32	66	1	0	⊕	⊕	0	11	17	⊕	0	⊕		
April	1012	30	25	31	24	79	64	4	4	27	7	⊕	1	59	40	⊕	0	0	0	⊕	⊕	0	41	58	1	0	0	⊕	0	12	17	⊕	⊕	⊕		
May	1014	30	25	31	23	76	61	3	3	10	5	1	⊕	53	44	1	⊕	0	⊕	⊕	⊕	0	40	58	1	⊕	⊕	0	0	12	17	2	⊕	⊕		
June	1015	29	24	29	22	73	60	3	3	11	5	1	1	55	43	1	0	0	0	0	0	0	40	57	3	0	0	0	0	13	17	1	⊕	0		
July	1016	28	23	29	21	73	61	4	3	16	7	0	0	62	38	1	0	0	0	0	0	0	43	55	1	0	0	0	0	13	17	1	⊕	0		
August	1017	27	22	28	20	75	62	5	4	7	4	0	⊕	60	38	2	0	0	0	0	0	0	48	49	2	0	0	0	0	13	16	2	⊕	0		
September	1016	27	22	28	20	76	63	6	5	8	5	⊕	1	63	35	1	0	0	0	0	⊕	0	49	49	1	⊕	⊕	0	⊕	13	17	1	⊕	0		
October	1015	27	22	28	20	76	62	6	5	4	3	0	⊕	64	36	⊕	0	0	0	0	⊕	0	41	58	1	⊕	0	0	0	12	17	1	⊕	0		
November	1014	27	22	28	21	79	65	6	5	7	4	⊕	0	63	36	1	0	0	0	0	⊕	⊕	42	56	1	0	0	0	0	12	17	⊕	⊕	⊕		
December	1013	28	23	29	21	79	63	5	4	4	3	⊕	⊕	61	38	⊕	⊕	0	⊕	0	⊕	0	34	64	2	0	0	0	0	12	16	1	⊕	⊕		
Means	1014	29	23	31*	20§	77	–	4	4	–	–	⊕	⊕	–	–	–	⊕	⊕	⊕	⊕	⊕	⊕	39	59	2	⊕	⊕	⊕	⊕	12	17	–	–	–		
Totals	–	–	–	–	–	–	63	–	–	132	55	–	–	60	39	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	11	⊕	⊕		
Extreme values	–	–	–	32†	19‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
No. of years observations	18	18				18		18		30		18										18								18		18	18	18		

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.228

WMO No 61901

ST. HELENA ISLAND (15° 56' S, 5° 40' W) Height above MSL – 436 m
Climatic Table compiled from 18 to 30 years observations, 1960 to 2000

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																				Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0600	1500	0600	1500	Average fall	No. of days with 0.1mm or more	0600										1200										0600	1500	Gale	Fog	Thunder
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm							
	hPa	°C	°C	°C	°C	%	%	Oktas		mm		N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	Knots						
January	1016	23	18	24	16	90	75	7	6	57	14	0	0	15	82	3	0	0	⊕	0	⊕	⊕	37	62	1	0	0	0	0	12	13	⊕	3	0		
February	1015	24	19	26	17	91	75	7	6	84	9	⊕	⊕	11	82	6	⊕	0	0	⊕	0	2	35	62	1	0	0	⊕	0	11	13	⊕	3	⊕		
March	1015	24	19	26	17	89	76	7	6	111	9	0	0	13	82	4	1	0	0	1	0	2	30	67	1	0	0	0	0	12	14	0	3	⊕		
April	1016	23	19	25	17	89	77	7	6	73	12	0	⊕	21	71	7	0	0	0	⊕	⊕	2	34	62	2	0	0	0	⊕	12	13	⊕	2	0		
May	1018	22	17	24	15	85	75	6	6	75	14	⊕	1	23	66	7	1	0	0	2	⊕	3	36	56	4	⊕	0	0	0	12	13	⊕	2	⊕		
June	1020	20	16	22	14	85	76	6	6	88	10	⊕	⊕	22	67	7	1	1	⊕	1	⊕	3	40	54	2	⊕	0	⊕	0	12	13	⊕	2	0		
July	1021	19	15	21	13	84	77	7	6	96	11	0	⊕	23	69	5	1	⊕	⊕	1	⊕	4	32	60	4	0	0	0	0	13	14	0	3	⊕		
August	1021	18	14	20	13	85	78	7	7	79	12	⊕	1	18	75	5	⊕	0	⊕	1	⊕	1	31	64	3	0	0	0	0	14	15	⊕	4	⊕		
September	1019	18	14	20	13	86	79	7	7	61	11	⊕	⊕	13	80	5	1	⊕	0	⊕	0	2	26	69	3	⊕	0	0	⊕	14	15	1	5	⊕		
October	1019	19	14	21	13	87	79	7	7	47	14	0	⊕	10	86	3	⊕	0	0	⊕	0	1	27	72	1	0	0	0	0	15	15	1	4	⊕		
November	1018	20	15	22	14	88	77	7	7	30	16	0	0	9	87	3	0	0	1	1	⊕	1	31	67	1	0	0	0	0	14	14	1	3	⊕		
December	1017	21	16	23	15	88	75	7	6	36	16	0	0	14	84	1	0	1	⊕	0	⊕	1	33	65	⊕	0	0	⊕	0	13	14	⊕	3	⊕		
Means	1018	21	16	26*	12§	87	76	7	6	–	–	⊕	⊕	16	78	5	⊕	⊕	⊕	1	⊕	2	33	63	2	⊕	0	⊕	⊕	13	14	–	–	–		
Totals	–	–	–	–	–	–	–	–	–	837	148	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	37	⊕		
Extreme values	–	–	–	30†	10‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
No. of years observations	18	18				18		18		30		18										18										18		18	18	18

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.229

TRISTAN DA CUNHA (37° 03' S, 12° 19' W) Height above MSL – 60 m
Climatic Table compiled from 11 to 18 years observations, 1943 to 1970

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																				Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0900	1500	0900	1500	Average fall	No. of days with 1mm or more	0900										1500										0900	1500	Gale	Fog	Thunder
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm							
January	hPa 1018	°C 20	°C 15	°C 22	°C 11	% 81	% 78	Oktas 5		mm 97	11	11	8	3	5	9	23	21	18	2	14	6	4	4	9	15	21	24	1	Knots 14 15		⊕	1			
February	1018	20	16	23	11	82	77	6	5	116	12	13	7	4	8	12	18	18	19	1	10	7	5	8	12	17	22	19	0	14	14	⊕	2			
March	1018	19	15	23	10	78	76	6	5	141	13	15	6	5	8	15	16	20	15	0	12	8	4	7	13	19	19	18	1	15	15	⊕	1			
April	1017	18	14	21	9	80	77	6	5	127	14	13	5	5	5	13	18	23	17	1	11	7	3	5	11	21	24	17	1	17	17	2	1			
May	1016	16	12	19	7	80	78	6	6	162	18	9	6	3	7	16	20	23	15	1	11	5	4	6	13	18	23	18	2	17	17	3	1			
June	1018	15	11	18	6	79	78	6	6	151	17	8	8	3	8	13	18	24	17	1	10	7	5	7	11	20	21	19	0	18	18	2	2			
July	1019	14	10	17	5	80	79	6	6	162	18	10	5	4	6	12	19	25	18	1	9	6	3	5	9	22	25	20	1	18	20	3	1			
August	1018	14	9	17	5	80	78	6	6	169	20	9	5	5	4	16	21	23	17	0	8	5	5	3	12	20	27	20	0	18	19	3	1			
September	1019	14	10	17	6	81	78	6	6	187	18	10	4	7	5	10	18	17	19	1	10	6	6	7	16	19	18	17	1	17	18	2	1			
October	1018	15	11	18	7	82	78	6	6	155	17	10	6	7	7	13	19	19	18	1	11	7	8	9	11	18	21	15	0	17	18	2	2			
November	1017	17	13	19	8	81	79	6	6	131	14	11	5	4	4	8	22	23	22	1	14	7	4	4	7	19	24	20	1	16	17	1	1			
December	1017	19	14	21	9	81	78	6	5	103	12	12	6	3	4	8	25	22	19	1	13	6	2	2	7	20	26	23	1	15	16	⊕	1			
Means	1018	17	13	23*	4§	80	78	6	6	–	–	11	6	4	6	13	20	21	18	1	11	6	4	6	11	19	23	19	1	16	17	–	–			
Totals	–	–	–	–	–	–	–	–	–	1701	184	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	19	15	–			
Extreme values	–	–	–	25†	3‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–			
No. of years observations	17	17				17		17		18/17		11										11										11		17	17	–

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.230

WMO No 68906

GOUGH ISLAND (40° 21' S, 09° 53' W) Height above MSL – 54 m
Climatic Table compiled from 18 to 30 years observations, 1960 to 2000

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																		Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0600	1200	0600	1200	Average fall	No. of days with 1mm or more	0600										1200								0600	1200	Gale	Fog	Thunder
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm					
January	hPa 1015	°C 18	°C 12	°C 24	°C 7	% 84	% 77	Oktas 7	6	mm 210	16	15	6	3	2	5	17	21	18	13	15	6	5	4	7	20	24	15	4	12	14	1	2	⊕
February	1017	17	12	23	7	84	77	6	6	183	13	15	7	2	2	4	18	24	16	13	13	10	3	5	8	18	23	14	6	11	12	1	2	0
March	1016	17	12	23	7	85	79	6	6	254	18	19	6	2	2	8	17	19	15	12	15	11	5	4	8	18	19	14	6	11	12	1	3	⊕
April	1015	15	11	20	5	84	79	6	6	276	19	14	8	3	2	5	17	19	23	11	13	10	4	3	6	17	23	14	9	12	12	1	3	⊕
May	1013	14	9	19	4	84	80	6	6	286	21	15	8	1	3	5	15	23	21	9	16	11	3	3	6	18	17	18	8	12	12	2	2	⊕
June	1013	12	8	17	3	84	81	6	7	310	22	14	7	1	2	7	18	25	20	7	11	8	3	1	5	21	22	19	8	13	13	1	1	⊕
July	1015	11	7	16	2	83	80	6	7	273	23	16	6	2	4	5	20	21	20	7	14	8	3	4	5	17	25	18	6	13	13	1	1	⊕
August	1016	11	7	16	2	83	79	6	7	304	21	17	7	3	3	6	16	23	20	7	15	11	4	4	7	18	19	15	6	12	12	1	2	⊕
September	1015	12	7	17	2	82	77	6	6	270	20	13	5	3	3	6	19	22	19	11	10	8	4	3	9	20	22	17	7	12	12	1	1	⊕
October	1017	13	8	19	3	83	77	7	6	294	20	16	7	2	2	4	15	22	21	10	13	10	4	3	8	15	20	19	9	11	12	1	4	⊕
November	1016	14	9	20	5	84	77	6	6	262	20	12	8	3	2	6	13	25	16	14	13	9	6	3	7	18	20	17	7	10	12	1	3	⊕
December	1014	17	11	22	7	85	78	6	6	241	18	15	7	3	3	4	14	19	20	14	15	9	6	4	6	15	22	17	6	12	13	2	3	0
Means	1015	14	9	25*	0§	84	78	6	6	–	–	15	7	2	2	5	17	22	19	11	14	9	4	3	7	18	21	17	7	12	12	–	–	–
Totals	–	–	–	–	–	–	–	–	–	3163	231	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	14	27	⊕
Extreme values	–	–	–	27†	–3‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	18	18				18		18		30		18										18								18		18	18	18

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.231

WMO No 64910

DOUALA (4° 00' N, 9° 44' E) Height above MSL – 9 m
Climatic Table compiled from 18 to 30 years observations, 1960 to 2000

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																		Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0700	1300	0700	1300	Average fall	No. of days with 1mm or more	0700										1300								0700	1300	Gale	Fog	Thunder
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm					
January	hPa	°C	°C	°C	°C	%	%	Oktas		mm																								
February	1010	33	23	34	22	97	64	7	6	36	5	⊕	1	⊕	1	0	⊕	0	⊕	97	2	1	⊕	4	20	30	12	1	30	<1	4	⊕	3	7
March	1009	33	24	35	22	96	62	7	6	64	9	1	0	1	2	0	⊕	0	⊕	96	1	1	1	4	21	40	13	2	18	<1	5	0	1	11
April	1009	33	24	35	22	96	65	7	6	168	16	2	1	1	2	0	⊕	⊕	0	95	2	1	1	5	15	44	12	3	16	<1	5	0	⊕	18
May	1009	32	24	35	22	97	69	7	7	230	18	2	1	3	1	1	⊕	⊕	1	91	2	2	2	3	11	31	6	5	39	<1	4	0	⊕	20
June	1010	32	23	34	22	97	70	7	7	272	21	2	1	2	2	1	0	0	1	91	2	1	5	6	10	30	9	4	34	<1	4	⊕	1	23
July	1012	31	23	33	21	97	75	7	7	429	23	1	2	1	⊕	1	1	⊕	⊕	93	1	0	1	3	18	34	9	2	33	<1	4	⊕	1	21
August	1013	29	23	31	20	97	81	8	7	695	27	1	⊕	0	2	2	2	⊕	1	92	1	⊕	2	3	19	36	7	1	30	<1	4	⊕	⊕	14
September	1013	28	23	30	21	98	83	8	7	755	30	⊕	1	1	2	5	1	⊕	0	90	⊕	⊕	1	4	16	42	7	2	28	<1	5	⊕	⊕	14
October	1012	29	23	31	21	97	79	8	7	626	27	1	2	1	2	⊕	1	⊕	1	91	⊕	0	⊕	6	22	39	9	2	21	<1	5	⊕	⊕	19
November	1011	30	23	32	21	97	75	7	7	410	25	1	1	1	2	1	1	0	⊕	94	⊕	2	2	4	12	38	8	2	33	<1	4	⊕	1	20
December	1010	32	23	33	21	97	71	7	7	134	13	1	1	⊕	⊕	1	⊕	0	1	95	1	0	⊕	2	11	41	11	2	31	<1	4	0	1	17
Means	1010	32	23	33	22	97	66	6	6	35	6	1	1	⊕	0	0	0	0	1	98	1	⊕	1	4	17	28	12	1	39	<1	3	0	1	9
Totals	1011	31	23	35*	19§	97	72	7	7	–	–	1	1	1	1	1	1	⊕	⊕	94	1	1	1	4	16	36	10	2	29	<1	4	–	–	–
Extreme values	–	–	–	–	–	–	–	–	–	3854	220	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	9	193
No. of years observations	18	18				18		18		30		18										18								18		18	18	18

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.232

WMO No 64810

MALABO (3° 45' N, 8° 46' E) Height above MSL – 56 m
Climatic Table compiled from 4 to 13 years observations, 1941 to 1970

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with				
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0630	1230			Average fall	No. of days with 0.1mm or more																	⊙		Gale	Fog	Thunder		
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W						NW	Calm
	hPa	°C	°C	°C	°C	%	%	Oktas	mm																									
January	1009	30	20	32	19	94	79		39	4																								
February	1010	31	21	34	18	93	78		34	4																								
March	1008	31	21	33	19	93	79		118	11																								
April	1009	30	21	32	19	93	82		186	15																								
May	1010	30	22	32	19	94	83		179	18																								
June	1011	29	21	31	19	95	85		223	19																								
July	1013	27	20	30	19	94	87		263	19																								
August	1014	28	20	30	18	95	88		181	17																								
September	1012	28	21	30	19	95	88		262	22																								
October	1009	28	21	30	19	95	87		231	19																								
November	1009	29	21	31	20	95	86		92	11																								
December	1010	30	21	31	19	94	83		30	4																								
Means	1010			*	§				–	–																								
Totals	–	–	–	–	–	–	–	–	1838	163	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Extreme values	–	–	–	35†	15‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
No. of years observations	4	13				13				13																		6						

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.233

WMO No 64971

KRIBI (2° 57' N, 9° 54' E) Height above MSL – 16 m
Climatic Table compiled from 18 to 30 years observations, 1960 to 2000

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																				Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0700	1300	0700	1300	Average fall	No. of days with 0.1mm or more	0700										1300										0700	1300	Gale	Fog	Thunder
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm							
January	hPa	°C	°C	°C	°C	%	%	Oktas		mm																										
February	1010	32	24	33	23	95	74	6	5	98	10	1	4	54	10	21	5	2	0	3	0	2	3	12	31	25	23	4	1	4	5	0	0	6		
March	1009	32	24	34	22	94	72	6	6	107	11	1	2	64	10	13	4	2	0	4	0	1	4	16	27	36	15	1	0	4	5	⊕	0	9		
April	1009	33	24	34	22	94	72	7	6	179	14	1	8	73	8	5	1	1	⊕	4	1	1	4	13	25	30	22	2	2	4	5	⊕	0	1		
May	1009	33	24	34	22	94	72	7	6	179	14	1	8	73	8	5	1	1	⊕	4	1	1	4	13	25	30	22	2	2	4	5	⊕	0	1		
June	1013	31	23	33	22	94	78	7	7	285	17	2	5	55	18	12	2	1	⊕	5	0	2	4	14	42	22	13	1	2	4	5	⊕	⊕	11		
July	1013	29	23	31	22	94	79	7	7	110	14	⊕	2	57	17	15	4	⊕	⊕	4	1	1	6	18	53	14	6	1	1	4	5	0	1	3		
August	1013	29	23	30	22	95	81	8	7	192	20	0	1	54	13	16	5	⊕	0	11	0	⊕	5	18	51	18	8	0	⊕	4	5	⊕	⊕	3		
September	1012	29	23	31	22	96	82	8	7	192	26	1	2	39	14	20	8	2	⊕	13	⊕	1	6	10	45	26	9	1	2	4	5	⊕	⊕	9		
October	1011	30	23	32	22	96	81	7	7	509	27	0	5	41	11	18	11	3	1	11	2	2	5	12	33	29	13	2	2	4	5	⊕	⊕	15		
November	1010	31	23	32	22	95	78	7	6	211	17	⊕	4	51	10	20	8	1	0	6	0	1	4	12	44	26	10	1	1	4	5	0	⊕	13		
December	1010	32	24	33	23	95	75	6	5	97	10	1	3	52	12	21	3	1	0	7	1	1	5	16	38	27	12	1	1	4	5	1	⊕	10		
Means	1011	31	23	35*	20§	95	77	7	6	–	–	1	4	56	12	14	5	2	⊕	6	1	2	5	13	35	26	15	2	1	4	5	–	–	–		
Totals	–	–	–	–	–	–	–	–	–	2848	207	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	2	129		
Extreme values	–	–	–	38†	19‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
No. of years observations	18	18				18		18		30		18										18										18		18	18	18

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.234

WMO No 61931

SÃO TOMÉ (00° 23' N, 6° 43' E) Height above MSL – 13 m
Climatic Table compiled from 9 to 30 years observations, 1941 to 1997

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																				Mean wind speed		Number of days with			
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0700	1300	0700	1300	Average fall	No. of days with 0.1mm or more	0900										1500										0700	1300	Gale	Fog	Thunder	
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm								
January	hPa	°C	°C	°C	°C	%	%	Oktas		mm																			Knots								
February	1010	30	22	31	21	96	78	7	7	79	9	9	4	5	13	24	16	9	5	15	15	8	12	24	23	4	3	10	1	4	4	0	0	10			
March	1010	31	23	32	22	95	76	7	7	86	9	7	2	6	14	25	15	9	6	16	11	8	13	28	22	7	4	6	1	3	6	0	0	9			
April	1009	31	23	33	22	94	75	7	6	138	12	8	6	7	15	29	13	7	6	8	15	8	8	24	24	6	4	10	1	4	8	⊕	0	13			
May	1009	31	23	32	22	97	76	7	7	137	13	7	5	8	19	33	12	5	4	7	13	7	10	25	26	6	6	6	1	3	8	⊕	0	21			
June	1011	30	22	31	21	94	79	7	7	127	11	4	4	6	24	42	11	3	2	4	8	6	8	24	41	4	2	7	0	3	7	0	0	6			
July	1013	29	22	30	20	91	77	7	6	18	2	3	3	3	20	57	8	2	2	2	7	5	6	26	48	4	1	3	0	5	5	0	0	0			
August	1014	28	20	29	19	92	70	7	5	<1	<1	3	4	4	19	53	10	3	3	2	9	5	6	24	45	6	2	2	1	8	8	0	0	0			
September	1014	29	22	30	20	92	75	7	7	1	1	7	5	6	17	44	9	2	4	6	11	10	13	25	31	3	2	3	2	4	7	0	0	0			
October	1013	29	22	30	20	94	73	7	6	36	5	10	10	12	17	29	8	2	6	6	13	13	13	22	25	3	3	6	2	2	6	0	0	0			
November	1012	29	21	30	20	96	77	7	7	101	12	13	10	10	18	26	7	4	4	8	11	11	11	23	25	6	4	7	2	2	7	0	0	3			
December	1011	29	21	30	20	96	77	7	7	100	13	9	6	9	17	34	8	2	4	11	13	5	6	27	29	5	4	8	3	3	6	0	0	8			
Means	1011	30	22	32*	18§	94	76	7	7	–	–	7	5	7	18	36	11	4	4	8	12	8	9	25	31	5	3	6	1	4	7	–	–	–			
Totals	–	–	–	–	–	–	–	–	–	923	97	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	0	81			
Extreme values	–	–	–	34†	14‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–			
No. of years observations	9	30/9				9		9		30		19										19										9		20	20	20	

* Mean of highest each year

§ Mean of lowest each year

† Highest recorded temperature

‡ Lowest recorded temperature

⊕ Rare

⊖ All observations

1.235

WMO No 64501

PORT GENTIL (0° 42' S, 8° 45' E) Height above MSL – 4 m
Climatic Table compiled from 18 to 30 years observations, 1960 to 2000

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																		Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0700	1300	0700	1300	Average fall	No. of days with 0.1mm or more	0700										1300								0700	1300	Gale	Fog	Thunder
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm					
January	hPa	°C	°C	°C	°C	%	%	Oktas	mm			0	1	6	6	18	19	3	4	43	2	2	2	2	22	55	10	3	3	3	8	⊕	1	11
February	1010	30	25	31	23	93	76	6	5	178		2	1	12	10	17	15	3	2	38	2	2	2	⊕	19	57	12	4	3	3	8	⊕	⊕	12
March	1010	31	25	32	22	93	76	6	5	267		1	4	11	9	18	16	4	2	35	3	3	3	2	22	52	13	1	1	3	8	⊕	1	14
April	1010	30	25	32	22	94	77	6	6	299		1	3	13	13	21	8	2	1	38	3	4	5	2	22	46	13	1	4	3	8	⊕	⊕	15
May	1011	29	25	31	23	94	79	6	5	151		⊕	⊕	8	12	31	16	3	0	30	2	1	2	2	35	49	7	1	3	4	8	0	1	10
June	1013	27	24	29	21	92	77	6	5	12		1	0	3	9	49	17	1	0	20	1	⊕	1	2	55	38	2	0	1	5	9	⊕	⊕	1
July	1014	26	22	27	20	91	75	6	5	3		0	⊕	2	7	58	18	1	0	14	⊕	0	0	1	56	41	1	1	⊕	5	10	0	⊕	⊕
August	1014	27	23	28	21	89	74	7	5	5		0	⊕	1	4	64	22	⊕	0	8	1	1	0	⊕	50	46	1	⊕	1	6	10	⊕	0	⊕
September	1013	28	24	29	22	89	75	7	6	32		0	⊕	2	3	54	33	⊕	0	8	1	0	0	1	38	57	3	0	0	6	10	⊕	0	⊕
October	1012	29	24	30	23	90	78	7	6	180		1	1	4	6	32	45	1	⊕	11	⊕	1	1	1	23	65	7	1	⊕	6	10	1	1	4
November	1011	29	24	30	22	94	81	7	6	352		1	1	7	6	29	27	3	1	26	⊕	⊕	2	1	32	57	5	1	2	4	8	1	1	11
December	1011	29	25	30	23	95	79	6	5	227		1	1	14	7	21	11	3	⊕	42	1	1	2	1	26	57	5	3	2	3	8	⊕	⊕	11
Means	1012	29	24	32*	19§	92	77	6	5	–	–	1	1	7	8	34	20	2	1	26	1	1	2	1	34	51	7	1	2	4	9	–	–	–
Totals	–	–	–	–	–	–	–	–	–	1954		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	5	89	
Extreme values	–	–	–	35†	17‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	18	18				18		18		30		18										18								18		18	18	18

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.236

WMO No 64503

MAYUMBA (3° 25' S, 10° 39' E) Height above MSL – 34 m
Climatic Table compiled from 17 to 30 years observations, 1960 to 2000

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																		Mean wind speed		Number of days with			
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0700	1300	0700	1300	Average fall	No. of days with 0.1mm or more	0700										1300								0700	1300	Gale	Fog	Thunder	
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm						
January	hPa	°C	°C	°C	°C	%	%	Oktas		mm																									
February	1009	30	24	31	22	96	79	7	6	237	14	0	1	1	6	0	0	0	0	92	0	0	0	0	0	2	8	2	88	<1	1	0	0	10	
March	1009	31	24	32	23	96	76	7	6	246	11	2	0	0	0	0	1	0	0	97	0	0	0	4	0	2	4	6	84	0	1	0	⊕	16	
April	1008	31	24	33	23	95	77	7	6	219	10	2	1	0	2	1	1	1	2	91	1	3	3	0	4	3	11	3	72	<1	2	0	⊕	18	
May	1008	31	24	33	23	95	76	7	5	126	9	0	0	0	3	2	0	0	1	93	0	0	0	0	9	9	18	4	61	<1	2	0	0	16	
June	1009	30	24	32	22	96	77	7	6	75	7	1	0	0	2	0	0	0	0	98	0	0	0	2	3	15	12	3	65	<1	2	1	⊕	23	
July	1013	28	22	30	20	96	76	7	6	6	2	0	0	0	3	0	3	0	0	94	1	0	0	0	4	33	7	0	54	<1	3	1	1	30	
August	1013	27	21	28	19	95	74	7	5	<1	1	0	0	1	2	3	0	0	1	94	0	1	0	1	5	17	6	1	69	<1	2	⊕	⊕	30	
September	1013	27	21	28	20	95	73	7	6	6	2	0	0	0	5	2	1	0	1	91	0	0	0	1	6	21	9	0	62	<1	3	⊕	0	30	
October	1012	28	22	29	21	94	77	8	7	45	9	0	0	0	6	4	4	2	0	84	0	0	0	0	19	31	14	3	33	1	4	0	1	29	
November	1011	29	23	30	22	95	80	8	7	214	20	0	0	0	1	0	2	5	0	92	0	2	0	2	10	15	7	2	63	<1	2	0	⊕	28	
December	1010	29	24	31	23	96	83	7	6	336	19	0	0	0	0	0	0	0	0	100	0	0	0	2	8	16	3	0	72	0	2	⊕	⊕	22	
Means	1010	29	23	33*	19§	96	77	7	6	–	–	⊕	⊕	⊕	2	1	1	1	1	94	⊕	1	⊕	1	5	14	8	2	69	<1	2	–	–	–	
Totals	–	–	–	–	–	–	–	–	–	1674	117	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	276	
Extreme values	–	–	–	36†	17‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
No. of years observations	17	17				17		17		30		17										17								17		17	17	17	

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.237

WMO No 64211

KINSHASA/N'DOLO (4° 19' S, 15° 19' E) Height above MSL – 282 m
Climatic Table compiled from 11 to 22 years observations, 1941 to 1970

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with					
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0600	1200			Average fall	No. of days with 0.3 mm or more	0700								1300										Gale	Fog	Thunder			
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W						NW	Calm	
	hPa	°C	°C	°C	°C	%	%	Oktas	mm																										
January		31	21	34	19	93	72		126	8	1	1	2	6	9	18	18	5	40	6	21	2	3	4	33	25	5	1				2	5		
February		31	21	35	19	93	70		141	9	1	1	1	6	10	27	17	2	35	12	16	1	2	4	23	34	7	1				1	6		
March		32	21	35	19	93	69		169	12	0	1	1	5	14	18	16	3	41	13	22	3	2	5	21	24	6	4				1	9		
April		32	21	35	20	94	69		212	14	0	0	2	9	15	17	19	4	34	12	29	5	3	4	12	22	9	4				1	11		
May		31	21	34	19	93	71		137	10	2	2	1	7	16	19	17	5	31	11	26	2	2	6	17	24	6	6				4	8		
June		29	19	32	17	93	70		5	1	0	0	1	7	14	24	22	⊕	32	6	8	1	1	8	32	37	4	3				5	⊕		
July		28	17	31	15	91	65		1	⊕	0	1	1	6	11	21	18	0	42	2	1	1	0	3	43	44	5	1				2	⊕		
August		29	18	34	15	88	59		3	1	1	0	0	1	8	27	18	2	43	0	0	0	1	7	47	41	4	0				1	⊕		
September		30	20	34	18	87	59		33	4	1	0	0	5	12	36	26	1	19	2	5	1	1	4	33	47	6	1				1	2		
October		31	21	35	19	90	65		139	10	1	0	1	5	13	26	20	3	31	6	20	6	1	5	20	33	6	3				1	6		
November		31	21	34	20	93	70		235	15	0	1	2	5	13	26	17	3	33	13	31	6	2	3	12	23	5	3				⊕	10		
December		31	21	34	20	94	72		170	12	2	4	3	5	15	22	13	3	33	15	25	9	2	6	11	19	7	9				1	9		
Means		30	20	*	§	92	68		–	–	1	1	1	6	12	23	18	3	35	8	17	3	2	5	25	31	6	3				–	–		
Totals	–	–	–	–	–	–	–	–	–	–	1371	96	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	20	66	
Extreme values	–	–	–	37†	12‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
No. of years observations		20				20				20		11								11										–	–	–			

* Mean of highest each year
§ Mean of lowest each year
† Highest recorded temperature
‡ Lowest recorded temperature
⊕ Rare
⊖ All observations

1.238

WMO No 64400

POINTE-NOIRE (4° 49' S, 11° 54' E) Height above MSL – 17 m
Climatic Table compiled from 18 to 21 years observations, 1941 to 2000

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																		Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0700	1300	0700	1300	Average fall	No. of days with 0.1mm or more	0700										1300								0700	1300	Gale	Fog	Thunder
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm					
January	hPa	°C	°C	°C	°C	%	%	Oktas	mm			3	5	13	13	10	1	0	⊕	54	2	⊕	1	2	26	45	16	4	4	2	8	⊕	1	9
February	1010	30	24	32	22	94	72	7	6	197	14	5	10	16	9	4	2	1	3	51	2	1	2	3	13	49	22	6	3	2	8	0	1	13
March	1010	31	24	32	22	94	71	7	6	241	16	6	13	15	10	4	1	⊕	1	50	3	2	1	3	19	45	19	5	4	2	7	⊕	1	16
April	1010	31	24	33	22	94	72	7	6	186	15	5	8	17	11	7	1	1	1	49	2	1	2	5	21	47	18	3	3	2	7	⊕	⊕	14
May	1011	30	24	31	22	94	74	7	6	85	7	⊕	2	11	14	10	1	⊕	⊕	60	1	1	3	2	22	55	12	2	3	2	8	⊕	1	6
June	1014	27	21	29	18	94	70	6	5	1	1	⊕	1	7	13	10	2	0	0	67	1	0	1	1	29	55	13	1	1	1	8	0	3	⊕
July	1015	26	20	27	17	93	68	7	5	1	1	⊕	1	6	8	9	1	0	0	75	⊕	⊕	⊕	2	37	52	8	0	1	1	8	⊕	4	0
August	1015	26	20	28	18	91	70	7	6	2	4	1	1	3	11	15	4	1	⊕	65	⊕	0	1	1	32	56	9	1	1	1	8	0	1	⊕
September	1013	27	22	28	19	91	73	8	7	12	11	0	⊕	5	11	25	16	2	0	41	0	0	0	1	21	63	13	0	1	3	8	0	⊕	⊕
October	1012	28	24	29	22	89	73	8	7	81	19	⊕	2	3	13	30	18	5	0	29	1	⊕	0	1	20	61	15	1	1	4	8	⊕	⊕	3
November	1011	29	24	30	22	92	76	8	6	201	18	1	5	15	16	21	6	1	⊕	36	1	1	1	2	16	59	13	2	5	3	8	0	⊕	11
December	1011	29	24	31	22	93	75	7	6	137	12	1	3	11	14	12	3	0	1	56	1	1	1	2	28	49	12	3	2	2	7	0	0	9
Means	1012	29	23	33*	16§	93	72	7	6	–	–	2	4	10	12	13	4	1	1	53	1	1	1	2	24	53	14	2	2	2	8	–	–	–
Totals	–	–	–	–	–	–	–	–	–	1304	131	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	12	81
Extreme values	–	–	–	35†	13‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	18	18				18		18		21		18										18								18		18	18	18

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.239

WMO No 64201

MOANDA (5° 57' S, 12° 21' E) Height above MSL – 27 m
Climatic Table compiled from 10 to 20 years observations, 1941 to 1970

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																		Mean wind speed		Number of days with			
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0600	1200	0700	1300	Average fall	No. of days with 1 mm or more	0700										1300								0600	1500	Gale	Fog	Thunder	
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm						
	hPa	°C	°C	°C	°C	%	%	Oktas		mm		N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	Knots					
January		30	24	31	23	90	72			54	6	3	6	5	8	7	6	0	1	64	0	2	2	4	6	47	23	7	9				0	2	
February		31	24	32	23	91	71			125	9	3	10	11	14	3	6	0	1	52	0	1	1	4	4	53	14	7	16				0	4	
March		31	25	32	23	92	71			141	11	1	13	4	12	8	5	1	1	55	0	1	0	3	11	41	19	7	18				0	5	
April		31	24	32	23	92	73			169	13	1	17	8	5	7	4	2	2	54	1	2	2	4	7	49	7	7	21				⊕	4	
May		29	23	30	22	91	72			62	5	1	5	1	14	9	4	0	0	66	1	0	0	2	11	42	10	6	28				⊕	1	
June		27	21	28	19	88	68			⊕	⊕	⊕	6	1	16	14	6	0	0	57	1	0	0	3	6	40	12	4	34				1	0	
July		25	19	26	18	89	69			1	1	⊕	3	1	16	16	2	0	0	62	1	2	0	2	9	26	16	5	39				0	0	
August		25	20	26	18	88	70			1	1	2	5	3	16	17	5	0	1	51	0	1	0	1	10	42	19	10	17				⊕	0	
September		27	22	28	21	87	71			6	5	0	1	1	15	32	11	2	1	37	0	0	0	1	10	54	17	14	14				⊕	0	
October		29	24	30	23	87	73			37	10	0	2	1	8	33	20	0	1	35	0	0	1	2	14	59	16	4	4				3	1	
November		30	24	31	23	89	73			111	13	2	4	3	10	20	6	1	2	52	1	0	1	1	16	57	13	2	9				⊕	4	
December		30	24	31	23	91	72			91	6	4	6	5	12	10	7	0	0	56	1	1	4	3	16	45	7	4	19				0	3	
Means		29	23	33*	17§	90	71			–	–	1	6	4	12	15	7	1	1	53	1	1	1	2	10	46	14	6	19				–	–	
Totals	–	–	–	–	–	–	–	–	–	798	80	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4	24	
Extreme values	–	–	–	34†	15‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
No. of years observations		18				18		18		20		10										10										–	–	–	

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.240

WMO No 66160

LUANDA (8° 51' S, 13° 14' E) Height above MSL – 70 m
Climatic Table compiled from 20 to 30 years observations, 1941 to 1970

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																				Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0900	1500	0900	1500	Average fall	No. of days with 1 mm or more	0900										1500										0900	1500	Gale	Fog	Thunder
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm							
January	hPa 1010	°C 30	°C 24	°C 31	°C 22	% 80	% 75	Oktas 7	mm 4	mm 26	2	3	12	12	19	17	8	10	5	14	1	0	0	0	0	13	73	12	1	Knots 4 11		0	1	3		
February	1010	31	24	33	22	79	73	7	5	35	3	3	10	17	25	19	5	8	2	11	2	1	0	0	1	10	76	10	0	4	11	0	1	4		
March	1010	31	24	33	22	80	73	7	5	97	7	2	11	20	23	15	8	5	2	14	1	1	0	1	0	9	72	16	0	4	12	0	1	9		
April	1010	31	24	33	22	84	79	7	5	124	9	2	10	21	24	17	7	3	4	12	2	1	1	0	1	7	75	11	2	5	11	0	1	11		
May	1012	29	23	31	21	83	77	7	3	29	2	2	10	22	21	14	8	4	5	14	1	0	0	0	0	10	77	12	0	4	10	0	5	2		
June	1014	27	20	28	17	83	76	6	2	⊕	⊕	1	15	21	25	13	4	2	5	14	1	0	1	0	0	9	74	15	0	3	10	0	6	0		
July	1015	24	18	26	16	84	77	7	2	⊕	⊕	2	12	27	25	7	4	3	4	16	2	1	0	0	0	9	71	17	0	3	9	0	8	0		
August	1015	24	18	26	16	85	79	7	3	2	1	2	16	29	24	5	3	5	2	14	4	0	0	0	0	11	61	23	1	4	8	0	9	⊕		
September	1014	26	20	27	18	83	78	7	3	3	2	6	11	16	22	11	10	9	5	10	1	1	0	0	1	14	68	15	0	4	10	0	4	⊕		
October	1012	28	22	29	20	82	77	7	4	6	2	5	5	4	12	14	19	23	9	9	1	0	0	0	3	18	69	7	2	5	13	0	2	1		
November	1011	29	23	31	21	81	77	7	4	34	3	7	7	6	12	11	14	21	10	12	0	0	0	1	3	20	71	3	1	4	13	0	1	2		
December	1011	30	23	31	22	80	76	7	4	23	4	7	11	9	14	16	10	12	9	12	1	2	1	1	3	15	70	7	0	4	12	0	1	2		
Means	1012	28	22	34*	16§	82	77	7	4	–	–	4	11	17	21	13	8	9	5	12	1	1	⊕	⊕	1	12	71	13	1	4	11	–	–	–		
Totals	–	–	–	–	–	–	–	–	–	379	35	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0	40	34		
Extreme values	–	–	–	37†	14‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
No. of years observations	30	30				30		30		30		20										20										30		30	30	30

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.241

WMO No 66305

LOBITO (12° 22' S, 13° 32' E) Height above MSL – 3 m
Climatic Table compiled from 20 to 28 years observations, 1941 to 1970

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0900	1500	0900	1500	Average fall	No. of days with 1 mm or more	0900										1500						0900	1500	Gale	Fog	Thunder
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W					
January	hPa 1011	°C 28	°C 22	°C	°C	% 77	%	Oktas		mm 8	2																	Knots				
February	1010	29	23			75				31	3																					
March	1010	31	24			77				82	7																					
April	1011	30	24			79				49	5																					
May	1012	28	22			78				5	1																					
June	1015	26	19			79				0	0																					
July	1016	23	17			80				0	0																					
August	1015	23	17			81				0	0																					
September	1014	24	18			80				2	1																					
October	1013	26	21			80				8	2																					
November	1012	28	22			78				16	3																					
December	1011	28	22			77				20	3																					
Means	1013	27	21	–*	–§	78				–	–																					
Totals	–	–	–	–	–	–	–	–	–	221	27	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Extreme values	–	–	–	36†	10‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
No. of years observations	20	20				20				28																				–	–	–

* Mean of highest each year

§ Mean of lowest each year

† Highest recorded temperature

‡ Lowest recorded temperature

⊕ Rare

⊖ All observations

1.242

WMO No 66422

NAMIBE (15°12'S, 12°09'E) Height above MSL -45 m
Climatic Table compiled from 10 to 30 years observations, 1941 to 1970

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																				Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0900	1500	0900	1500	Average fall	No. of days with 1 mm or more	0900										1500										0900	1500	Gale	Fog	Thunder
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm							
January	hPa	°C	°C	°C	°C	%	%	Oktas	mm																											
February	1012	26	19	30	16	79	70	5	4	8	1	3	1	0	1	24	16	31	3	21	0	0	0	0	16	39	43	1	1	2	7	0	0	0		
March	1011	28	20	31	17	78	69	5	4	15	2	1	1	1	2	25	8	34	3	25	0	0	0	0	17	33	48	1	1	2	7	⊕	⊕	⊕		
April	1012	29	20	31	17	77	68	5	4	14	2	2	1	2	3	33	11	19	4	25	1	0	1	0	21	35	40	1	1	2	5	⊕	⊕	1		
May	1013	28	19	33	15	79	59	4	3	7	1	4	1	1	5	37	12	13	8	19	0	0	0	0	16	37	42	3	2	2	6	⊕	1	1		
June	1016	25	15	32	11	82	71	4	2	0	0	5	1	3	9	35	13	6	5	23	2	0	3	2	18	45	23	4	3	2	6	⊕	3	⊕		
July	1016	22	13	29	10	84	74	5	3	0	0	6	1	3	8	28	17	3	4	30	2	1	2	1	16	38	28	7	5	2	5	⊕	3	0		
August	1017	20	13	24	9	85	76	6	4	0	0	6	3	2	7	19	22	5	4	32	2	1	1	0	17	43	27	5	4	1	5	0	2	0		
September	1017	21	14	24	10	85	75	6	4	0	0	4	5	1	5	24	21	4	5	31	1	0	0	1	18	34	34	7	5	1	5	0	1	0		
October	1016	22	15	25	11	83	74	6	4	0	0	4	2	2	3	22	21	11	4	31	0	1	1	0	17	36	34	6	5	1	5	0	1	0		
November	1014	24	16	27	13	80	72	5	4	1	⊕	2	0	0	2	26	22	22	8	18	1	0	0	1	18	38	35	3	4	2	6	0	⊕	0		
December	1013	26	17	29	14	75	70	5	3	2	1	5	0	1	1	29	25	23	7	9	0	0	0	0	19	39	36	3	3	3	8	0	0	0		
December	1012	26	18	29	15	77	69	5	4	2	1	4	0	0	1	30	22	27	4	12	0	1	1	0	17	44	34	2	1	3	8	⊕	⊕	0		
Means	1014	25	17	34*	9§	80	71	5	4	–	–	4	1	1	4	28	18	16	5	23	1	⊕	1	⊕	18	38	35	4	3	2	6	–	–	–		
Totals	–	–	–	–	–	–	–	–	–	49	8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	11	2			
Extreme values	–	–	–	39†	6‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
No. of years observations	30	30				30		30		30		10										10										10		24	24	24

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.243

WMO No 68016

MÖWE (19° 20' S, 12° 43' E) Height above MSL – 0 m
Climatic Table compiled from 3 to 18 years observations, 1969 to 2000

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																				Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0800	1400	0800	1400	Average fall	No. of days with 1 mm or more	0800										1400										0800	1400	Gale	Fog	Thunder
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm							
January	hPa 1013	°C 21	°C 17	°C 24	°C 13	% 92	% 87	Oktas 6	Oktas 3	mm 3	1	1	0	⊕	6	58	13	1	1	21	⊕	0	0	0	29	52	13	4	3	6	11	⊕	1	0		
February	1012	22	17	28	15	94	86	6	3	5	1	1	0	2	7	58	11	1	1	21	1	0	0	0	31	52	13	2	3	6	11	⊕	1	0		
March	1012	21	17	25	14	94	87	6	4	21	2	1	⊕	⊕	5	68	11	1	1	15	⊕	0	⊕	1	37	51	7	2	2	7	13	⊕	2	⊕		
April	1013	19	15	27	13	95	88	6	4	0	0	2	⊕	1	9	53	7	⊕	⊕	18	2	⊕	1	⊕	47	41	5	2	2	7	14	⊕	4	0		
May	1015	20	14	33	11	95	86	5	3	1	⊕	2	1	6	8	55	3	1	⊕	25	5	1	3	⊕	49	32	2	2	5	6	12	⊕	6	⊕		
June	1017	19	12	33	9	93	86	5	3	0	0	6	1	12	13	39	4	0	⊕	25	6	1	7	1	36	32	4	3	10	6	12	⊕	7	0		
July	1018	18	12	34	9	92	86	5	4	0	0	6	2	10	15	41	3	1	1	22	6	1	6	0	38	34	5	5	5	7	13	⊕	5	0		
August	1018	16	12	25	9	95	89	7	5	1	⊕	7	1	4	11	51	7	1	1	18	6	⊕	2	1	33	36	11	6	6	7	12	⊕	5	⊕		
September	1016	16	12	20	10	96	92	7	4	0	0	5	⊕	1	6	62	11	1	1	13	5	0	0	⊕	36	39	11	5	4	8	12	⊕	3	⊕		
October	1015	17	13	21	11	93	90	7	3	0	0	1	⊕	1	5	68	17	1	⊕	7	2	0	1	0	36	50	9	2	1	10	13	⊕	2	⊕		
November	1014	18	14	21	12	92	89	7	3	0	0	2	⊕	⊕	4	70	14	1	1	9	1	0	⊕	0	42	43	9	3	2	10	13	⊕	2	⊕		
December	1014	20	16	23	13	92	87	6	2	0	0	⊕	0	⊕	5	70	15	1	⊕	9	1	⊕	⊕	0	35	50	9	3	1	9	12	⊕	1	⊕		
Means	1015	19	14	35*	8§	94	88	6	3	–	–	3	⊕	3	8	59	9	1	1	16	3	⊕	2	⊕	38	43	8	3	3	7	12	–	–	–		
Totals	–	–	–	–	–	–	–	–	–	31	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	39	⊕		
Extreme values	–	–	–	41†	6‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
No. of years observations	18	18				18		18		3		18										18										18		18	18	18

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.244

WMO No 68104

WALVIS BAY (PELICAN POINT) (22° 53' S, 14° 26' E) Height above MSL – 0 m
Climatic Table compiled from 18 to 30 years observations, 1960 to 2000

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																		Mean wind speed		Number of days with				
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0800	1400	0800	1400	Average fall	No. of days with 1 mm or more	0800										1400								0800	1400	Gale	Fog	Thunder		
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm							
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																										
January	1011	21	16	25	13	92	82	7	4	2	⊕	23	2	1	2	13	7	6	20	27	2	0	⊕	⊕	6	36	41	12	2	6	13	1	3	0		
February	1011	21	16	25	13	93	83	7	4	2	⊕	22	3	1	3	16	7	3	13	31	⊕	0	⊕	1	6	48	32	11	1	6	14	1	4	0		
March	1011	21	15	28	12	94	84	6	4	3	1	19	3	1	6	16	5	3	11	36	1	⊕	⊕	⊕	11	53	24	6	5	5	14	2	8	⊕		
April	1012	19	13	30	11	94	83	6	3	2	⊕	15	5	4	7	22	4	2	8	33	1	1	0	0	15	60	15	6	2	5	15	2	13	⊕		
May	1014	21	12	31	9	90	79	5	2	1	⊕	9	6	7	10	25	2	1	5	36	3	2	⊕	1	19	51	16	5	5	6	14	1	13	⊕		
June	1016	20	11	31	6	84	74	4	2	<1	⊕	10	11	14	10	19	3	2	3	28	4	5	1	1	17	44	16	8	6	7	13	1	10	⊕		
July	1017	19	11	30	6	84	75	4	2	<1	⊕	13	13	12	12	17	2	1	5	25	5	3	1	2	20	43	13	7	5	7	14	2	10	⊕		
August	1017	18	10	28	7	91	80	6	3	1	⊕	16	5	6	12	19	3	2	8	30	3	1	⊕	1	17	46	17	9	5	6	14	3	10	0		
September	1015	17	11	25	7	95	85	6	4	1	⊕	18	6	5	10	20	3	1	9	29	3	⊕	1	1	15	51	19	8	3	6	16	2	9	0		
October	1014	18	12	25	9	94	83	7	3	1	⊕	18	4	3	9	20	5	4	9	27	3	⊕	0	1	17	53	18	7	1	7	17	3	5	⊕		
November	1013	16	13	24	10	93	85	7	3	<1	⊕	19	3	3	7	19	8	3	12	28	2	⊕	⊕	⊕	14	51	22	8	1	6	17	3	5	⊕		
December	1012	20	14	25	12	93	83	7	4	<1	⊕	21	2	2	5	15	8	5	14	28	2	⊕	0	0	9	52	25	10	2	6	15	2	5	⊕		
Means	1014	19	13	34*	4§	91	81	6	3	–	–	17	5	5	8	18	5	3	9	30	3	1	⊕	1	14	49	21	8	3	6	15	–	–	–		
Totals	–	–	–	–	–	–	–	–	–	14	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	23	95	⊕		
Extreme values	–	–	–	38†	1‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
No. of years observations	18	18				18		18		30		18										18								18		18	18	18		

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.245

WMO No 68300

LUDERITZ (DIAZ POINT) (26° 38' S, 15° 06' E) Height above MSL – 16 m
Climatic Table compiled from 18 to 30 years observations, 1960 to 2000

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																		Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0800	1400	0800	1400	Average fall	No. of days with 1 mm or more	0800										1400								0800	1400	Gale	Fog	Thunder
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm					
	hPa	°C	°C	°C	°C	%	%	Oktas		mm		N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	Knots				
January	1011	22	15	25	12	87	74	3	2	1	⊕	6	3	2	18	50	7	1	4	10	4	⊕	⊕	1	33	43	8	9	1	14	24	12	5	⊕
February	1011	22	15	25	12	90	76	3	2	2	⊕	9	2	2	19	44	9	1	5	8	4	⊕	1	2	26	42	10	14	2	13	22	8	7	0
March	1012	21	15	26	11	89	75	3	2	2	⊕	6	3	2	19	46	11	1	2	10	4	1	⊕	2	31	44	7	9	2	12	21	6	7	⊕
April	1013	21	13	32	11	88	73	3	2	4	1	5	5	5	20	39	14	1	2	10	5	1	2	1	29	47	6	8	2	11	19	3	8	⊕
May	1016	20	12	30	9	81	72	3	2	2	⊕	5	5	10	22	32	14	1	3	10	5	2	1	⊕	23	51	7	9	2	11	16	2	8	⊕
June	1018	19	12	28	8	75	68	2	2	3	⊕	5	6	23	21	24	9	⊕	4	8	9	3	3	2	21	44	8	7	4	11	14	1	6	⊕
July	1019	18	11	27	8	77	68	2	2	2	⊕	5	8	17	27	24	8	1	3	7	5	3	3	3	27	38	7	10	3	12	16	1	5	0
August	1018	18	11	27	7	80	71	3	2	2	⊕	8	7	12	21	30	9	1	5	8	9	2	⊕	2	26	37	7	13	3	11	17	3	6	⊕
September	1016	18	11	28	8	87	74	4	3	2	⊕	11	4	5	20	37	7	2	6	8	7	2	0	2	24	40	10	15	1	12	19	4	6	⊕
October	1015	19	12	25	9	86	72	3	2	1	⊕	10	4	2	23	41	6	1	5	8	6	1	0	2	28	40	8	13	2	14	22	9	5	⊕
November	1013	20	13	25	10	85	73	3	2	1	⊕	8	4	2	20	47	9	⊕	5	7	5	⊕	⊕	2	32	41	8	10	1	15	25	10	5	⊕
December	1012	21	14	25	11	85	74	3	2	1	⊕	7	2	1	19	48	9	1	3	9	3	⊕	⊕	2	31	46	7	10	⊕	14	24	9	4	⊕
Means	1015	20	13	32*	6§	84	72	3	2	–	–	7	4	7	21	38	9	1	4	9	5	1	1	2	28	43	8	10	2	13	20	–	–	–
Totals	–	–	–	–	–	–	–	–	–	23	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	68	72	⊕
Extreme values	–	–	–	36†	2‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	18	18				18		18		30		18										18								18		18	18	18

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.246

WMO No 68403

ALEXANDER BAY (28° 34' S, 16° 32' E) Height above MSL – 29 m
Climatic Table compiled from 12 to 30 years observations, 1960 to 2000

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																				Mean wind speed		Number of days with				
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0800	1400	0800	1400	Average fall	No. of days with 1 mm or more	0800										1400										0800	1400	Gale	Fog	Thunder		
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm									
January	hPa	°C	°C	°C	°C	%	%	Oktas	mm																													
February	1011	24	15			85	62	5	2	1	0	0	0	3	11	31	11	6	7	31	0	0	0	0	52	40	8	0	0	6	16	⊕	3					
March	1012	24	15			91	69	5	2	2	0	5	0	4	5	45	7	4	5	25	0	0	0	2	45	39	13	2	0	6	16	0	4					
April	1012	24	14			93	72	5	2	2	1	4	2	5	18	16	12	7	5	32	0	2	2	4	38	45	11	0	0	5	14	0	3					
May	1015	24	12			95	70	4	2	4	1	7	7	4	5	9	11	4	2	51	0	0	1	0	22	50	26	0	2	3	12	0	7					
June	1017	23	11			96	66	4	2	4	1	10	8	15	19	3	3	3	⊕	39	2	3	5	0	28	34	23	2	3	3	10	⊕	7					
July	1018	22	10			80	50	3	2	8	2	8	13	25	7	3	2	7	2	33	0	10	19	2	17	19	20	9	5	5	10	0	5					
August	1020	21	9			85	55	3	2	5	2	3	7	43	8	8	3	3	2	23	1	8	6	2	14	32	23	3	10	6	10	0	4					
September	1020	20	9			86	58	4	2	6	2	8	8	18	13	7	2	3	10	31	1	3	5	0	39	28	11	11	2	5	13	0	3					
October	1017	21	10			94	60	4	3	3	1	7	7	12	7	5	5	7	10	41	0	5	5	3	40	22	22	2	0	4	15	0	4					
November	1016	22	11			95	75	5	2	4	0	5	7	3	13	30	2	8	7	26	0	0	0	3	42	37	17	2	0	7	16	0	4					
December	1014	23	13			97	76	4	2	2	0	5	0	2	7	30	15	5	13	23	0	0	0	2	52	27	18	2	0	7	18	0	3					
December	1013	23	14			98	79	5	2	2	0	7	2	0	10	42	17	2	3	18	0	0	0	0	53	36	11	0	0	6	17	0	2					
Means	1015	23	12	*	§	91	66	4	2	–	–	6	5	11	10	19	7	5	6	31	⊕	3	3	1	37	34	17	3	2	5	14	–	–	–				
Totals	–	–	–	–	–	–	–	–	–	43	10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	49	–				
Extreme values	–	–	–	42+	2+	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
No. of years observations	12	12				12		30		30		12										12										12		12	25	–	–	–

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.247

WMO No 68408

PORT NOLLOTH (29° 14' S, 16° 52' E) Height above MSL – 10 m
Climatic Table compiled from 18 to 27 years observations, 1941 to 2000

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																				Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0800	1400	0800	1400	Average fall	No. of days with 1 mm or more	0800										1400										0800	1400	Gale	Fog	Thunder
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm							
January	hPa 1013	°C 20	°C 14	°C 25	°C 11	% 91	% 79	Oktas 5		2	1	2	0	1	10	21	1	⊕	4	61	2	0	0	4	39	20	2	4	29	4	10	⊕	6	⊕		
February	1013	21	14	24	9	93	79	5	3	3	1	3	⊕	1	8	14	1	1	3	70	2	1	1	4	32	24	5	6	26	3	10	⊕	7	⊕		
March	1013	20	13	28	9	93	80	5	3	5	1	4	⊕	2	9	8	2	⊕	2	73	2	⊕	⊕	6	36	16	3	8	27	2	10	⊕	9	⊕		
April	1015	19	12	34	7	89	76	4	3	6	2	3	3	4	11	4	⊕	1	3	70	3	2	3	9	28	17	4	9	25	3	10	⊕	6	⊕		
May	1017	19	11	33	6	86	75	4	3	8	2	6	3	6	12	4	1	⊕	5	65	4	2	4	5	27	16	2	10	31	4	9	0	7	0		
June	1020	19	10	31	5	80	72	3	3	8	2	10	7	7	14	3	1	⊕	4	54	9	4	5	6	21	8	3	12	32	5	9	0	3	⊕		
July	1021	18	9	30	4	81	71	3	2	9	3	6	9	9	9	4	1	1	5	56	7	5	8	5	22	13	4	11	26	5	9	⊕	3	0		
August	1020	18	9	32	4	83	73	3	3	8	2	10	4	8	14	3	1	1	6	55	9	1	4	4	32	15	4	11	20	5	11	0	2	0		
September	1018	17	10	32	5	89	76	4	3	4	1	9	1	3	13	9	1	1	7	55	6	1	2	9	38	15	6	9	14	4	13	⊕	4	⊕		
October	1017	18	11	29	7	87	76	4	3	3	1	6	1	4	17	16	1	1	5	49	4	0	1	10	41	20	5	7	12	5	13	⊕	3	⊕		
November	1015	19	12	28	9	88	77	4	2	3	1	5	1	2	13	16	3	2	7	53	3	0	0	9	42	19	3	6	18	5	12	0	3	⊕		
December	1014	20	14	25	10	89	77	5	2	3	1	2	0	⊕	11	15	3	1	6	61	2	⊕	0	6	41	21	2	6	21	4	11	0	4	⊕		
Means	1016	19	12	37*	3§	87	76	4	3	–	–	5	2	4	12	10	1	1	5	60	5	1	2	7	33	17	14	8	23	4	11	–	–	–		
Totals	–	–	–	–	–	–	–	–	–	62	18	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	57	⊕		
Extreme values	–	–	–	41†	1‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
No. of years observations	18	18				18		18		27		18										18										18		18	18	18

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.248

WMO No 68712

CAPE COLUMBINE (32° 50' S, 17° 51' E) Height above MSL – 67 m
Climatic Table compiled from 18 to 22 years observations, 1950 to 2000

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																		Mean wind speed		Number of days with				
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0800	1400	0800	1400	Average fall	No. of days with 1 mm or more	0800										1400								0800	1400	Gale	Fog	Thunder		
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm							
January	hPa 1014	°C 21	°C 14	°C 28	°C 11	% 87	% 72	Oktas 3		2	mm 4	1	4	8	3	8	59	4	1	1	13	5	2	⊕	1	51	26	7	7	1		Knots 10 14		⊕	7	⊕
February	1013	22	14	30	12	89	73	3	2	6	1	5	10	5	10	48	3	1	3	15	9	3	2	2	50	19	5	9	1	9	13	⊕	9	⊕		
March	1014	21	14	29	11	91	74	4	3	7	2	5	11	5	17	40	4	1	1	15	8	3	1	7	45	20	6	8	3	9	12	⊕	10	1		
April	1016	20	13	29	10	88	74	4	3	23	4	7	12	5	20	27	4	1	3	20	15	6	⊕	3	41	16	5	9	4	8	11	⊕	9	1		
May	1018	19	12	28	8	86	77	4	4	35	6	11	16	8	19	17	4	3	5	16	22	10	1	4	27	13	6	12	5	8	10	⊕	9	⊕		
June	1021	17	11	23	7	85	76	4	4	47	7	15	17	9	19	13	2	5	8	12	21	15	3	5	22	9	8	13	6	10	11	⊕	5	⊕		
July	1022	16	10	22	6	84	75	4	4	38	7	15	16	8	17	15	4	4	6	13	23	14	2	6	21	10	8	12	5	9	11	⊕	4	⊕		
August	1021	17	11	25	7	85	76	4	4	35	7	12	11	8	25	17	3	5	6	13	20	8	1	4	31	15	7	10	4	9	11	⊕	3	⊕		
September	1019	18	11	27	8	87	75	5	4	20	5	9	9	5	19	27	4	5	7	15	13	3	1	4	39	17	6	15	3	9	12	⊕	3	⊕		
October	1018	19	12	28	9	84	72	4	3	15	4	5	7	4	15	40	6	3	3	16	7	2	⊕	6	50	18	7	8	2	10	14	1	4	⊕		
November	1016	20	13	29	10	85	71	4	3	8	2	8	10	2	11	47	6	2	3	11	7	3	⊕	4	51	20	7	7	1	10	14	⊕	6	⊕		
December	1014	21	14	28	11	86	71	4	2	6	1	8	9	1	6	52	7	1	4	13	5	2	0	2	46	26	7	11	1	9	14	⊕	6	1		
Means	1017	19	12	33*	4§	86	74	4	3	–	–	9	11	5	16	34	4	3	4	14	13	6	1	4	39	17	7	10	3	9	12	–	–	–		
Totals	–	–	–	–	–	–	–	–	–	244	47	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	75	3		
Extreme values	–	–	–	35†	0‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
No. of years observations	18	18				18		18		27		18										18								18		18	18			

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.249

WMO No 68816

CAPE TOWN AIRPORT (33° 58' S, 18° 36' E) Height above MSL – 42 m
Climatic Table compiled from 17 to 25 years observations, 1960 to 2000

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																		Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0800	1400	0800	1400	Average fall	No. of days with 1 mm or more	0800									1400									0800	1400	Gale	Fog	Thunder
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm					
January	hPa 1013	°C 26	°C 16	°C 34	°C 11	% 72	% 52	Oktas 3	mm 2	mm 14	3	9	1	⊕	7	35	19	2	9	19	2	⊕	⊕	3	58	14	2	19	1	9	17	1	1	⊕
February	1013	27	16	34	11	77	52	3	2	16	3	12	2	⊕	6	27	19	3	7	24	2	0	0	5	54	16	3	20	2	8	16	1	1	⊕
March	1014	26	15	34	9	83	54	3	2	21	3	10	3	⊕	6	23	17	3	7	31	1	⊕	0	6	55	13	2	21	1	6	14	⊕	3	1
April	1016	23	12	33	5	88	55	4	3	41	6	16	9	3	4	15	10	3	6	35	5	0	⊕	5	40	12	3	28	7	5	12	⊕	3	1
May	1018	21	10	29	3	90	61	4	4	68	8	22	14	3	4	8	6	2	6	36	11	2	⊕	3	23	8	5	36	12	5	10	⊕	5	1
June	1020	18	8	26	2	88	61	4	4	93	10	24	22	2	2	6	4	1	6	33	21	3	1	2	22	4	4	29	14	6	10	1	5	1
July	1021	17	7	25	1	88	62	4	4	83	9	22	23	3	4	6	4	3	7	28	20	3	0	4	18	7	6	29	13	7	11	⊕	4	1
August	1021	18	8	28	2	89	60	4	4	77	9	21	16	4	4	8	4	3	6	35	15	1	0	8	27	7	6	28	9	6	11	⊕	3	1
September	1019	19	9	28	3	87	59	4	4	41	7	19	12	3	6	14	6	3	7	30	7	⊕	⊕	5	35	9	5	32	6	7	12	⊕	2	⊕
October	1018	22	11	30	5	76	55	4	3	33	5	16	5	⊕	11	24	11	3	5	24	3	⊕	1	10	50	9	2	24	2	8	15	⊕	1	1
November	1016	23	13	32	70	70	53	3	2	16	3	13	1	⊕	10	32	12	4	10	18	2	⊕	⊕	5	51	13	4	22	2	10	16	1	⊕	1
December	1014	25	15	33	10	70	53	3	2	17	3	13	1	⊕	7	33	13	4	9	20	2	⊕	0	4	52	16	2	24	1	9	16	⊕	1	1
Means	1017	22	12	36*	1§	82	56	4	3	–	–	16	9	2	6	19	10	3	7	28	18	1	⊕	5	40	10	4	26	6	7	13	–	–	–
Totals	–	–	–	–	–	–	–	–	–	520	69	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4	29	9
Extreme values	–	–	–	41†	–1‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	18	18				18		18		30		18									18									18		18	18	18

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.250

WMO No 68916

CAPE POINT (34° 21' S, 18° 30' E) Height above MSL – 238 m
Climatic Table compiled from 18 to 22 years observations, 1950 to 2000

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																		Mean wind speed		Number of days with			
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0800	1400	0800	1400	Average fall	No. of days with 1 mm or more	0800										1400								0800	1400	Gale	Fog	Thunder	
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm						
January	hPa 1014	°C 22	°C 16	°C 29	°C 12	% 83	% 69	Oktas 4		3	mm 12	3	4	4	3	45	17	11	4	7	6	1	1	1	34	24	18	8	12	2	Knots 19 19		7	4	⊕
February	1014	22	16	30	12	85	71	4	3	14	4	4	2	2	46	18	8	4	10	5	2	⊕	2	40	18	12	9	11	5	21	20	8	4	1	
March	1015	22	15	29	11	86	71	4	3	14	4	5	2	2	43	15	9	5	9	10	3	1	3	35	19	13	9	12	6	19	18	9	7	⊕	
April	1016	20	14	29	9	83	70	5	4	26	6	11	8	4	31	13	8	6	11	8	7	5	3	26	15	8	10	15	10	16	16	5	5	⊕	
May	1018	18	13	27	9	83	72	5	5	48	9	15	10	3	19	11	10	6	17	11	12	5	2	17	9	9	8	23	14	14	14	3	5	⊕	
June	1020	17	11	23	8	80	72	5	5	57	10	19	12	2	12	7	10	8	20	10	17	9	2	12	9	10	7	26	9	15	16	4	3	⊕	
July	1021	16	11	23	6	80	71	5	5	50	10	15	14	3	16	6	10	6	21	8	13	11	3	18	5	8	11	24	9	17	17	5	2	⊕	
August	1020	16	11	25	6	82	72	5	5	45	10	11	9	3	25	8	10	7	18	9	11	5	2	20	11	9	11	21	9	16	17	4	2	⊕	
September	1019	17	11	25	7	83	72	5	5	32	6	12	6	2	24	13	11	7	16	8	7	3	2	21	14	13	9	23	8	17	17	5	2	⊕	
October	1018	18	12	27	9	83	70	5	4	24	6	7	4	2	40	16	10	6	9	5	5	2	1	35	18	13	10	13	4	20	20	8	2	⊕	
November	1016	20	14	28	10	82	70	5	4	15	3	7	2	2	40	18	11	5	10	5	2	1	2	33	20	15	11	14	1	19	19	7	3	⊕	
December	1015	21	16	28	11	82	70	4	3	12	3	6	3	2	37	20	10	6	11	6	3	1	1	31	21	16	8	16	4	19	19	7	3	⊕	
Means	1017	19	13	33*	4§	83	71	5	4	–	–	10	6	3	31	13	10	6	13	8	7	4	2	27	15	12	9	17	18	18	18	–	–	–	
Totals	–	–	–	–	–	–	–	–	–	359	74	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	72	42	⊕	
Extreme values	–	–	–	38†	0‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
No. of years observations	18	18				18		18		22		18										18								18		18	18	18	

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.251

WMO No 68920

CAPE AGULHAS (34° 50' S, 20° 01' E) Height above MSL – 14 m
Climatic Table compiled from 18 to 30 years observations, 1960 to 2000

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																				Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0800	1400	0800	1400	Average fall	No. of days with 1 mm or more	0800										1400										0800	1400	Gale	Fog	Thunder
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm							
January	hPa	°C	°C	°C	°C	%	%	Oktas		mm																										
February	1014	24	18	27	13	82	71	5	4	19	3	0	6	24	16	6	11	17	7	13	⊕	3	21	20	10	25	17	2	2	11	14	⊕	1	⊕		
March	1015	24	18	27	14	86	74	5	4	23	4	⊕	9	26	16	5	11	17	5	11	⊕	6	25	20	9	19	18	2	1	12	15	⊕	1	⊕		
April	1016	22	17	26	13	89	78	5	4	31	6	⊕	10	26	13	4	6	17	8	15	0	5	27	18	6	14	25	3	3	11	14	1	2	⊕		
May	1017	20	15	24	11	89	79	5	4	43	7	2	12	18	8	5	5	17	15	18	⊕	8	22	10	6	10	29	7	9	10	13	⊕	2	⊕		
June	1017	19	14	26	9	88	79	5	5	51	8	3	14	7	4	2	8	20	21	22	⊕	7	16	5	2	17	31	8	13	9	12	1	2	⊕		
July	1019	18	12	25	8	84	76	4	4	59	8	9	13	4	2	2	7	21	24	19	2	7	11	3	2	11	35	14	14	9	12	1	1	⊕		
August	1021	17	11	23	7	85	77	4	4	55	10	6	11	6	3	1	7	22	24	19	2	7	13	5	2	8	36	15	12	10	13	1	⊕	⊕		
September	1020	17	11	23	8	87	77	5	4	56	8	7	11	8	4	4	8	24	20	14	2	5	17	8	3	13	36	10	7	10	14	1	1	⊕		
October	1019	18	12	22	8	86	76	5	4	45	7	2	10	15	5	3	11	22	14	17	0	6	17	9	6	19	33	7	4	11	15	1	1	⊕		
November	1019	19	14	23	10	84	74	5	4	43	6	2	7	24	12	6	11	18	8	12	⊕	4	21	18	8	19	25	3	2	12	15	1	1	⊕		
December	1017	21	15	24	11	83	73	6	4	33	5	1	5	25	16	6	10	17	10	11	0	2	19	24	8	21	22	4	⊕	12	16	1	⊕	⊕		
December	1015	23	17	25	13	82	71	5	4	20	5	1	5	19	20	5	10	23	7	10	⊕	3	17	22	9	20	24	4	1	12	16	1	⊕	⊕		
Means	1017	20	14	28*	6§	85	75	5	4	–	–	3	9	17	10	4	9	19	14	15	1	5	19	13	6	16	27	7	6	11	14	–	–	–		
Totals	–	–	–	–	–	–	–	–	–	477	77	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	9	12	⊕		
Extreme values	–	–	–	33†	1‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
No. of years observations	18	18				18		18		30		18										18										18		18	18	18

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

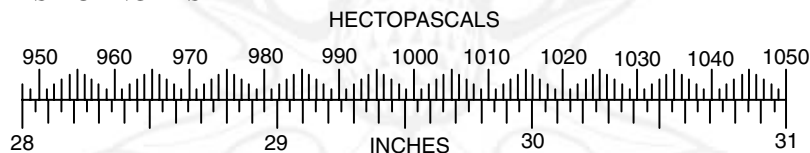
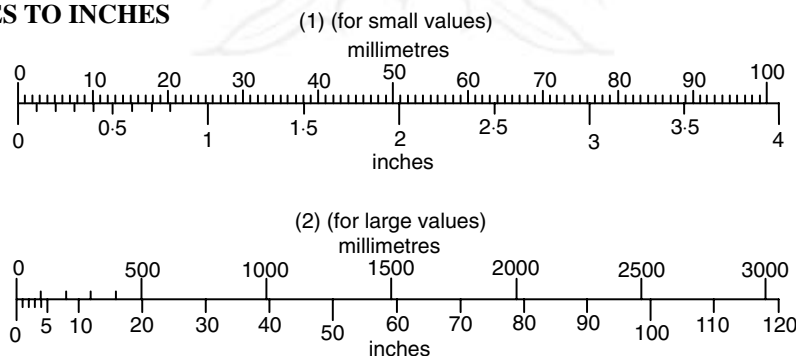
⊕ Rare
⊖ All observations

METEOROLOGICAL CONVERSION TABLE AND SCALES**Fahrenheit to Celsius****°Fahrenheit**

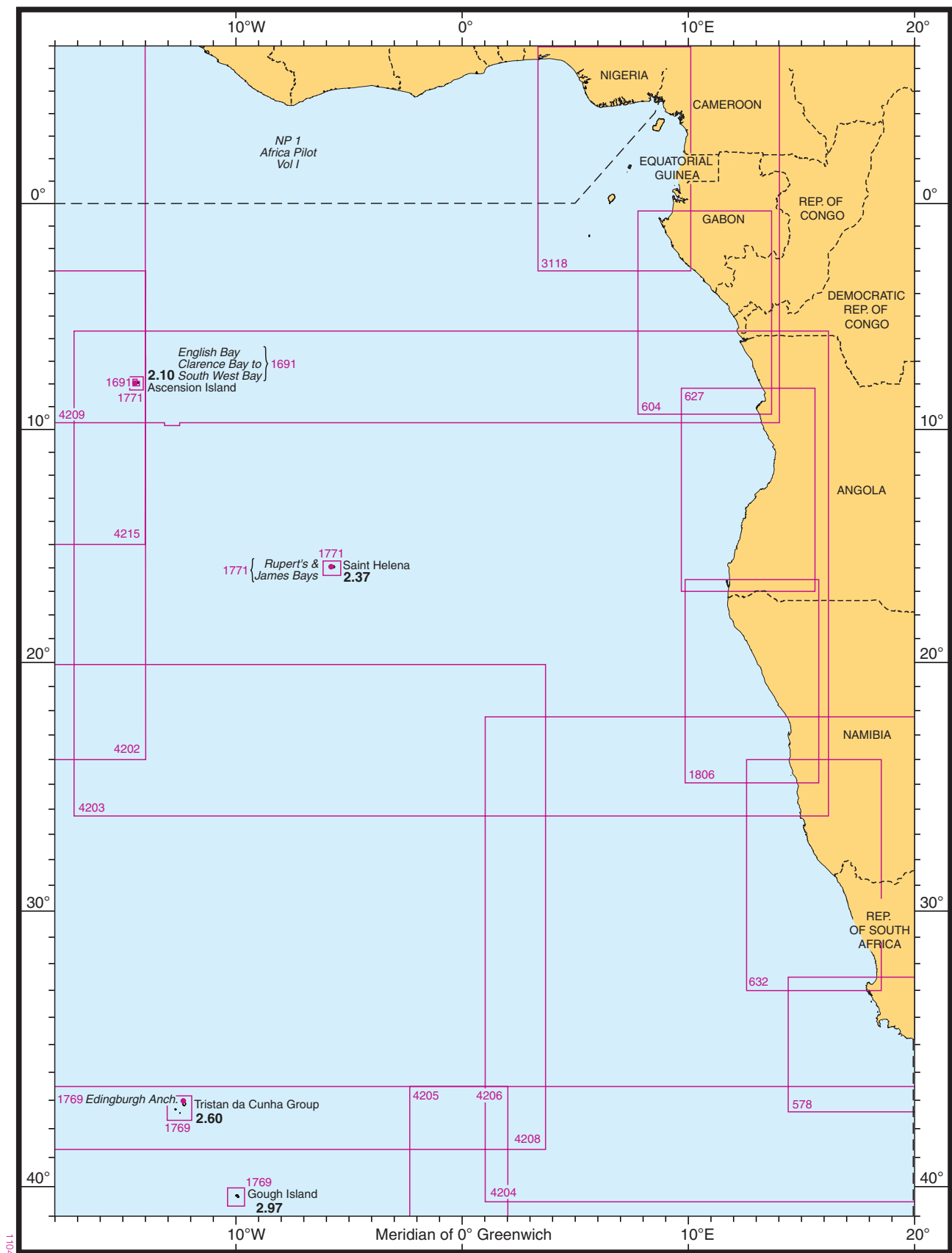
	0	1	2	3	4	5	6	7	8	9
°F	Degrees Celsius									
-100	-73.3	-73.9	-74.4	-75.0	-75.6	-76.1	-76.7	-77.2	-77.8	-78.3
-90	-67.8	-68.3	-68.9	-69.4	-70.0	-70.6	-71.1	-71.7	-72.2	-72.8
-80	-62.2	-62.8	-63.3	-63.9	-64.4	-65.0	-65.6	-66.1	-66.7	-67.2
-70	-56.7	-57.2	-57.8	-58.3	-58.9	-59.4	-60.0	-60.6	-61.1	-61.7
-60	-51.1	-51.7	-52.2	-52.8	-53.3	-53.9	-54.4	-55.0	-55.6	-56.1
-50	-45.6	-46.1	-46.7	-47.2	-47.8	-48.3	-48.9	-49.4	-50.0	-50.6
-40	-40.0	-40.6	-41.1	-41.7	-42.2	-42.8	-43.3	-43.9	-44.4	-45.0
-30	-34.4	-35.0	-35.6	-36.1	-36.7	-37.2	-37.8	-38.3	-38.9	-39.4
-20	-28.9	-29.4	-30.0	-30.6	-31.1	-31.7	-32.2	-32.8	-33.3	-33.9
-10	-23.3	-23.9	-24.4	-25.0	-25.6	-26.1	-26.7	-27.2	-27.8	-28.3
-0	-17.8	-18.3	-18.9	-19.4	-20.0	-20.6	-21.1	-21.7	-22.2	-22.8
+0	-17.8	-17.2	-16.7	-16.1	-15.6	-15.0	-14.4	-13.9	-13.3	-12.8
10	-12.2	-11.7	-11.1	-10.6	-10.0	-9.4	-8.9	-8.3	-7.8	-7.2
20	-6.7	-6.1	-5.6	-5.0	-4.4	-3.9	-3.3	-2.8	-2.2	-1.7
30	-1.1	-0.6	0	+0.6	+1.1	+1.7	+2.2	+2.8	+3.3	+3.9
40	+4.4	+5.0	+5.6	6.1	6.7	7.2	7.8	8.3	8.9	9.4
50	10.0	10.6	11.1	11.7	12.2	12.8	13.3	13.9	14.4	15.0
60	15.6	16.1	16.7	17.2	17.8	18.3	18.9	19.4	20.0	20.6
70	21.1	21.7	22.2	22.8	23.3	23.9	24.4	25.0	25.6	26.1
80	26.7	27.2	27.8	28.3	28.9	29.4	30.0	30.6	31.1	31.7
90	32.2	32.8	33.3	33.9	34.4	35.0	35.6	36.1	36.7	37.2
100	37.8	38.3	38.9	39.4	40.0	40.6	41.1	41.7	42.2	42.8
110	43.3	43.9	44.4	45.0	45.6	46.1	46.7	47.2	47.8	48.3
120	48.9	49.4	50.0	50.6	51.1	51.7	52.2	52.8	53.3	53.9

Celsius to Fahrenheit**°Celsius**

	0	1	2	3	4	5	6	7	8	9
°C	Degrees Fahrenheit									
-70	-94.0	-95.8	-97.6	-99.4	-101.2	-103.0	-104.8	-106.6	-108.4	-110.2
-60	-76.0	-77.8	-79.6	-81.4	-83.2	-85.0	-86.8	-88.6	-90.4	-92.2
-50	-58.0	-59.8	-61.6	-63.4	-65.2	-67.0	-68.8	-70.6	-72.4	-74.2
-40	-40.0	-41.8	-43.6	-45.4	-47.2	-49.0	-50.8	-52.6	-54.4	-56.2
-30	-22.0	-23.8	-25.6	-27.4	-29.2	-31.0	-32.8	-34.6	-36.4	-38.2
-20	-4.0	-5.8	-7.6	-9.4	-11.2	-13.0	-14.8	-16.6	-18.4	-20.2
-10	+14.0	+12.2	+10.4	+8.6	+6.8	+5.0	+3.2	+1.4	-0.4	-2.2
-0	32.0	30.2	28.4	26.6	24.8	23.0	21.2	19.4	+17.6	+15.8
+0	32.0	33.8	35.6	37.4	39.2	41.0	42.8	44.6	46.4	48.2
10	50.0	51.8	53.6	55.4	57.2	59.0	60.8	62.6	64.4	66.2
20	68.0	69.8	71.6	73.4	75.2	77.0	78.8	80.6	82.4	84.2
30	86.0	87.8	89.6	91.4	93.2	95.0	96.8	98.6	100.4	102.2
40	104.0	105.8	107.6	109.4	111.2	113.0	114.8	116.6	118.4	120.2
50	122.0	123.8	125.6	127.4	129.2	131.0	132.8	134.6	136.4	138.2

HECTOPASCALS TO INCHES**MILLIMETRES TO INCHES**

Chapter 2 - Islands and seamounts in eastern portion of South Atlantic Ocean



CHAPTER 2

ISLANDS IN EASTERN PORTION OF SOUTH ATLANTIC OCEAN

GENERAL INFORMATION

Charts 4021, 4209, 4203, 4204

Scope of the chapter**2.1**

- 1 This chapter describes the offshore islands of the eastern part of the South Atlantic Ocean lying between the parallels of 0° and 45°S and the meridians of 20°W and 20°E, namely Saint Helena and its dependencies (1.55). The islands in the Bight of Biafra are described in chapter 3.

- 2 Only those seamounts which are at present named, those which form a danger to navigation, or those that could assist navigation are specifically mentioned, but many others are charted and others may exist. See also section on bathymetry (1.186).

- 3 The chapter is arranged as follows:
 Ascension Island and Saint Helena Island (2.8).
 Tristan Da Cunha Group (2.60).
 Gough Island (2.97).

Routes**2.2**

- 1 Directions circumnavigate the islands in an anti-clockwise direction, passing all features at a prudent distance.

A number of ocean routes pass the islands mentioned in this chapter. See *Ocean Passages for the World*.

Romanche Fracture Zone**2.3**

- 1 The greatest recorded depth in the eastern part of the South Atlantic Ocean of 7728 m lies in the Romanche Fracture Zone on the equator in longitude 18°W.

Seamounts**2.4**

- 1 **Unnamed seamount** (3°03'S, 0°44'E), with a depth of 152 m over it.
Unnamed seamount (8°30'S, 17°00'W), with a depth of 256 m over it.
Grattan Seamount (9°43'S, 12°50'W) with a depth of 70 m over it.
- 2 **Unnamed seamount** (9°45'S, 12°05'W), with a reported depth of 213 m over it. Another unnamed seamount lies close SSE, with a depth of 316 m over it.
Stvor Seamount (9°55'S, 5°25'W).
Dampier Seamount (11°09'S, 0°27'W).
Unnamed seamount (11°40'S, 5°15'W), with a depth of 115 m over it.
Malahit Guyot Seamount (12°50'S, 2°40'W).
Cardno Seamount (12°53'S, 6°08'W) with a depth of 77 m over it.

- 3 **Unnamed seamount** (13°00'S, 5°40'W), with a depth of 158 m over it.

Kutuzov Seamount (15°11'S, 8°16'W).

Bagration Seamount (15°30'S, 6°30'W).

Bonaparte Seamount (15°40'S, 7°00'W) with a depth of 105 m over it.

Ewing Seamount (23°15'S, 8°15'E).

Molloy Seamount (27°55'S, 8°50'E).

Tripp Seamount (29°38'S, 14°14'E) with a depth of 150 m over it.

2.5

- 1 **Vema Seamount** (31°41'S, 8°20'E) is reported to have only 7 m over it. There is some evidence that the top of the seamount consists of a plateau approximately 5 miles in diameter with depths between 45 and 90 m with some shallower peaks.

An unconfirmed depth of 11 m is reported to lie on the S side of the plateau.

In 1954, a shoal of 57 m was reported to lie 15 miles NE of Vema Seamount.

Wüst Seamount (34°00'S, 3°30'W).

Engelbrecht Seamount (36°11'S, 14°10'E).

- 2 **Protea Seamount** (36°45'S, 18°15'E). This is one of a number of seamounts located on Agulhas Ridge which extends between 150 miles and 880 miles SW of Cape Agulhas.

Argentina Seamount (37°27'S, 18°05'E).

Wyandot Seamount (37°47'S, 15°38'E).

Erica Seamount (38°12'S, 14°50'E).

Schmitt-Ott Seamount (38°27'S, 13°45'E).

Panzarini Seamount (40°00'S, 11°50'E).

Richardson Seamount (40°10'S, 14°40'E).

- 3 **Crawford Seamount** (38°40'S, 9°50'W).

R.S.A. Seamount (39°30'S, 6°40'W) with a depth of 176 m over it.

Mc Nish Seamount (40°10'S, 8°30'W).

Unnamed Seamount (40°05'S, 9°10'W), with a reported depth of 90 m over it.

Zenker Seamount (41°05'S, 6°00'W).

Discovery Seamounts (42°05'S, 0°20'E), with a least depth of 326 m over them

Shannon Seamount (43°00'S, 2°30'E).

Junov Seamount (43°35'S, 4°30'W).

Valdivia Bank**2.6**

- 1 Valdivia Bank 25°55'S, 5°30'E, with a least depth of 23 m, lies in the main shipping route leading NW from the Cape of Good Hope.

Local magnetic anomaly**2.7**

- 1 A local magnetic anomaly has been reported in the vicinity of Ewing Seamount (2.4).

ASCENSION AND SAINT HELENA ISLAND

GENERAL INFORMATION

Chart 4203

Area covered

2.8

- 1 This section describes Ascension Island and Saint Helena Island.

It is arranged as follows:

Ascension Island (2.10).

Saint Helena Island (2.37).

Rollers

2.9

- 1 The rollers at Ascension Island and Saint Helena Island are thus described by Mr WHB Webster, Surgeon of HMS *Chanticleer*, 1829.

- 2 "One of the most interesting phenomena at Ascension are the rollers; in other words, a heavy swell producing a high surf on the leeward coast of the island, occurring without any apparent cause. All is tranquil in the distance, the sea breeze scarcely ripples the surface of the water, when a high swelling wave is suddenly observed rolling towards the island. At first it appears to move slowly forward, till at length it breaks on the outer reefs. The swell then increases, wave urges on wave, until it reaches the beach, where it bursts with tremendous fury.

- 3 The rollers now set in and augment in violence, until they attain a terrific and awful grandeur, affording a magnificent spectacle to the spectator, and one I have witnessed with mingled emotions of terror and delight. A towering sea rolls forward on the island, like a vast ridge of waters threatening, as it were, to envelop it; pile upon pile succeeds with resistless force, until meeting with the rushing off-set from the shore beneath, they rise like a wall, and are dashed with impetuous fury on the long line of the coast, producing a stunning noise.

- 4 The beach is now mantled over with foam, the waters sweep over the plain, and the very houses at the town are shaken by the fury of the waves. But the principal beauty of the scene consists in the continuous ridge of water crested on its summit with foam and spray; for as the wind is off the land, the over-arching top of the rollers meet resistance, and is carried, as it were, back against the curl of the swell; and thus it plays elegantly above it, as it rolls furiously onward, graceful as a bending plume; while, to add more to its beauty, the sunbeams are reflected from it in all varied tints of the rainbow.

- 5 Amid the tranquillity that prevails around; it is a matter of speculation to account for this commotion of the waters, as great as if the most awful tempest had swept the surface of the ocean. It occurs in situations where no such swell would be expected in sheltered bays, and where the wind never reaches the shore. The strong and well built jetty (7°55'5S, 14°24'8W) of the town has once been washed away by the rollers, which sometimes make a complete beach over it, although it is 6 m above the HW mark. On these occasions, the crane at its extremity is turned round in various directions, as the weathercock is turned by the wind, and landing becomes impracticable for two or three days together.

- 6 Such are the rollers of the Ascension, and like unto them are those of Saint Helena and Fernando Noronha (3°50'0S, 32°25'0W). The season at which the heaviest rollers prevail is from December to April, although they do occur at other periods, and they have been felt severely in July. Vessels in the bay are perfectly secure, and they have

to apprehend no danger unless within the immediate influence of the breakers. Not only are the seasons of the rollers the same at Saint Helena and Ascension, but they sometimes are simultaneous in occurrence.

- 7 The rollers occur in the most tranquil seasons of the year, when the SE trade wind is very light, where the vast volume of water is constantly impelled in one direction. There is then the tendency to a back set, or a rush of water in a contrary direction, and a tumultuous swell is produced wherever it meets with the resistance from the islands, and the banks upon which they are based, as well as the shores of the continent. The long steep beaches of Ascension are admirably adapted for the full display of the effect which has just been described."

ASCENSION ISLAND

General information

Charts 1771 plan of approaches to Ascension Island, 1691

Description

2.10

- 1 Ascension Island (07°55'S, 14°22'W) lies 703 miles NW of Saint Helena Island. The climate is singularly healthy, and the salubrity of the island is attributed to its situation in the heart of the SE trade wind and the complete absence of marshy soil.

- 2 Water used to be obtained from the cement rain catchments on the mountain and was conveyed through pipes to covered tanks in Georgetown, situated on the NW side of the island. The island now obtains its supply of water by desalination and little can be spared for shipping.

- 3 It has an area of 88 square km. The population in 2000 was about 1117 and the capital is Georgetown.

For information about history, flora and fauna, see 1.57.

Route

2.11

- 1 The island may be passed at a prudent distance having regard to the dangers given in the coastal directions at 2.19.

Topography

2.12

- 1 Ascension Island is of volcanic origin, but since the time of its discovery no signs of volcanic activity, not even a hot spring, has been reported, though geologically the island is extremely young.

- 2 The surface of the island is extremely irregular, and when viewed from seaward presents a rugged and uninviting appearance. The greatest elevation, 859 m, is attained at The Peak (7°57'S, 14°21'W) the summit of Green Mountain, which latter is so called from the colour of its apex. There are about 40 cones of various magnitudes on the island, being extinct craters from many of which the courses of the lava streams may be traced on their way to the sea. Green Mountain is surrounded by numerous other craggy peaks of less elevation, having between them deep gorges and dark ravines.

2.13

- 1 Practically the only signs of vegetation on the island are on Green Mountain where vegetables are successfully cultivated; the summit of the mountain where rain falls more frequently than on the less elevated parts of this land, is covered with rock roses and ferns, and is a graceful oasis amidst waste and desolation. The mountain is generally more or less obscured by mist for some part of the day.

- 2 **Devil's Riding School** (7°58'S, 14°23'W), a crater, more rugged and remarkable than the rest, is situated about 2 miles WSW of Green Mountain.

Meteorological rocket firings

2.14

- 1 Meteorological rocket firings (2.34) take place NNE of Portland Point.

Traffic regulations

2.15

- 1 **Firing practice area.** A firing practice area the limits of which are indicated on the chart lies NE of Porpoise Point (7°54'·0S, 14°21'·1W).

Although no restrictions are placed on the right to transit the firing practice area at any time, mariners are advised to exercise particular caution whilst in the area. Red flags are displayed to indicate that an area is in use. The firing practice area is operated using a clear range procedure. Exercises and firing only take place when the area is considered to be clear of all shipping. For further details see *Annual Summary of Admiralty Notices to Mariners Notice No 5*.

- 2 **Submarine cable area.** An submarine cable area where anchoring is prohibited, the limits of which are indicated on the chart, lies between Collyer Point (7°56'·1S, 14°25'·2W), and Portland Point 2½ miles S.

Natural conditions

2.16

- 1 **Current.** The predominant set is W at ½ kn.

Rollers. These phenomena, which take the form of either SW or NW rollers, may be expected about once a fortnight, and are sufficient to prevent lighters lying alongside the wharf. Rollers can be of up to about 3 m in height and locally the smaller ones are called Single rollers and the larger ones Double rollers. When Single rollers are running, landing may still be effected, but difficulty is then often experienced in getting alongside the steps, and great caution should be exercised.

- 2 The moment of a lull should be watched for and then the boat should shoot in round Tartar Rock (7°55'·5S, 14°24'·8W), situated close N of the head of the wharf, steering well to the left of the steps; when close to the rocks outside the steps, a sharp turn to starboard should be made and the boat will be carried up to the latter by the set between Tartar Rock and the bluff on which stands Fort Thornton (7°55'·5S, 14°24'·8W).

- 3 On the E side of Clarence Bay, the depths offshore are sufficient to prevent the swell acquiring the character of breaking rollers, except in cases where the undulation arrives from NW, and breaks directly on the island; even then the guard ship formerly moored in a position about 3 cables NNE of Fort Thornton was never disturbed at her moorings in a depth of 16·5 m, which would tend to demonstrate that in the very worst cases the rollers do not break at that depth.

- 4 Anchoring in Clarence Bay on the 30 m contour reduces swell effect on vessels working cranes. RMS *Saint Helena* anchors in berth CB1D.

Rollers are the swell resulting from intense storms thousands of miles away in the North and South Atlantic Oceans.

- 5 The waves are very low and of such great length that they are not noticeable in deep water, but on reaching shallow water they become shorter and higher; off Clarence Bay they frequently break on crossing the 10 m line. Rollers from either direction may occur during any month

of the year, though the frequency of occurrence of NW rollers is greater during the months of winter in the N hemisphere, and of SW rollers, during winter in the S hemisphere.

2.17

- 1 The following table gives the average number of days on which rollers occurred in each month during the periods 1904 to 1911, inclusive, and November 1912 to 1914, inclusive. It is noticeable that no Double rollers occurred during the latter period.

1904–1911

Month	South-west rollers		North-west rollers	
	Single	Double	Single	Double
January	0	0	3	1
February	2	0	1	0
March	2	0	2	0
April	4	1	1	0
May	4	1	0	0
June	7	1	0	0
July	6	1	0	0
August	7	2	0	0
September	4	0	0	0
October	3	0	1	0
November	3	0	2	0
December	1	0	6	1

Nov 1912–June 1914

Month	South-west rollers		North-west rollers	
	Single	Double	Single	Double
January	2	0	12	0
February	2	0	6	0
March	2	0	4	0
April	4	0	6	0
May	7	0	0	0
June	13	0	0	0
July	2	0	0	0
August	2	0	0	0
September	0	0	0	0
October	3	0	5	0
November	6	0	3	0
December	3	0	6	0

- 2 Rollers were reported on 44 occasions in 1958, and on 85 occasions in 1959; and very large rollers were reported on 11 and 5 occasions in each of those years respectively.

The shoals NW of the wharf appear to subdue the approaching NW rollers which arrive at the wharf in the form of an ordinary swell, it being then quite possible to use the landing place, and as long as the swell is not heavy even lighters can be taken in and unloaded.

- 3 A combination of NW and SW rollers which occurs at the most only twice in the year, raises a nasty lumpy sea extremely dangerous to boats. On these occasions a pyramidal mass of water some 3·7 to 4·6 m in height may rise in the direct track of boats making for the wharf from the roadstead, and break about ¼ cable NW of Tartar Rock (7°55'·5S, 14°24'·8W).

- 4 Neither SW nor NW rollers break in the vicinity of the anchorage, nor in that of the lighter's mooring buoys; but they cross these areas in the form of a heavy swell, the effect of which diminishes as the distance offshore is increased. Thus the swell at the anchorage is not nearly so heavy as that at the lighters mooring buoys, and lighters can always be used by vessels lying at the anchorage although at the same time communication with the shore may be impossible. See also 2.9.

- 5 **Climatic table.** See 1.226 and 1.227.

Local weather. The SE Trade Wind is dominant throughout the year but it varies at times between ESE and SSE. Any precipitation consists of light showers or drizzle. The sky is usually about half covered with cloud but seldom cloudless. The highest peaks are frequently obscured by this cloud.

Principal marks

2.18

- 1 **Landmarks:**

Masts, N of many (7°53'·6S, 14°22'·8W).
Tanks (7°53'·7S, 14°23'·2W).
Radome (7°54'·4S, 14°24'·2W).
Monument (7°54'·6S, 14°24'·2W).
Flagstaff (7°55'·6S, 14°24'·7W).
Tower (7°55'·9S, 14°24'·1W), on top of Cross Hill.
Cross Hill is one of the many rounded hills on the island whose soil is composed of ashes and a ferruginous earth which is so dry and porous that rain immediately is absorbed.

2 Tanks, N of many (7°56'·0S, 14°25'·1W).
Radome (7°57'·0S, 14°24'·7W).
Dish aerial (7°57'·1S, 14°24'·7W).
Green Mountain (7°57'·1S, 14°20'·6W).
Dish aerial (7°58'·3S, 14°24'·1W) stands on Saddle Crater.
Dish aerials (7°58'·5S, 14°23'·5W), on South Gannet Hill.
Mountain Red Hill (7°57'·8S, 14°21'·6W).
South Pyramid Rock (7°59'·4S, 14°24'·0W).

- 3 **Major light:**

Aero light (7°57'·5S, 14°23'·8W), reported visible at 30 miles, partially obscured by high land, shown 30 minutes either side of aircraft movement.

Directions

Circumnavigation

2.19

- 1 From a position N of North Point (7°53'·4S, 14°22'·7W), noting a dangerous wreck and foul ground extending up to 2½ cables N, the track leads initially SW, passing, (with positions relative to N Point):
NW of Pyramid Point (2 miles SW). Pyramid Rock, which is brown peaked and standing near the waters edge contrasts with the surrounding terrain.
Thence:
- 2 Clear of the anchorages off Clarence Bay, thence:
NW of a buoy (spar, black and white) (3½ miles SW), marking foul ground extending up to 6 cables NW of Catherine Point.

2.20

- 1 Thence the track leads S, passing:
W of Catherine Point (3½ miles SW). A dangerous wreck, reported in 1983, lies 3 cables WSW.
Thence:

W of Portland Point (5¾ miles SSW), noting an unsurveyed area, the limits of which are indicated on the chart, lying 6 cables WNW.

- 2 Thence the track leads SE, passing:
SW of Mars Bay (6 miles S) thence:
SW of a rock (6½ miles S), 2 cables offshore. South Pyramid Rock stands 2 cables NE.
- 3 The track continues to a position S of South Point (6¼ miles S), the S extremity of Ascension Island, close off which are several rocks. Gannet Bay which is fouled by many rocks lies 3½ cables NE of South Point.

2.21

- 1 The track then leads ENE, passing:
SSE of Pillar Bay (5¾ miles SSE). Two rocks 42 and 32 m in height known as Pillar Rocks, are situated in the bay. Thence:
SSE of Coconut Bay (5¾ miles SSE). White Rocks stand close off White Bluff the SW entrance point of the bay. Thence:
- 2 SSE of Unicorn Point (6 miles SE). Crystal Bay lies about 3 cables W. Thence:
SSE of Pumice Cove (6 miles SE). The whole of this coast between South Point and South East Head is high, inaccessible and rocky, and being exposed to the full force of the SE trade winds, the sea breaks upon it with great violence. Thence:
SSE of South East Bay (6 miles SE).

Thence the track continues to a position SE of Whale Point (6¼ miles SE).

2.22

- 1 The track then leads N, to a position NE of South East Head (6¼ miles SE), passing E of South East Head. Thence the track leads NW, passing:
NE of Boatswain Bird Rock (5½ miles SE). The coast between South East Head and Hummock Point 2¾ miles NW is high, inaccessible and rocky, with deep water close off it. Thence:
- 2 NE of Boatswain Bird Island (5 miles SE), thence:
NE of North East Point (3 miles SE), thence:
NE of Porpoise Point (1¾ miles SE).

Thence the track continues to a position N of North Point.

2.23

- 1 **Useful marks:**

South West Bay Red Hill (7°57'·1S, 14°24'·1W).
White Hill (7°56'·7S, 14°19'·0W).
Powers Peak (7°56'·5S, 14°19'·0W).
East Crater (7°54'·5S, 14°21'·7W).

Clarence Bay and Georgetown

General information

2.24

- 1 **Position.** Clarence Bay (7°55'·3S, 14°24'·6W) is situated on the NW side of Ascension Island. Georgetown, the capital is situated on the S side of the bay.

Function. Clarence Bay is the main anchorage and port for the island. There is a tanker berth in English Bay (2.35).

Georgetown is the only settlement and is the centre of administration.

Cable and Wireless PLC operates international telephone and cable services from the island and maintains an internal telephone service.

- 2 **Topography.** For further information See 2.12.

Approach and entry. Clarence Bay is entered between Pyramid Point (7°54'·5S, 14°24'·3W) and Catherine Point 1¼ miles SW.

Cross Hill

Leading Lights

Fort Thornton



Ascension Island – Approaches to Georgetown from NW (2.24)
(Original dated 2004)

Traffic. In 2003, the port was visited by 5 ships. About 10 000 tonnes of cargo is handled annually.

Current. See 2.16.

- 3 **Port Authority.** Port Authority of Georgetown, Administrator's Office, Georgetown, Ascension Island.

Limiting conditions 2.25

- 1 **Controlling depths.** Depths in the designated anchorages range from 15.9 m to 62 m as indicated on the chart.

Tidal levels. Mean spring range about 0.8 m; mean neap range about 0.4 m. See information in *Admiralty Tide Tables Volume 2*.

Density of water is 1.025 g/cm³.

Maximum size of vessel handled. No limitation.

Arrival information 2.26

- 1 **Port radio.** There is a port radio station at Georgetown. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required. Vessels should send ETA 72 hours prior to arrival.

- 2 **Outer anchorage** may be obtained in Clarence Bay, in designated numbered anchorages which are indicated on the chart. Vessels working cargo are advised to anchor on the 30 m contour.

- 3 **Pilotage** is not available. The Port Authority will allocate the anchorage.

Tugs are not available.

Regulations concerning entry. Nobody is allowed on the island without the permission of the Administrator (1.59) unless they are employed by an exempt organisation, or are members of HM Forces on active service.

Local weather forecast. A local weather forecast including swell warnings is provided. See *Admiralty List of Radio Signals Volume 6(3)* for details.

Harbour 2.27

- 1 **General layout.** Clarence Bay provides anchorage for all vessels. A number of mooring buoys, used for lighters and island launches, are laid inshore together with floating hoses used for the occasional discharge of tankers.

A small jetty (2.32) where lighters are discharged and passengers landed is situated close W of Fort Thornton. A landing place is situated in Comfortless Cove (2.32).

- 2 **Landmarks:**

Masts, N of many (7°53'·6S, 14°22'·8W)

Tanks (7°53'·7S, 14°23'·2W).

Radome (7°54'·4S, 14°24'·2W).

Redpole Monument (white square pyramidal obelisk, 4.6 m in height, the apex of which is at an elevation of 27 m) (7°55'·6S, 14°24'·5W).

Flagstaff (7°55'·6S, 14°24'·7W).

- 3 Monument (7°54'·5S, 14°24'·2W).

Tower (7°55'·9S, 14°24'·2W), on top of Cross Hill (2.18).

Tanks, N of many (7°56'·0S, 14°25'·1W).

Radome (7°57'·0S, 14°24'·7W).

Dish aerial (7°57'·1S, 14°24'·7W).

Green Mountain (7°57'·1S, 14°20'·6W).

Mountain Red Hill (7°57'·8S, 14°21'·6W).

- 4 **Major light:**

Aero light (7°57'·5S, 14°23'·8W) (2.18)

Directions for entering harbour 2.28

- 1 **Lines of bearing.** If approaching from S or W, the line of bearing not less than 055° of Pyramid Point (7°54'·5S, 14°24'·3W), thence not less than 090° of the N end of The Long Beach, at the head of Clarence Bay, clears the shoal with depths of less than 10 m off Georgetown. The W extremity of this shoal is marked by a spar buoy.

- 2 **Leading lights.** From the vicinity of 7°51'·5S, 14°28'·0W, the track leads SE towards the anchorage on the alignment (140°) of the following lights, passing clear of shoal ground extending NW between Fort Thornton (7°55'·5S, 14°24'·8W) and Catherine Point 6 cables SW:
Front light (white concrete column, black bands, 5 m in height) (7°55'·6S, 14°24'·5W).
Rear light (similar structure) (61 m from front light).
- 3 **Caution.** Catherine Point (7°55'·9S, 14°25'·2W) should not be used for fixing the vessel's position, nor for a cross bearing by which to anchor, as it consists of detached rocks with no definite extremity.

Directions for landing

2.29

- 1 If proceeding by boat into the jetty W of Fort Thornton the following should be noted:
Tartar Rock (7°55'·5S, 14°24'·8W).
Five rocks between 0·5 and 2 m in height, ½ cable offshore N of Fort Thornton.
A spherical buoy close W of Tartar Rock.

Useful marks

2.30

- 1 Pyramid Rock (7°54'·4S, 14°24'·3W) (2.19).
Bates Rock (surmounted by a white square beacon, reported in 1966 as difficult to see until close inshore) (7°55'·0S, 14°24'·5W), close off Bates Point.
Fort Thornton (7°55'·5S, 14°24'·8W).
- 2 Fort Hayes (7°55'·7S, 14°24'·9W), on Hayes Hill 31 m high.
- 3 The following lights may be of assistance when anchoring in designated anchorage CB1 :
Front light (white mast, red bands, 18 m in height) (7°54'·4S, 14°24'·2W).
Rear light (similar structure, 27 m in height) (37 m from front light).
These marks are difficult to distinguish by day, due to the numerous masts in the vicinity.

Anchorage

2.31

- 1 Numbered anchorage berths are as indicated on the chart. Berths are allocated by the Port Authority.
On anchoring a good scope of cable should be veered, as sometimes the wind blows with strength off the high land. Vessels generally lie at single anchor heading towards the land, but instances have occurred when they have swung stern towards the shore, and as they are almost continually rolling it is necessary to bear this fact in mind.
- 2 Anchorage S of the shoals off Georgetown is unsafe, and rollers (2.16) sometimes prevent disembarkation in that vicinity for several days in succession.
Caution. A disused cable area, as indicated on the chart, lies in the N part of Clarence Bay.
Some old moorings foul the bottom between the cable area mentioned above and the mooring buoys in the inner part of Clarence Bay.

Landings

2.32

- 1 **Comfortless Cove.** A landing place is situated in Comfortless Cove (7°54'·6S, 14°24'·1W), which is small. The shore is composed of a mass of irregular shaped clinkers. Mariners should note that a rope may be across the entrance to protect swimmers.

This landing place is not to be used without the direct permission of the Administrator.

- 2 **Pier.** A jetty 23 m long by 15 m wide and alongside depth of 3 m, where lighters are discharged and passengers embark and disembark is situated close W of Fort Thornton (7°55'·5S, 14°24'·8W). Great caution is necessary on account of the rollers (2.16). There are two buoys moored off the jetty, used for waiting boats; it being unsafe to remain alongside the landing steps longer than is absolutely necessary.

Port services

2.33

- 1 **Repairs:** minor repairs can be effected.
Other facilities: shipping agency; shop; hospital. Deratting can be carried out and deratting and deratting exemption certificates issued. Shore leave is limited to between 0800 and 1900.
Supplies: fresh water is expensive and only available in own containers; very limited supplies.
Communications. Wideawake Airport 3¼ km, no commercial flights, military only. RMS *Saint Helena* calls regularly from Capetown, Luderitz and Walvis Bay.
Rescue. A launch is available.

Anchorage harbours and bays

South West Bay

2.34

- 1 **Description.** South West Bay (7°58'S, 14°25'W), entered S of McArthur Point (7°57'·7S, 14°24'·9W), lies on the W side of the island.
- 2 **Topography.** It has a fine sandy beach, behind which is a lava cliff, the highest point of which rises to an elevation of 75 m. Starting 5 cables inland from the bay, there is a smooth plain of considerable dimensions, the soil of which is very rich, but so dry and dusty as seldom to exhibit any other verdure than a small amount of an annual herb named purslane.
In the vicinity of Saddle Crater (7°58'·4S, 14°24'·1W) there are several conical hills.
- 3 **Depths.** An area that has not been surveyed lies about 8 cables WSW of the bay. A depth of 5 m lies 2¾ cables S of McArthur Point.
Meteorological rocket firings take place from a position 7½ cables NNE of Portland Point (7°58'·6S, 14°24'·9W). Lights are displayed from the point when the range is in use. However they avoid times of known ETA's of ships.
A danger arc 150° to 270° radius 8 miles exists, and the area is safe 10 minutes after launch.
Ascension radio station makes a warning broadcast.
Prohibited anchorage. See 2.15.

English Bay

2.35

- 1 **Description.** English Bay (7°53'·5S, 14°23'·0W) lies 2¾ miles NE of Georgetown. Special arrangements to berth oil tankers in the bay are made through the Harbour Master, Ascension Island.
Maximum size of vessel handled. Length 183 m and draught 12·2 m.
Port radio. There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.
Landmarks:
Masts, N of many (7°53'·6S, 14°22'·8W).
Tanks (7°53'·7S, 14°23'·1W).



Saint Helena Island from SSE at 12 miles (2.37)

(Original dated 2001)

(Photograph – Siegfried Netzband)

- 2 **Directions.** Leading beacons:
 Front beacon (white, triangular topmark apex down)
 (7°53'4S, 14°22'8W).
 Rear beacon (white, triangular topmark apex up)
 (100 m from front beacon).

From a position about 1½ miles W of North Point (7°53'4S, 14°22'7W), the alignment (090°), of these beacons leads E, passing:

N of a headland about 7½ cables W of North Point with shoal ground extending 1 cable N, and depths of less than 3 m over it.

- 3 The track then continues towards the tanker berth in the bay, noting a rock which covers and uncovers 1¾ cables W of North Point. A buoy (port hand) is moored 2½ cables W of the same point.

4 **Useful marks:**

Cairn (7°53'4S, 14°22'7W).

Anchorage. Vessels approach on the alignment 090° of the beacons on North Point and let go the port anchor when 4½ cables from the front beacon, that is when crossing the following beacons on the alignment of 180°:

Front beacon (white, square topmark) (7°53'6S, 14°23'2W).

Rear beacon (similar) (80 m from front beacon).

- 5 The starboard anchor is let go when 3 cables from the front beacon, then the vessel is turned to port, the cables are evened up and the stern secured to hooks on shore.

The alignment 090° of poles (black and white), S of the 090° beacons on North Point mark the position of the stern of the tanker when secured.

Three mooring buoys are laid in the bay.

Landing. There is a natural rock landing place on the W side of the bay as indicated on the chart.

North East Bay

2.36

- 1 Anchorage, fairly sheltered from the predominating SE wind, may be obtained in North East Bay (7°54'7S, 14°20'4W) as indicated on the chart. Foul ground extends about ½ cable off the E entrance point. It is said that rollers (2.16) only enter the bay about six times a year. There is a landing place on the E side of the bay.

SAINT HELENA ISLAND

General information

Chart 1771 plan of Saint Helena and plan of Rupert's and James Bays

Description

2.37

- 1 Saint Helena Island (15°57'S, 5°2'W) lies 703 miles SE of Ascension Island. The island is 10½ miles in length and 6½ miles wide and has an area of 122 square km. The population in 2000 was about 5006.

Although within the tropics, the SE trade winds keep the temperature mild and equable.

- 2 Landing is almost impracticable, except on the NW or leeward side of the island, though in very favourable weather it may be effected in Prosperous Bay (2.58) and Sandy Bay (2.59), situated respectively on its E and S sides.

The capital is Jamestown.

For information on history, flora and fauna, see 1.66.

Route

2.38

- 1 The island may be passed at a prudent distance having regard to the dangers given in the coastal directions at 2.43.

Topography

2.39

- 1 The Island is of volcanic origin, and consists of numerous rugged mountains, the highest rising to 820 m, interspersed with picturesque ravines.

At a distance of about 60 miles, Saint Helena resembles a huge pyramidal-shaped fortress rising abruptly from the sea; from afar no signs of vegetation are visible, but on nearer approach the valleys and the summits of the hills are seen to be clothed in verdure in striking contrast to the

precipitous and almost inaccessible cliffs which form the coastline. These cliffs, from 300 to 550 m in height, are intersected by chasms which serve as outlets for the streams flowing from the high lands of the interior and terminate in small coves more or less exposed to the fury of the waves.

2 The island is divided into two unequal parts by a ridge of mountains from 600 to 820 m high, extending in a curve from Castle Rock Point, the S point of the island, to Stone Top Point (15°59'S, 5°39'W), near its SE extremity. The principal eminences in this range are Mount Actaeon, the highest point on the island; Diana's Peak, and High Peak, whilst near the N end of the island, Flagstaff Hill.

3 Numerous spurs radiate from the central range of the mountains and terminate, on reaching the sea, in the precipitous cliffs remarked on above, whilst the intermediate valleys slope down to the coves. The spurs on each side of the SW part of the range are suddenly broken at about 5 cables from the ridge, apparently the result of a subsidence which has left, here and there, towering fragments of basalt. These isolated masses are the evident results of some volcanic disturbance, and several of them are of curious and fantastic shape. Two of the most remarkable are situated on the S side, of the range and are named Lot and Lot's Wife; they are both formed of strangely contorted Columna basalt, and are 60 and 49 m in height, respectively; whilst their summits are at elevations of 454 and 462 m.

Natural conditions

2.40

1 **Local magnetic anomaly.** The normal magnetic variation is increased by up to 7° in the vicinity of Munden's Point (15°55'·1S, 5°43'·1W).

Current. The South Sub Tropical Current sets W throughout the year at an average rate of ½ kn.

2 **Rollers.** The most singular phenomenon connected with this part of the ocean is the setting in of very heavy continuous swells or rollers from NNW which are most prevalent during the months of January and February, when the waves break on the NW coast of Saint Helena with astonishing grandeur. During their continuance, landing in ships boats is dangerous, often impossible and shore boats only should be used.

3 These rollers rise without any apparent cause for, as a rule the weather is good and the wind light. In the old days, many lives were lost in consequence of ships' boats being capsized, and in February, 1846, 13 small vessels moored near the shore were driven from their moorings and totally wrecked, and the wharves and low-lying batteries also suffered severe damage. If a vessel is moored in a depth of 31 m however, there is no danger as the rollers only commence to be dangerous within 1 cable of the shore; in 1921, one of HM vessels was able to load coal whilst the rollers were setting in.

4 Local reports in 1975, indicate that December to March is the worst time for rollers, and that the above remarks tend to exaggerate their effects. Rupert's Bay is reported to suffer more than James Bay, the low jetty at the S side of the bay being swamped to a height of 2 m on occasions. Up to 3 days warning of rollers from the NW may be passed from Ascension Island by radio, which is passed to ships on VHF by Saint Helena Radio.

See 2.9 and 2.16.

2.41

1 Table showing average sea conditions in James Bay (1891 to 1898).

Month	Calm	Slight swell	Heavy swell	Roller
Jan	6	14	6½	5
Feb	4	10	9	5
March	12	13	5	1
April	11	13½	5	½
May	13	12	4	2
June	9½	17	2½	1
July	11	15½	2½	1
Aug	16	10	3½	½
Sept	10	16	3½	½
Oct	8	15	7	1
Nov	10	9½	8½	2
Dec	6	15	7	3½

2 **Climatic table.** See 1.226 and 1.228.

Local weather. Conditions at the island are dominated by the SE Trade wind in all months. The direction is regular between SE and S but the wind is deflected by the high ground so that the direction becomes erratic near the NW coast and local squalls develop. The higher points on the island are often obscured by cloud. The average rainfall is moderate with little seasonal change but considerable variations from year to year. Amounts are smaller on the lee side.

The weather station is 628 m above sea level so the observations are not entirely representative of the weather below.

Principal marks

2.42

1 **Landmarks:**

Flagstaff (15°55'·6S, 5°43'·2W).

Diana's Peak (15°58'·3S, 5°42'·0W) on Mount Actaeon.

Directions

Circumnavigation

2.43

1 From a position N of Sugar Loaf Point (15°54'·2S, 5°41'·8W), with the land behind rising to Sugar Loaf Hill (2.52), the track leads initially SW passing, (with positions relative to Sugar Loaf Point):

NW of Buttermilk Point (2¾ cables WSW), from which a light is exhibited, thence:

NW of Banks Point (5 cables SW), thence:

NW of Rupert's Bay (1¼ miles SW) (2.57), thence:

2 NW of Chubbs Point (1¼ miles SW), from which a light is exhibited. Deep valleys descend between steep rocky hills to the head of Rupert's Bay and James Bay, 5 cables SW. Rupert's valley is flanked on the NE side by Rupert's Hill, and the two valleys are separated by a ridge which rises from Munden's Point, situated between the two bays, to a height of 267 m. The valley descending to James Bay, in which is the settlement of Jamestown, is flanked on its SW side by a ridge which descends from High Knoll (not named on chart), its summit, to Ladder Hill, where it terminates abruptly in a stupendous perpendicular cliff facing the sea. Thence:



Chubbs Point from WNW (2.43)
(Original dated 2001)

(Photograph – Siegfried Netzband)

- 3 NW of Lemon Valley Bay ($3\frac{1}{2}$ miles SW). Long Ledge, 7 cables SW, a narrow reef extends NW from the coast for $1\frac{1}{2}$ cables offshore. The Lion (not charted) is an above-water rock lying 2 cables SW of Long Ledge. Thence:
NW of Lighter Rock (5 miles SW), $1\frac{1}{2}$ cables offshore, thence:
NW of Egg Island (6 miles SW) (2.59) 88 m high. Peaked Island and Thompson's Valley Island lie 2 and 7 cables, respectively SSW of Egg Island.
Thence the track continues to a position W of South West Point ($7\frac{3}{4}$ miles SW).

2.44

- 1 The track then leads SE passing:
SW of Bird Islet ($7\frac{3}{4}$ miles SW), thence:
SW of Old Joan Point ($7\frac{3}{4}$ miles SW), thence:
SW of Old Father Point ($7\frac{3}{4}$ miles SW), thence:
SW of The Needle ($7\frac{3}{4}$ miles SSW), close inshore, thence:
Clear of a rocky patch ($9\frac{1}{2}$ miles SSW) with a depth of 18.3 m over it, and:
2 SW of Speery Islet ($8\frac{1}{4}$ miles SSW). Flat Rock and Salt Rock, (both not named on chart) lie 1 cable NE and E respectively. Thence:
Clear of Speery Ledge (9 miles SSW), a small reef of pointed rocks, with depths from 3.0 m, reported in 1977, to 7.3 m over them.
3 Thence the track continues to a position S of Castle Rock Point (8 miles SSW), 165 m high. The Jar and Flat Rock (both not named on chart) lie 1 cable SE and SW respectively. Robert Rock (not named on chart) lies about 2 cables S of the point. Lower Black Rock, 43 m high, and Upper Black Rock, 49 m high, (both not named on chart) lie $3\frac{1}{2}$ and 5 cables respectively, WNW of Castle Rock Point. The coast to Horse's Head $2\frac{1}{4}$ miles NE is precipitous and apparently steep-to, though it has not been thoroughly sounded. There are a number of small off-lying rocks up to $\frac{1}{2}$ cable offshore, including Lot's Wife Ponds (not named on chart).
4 **Clearing bearing.** The line of bearing less than 051° of Gill Point ($15^\circ 58' 2S$, $5^\circ 38' 2W$) open E of Long Range Point, 3 miles SW, passes SE of Speery Ledge.

2.45

- 1 The track then leads NE, passing:
SE of White Bird Islet (7 miles SSW), thence:
SE of The Chimney (7 miles SSW), 20 m high, a remarkable hexagonal column of basalt. It is an isolated portion of a horizontal stratum of columnar basalt which forms a stupendous wall 15 to 55 m high that stretches for a considerable distance along this coast Thence:



Saint Helena – George and Shore Islands from NE (2.45)
(Original dated 2004)

(Photograph – Crown Copyright)

- 2 SE of Sandy Bay Islet (6 miles S). Thence:
SE of Powell Point (6 miles S). The Buoys, two rocks lie about 2 cables SE of the point. Between Powell Point and Long Range Point 8 cables ENE lie Powell Bay and Long Range Cove (both not named on chart). Thence:
- 3 SE of Long Range Point (6 miles S). Flat Rock and Rough Rock Islets lie 1 and 1¼ miles respectively, NE. There is an unexamined indentation in the coast between Long Range Point and Rough Rock Islets. Thence:
SE of Stone Top Point (5½ miles SSE), thence:
SE of George Islet (6 miles SE), a detached rock, thence:
SE of Gill Point (5½ miles SE). Shore Islet lies close S off the point.
- 4 Thence the track continues to a position E of Saddle Point (4¾ miles SE), also known as King and Queen Point. The intervening coast between Saddle Point and Gill Point, forms an indentation which has not been examined. It also includes a small bay known as Dry Gut Bay (there is also a Dry Gut Bay on the W side of the island near Lighter Rock).
- 2.46**
1 The track then leads NW, passing:
NE of Bay Point (4 miles SE). The coast between Saddle Point and Bay Point is steep-to.
Clearing bearings. The line of bearing more than 178°, of George Islet, well open E of Saddle Point, passes E of Barn Ledge.
The line of bearing less than 279°, of Sugar Loaf Point, open N, of the extreme N part of the coast under The Barn, passes N of Barn Ledge.
- 2 The track continues NW, passing:
Clear of Barn Ledge (3¾ miles ESE), a small detached rocky shoal, with a least depth of 5.9 m and with depths from 16.5 to 22 m within 1 cable of it all round. This dangerous shoal is generally marked by a heavy ground swell. Thence:
- 3 NE of Scraggy Point (3 miles ESE). Turks Cap Bay (not named on chart), lies between this point and Barn Point 5 cables N. Thence:
NE of Barn Long Point (3 miles E). The remains of a vast crater can be traced between Flagstaff Hill, 1 mile WSW, and The Barn, a mountain 616 m high, in shape resembling a building of that kind, and situated on the NE end of the island.
Thence the track continues to a position N of Sugar Loaf Point.

James Bay and Jamestown

General information

2.47

- 1 **Position.** James Bay (15°55'3S, 5°43'2W), is situated on the NW side of Saint Helena Island.
Function. It provides anchorage berths for ships calling at the island. A tanker berth is situated in Rupert's Bay (2.57) 5 cables NE.
- 2 **Topography.** On the summit of Ladder Hill are the old artillery barracks, the ascent to which is made by a well engineered zig-zag road, or by 699 steps leading straight up from the town.
A white cottage standing about 1¾ cables ESE of Munden's Point is prominent from W and NW.
There is a rifle range on Ladder Hill.

- 3 Jamestown (15°55'5S, 5°43'1W) is entered from seaward through a covered gateway, within which on the left hand are the Government offices, known as The Castle, whilst on the right hand is Saint James' Church. The town extends the whole length of the valley, which gradually decreases in breadth as it recedes from the coast. The residences of the principal inhabitants are built on the higher and cooler parts of the island.
The population in 2000 was about 1500.
- 4 Plantation House, the residency of the Governor, and Saint Paul's Church, the official cathedral, stand 1¾ miles SE of Lemon Valley Bay (15°56'4S, 5°44'7W).
- 2.48**
1 **Approach and entry.** James Bay is approached and entered between Munden's Point (15°55'1S, 5°43'1W) and Ladder Hill Point, 3½ cables SSW.
Tidal stream in James Bay is said to set N during the stronger in-going tide and SW during the out-going tide.
No tidal stream was experienced by HM Surveying Ship *Herald* whilst at anchor for 38 hours in April 1984.
Marine farm. An artificial reef is established as indicated on the chart 4½ cables W of Ladder Hill Point.
- 2 **Port Authority.** Jamestown Harbour Master, The Wharf, Jamestown, Saint Helena Island.

Limiting conditions

2.49

- 1 **Controlling Depths.** Depths in the three recommended anchorages are approximately 35 m (2.53).
Tidal levels. Mean spring range about 0.8 m; mean neap range about 0.4 m. See information in *Admiralty Tide Tables Volume 2*.
Density of water is 1.025 g/cm³.
- 2 **Maximum size of vessel handled.** *Berge Odel*, 106 882 tonnes.
Local weather and sea state. The prevailing SE wind blows down James Valley and Rupert's Valley in violent squalls, but where there is high ground the prevailing wind is deflected so that a light NE wind blows along the NW side of the island. The interaction of this wind and the main SE wind causes a confused sea in the vicinity of Sugar Loaf Point and Rupert's Bay.
- 3 Rollers and heavy swell, particularly affecting the NW coast are most common between December and March. For further information about rollers see 2.40.

Arrival information

2.50

- 1 **Port radio.** There is a radio station. See *Admiralty List of Radio Signals Volume 6(3)*.
Notice of ETA required. ETA should be sent 24 hours in advance.
- 2 **Outer anchorage.** Anchorage may be obtained, in depths of 27 to 51 m at distances of from 2 to 4 cables offshore, anywhere off the coast between Ladder Hill Point and Lemon Valley Bay, 1½ miles SW.
Pilotage not available, however the Harbour Master will provide advice on request.
Tugs are not available.
- 3 **Quarantine.** No boat, except the Health Officer's boat, is permitted to go alongside any in-coming vessel which intends to anchor, nor is any contact with other vessels or with the shore permitted until pratique has been granted.
Any vessel placed in quarantine shall continue to show a yellow flag, and by night she shall exhibit, from the foremast, two white lights in a vertical line, at a distance apart of not less than 1.2 m or more than 1.8 m.

Chubbs
PointLadder Hill
Point

James Bay from N (2.48)

(Original dated 2004)

(Photograph – Crown Copyright)

Vessels calling at Saint Helena for refuge, to land a sick person, or for other reasons, are advised to anchor as previously directed since port officials, including medical staff, will not board a vessel unless she is at anchor. However if a vessel is unable to anchor, she should heave-to 1 mile NNW of Ladder Hill Point. If anyone is to be landed, a ship's boat must be used. The Saint Helena port launch will meet the boat in the mooring area about 1½ cables N of Ladder Hill Point. During the operation contact should be maintained with Saint Helena coast radio station (see *Admiralty List of Radio Signals Volume 1*). If a ship is likely to arrive outside the normal operating times of the radio station a request should be made in advance to maintain communication until the operation is completed.

Harbour

2.51

- 1 **General layout.** The harbour consists of three anchor berths as indicated on the plan.

Local magnetic anomaly. See 2.40.

Climatic table. See 1.226 and 1.228.

Landmark:

Flagstaff (15°55'·6S, 5°43'·2W).

Directions for entering harbour

2.52

- 1 **Leading lights.** From the vicinity of 15°52'·6S, 5°43'·7W, the alignment (171°) of the following lights leads S into James Bay, passing E of a wreck, RFA *Darkdale*, lying 4½ cables NNW of the front light. Thence the track leads to the required anchorage berth.

Front light (white triangular beacon, 2 m in height) (15°55'·5S, 5°43'·2W).

Rear light (similar structure) (98 m from front light)

- 2 **Useful marks:**

Sugar Loaf Hill (15°54'·4, 5°42'·1W), conspicuous white rock on summit.

Rupert's Hill (15°55'·3S, 5°41'·9W).

Monument (15°55'·5S, 5°43'·1W).

The Castle (15°55'·5S, 5°43'·1W).

Tower (15°55'·5S, 5°43'·1W), of Saint James' Church.

Sampson's Battery (15°55'·7S, 5°42'·7W).

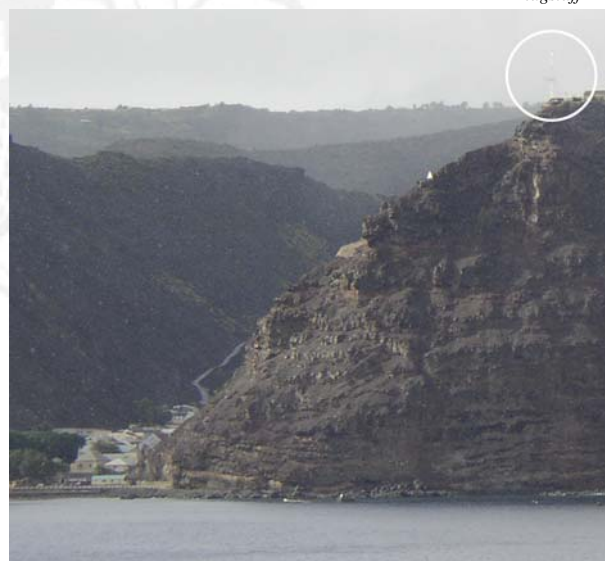
Round tower (15°55'·8S, 5°43'·1W).

Anchorage

2.53

- 1 Anchorage may be obtained as indicated on the chart. Vessels should not anchor in depths of less than 30 m on account of the rollers and ground swell. Vessels lie bow to shore most of the time but can swing stern to shore during calm conditions and when turned by tide.
- 2 **Caution.** The wreck of RFA *Darkdale* lies about 1 cable NW of the recommended anchorage in position 15°55'·2S, 5°43'·4W.

Flagstaff



Ladder Hill Point (2.52)

(Original dated 2004)

(Photograph – Crown Copyright)



Jamestown (2.51)

(Original dated 2001)

(Photograph – Siegfried Netzband)

Port services

2.54

- 1 **Wharf.** On the NE side of James Bay there is a wharf 91 m in length, with a depth of 2.7 m alongside at its N extremity. The wharf is equipped with cranes for the discharge of lighters and there are steps at the N end of the wharf for harbour launches to land passengers.

- 2 **Repairs.** Limited facilities available.

Other facilities: hospital; clinics; post office; HM Customs Warehouse; Deratting can be carried out and deratting and deratting exemption certificates issued.

- 3 **Supplies:** Fresh water supplies are limited and can only be supplied in an emergency. Fresh provisions including fish, fruit and vegetables available in small quantities.

Communications: no airport; supply ship RMS *Saint Helena* makes fortnightly visits to the island from Capetown, Luderitz and Walvis Bay.

Rescue. A lifeboat is stationed at James Bay.

Small craft

2.55

- 1 A number of small craft moorings lie in James Bay as indicated on the chart. Limited facilities available at the Saint Helena Yacht Club.

Two submerged wrecks lie approximately 1 cable N of Ladder Hill Point. The outer end of the larger wreck is marked.

Anchorage and bays

Flagstaff Bay

2.56

- 1 Flagstaff Bay is entered between Sugar Loaf Point (15°54'2S, 5°41'8W) and an unnamed point 2 miles ESE. Though the bay has not been thoroughly examined, the

indications are that it is fairly steep-to and is clear of known dangers.

Rupert's Bay

2.57

- 1 **Description.** Rupert's Bay (15°55'0S, 5°42'8W) is used by tankers, whilst discharging through a floating hose, fixed to the shore by a gantry 1½ cables SSE of the tanker berth. A yellow mooring buoy is laid, as indicated on the chart, to which the stern is secured.

- 2 **Anchorage** may be obtained off Rupert's Bay, but vessels are cautioned that abandoned submarine cables exist E of a line drawn 335° from Munden's Point. In the event of a ship's anchor fouling one of these cables, efforts should be made to slip the cable undamaged, but not to the detriment of the ship's equipment or safety.

- 3 **Useful marks:**

Chimney (15°55'1S, 5°42'7W).

The alignment (091°) of two leading marks (yellow triangles, point upwards) situated 3 cables ENE of Chubbs Point (15°55'1S, 5°42'9W), may assist vessels in berthing. It is reported that these marks have not been maintained and are not easily visible.

Prosperous Bay

2.58

- 1 Anchorage may be obtained in a depth of 22 m, about 2 cables offshore in Prosperous Bay (15°56'1S, 5°38'8W). The original landing place of the English expedition in 1672 was at the S end of Prosperous Bay, close W of Bay Point.

Other minor bays and anchorages**2.59**

- 1 **Stone Top Bay** which has not been examined lies between Gill Point (15°58'4S, 5°38'2W) and Stone Top Point about 1 mile SW.

Egg Island (15°58'2S, 5°46'4). Anchorage may be obtained 2 cables NW of the island in a depth of 37 m.

Sandy Bay (16°00'3S, 5°42'8) is entered N of Horse's Head. There is a landing place on the SW shore of the bay and an old battery is situated on its N shore.

TRISTAN DA CUNHA GROUP**GENERAL INFORMATION**

Chart 1769

Area covered**2.60**

- 1 This section describes the Tristan da Cunha group (37°15'S, 12°30'W). These islands, five in number, are situated between the parallels of 37°04'S and 37°26'S and the meridians of 12°13'W and 12°43'W.

It is arranged as follows:

Tristan da Cunha Island (2.63).

Inaccessible Island (2.79).

Nightingale, Middle and Stoltenhoff Islands (2.89).

For information on history, flora and fauna, see 1.76.

Routes**2.61**

- 1 The islands may be passed at a prudent distance having regard to the dangers given in the coastal directions at 2.71, 2.86 and 2.95.

Natural conditions**2.62**

- 1 **Current.** The current generally sets NE, but other sets are common. Exceptionally, a rate of 2 kn may be attained.
Rollers. The following information respecting the rollers, which are occasionally experienced at Tristan da Cunha Island, as well as at the other islands in the South Atlantic,

is derived from the islanders themselves, but unfortunately no statistics have been kept.

- 2 At Tristan da Cunha Island the rollers may occur at all times during winds or calms; in the latter case they are always heavier.

Though they are more frequent during the winter months, the heaviest rollers occur in December, January, and February, three of the finest months, when they sometimes last three or four days, and this last remark, according to the account of whalers, also applies to Gough and other islands in the S hemisphere. For further information on rollers see 2.9.

- 3 **Climatic table.** See 1.226 and 1.229.

TRISTAN DA CUNHA ISLAND**General information**

Chart 1769 plan of Tristan da Cunha group

Description**2.63**

Tristan da Cunha Island (37°07'S, 12°18'W) is the largest and most NE of the group, and has an area of 98 square km. The population in 2000 was about 313. The capital is Edinburgh.

- 1 Experience shows Tristan da Cunha Island to be moderately healthy for the inhabitants are subject to few diseases other than infections such as influenza, introduced by visiting vessels.



Tristan da Cunha from W at 11 miles (2.63)

(Original dated 1995)

(Photograph – Crown Copyright)

Route**2.64**

- 1 The island may be passed at a prudent distance having regard to the dangers given in the coastal directions at 2.71.

Topography**2.65**

- 1 The island is in the form of a truncated cone about 6 miles in diameter with its sides rising at an angle of about 45° to a central peak 2060 m in height.

The sides of the island consist of walls of inaccessible cliffs from 300 to 610 m in height, which rise, except on its NW side, directly from the sea. On the NW side there is, in front of the cliffs, a comparatively low grassy slope, from 30 to 60 m high, which terminates in Herald Point (37°03'·9S, 12°19'·0W), the NW extremity of the island. The sides of the mountain mass as far as the central dome are covered with brushwood, intermixed with ferns and long grass; but above 1500 m, coinciding with the normal upper level of the clouds, the mountains consist of loose stones and volcanic rubble, with occasional rocks and boulders.

Depths**2.66**

- 1 Except on the N and SW coasts, where shelves extend more than 1 mile offshore, the island is surrounded by deep water.

Kelp**2.67**

- 1 The island is practically surrounded by a belt of kelp. In 1970, HMS *Eskimo* reported that, at least as far seaward as the 36 m line, the kelp was dense enough to cause blockage of sea-water inlets. In 1995, RMS *Saint Helena*, and in 1997, HMS *Monmouth* reported kelp out to a depth of 20 m in the vicinity of the Edinburgh anchorage (2.74). For further information on kelp see 1.3.

Fauna**2.68**

- 1 Tristan da Cunha was once a major breeding place for oceanic birds, but its importance declined with the advent of man and the introduction of animals. Following a shipwreck in 1882, the island became infested with rats, and these, together with wild cats, goats and pigs were mainly responsible for the reduction in the bird life of the island.
- 2 Of the original land birds the only survivor is a species of thrush, though the Gough Island moorhen introduced in the middle of the 20th century, is said to be thriving. Wild cattle may be found in many parts of Tristan da Cunha Island and the islanders will only approach them if armed.

The sea surrounding the islands abounds with fish (1.82) which provides the main livelihood for the islanders.,

Natural conditions**2.69**

- 1 **Local magnetic anomaly.** The normal magnetic variation is increased by up to 14° within a distance of 3 miles of Edinburgh anchorage. **Weather.** Wind from a NW direction has been observed to eddy around the island and to increase in strength as it does so, veering or backing to NW again about 2 miles SE of the island. In periods when the wind has a W

component, the upper part of the island is covered with cloud.

- 2 Thunderstorms are rare, but violent storms occur about three or four times a year.

Between June and October the upper part of The Peak is often snow covered, and sleety snow and hail are experienced at ground level.

Mariners are advised to consult the islanders concerning the weather as they are reported to be able to predict changes when normal signs give no indication of their approach.

Climatic table. See 1.226 and 1.229.

Principal marks**2.70**

- 1 **Landmarks:**

Queen Mary's Peak (37°06'·6S, 12°17'·4W), often obscured by cloud.
Tank (37°04'·2S, 12°18'·5W).

Directions**Circumnavigation****2.71**

From the vicinity of Edinburgh Anchorage, 6 cables NE of Herald Point (37°03'·9S, 12°19'·0W), the track leads initially W passing (with positions relative to Herald Point):
N of Herald Point, which is steep-to. Shoal ground extends up to 3 cables off the point.

- 1 Thence the track continues to a position NW of Herald Point.

The track then leads SSW, passing:

WNW of Herald Point. Dangerous rocks extend up to 2 cables off the coast between Herald Point and Crawford Point 4 cables SW. Thence:

- 2 WNW of Boatharbour Bay (1¼ miles SW). Hillpiece Hardy Rocks (not named on chart) lie close to the coast on the N side of Boatharbour Bay. The cliffs between Boatharbour Bay and The Hardies 1 mile SW are about 30 m in height., Close inland are the potato patches upon which the islanders so much depend. These are connected by a road with the main settlement. Thence:
- 3 WNW of The Hardies (2¼ miles SW), two rocks, thence:
WNW of Anchorstock Point (3¾ miles SW). A rock, the position of which is approximate, was reported, in 1936, 4 cables NW of the point.

Thence the track continues to a position W of Anchorstock Point.

2.72

- 1 The track then leads SSE, passing WSW of Cave Point (6 miles S). Dangerous rocks extend up to 6 cables off the coast between Anchorstock Point and Cave Point 3 miles SE.

The track then leads SE, E and NE, passing:

SW, S and SE of Sailshardy Rocks (6¾ miles S), thence:

SE of Stonyhill Point (6½ miles SSE). A shoal, the position of which is approximate, lies 7 cables ENE of the point. Thence:

SE of a reported dangerous rock (7 miles SSE) located 1¼ miles offshore, thence:

- 2 SE of Lyon Point (5¾ miles SE). Reefs extend up to 6 cables off the coast between Sailshardy Rocks and Sandy Point 4¾ miles NE. Thence:
SE of Sandy Point (5¾ miles SE).

Thence the track continues to a position E of Sandy Point.

The track then leads NW, passing NE of Rookery Point (2¼ miles E), then W to the vicinity of Edinburgh Anchorage.

2.73

1 Useful mark:

Spire (37°04'1S, 12°18'6W).

Edinburgh Anchorage

Chart 1769 plan of Edinburgh Anchorage

General information

2.74

- 1 **Description.** Edinburgh Anchorage (37°03'4S, 12°18'6W) lies off the N coast of Tristan da Cunha Island. The settlement of Edinburgh is situated on a grassy slope which terminates at Herald Point (37°03'9S, 12°19'0W).

Calshot Harbour, 2 cables E of Herald Point is a small boat harbour, but the use of it is made hazardous on account of the reefs inside it and also outside in the approach, and by breakers which are continuous in the entrance during any swell. In 1997 it was reported that entry to the harbour is very difficult if the wind or swell is from the N or NW.

- 2 **Topography.** The Ridge which is a point terminating in a yellow cliff, is situated 12 cables E of Herald Point. Between these two points there were formerly two bays, Falmouth Bay and Quest Bay, (not named on chart), which were separated by Julia Point (not named on chart). These features have been changed by the lava stream from the 1961 eruption, and the former Hicks Beach Landing in Falmouth Bay and most of Quest Bay have been covered by lava.

- 3 A mast (10 m in height) stands 1½ cables E of Herald Point.

A flagstaff stands 600 m SE of Herald Point at Prince Phillip Hall, the social centre.

A crayfish canning factory stands 100 m SE of Herald Point.

For further information on topography see 2.65.

2.75

- 1 **Depths.** There are general depths from 28 to 36 m at the anchorage. In the harbour there are depths of 2.4 m at high water.

Uncharted shoals. Following volcanic eruptions in 1961, there is a possibility that uncharted shoals may exist offshore.

- 2 **Local knowledge** is essential for entering the harbour.

Swell. There is a heavy swell on the beaches near the settlement, and at the landing places indicated on the chart.

Landings. The landings indicated on the chart can only be used with difficulty, by agile people who may have to climb cliffs 60 m in height before they can traverse the island to the settlement. These landings should not be attempted unless accompanied by a resident.

- 3 **Local magnetic anomaly.** See 2.69.

Landmarks:

Queen Mary's Peak (37°06'6S, 12°17'4W).

Tank (37°04'2S, 12°18'5W).

Directions

2.76

- 1 The chart is sufficient guide noting a rock, known as Puma Rock, with a depth of 3 m over it reported in 1982, lying 5 cables NE of Herald Point.

Puma Rock is marked by a plastic buoy when RMS *Saint Helena* is expected.



T'da Cunha–Edinburgh Anchorage from N (2.74)

(Original dated 1995)

(Photograph – HMS Endurance)



T' da Cunha–Edinburgh and Calshot Harbour (2.74)

(Original dated 2000)

(Photograph – HMS Endurance)

2 Useful marks:

The following beacons in line may be useful for the approach, or for anchoring:

Beacons in line 114°, only becoming visible at about 2½ miles.

Front beacon (triangle) (37°03'·9S, 12°17'·6W).

Rear beacon (similar) (2¼ cables from front beacon).

3 Beacons in line 202¾°:

Front beacon (triangle) (37°04'·0S, 12°18'·8W), position approximate.

Rear beacon (similar to front beacon) (1½ cables from front beacon).

Anchorage

2.77

- 1 The anchorage was surveyed in 1972 and details have been incorporated on the plan. However mariners are cautioned that following the volcanic eruption in 1961, there is a possibility that isolated pinnacles undetected by the above survey, may be encountered offshore.

Anchorage may be obtained as indicated on the plan in depths from about 28 to 36 m, about 6 cables NE of Herald Point. Choppy seas may be experienced here due to the meeting of tidal stream and current.

A quieter anchorage may be obtained 5 cables NE of the harbour, E of the designated anchorage.

In strong winds there is no shelter due to acceleration effect at Tristan da Cunha. Vessels are advised to seek shelter in the lee of Inaccessible Island.

In consequence of the uncertainty of the weather it is essential that main engines should be kept ready.

Port services

2.78

- 1 **Other facilities:** hospital and resident doctor, who also carries out dental duties; Anglican church.

Communications. Helicopter landing area, 3 cables 095° from Herald Point. It is indicated by a circle of white stones and a small H. The ground slopes away slightly towards the shore.

Two fishing vessels *Calso* and *Edinburgh* which operate from Capetown, also run a mail service. In addition, visiting ships are asked to bring and collect mails. The island issues its own postage stamps.

INACCESSIBLE ISLAND

General information

Chart 1769 plan of Tristan da Cunha group

Description

2.79

- 1 Inaccessible Island (37°18'S, 12°41'W), is second largest island of the Tristan da Cunha group. As its name implies it is the least known and visited of the group. It is 3 miles in length and 2½ miles wide.



Inaccessible Island from N (2.81)

(Original dated 1997)

(Photograph – HMS Endurance)

The island is of great scientific interest to botanists and biologists and the conservation of its undisturbed environment far outweighs any potential for agricultural or human use.

- 2 The island was declared a nature reserve in 1994. Landing is not allowed without a permit from the Administrator of Tristan da Cunha. Permits are normally only granted for scientific visits.

Route

2.80

- 1 The island may be passed at a prudent distance having regard to the dangers as given in the coastal directions at 2.86.

Topography

2.81

- 1 The island is a high mass of rock with a table summit. Its highest peak situated on the W side of the island, rises to an elevation of 561 m, and is said to be a crater with water in it. Thence the summit slopes irregularly, terminating on all sides in precipitous cliffs about 335 m high.
- 2 The NW coast of the island is low, and the cliffs there recede sufficiently to allow the summit to be gained without difficulty.
On the NE side of the island the coast is also low and there are two waterfalls, the E of which, being the larger, is more conspicuous.

Depths

2.82

- 1 Depths of less than 100 m surround the island on all sides up to about 1 mile offshore but on the W side this shelf extends as far as 4½ miles offshore.

Kelp

2.83

- 1 Kelp has been reported on the NE side of the island in depths of 20 m at distances of 2 to 5 cables offshore. For further information on kelp see 1.3.

Fauna

2.84

- 1 The island was once inhabited for a short time, and cattle, sheep and pigs were kept, but is now uninhabited. Dogs are occasionally taken over to Inaccessible Island from Tristan da Cunha Island and individual animals may have run wild there in the past but there is no feral population at the present time. So far as is known, cats, rodents, nor any other alien vertebrates have ever been present.
- 2 A few fur seals and some elephant seals land on the island in small numbers
Sixteen species of seabird are known to breed on the island. Fish are abundant.

Principal mark

2.85

- 1 **Landmark:**

Queen Mary's Peak (Tristan da Cunha) (37°06'6S, 12°17'4W).

Directions

2.86

- 1 In circumnavigating the island dangerous rocks lying up to 5 cables off the SW coast should be noted; also a rock 1 m in height lies 1 cable offshore 2 miles NE of South Hill. Another rock 0.6 m in height lies 1 cable offshore 8 cables SE of North Point.

- 2 **Useful marks** with positions relative to South Hill (37°19'S, 12°41'W):
 Detached rock 70 m in height (6 cables NE) lies close to the shore.
 Pyramid Rock, 18 m in height, with an above-water rock close W (1½ cables SW).
- 3 South Hill (347 m in height), a remarkable conical rocky hill, situated in front of the cliffs, on the S point of the island; 6 cables NW of it is a similar rocky cliff 210 m in height.

Anchorage

Carlisle Bay 2.87

- 1 **Description.** Carlisle Bay (37°17'S, 12°40'W) is a marked indentation on the NE side of the island, at the head of which is a beach, a waterfall and the remains of a hut.

Anchorage may be obtained in a depth of 35 m, with the waterfall at the head of the bay bearing 197° distant 8 cables.

Landing may be effected on the beach near the hut, or about 2 cables W of the hut. A path leads from the hut to the top of the cliff. Landing is not allowed without a permit (2.79).

South coast 2.88

Anchorage may be obtained off the S coast, 1 mile E of South Hill (37°19'S, 12°41'W) in a depth of 30 m.

NIGHTINGALE — MIDDLE AND STOLTENHOFF ISLANDS

General information

Chart 1769 plan of Tristan da Cunha group

Description 2.89

- 1 **Nightingale Island** (37°25'S, 12°29'W) the S and largest of these three islands, is about a mile in diameter.
 The island is visited by the settlers of Tristan da Cunha Island several times a year for birds, eggs and guano.
 During the breeding season of penguins and Great Shearwaters, walking on the island, except along the old sealers' road and on the plateau and ridges, is rendered difficult by the birds. Their nests and burrows occupy almost the entire ground, and tussock grass 2 to 3 m in height overruns the island.
- 2 **Stoltenhoff Island** the N of this group, is situated about 8 cables N of Nightingale Island.
Middle Island is situated as its name implies between the other two.

Routes 2.90

- 1 The islands may be passed at a prudent distance having regard to the dangers given in the coastal directions at 2.95.

Topography 2.91

- 1 **Nightingale Island** has two peaks, the E of which is rugged and precipitous, 337 m in height and appears

conical when seen from NE or SW. The other peak, 293 m in height, slopes gently on all but its S side. With the exception of the NE coast, the sides of the island are precipitous and cut into deep recesses and caves.

- 2 **Stoltenhoff Island** is a flat-topped precipitous rock, 99 m in height, and consists of one large and two small pieces, separated by narrow chasms which can only be distinguished on one particular bearing.

Middle Island is 46 m in height. Pin Rock, about 9 m in height, lies off its NW extremity.

Depths 2.92

- 1 Depths of less than 100 m surround the islands up to about 1 mile from shore.

Kelp 2.93

- 1 Kelp extends for about ¼ mile off shore from the E side of the islands; but there is less on their S and W sides, which are the most exposed.
 For further information on kelp see 1.3.

Principal mark 2.94

- 1 **Landmark:**
 Queen Mary's Peak (Tristan da Cunha) (37°06'6S, 12°17'4W).

Directions

2.95

- 1 The group apparently possesses no out-lying dangers. A few submerged rocks border the S coast of Nightingale Island but their positions show up well. Several above-water rocks lie about 2 cables S of the SE point of the island.
- 2 There is a channel between Stoltenhoff Island and Pin Rock, about 2 cables in width which appears to be deep.
 The passage between Middle and Nightingale Islands is 1½ cables in width but it is completely blocked with detached rocks.

Anchorage

Petrel Bay 2.96

- 1 In 1997, HMS *Monmouth* obtained good anchorage in Petrel Bay on the NW side of Nightingale Island, approximately 2 cables SW of Pin Rock. In 1999, RMS *Saint Helena* found good anchorage 3 cables NE of the huts, (see below) in the kelp fringe.
Landing. The old landing beach on the SE side of the island is now seldom used but landing may be most easily effected on the rocks at the NE extremity of Nightingale Island. Caution should, however, be exercised as there is a small rock awash about 50 m from the point.
- 2 **Other facilities.** There are some huts near the NE landing, and a path leads to three ponds on the plateau.
Supplies. The water on Nightingale Island tends to be tainted, possibly due to the number of birds; but drinkable water can be obtained in four large, and several small ponds or bogs on the plateau below the lower peak and also in a small bay 2 or 3 cables W of the sealers' road leading from the NE landing place.

GOUGH ISLAND

General information

Chart 1769 plan of Tristan da Cunha group

Description**2.97**

- 1 Gough Island (40°19'S, 9°57'W), discovered in 1505 by the Portuguese Navigator Gonçalo Alvarez, is situated about 230 miles SSE of Tristan da Cunha Island. It is about 7 miles in length and 4½ miles wide, and is a dependency of Saint Helena. It is well wooded and watered.
- 2 Apart from the manning of the meteorological station (2.104) the island is otherwise uninhabited, and the only current (1995) economic activity within the reserve is inshore fishing for lobster and also octopus as a by-catch of the rock lobster.

Route**2.98**

- 1 The islands may be passed at a prudent distance having regard to the dangers given in the coastal directions at 2.106.

Topography**2.99**

- 1 Behind narrow boulder beaches, cliffs rise steeply round most of the island; those at North East Point are about 365 m in height and sheer; those between Reef Point about 2 miles SSE of North East Point, and Haulround Point about 2¼ miles farther SSE, are also sheer but not very high. In most other parts of the island vegetation, chiefly tussock grass, grows on the steep cliffs up which routes can often be found. On the W side of the island the steep cliffs attain a height of 460 m in places. At the S end of the island the land is comparatively low. The interior of the island is an undulating boggy plateau with an elevation of 600 m or more from which the summits rise in easy slopes, the highest of which are Edinburgh Peak, Gonçalo Alvarez Peak (Expedition Peak), Mount Rowett and South Peak.
- 2 Numerous waterfalls descend in long cascades.

Depths**2.100**

- 1 The sea around Gough Island has not been fully surveyed. It is stated that the island may be approached in safety to a distance of about 1 mile, except off West Point and North East Point where reefs extend offshore about 8 cables W and 2 cables N, respectively; that off West Point breaks heavily. The island is apparently steep-to on all but its E side, where depths of 37 m are found up to 5 cables offshore.

Kelp**2.101**

- 1 Kelp grows round much of the island. For further information on kelp see 1.3.

Fauna**2.102**

- 1 Fish and crawfish (rock lobsters) are abundant close inshore, seals and sea birds can easily be obtained and most of them, like the fish, are very good eating. A bright fire at night will attract many petrels. Wild potatoes and wild celery grow on the island, the latter being rich in vitamin C.

Natural conditions**2.103**

- 1 **Currents** are strong at times and erratic, being mostly wind generated.
- Climatic table.** See 1.226 and 1.230.
- 2 **Local weather.** The scientific expedition of 1955–1956, found that, in the summer E moving depressions passed mainly to the S of the island, but as the winter approached, their tracks moved N. By mid-April 1956, the depressions were passing to the N of Gough Island, causing many more E winds with consequent deterioration of landing conditions at Quest Bay (2.111).
- 3 In general the weather in the vicinity of the island may be best described as wet and windy, with only a modest improvement in summer months. Visitors are advised to consult the appropriate weather authority regarding the prospects of reasonable landing conditions. A few days of relatively favourable conditions can be expected between November and March. At other times the wind and sea are prohibitive on most days.
In January 1999, RMS *Saint Helena* experienced 70 kn winds at anchor 3½ cables E of Archway Rock.

World Heritage Site**2.104**

- 1 Gough Island and its surrounding waters out to 3 miles have been declared a World Heritage Site. Landing is not allowed without a permit from the Administrator of Tristan da Cunha. Permits are normally only granted for scientific visits. *Force majeure* visits must be reported as soon as practicable to the Administrator and must last no longer than is absolutely necessary coincident with safety and health reasons.
- 2 All visiting vessels (including yachts) must be in possession of rodent free certificates and may be required by the Administrator to call at Tristan da Cunha to clear customs, immigration and health controls before proceeding to Gough Island.
- 3 A meteorological and scientific station, is situated 1 cable inshore on the N side of Transvaal Bay (2.112). The station is manned by South African scientists, usually about eight in number, and consists of several white buildings, prominent from the E and well-lit at night. The station is in radio contact with South Africa, and can be contacted by VHF, using call sign *Gough Island*.

Principal marks**2.105**

- 1 **Landmarks:**
Gonçalo Alvarez Peak (Expedition Peak) (40°18'·0S, 9°57'·6W).
Edinburgh Peak (40°18'·6S, 9°56'·6W).
Mount Rowett (40°20'·0S, 9°55'·3W).
South Peak (40°20'·4S, 9°54'·3W).

Directions**Circumnavigation****2.106**

- 1 From a position N of North Point (40°16'·6S, 9°59'·1W) the track leads SW, passing (with positions relative to North Point):
NW of Isolda Rock (8 cables SW), thence:
NW of Tristiana Rock (2 miles SSW), thence:
NW of West Point (2¾ miles SSW). See 2.100.
Thence the track continues to a position W of West Point.

- 2 The track then leads SE, passing:
 SW of Gaggins Point (4 miles S). Sea Elephant Bay lies 2 miles NW. Thence:
 SW of Saddle Island (5½ miles SSE), thence:
 SW of South West Point (6 miles SSE). South West Islet with an above-water rock 1 cable SE of it, lies about 4 cables SE of the point. Thence:
 SW of South Point (7 miles SE). Snug Harbour (2.113) lies close W.

Thence the track continues to a position S of South Point.

2.107

- 1 The track then leads NE, passing SE of South Point. A meteorological and scientific site is established in Transvaal Bay 1¼ miles NNE of South Point. See 2.104.

SE of South East Point (6¾ miles SE).

Thence the track continues to a position NE of South East Point.

The track then leads NW, passing:

NE of The Admiral (6¾ miles SE). Number One (not named on chart), a rock (73 m in height) lies 3 cables N. Thence:

NE of Haulround Point (6 miles SE), Thence:

- 2 NE of Channel Rock (4¼ miles ESE). It is not advisable to pass between Channel Rock and Penguin Islet except by boat. Thence:

NE of Penguin Islet (4½ miles ESE), with an above-water rock close SE of it, thence:

NE of North East Point (2¾ miles E), thence:

The track then leads W to a position N of North Point, passing:

- 3 N of Lot's Wife (1½ miles E), thence:
 N of an unnamed islet (1½ miles E), 134 m in height, thence:
 N of Round Island (8 cables E).

Anchages and harbours

General information

2.108

- 1 There are no sheltered bays but there are a number of open roadstead anchorages; those off the E side of the island giving the best shelter from the prevailing W and SW winds. The anchorage in Quest Bay (2.111) is normally used when the wind is between W and S.

With a NW wind the anchorage in Transvaal Bay (2.112) is preferred.

The W side of the island being the weather side and steep-to, anchorage is not recommended.

Hawkins Bay

2.109

- 1 Good anchorage may be obtained in Hawkins Bay (40°17'7S, 9°54'6W), off Deep Glen (not named on chart), in a depth of 22 m, sand and stones.

Milford Bay

2.110

- 1 Good anchorage may be obtained in Milford Bay (40°18'6S, 9°54'0W), off Capsize Sands (not named on chart), clear of Reef Point (40°18'2S, 9°54'1W), in a depth from 18 to 27 m.

Quest Bay

2.111

- 1 **Description.** Quest Bay (40°19'4S, 9°53'0W), is entered between Haulround Point (40°20'1S, 9°52'6W), and an unnamed point 1¼ miles NW, close to where the Glen provides access to the interior of the island. The Glen Beach is composed of small boulders and shingle, and is approached from SE to clear a submerged rock in the centre of the cove. The surf sometimes makes landing on The Glen Beach difficult, not to say dangerous. However, there is a place at the foot of Archway Rock, 21 m in height, on the S side of the mouth of The Glen, where experienced boatmen can effect a landing in almost any weather. At the corner of the rock nearest the N end of the beach there is a chimney up which an active man carrying a coil of rope could clamber and on top of the rock there are a few island-trees to which it could be secured. In this way landing on, or departure from the island can be effected in any but the worst weather, though in the case of moving heavy gear, very hard work is entailed.

- 2 **Anchorage** may be obtained in Quest Bay (40°19'4S, 9°53'0W) as indicated on the chart, in a depth of about 27 m. The holding ground is good, consisting of black volcanic sand and shell. This anchorage known as The Glen Anchorage, is normally used when the wind is between W and S.

- 3 In January 1999, RMS *Saint Helena* obtained good anchorage 3½ cables E of Archway Rock, and made a landing in two rubber dinghies.

Transvaal Bay

2.112

- 1 **Description.** Transvaal Bay, a small bay with a stream at its head, lies between South East Point (40°21'S, 9°52'W) and Cavern Head 1 mile SSW.

Anchorage may be obtained in a depth of 37 m. Landing can be effected on the NE side of an archway rock, at the entrance to the cove on the N side of the bay. Stores may be hoisted by a crane on the cliff, which can lift loads up to ¼ tonne. A boat can secure to an anchor in the rocks. This anchorage is normally used with a NW wind.

Snug Harbour

2.113

- 1 Anchorage may be obtained in Snug Harbour (40°22'1S, 9°53'6W), with slight protection from N wind, in a depth of 27 m. The prevailing SW swell renders anchorage on this side of the island uncomfortable.

Landings

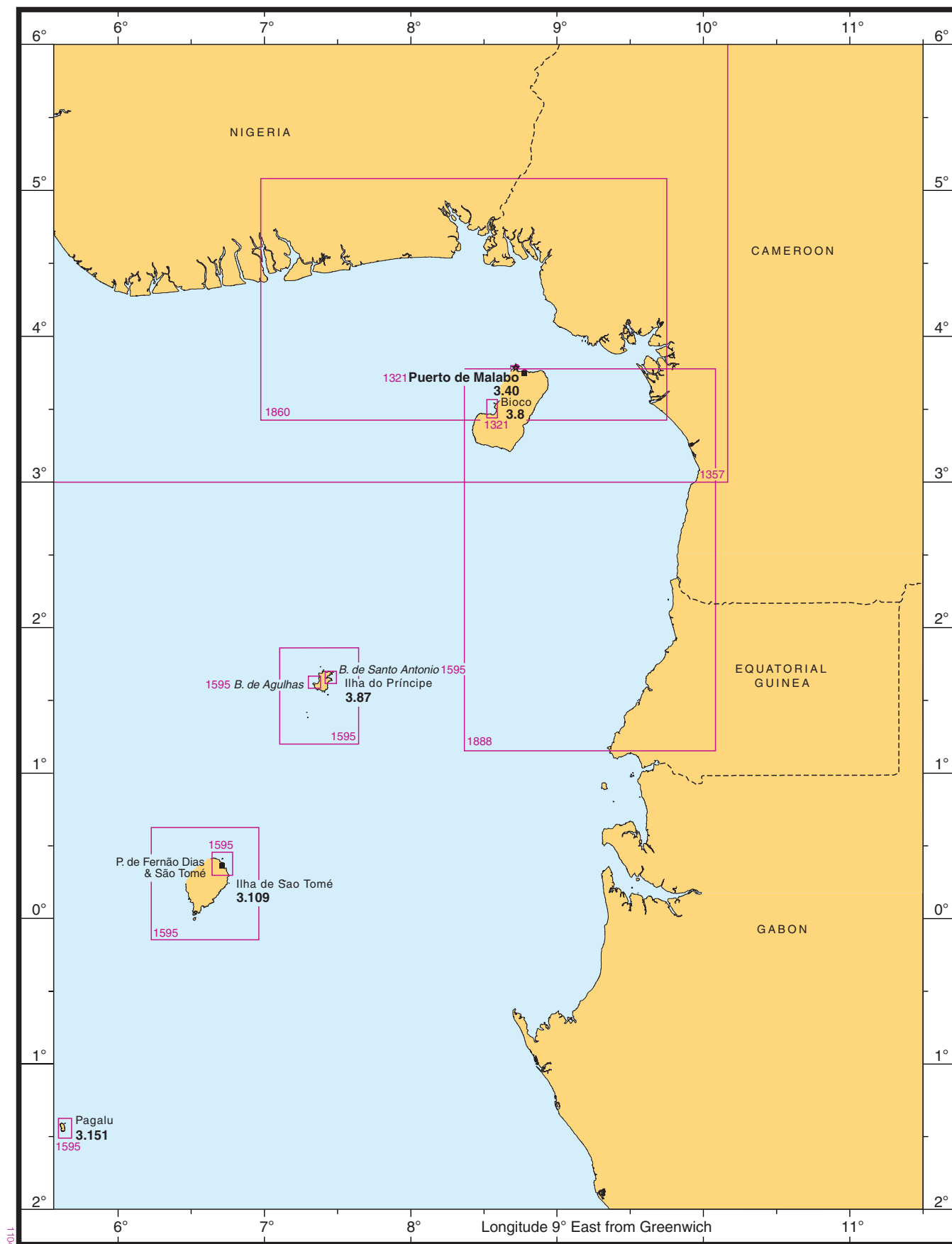
2.114

- 1 Landing can be effected in calm weather in a number of places round the coast including, S of Church Rock (40°16'5S, 9°55'5W), where there is an islet within which landing is safe and easy as the place is protected from the swell and N winds by North East Point. The best position for landing will obviously depend upon the wind and swell prevailing at the time. From most beaches access to the interior of the island is very difficult owing to the cliffs along the coastline.

NOTES



Chapter 3 - Islands in the Bight of Biafra



CHAPTER 3

ISLANDS IN BIGHT OF BIAFRA

GENERAL INFORMATION

Chart 3118

Scope of the chapter**3.1**

- 1 This chapter describes the four major islands in Bight of Biafra, also known in Nigeria as Bight of Bonny, an extensive indentation on the W side of Africa lying between Cape Formoso (4°17'N, 6°05'E), see *Africa Pilot Volume I*, and Cap Lopez (0°38'S, 8°42'E).

- 2 The four islands are situated at almost equal intervals in a SW direction from the head of the bight. The NE and largest is Bioco, for centuries called Fernando Póo, subsequently Mácias Nguema Biyogo. Next comes Ilha do Príncipe, then Ilha de São Tomé, the second largest, and finally Isla Pagalu, formerly known as Annobón.

3.2

- 1 Bioco and Isla Pagalu are provinces of Equatorial Guinea.

Ilha do Príncipe and Ilha de São Tomé form a separate independent Republic of São Tomé E Príncipe.

- 2 The chapter is divided into the following sections:
 Bioco (3.8).
 Ilha do Príncipe (3.87).
 Ilha de São Tomé (3.109).
 Pagalu (3.151).

Marine exploitation**3.3**

- 1 Marine exploitation is extensive in the area covered by this chapter. See 1.14.

Navigation**3.4**

- 1 It is reported that lights and navigation aids on Bioco, Ilha do Príncipe and Ilha de São Tomé are unreliable.

Physical**3.5**

- 1 These islands as well as the lofty mountain ranges on the mainland described at 4.2 and 4.3, are evidently of volcanic origin, and are probably the result of some volcanic upheaval. All are in line apparently indicating the direction of the volcanic disturbance, the effects of which may be traced in the irregular features of the ground, marked by abrupt declensions and needle-shaped peaks; whilst the basaltic and ferruginous rock of which the islands are composed; the black sand, as well as the lava which is found along the shores, are all evidences of volcanic agency.

Piracy**3.6**

- 1 Mariners are advised to be alert for pirates in the waters off the coast of Bioco.

Local weather**3.7**

- 1 South to SW winds are the most common but light variable winds predominate in some months. The usual tropical conditions are well marked, including heavy thunderstorms (1.222) and tornadoes (1.218). Associated squally winds from various directions cause temporary anchorage problems. Rather weak Harmattan winds from NE occur at times in the period December to March and dust haze affects the islands in these dry months.

BIOCO

GENERAL INFORMATION

Charts 1888, 1860

Area covered**3.8**

- 1 This section describes Bioco, formerly Mácias Nguema Biyogo, its coastal routes, the port of Malabo, Punta Europa Terminal and other anchorages. Bioco lies between the parallels of 3°47'N and 3°12'N, and the meridians of 8°25'E and 8°56'E, and has an area of 2017 square km.

It is arranged as follows:

- Punta Europa to Punta Oscura (3.14).
 Punta Oscura to Punta Santiago (3.27).
 Punta Santiago to Punta Hermosa (3.30).
 Punta Hermosa to Puerto de Malabo (3.36).
 Puerto de Malabo (3.40).
 Puerto de Malabo to Punta Europa (3.64).
 Offshore Terminals (3.81).

Route**3.9**

- 1 Directions circumnavigate the island in an anti-clockwise direction passing all features at a prudent distance.

Topography**3.10**

- 1 A mountain ridge traverses nearly the whole island from its SW towards its NE point, and culminates in the magnificent cone of Pico de Santa Isabel (3.16), the summit of which is almost continually enveloped in clouds. It is doubtful whether this volcano can yet be considered extinct, as smoke issuing from it is seen occasionally. However, the highest parts, composed of volcanic lava, have been so far decomposed as to be covered with a grassy vegetation.
- 2 Two lower peaks, Gran Caldera Volcánica de San Carlos (3.16) and Pico Biaó, rise in the S part of the island in an W to E direction.

When seen from seaward, Bioco presents a beautiful appearance. Pico de Santa Isabel is visible from W on a clear day, or after a tornado, at a distance of 100 miles.

- 3 The weather, however, is sometimes so thick and hazy that the land cannot be seen, and as the E-going current is strong, vessels might pass the island without sighting it. Approaching from W, therefore, it is essential in these circumstances, that soundings should be taken frequently.

The channel separating Bioco from Cap Limbo (4°00'·2N, 9°07'·6E) (4.58), on the mainland of Cameroon is 18 miles in width.

Natural conditions

3.11

- 1 **Current.** The Guinea current (1.194), which sets strongly E towards the Bight of Biafra, impinges upon the coast of Bioco, and the island is therefore within its influence.

- 2 As a rule, during the winter months the currents appear to set N along the W coast, E along the S coast and S along the E coast, at the rate of from 1 to 2 kn; during the summer they appear to set N along the E and W coasts, and W along the S coast. They are however, variable in this locality, and cannot be depended upon.

- 3 Along the N coast the general direction of the current is E and its velocity is variable, but it often runs at the rate of 1½ kn. It should be particularly guarded against when approaching Malabo (3.40) at night.

3.12

- 1 **Weather.** Rainfall is very heavy on the S, exposed part of the island, where 10 451 mm is the mean annual fall at Ureka (not named on chart) (3°15'N, 8°35'E). Malabo (Santa Isabel), sheltered by the mountains, only has 1898 mm. Here, April to October are the wettest months and December to February are relatively dry.

- 2 The warmest months at Malabo are January to May when the mean monthly temperature is about 26°C. The coolest months are July to October when the mean monthly temperature is about 24°C. Extreme temperatures of 39°C and 16°C have been recorded.

- 3 In the cultivated areas, mosquitoes, tsetse fly and the phalaria fly are common up to heights of about 600 m but the townships are clear of all but the mosquito and ubiquitous sand-fly.

Climatic table. See 1.226 and 1.232.

Navigation

3.13

- 1 The NE coast of the island is little frequented in consequence of there being no good anchorages, and because low-powered vessels, caught here in a tornado, would be in a position of great danger without a place of refuge.

PUNTA EUROPA TO PUNTA OSCURA

General information

Chart 1888

Route

3.14

- 1 From a position NW of Punta Europa (3°46'·9N, 8°43'·0E), the route leads SSW for about 48 miles to a position SW of Punta Oscura (3°16'·7N, 8°26'·5E).

Submarine pipelines

3.15

- 1 High pressure gas pipelines are laid from a position on the shore 3°46'·9N, 8°43'·2E, to Alba A (3°58'·5N, 8°32'·9E) and Alba B (3°58'·0N, 8°30'·8E) platforms. See 3.65.

Principal marks

3.16

- 1 **Landmarks:**

Pico de Santa Isabel (3°35'·0N, 8°45'·6E).

Gran Caldera Volcánica de San Carlos (3°21'·5N, 8°32'·4E).

- 2 **Major light:**

Punta Europa Light (white framework tower, red bands) (3°46'·9N, 8°43'·0E). When bearing less than 073° the light is obscured by trees, and by day on bearings more than 089°, the tower itself is barely discernible for the same reason.

Directions

3.17

- 1 From a position NW of Punta Europa (3°46'·9N, 8°43'·0E), the track leads SSW, passing (with positions relative to Punta Europa):

WNW of Punta Europa, of moderate height and surrounded by a large number of remarkable, tall trees. Numerous rocks, most of which are above-water, lie close around its base; but there are no off-lying dangers. A light (3.16) is exhibited from the point. Thence:

- 2 WNW of Cabo Prior (1¾ miles SW), thence:

WNW of Punta Beecroft (4 miles SW), thence:

WNW of Bajo Vázquez de Castro, a shoal (10½ miles SW), lying about 1¾ miles W of Punta Archada, thence:

WNW of Islotes Primos (12½ miles SW), three above-water rocks lying in a reef 8 cables in length, in a NNE/SSW direction, but narrow and steep to all round. The dangerous wreck of *Pepita* lies near the S rock. Thence:

- 3 WNW of Islote Loros (17 miles SSW), of moderate height. Islote Loros Light (white metal tower, 4 m in height) is exhibited from the islet. Islote Kid lies 3 cables E of Islote Loros and is the smaller of the two. A low rock, surrounded by breakers, lies 2 cables NE of Islote Kid. The coast recedes close SE of these islets, forming a bay with a sandy beach, broken here and there by rocks; the islets afford convenient shelter and anchorage (3.26). The passage between Islotes Loros and the coast is dangerous and not recommended. Thence:

- 4 WNW of Punta Argelejos (24 miles SW). The coast between this point and Cabo Redondo 7½ miles SW is of medium elevation and fringed by black round rocks, but is otherwise clear of danger. Thence:

WNW of Cabo Redondo, the W extremity of Bioco. The coast S of this cape is precipitous, little frequented and affords no shelter from winds between SE and SW, which sometimes raise a heavy sea as far as Punta Oscura, 5 miles SSE. Thence:

- 5 WNW of Punta Oscura (34½ miles SSW), the SW extremity of the island. It is the most prominent point on this coast and there is a waterfall in its vicinity. Here the land rises steeply towards the

interior and is dominated by Gran Caldera Volcánica de San Carlos (3°21'5N, 8°32'4E).

Thence the track leads to a position SW of Punta Oscura (34½ miles SSW).

3.18

Useful mark:

Flare (3°46'9N, 8°42'9E).

(Directions continue at 3.29)

Bahía de Luba

Chart 1321 plan of Bahía de Luba

General information

3.19

- 1 **Position.** Bahía de Luba (3°29'0N, 8°34'0E) lies on the W coast of Bioco. Luba, a small town, lies in the S part of the bay.

Function. It is a small port used for the export of bananas and as a supply base for the offshore oil and gas industry.

- 2 **Topography.** Playa de Boloco (not named on chart) a black sandy beach lies 1½ miles SE of Punta Cabras (3°31'0N, 8°34'3E), and is intersected by numerous streams and small rivers of which the most important are Rio Tiburones and Rio Musola. From the N end of Playa de Boloco to the town of Luba, a road runs close to the coast, and both rivers are spanned by bridges close within their mouths.

- 3 From Luba the coast trends 7½ cables NW to Punta Barcelonesa.

From Punta Barcelonesa, the coast lies in a general W direction for 4 miles to Punta Argelejos, being indented with several small bays, the W of which is Ensenada de las Mantas (not named on chart). Rocks fringe the coast for a short distance seaward, but otherwise it is clear of dangers.

- 4 **Approach and entry.** The port is approached from NW, and entered between Punta Cabras (3°31'0N, 8°34'3E) and Punta Barcelonesa 3½ miles SSW.

Port Authority. Administracion de Puertos de Guinea Ecuatorial (A.P.G.E), Luba, Equatorial Guinea.

Limiting conditions

3.20

- 1 **Deepest and longest berth.** Supply base jetty (3.24).

Tidal levels. Mean spring range about 1.4 m; mean neap range about 0.6 m. See information in *Admiralty Tide Tables Volume 2*.

Density of water is 1.025 g/cm³.

Arrival information

3.21

- 1 **Outer anchorage.** There is good anchorage in Bahía de Luba, which is large and can easily be entered with no known off-lying dangers. It is well sheltered from the predominant winds with the exception of the squalls which come down from the mountain sides.

- 2 The best anchorage may be obtained in a depth of 31 m, with Islote Loros in line with Punta Cabras bearing about 352°, and the latter distant 1¾ miles. A buoy (special) is moored close to this berth.

Pilotage is not normally necessary but a pilot can be summoned from Malabo.

Harbour

3.22

- 1 **General layout.** The harbour, consisting of two jetties and an anchorage, lies in the S part of the bay.

Directions for entering harbour

3.23

- 1 Approaching Bahía de Luba from W, Bioco, when first seen, appears as two peaks; the N most and highest being Pico de Santa Isabel, and the S most, also very high, having a rounded summit, whence its sides slope gradually to the sea.

- 2 From the vicinity of 3°31'N, 8°32'E, the track leads SE, passing (with positions relative to Punta Cabras (3°31'0N, 8°34'3E):

SW of Punta Cabras, thence:

NE of Punta Barcelonesa (3½ miles SW), off which there is a rocky spit with depths of less than 5 m extending NE for 2½ cables. Punta Barcelonesa Light (white tower, red bands; 16 m in height) is exhibited from the point.

- 3 **Useful marks:**

Monument (3°29'8N, 8°35'2E).

Puerto de Luba Light (white metal pylon, 5 m in height) (3°27'4N, 8°33'4E).



Luba (3.19)

(Original dated 2004)



Luba – Supply Base and Light on Punta Barcelonesa (3.24)

(Original dated 2004)

Masts (3°27′.4N, 8°33′.4E).

The following lights in line (251½°) assist in berthing stern-to the jetty (3.24):

Front light (red circle on white post, red bands)
(3°27′.6N, 8°33′.1E).

Rear light (similar structure) (40 m from front light).

Berths

3.24

- 1 **Anchorage** There is an anchorage and a mooring buoy in the S part of the bay. Cargo is worked to and from lighters.

Luba jetty (3°27′.4N, 8°33′.4E) extends N from the town, 123 m in length and 20 m in width, with a depth of 7.3 m at its head. Vessels up to a draught of 6.7 m can be accommodated by berthing stern-to the head of the jetty with about 6 shackles on the anchors.

- 2 **Supply base jetty.** A supply base jetty, 100 m long with a depth alongside of about 6.6 m, is situated 2 cables SE of Punta Barcelonesa Light.

Port services

3.25

- 1 **Other facilities.** Hospital.
Supplies. Fresh water.
Communications. Airport at Malabo.

Anchorage

Chart 1321 plan of Bahía de Luba

Islote Loros

3.26

- 1 Sheltered anchorage for small craft may be obtained about 4 cables SE of Islote Loros (3°32′.3N, 8°34′.0E) in depths of 6 to 7 m. Local knowledge is required.

PUNTA OSCURA TO PUNTA SANTIAGO

General information

Chart 1888

Route

3.27

- 1 From a position SW of Punta Oscura (3°16′.7N, 8°26′.5E), the route leads ESE for about 20 miles to a position SE of Punta Santiago (3°12′.5N, 8°40′.5E).

Principal marks

3.28

- 1 **Landmarks:**

Pico de Santa Isabel (3°35′.0N, 8°45′.6E).

Gran Caldera Volcánica de San Carlos (3°21′.5N, 8°32′.4E).

Directions

(continued from 3.18)

3.29

- 1 From a position SW of Punta Oscura (3°16′.7N, 8°26′.5E), the track leads ESE passing (with positions relative to Punta Oscura):

SSW of Punta Sagre (4 miles ESE), low lying and rocky, E of which is Playa de las Tortugas (not named on chart), extending 4 miles E to Punta Owen, thence:

SSW of Punta Owen (7¼ miles ESE), thence:

SSW of Punta Dolores (11 miles ESE), thence:

SSW of Punta Santiago (14¾ miles ESE), the S extremity of the island, from which Punta Santiago Light (metal framework tower, 25 m in height) is exhibited.

Thence the track continues to a position SE of Punta Santiago (14¾ miles ESE).

(Directions continue at 3.33)

PUNTA SANTIAGO TO PUNTA HERMOSA

General information

Chart 1888

Route

3.30

- 1 From a position SE of Punta Santiago ($3^{\circ}12'5N$, $8^{\circ}40'5E$), the route leads NNE for about 45 miles to a position NE of Punta Hermosa ($3^{\circ}45'7N$, $8^{\circ}54'0E$).

Topography

3.31

- 1 The coast between Punta Santiago and Punta Hermosa is abrupt and indented. It consists of a succession of points between which there are coves. The points are fringed with inshore rocks.

Principal marks

3.32

- 1 **Landmarks:**

Pico de Santa Isabel ($3^{\circ}35'0N$, $8^{\circ}45'6E$).
Gran Caldera Volcánica de San Carlos ($3^{\circ}21'5N$, $8^{\circ}32'4E$).

Directions

(continued from 3.29)

3.33

- 1 From a position SE of Punta Santiago ($3^{\circ}12'5N$, $8^{\circ}40'5E$) the track leads NNE, passing (with positions relative to Punta Santiago):

ESE of Punta Santiago, thence:

ESE of Punta Soledad (2 miles NE), thence:

ESE of Punta Salvador ($9\frac{1}{4}$ miles NE), thence:

ESE of Punta Cañones ($13\frac{3}{4}$ miles NE), thence:

ESE of Frontón de Caracas Light (15 miles NNE), (white truncated pyramidal tower, 8 m in height), thence:

- 2 ESE of Islote Leven (18 miles NNE), of small extent and moderate elevation. It lies within 5 cables of the coast from which it does not stand out clearly when viewed from E. The island is covered by the red sector of Frontón de Caracas Light (above). Ensenada Alicia (not named on chart), lies SW of Islote Leven, and appears to be clear of dangers, but the points on either side of it are fringed with rocks; on the shores at the head of the cove are some factories. Thence:

- 3 ESE of Punta Frontón (19 miles NNE), thence:

ESE of Punta Copohatá (23 miles NNE), thence:

ESE of Punta Bososo ($26\frac{1}{2}$ miles NNE), thence:

ESE of Punta Basuala (30 miles NNE), thence:

ESE of Punta Moreno (34 miles NNE). Ensenada de los Pajaros (not named on chart) lies NNW.

- 4 Thence the track leads to a position NE of Punta Hermosa (36 miles NNE), the NE point of Bioco. It is round, sloping and wooded with hills rising behind it; rocks lie close inshore round its base and there is deep water close off it. At night or in thick weather mariners should be extra cautious in passing this point, for the soundings give no warning of its proximity and the high land behind the point makes it difficult to judge the distance off it. Islote Horacio is situated about 5 cables ESE of the point and shows up distinctly as an island when rounding the point at a distance of 2 miles. A light (white metal tower, 16 m in height) is exhibited from the island.

3.34

- 1 **Useful mark:**

Bahía de Riaba Light (white tower, 6 m in height) ($3^{\circ}22'9N$, $8^{\circ}45'8E$).

(Directions continue at 3.38)

Anchorage

Bahía de Riaba

3.35

- 1 Bahía de Riaba, entered S of Punta Cãones ($3^{\circ}23'9N$, $8^{\circ}47'5E$) is quite exposed to E winds which may be strong during a tornado, and the bank, on which anchorage may be obtained by vessels is close inshore.

Anchorage may be obtained about 3 cables offshore, with Bahía de Riaba Light (3.34) bearing $251\frac{1}{2}^{\circ}$, distant 4 cables, in a depth of 18 m, sand.

- 2 The village of Riaba Concepción (not named on chart), is situated near the head of the bay. Local knowledge is required.

PUNTA HERMOSA TO PUERTO DE MALABO

General information

Charts 1888, 1860

Route

3.36

- 1 From a position NE of Punta Hermosa ($3^{\circ}45'7N$, $8^{\circ}54'0E$) the route leads W for about 9 miles to a position NW of Punta de la Unidad Africana ($3^{\circ}45'7N$, $8^{\circ}47'0E$).

Principal marks

3.37

- 1 **Landmarks:**

Pico de Santa Isabel ($3^{\circ}35'0N$, $8^{\circ}45'6E$).

Gran Caldera Volcánica de San Carlos ($3^{\circ}21'5N$, $8^{\circ}32'4E$).

Major light:

Punta Europa Light ($3^{\circ}46'9N$, $8^{\circ}43'0E$) (3.16).

Directions

(continued from 3.34)

3.38

- 1 From a position NE of Punta Hermosa ($3^{\circ}45'7N$, $8^{\circ}54'0E$), the track leads W, passing:

N of Punta Hermosa. The coast between this point and Punta de la Unidad Africana 7 miles W is rocky and indented by numerous small coves; it is well wooded and without any known off-lying dangers, being steep-to. Thence:

- 2 N of Punta de la Unidad Africana, the extremity of a narrow rocky peninsula which extends NW from the coast; a shoal spit extends a further $2\frac{3}{4}$ cables W from the point, which should be given a wide berth when rounding it. Punta de la Unidad Africana Light (column on pyramid, 8 m in height) is exhibited from the point.

- 3 Thence the track continues to a position NW of Punta de la Unidad Africana.

(Directions continue for the coastal route at 3.67 and for entering Malabo at 3.56)

Anchorage

3.39

- 1 Anchorage may be obtained off the NE coast, or, on the N coast 4 miles E of Punta de la Unidad Africana; however towards Punta Hermosa ($3^{\circ}45'7N$, $8^{\circ}54'0E$) the depths



Puerto de Malabo – Muelle Nuevo (3.40)

(Original dated 1998)

(Photograph – Capt. S. L. Holloway)

become greater. Tornadoes can blow violently all along this coast though not for sufficient time to raise much sea.

PUERTO DE MALABO

General information

Chart 1321 plan of Puerto de Malabo

Position

3.40

- 1 Puerto de Malabo ($3^{\circ}45'.5N$, $8^{\circ}46'.8E$) is situated on the N coast of Bioco at the head of Bahía de Malabo.

Function

3.41

- 1 It is a medium sized port, used for the export of timber and cocoa-beans. Imports include food products, construction materials and all types of used materials. The port is being developed.

The town of Malabo, the capital of Equatorial Guinea, is situated on a plateau at the top of cliffs. The population is estimated at about 10 000.

Topography

3.42

- 1 Difficulty is frequently experienced in identifying the land in the vicinity of Malabo from the offing, in consequence of the coast being backed by high land; this is particularly the case with Islotes de Enrique. The town, however, can easily be seen at a distance of 5 to 10 miles; it is the only town on the N coast of Bioco and the buildings show up well, especially the water tower, when approaching from E, and the cathedral when approaching from W.
- 2 From its semi-circular form and the nature of its shores, which are composed of steep, rocky cliffs from 30 to 60 m

high, it is evident that Bahía de Malabo is the crater of an extinct volcano.

Punta Cristina ($3^{\circ}45'.3N$, $8^{\circ}46'.6E$), on the W side of the bay is the N extremity of a bluff peninsula which terminates in vertical cliffs. There are steps for ascending to the summit which is high and wooded.

- 3 The house where the president resides is a long building, just E of the cathedral. In common with most houses in Malabo, it has a flagstaff.

Approach and entry

3.43

- 1 Rada de Malabo is approached from NW between Punta Linslager ($3^{\circ}46'.7N$, $8^{\circ}43'.7E$) and Punta de la Unidad Africana $3\frac{1}{4}$ miles ESE. Puerto de Malabo is entered between Punta de la Unidad Africana ($3^{\circ}45'.7N$, $8^{\circ}47'.0E$) and Islotes de Enrique $4\frac{1}{2}$ cables SW.

Traffic

3.44

- 1 The port is visited by about 40 vessels annually and about 380 500 tonnes of cargo are handled.

Port Authority

3.45

- 1 Administracion de Puertos de Guinea Ecuatorial (A.P.G.E.), Apartado dos Corres 536, Malabo, Equatorial Guinea.

Limiting conditions

Deepest and longest berth

3.46

- 1 Muelle Nuevo (3.59).

Tidal levels

3.47

- 1 Mean spring range about 1.6 m; mean neap range about 0.7 m. See information in *Admiralty Tide Tables Volume 2*.

Density of water**3.48**

- 1 The density of water is 1.025 g/cm³.

Maximum size of vessel handled**3.49**

- 1 Vessel *Blandine Delmas* 176 m in length, 23 000 grt has used the port.

Arrival information**Port operations****3.50**

- 1 It is reported that vessels are berthed during daylight hours only.

Port radio**3.51**

- 1 There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Outer anchorage**3.52**

- 1 Outer anchorage may be obtained as follows:
In Ensenada de Gravina (3°45'4N, 8°45'8E), the farther offshore the better, as it is cooler and the vessel will be free from mosquitoes. A recommended anchorage berth is about 5½ cables NW of Punta Pilón (3°45'2N, 8°46'3E), in a depth of 29 m, mud. An inshore berth is specially undesirable during the tornado season as these winds frequently blow directly towards the land. About 4½ cables W of Punta de la Unidad Africana as indicated on the chart.

Prohibited anchorage. Anchoring and fishing are prohibited in Bahía de Malabo.

Pilotage and tugs**3.53**

- 1 Pilotage is compulsory inbound only. Pilot boards vessel about 5 cables NW of Punta de la Unidad Africana.
Tug is available.

Harbour**General layout****3.54**

- 1 The harbour fronts the town of Malabo. The old port is situated in the SE corner of the bay; the new port lies at Punta Cristina (3°45'3N, 8°46'6E), on the W side of the bay.

A small bay, Ensenada de Venus, entered from Bahía de Malabo, lies between Punta Cristina and Punta Pilón 3 cables WSW. The shores of the bay are mostly high, rocky and steep, and are fringed with rocks both above and below water.

Climatic table**3.55**

- 1 See 1.226 and 1.232.

Directions for entering harbour

(continued from 3.38)

Leading lights**3.56**

- 1 From a position at the pilot boarding position, as indicated on the chart, NW of Punta de la Unidad Africana

(3°45'7N, 8°47'0E), the track leads SW to a position WNW of the following leading lights:

Front light (white framework mast, red bands, 8 m in height) (3°45'3N, 8°47'1E).

Rear light (similar structure, 3 m in height) (40 m from front light).

The alignment (120°) of these lights leads ESE, passing (with positions relative to Punta de la Unidad Africana):

SSW of a shoal patch (2½ cables W) with a depth of 5.5 m over it. A buoy (port hand) is moored about ½ cable SE of it. Thence:

- 2 NNE of a buoy (starboard hand) (3½ cables WSW) marking the NE extremity of a rocky reef on which stand the three Islotes de Enrique, the tallest of which has an elevation of 14 m. Punta Pilón lies a further 3½ cables WSW and has a rocky shelf extending N. The wreck of *Principe de Asturias*, with a depth of 0.8 m over it, lies at the extremity of the shelf.

Thence the track leads to the required berth.

- 3 **Caution.** It is reported that the leading marks are difficult to distinguish by day.

- 4 **Useful marks** (with positions relative to Punta de la Unidad Africana):

Cross (¾ cable SE).

Water tower (4¾ cables SSE).

Spires (5 cables S) of cathedral.

Tanks (grey) (8½ cables SW) on the W bank of Rio Cokburn.

Berths**General information****3.57**

- 1 The port has two jetties, Muelle Viejo and Muelle Nuevo.

Alongside depths are reported depths. The port authorities should be contacted for the latest information.

Muelle Viejo**3.58**

- 1 Muelle Viejo (3°45'4N, 8°47'1E) is 250 m long but shallow depths alongside make the greater part suitable only for lighters and small craft. A pier 45 m long and 15 m wide projects perpendicularly from the middle of Muelle Viejo enabling a vessel with a draught of up to 5 m to berth stern-to the end and work cargo to lighters.

Muelle Nuevo**3.59**

- 1 Muelle Nuevo (3°45'3N, 8°46'7E) is 200 m in length with a depths from 6 to 9 m alongside. It is reported that a vessel with a maximum draught of 8 m can berth safely alongside.

Port services**Repairs****3.60**

- 1 Small repairs only; slipway with lifting capacity of 40 tonnes.

Other facilities**3.61**

- 1 Hospital; mobile crane.

Supplies**3.62**

- 1 Fuel oil; fresh water; diesel; provisions.

Communications

3.63

- 1 Malabo airport.

PUERTO DE MALABO TO PUNTA EUROPA

General information

Charts 1888, 1860

Route

3.64

- 1 From a position NW of Punta de la Unidad Africana (3°45'7N, 8°47'0E), the route leads WNW for about 6 miles to a position NW of Punta Europa (3°46'9N, 8°43'0E).

Submarine pipelines

3.65

- 1 Two high pressure gas pipelines are laid from a position on the shore 3°46'9N, 8°43'2E, close E of Europa Point, NW for approximately 16 miles to Alba A (3°58'5N, 8°32'9E) and Alba B (3°58'0N, 8°30'8E), offshore production platforms. Alba C platform is located 2 miles SW of the latter and the three platforms are interconnected by submarine pipelines.
- 2 Anchoring in the vicinity of these high pressure gas pipelines is extremely dangerous and is prohibited. Two beacons are located onshore close to the landings of the pipelines and a light-buoy (red and yellow spar) is moored near the alignment of the beacons (216°) 4 cables from shore.

The offshore production platforms exhibit flashing lights and Alba A sounds a siren in restricted visibility.

For further information on gas pipelines see 1.15.

Principal marks

3.66

- 1 **Landmarks:**
Pico de Santa Isabel (3°35'0N, 8°45'6E).
Gran Caldera Volcánica de San Carlos (3°21'5N, 8°32'4E).
- Major light:**
Punta Europa Light (3°46'9N, 8°43'0E) (3.16).

Directions

(continued from 3.38)

3.67

- 1 From a position NW of Punta de la Unidad Africana (3°45'7N, 8°47'0E), the track leads WNW, passing (with positions relative to Punta de la Unidad Africana):

Clear of, depending on draught, Baja de Punta Europa (2¾ miles NW) over which there is a depth of 22 m.

Thence the track continues to a position NW of Punta Europa (3.17) (5 miles W).

Useful mark:

Flare (3°46'9N, 8°42'9E).

(Directions continue at 3.17)

K5 Oil Centre

General information

3.68

- 1 **Position.** K5 Oil Centre is located close W of the mouth of Rio Sampaca (3°45'8N, 8°44'7E). The port is situated at the E end of a bight known as Bahía de Venus (not named on chart) between Rada de Malabo and Punta Europa.

Function. It is used primarily as a supply base for the offshore oilfields.

Topography. The coast adjacent the supply base is undeveloped and consists of dense tropical vegetation backed by the foothills of Pico de Santa Isabel (3.16) 10 miles S.

- 2 **Approach.** The port is approached from N passing E of Punta Europa Light (3°46'9N, 8°43'0E) (3.16) and W of Punta de la Unidad Africana (3°45'7N, 8°47'0E) (3.38) to enter Bahía de Venus.

Port Authority. K5 Oil Centre, Carretara Aeropuerto KM 5, Malabo, Equatorial Guinea.

Limiting conditions

3.69

- 1 **Controlling depth.** The main berth is designed to have a depth alongside of 8.5 m.

Tidal levels. See 3.47.

Maximum size of vessel handled. The main berth has a designed length of 130 m.

Local weather. See 3.7.

Harbour

3.70

- 1 **General layout.** The port comprises a single jetty, 400 m in length, with a spacious hinterland.

Principal marks.

Landmarks:

Pico de Santa Isabel (3°35'0N, 8°45'6E).

Flare at Punta Europa Terminal (3°46'9N, 8°42'9E).

Spires of Malabo Cathedral (3°45'2N, 8°47'0E).

Major light:

Punta Europa Light (3°46'9N, 8°43'0E) (3.16).

Directions

3.71

- 1 Owing to the small scale of the chart, insufficient information about depths in the approaches and the existence or otherwise of navigational aids, detailed directions cannot be given. It is advised that the Port Authority be consulted prior arrival.

Berth

3.72

- 1 The jetty projects 400 m N from the shore and its head which is aligned W to E has a berth which is 130 m in length with a designed depth alongside of 8.5 m. On either side of the jetty head are two berths for supply vessels also about 130 m in length with a least depth alongside of about 3 m. The jetty is equipped with mobile cranes and there are storage facilities for containers and oilfield supplies onshore.

Port services

3.73

- 1 **Customs.** An office on site enables cargo to be cleared for transit inland.

Communications. The port is connected by road to Malabo and to the airport.

Punta Europa Terminal

Chart 1321 plan of Punta Europa Terminal

General information

3.74

- 1 **Position.** Punta Europa Terminal (3°47'0N, 8°43'5E).

Function. It is a refinery having an offshore mooring used for the export of Alba condensate.

Approach and entry. The terminal is approached from NE.

- 2 **Current.** Offshore the current generally sets E at variable rates throughout the year. Inshore in the vicinity of the berth, a strong counter current sets W at rates in excess of 2 kn. The counter current is more pronounced during the rainy season and becomes weak and variable during the dry season.

Port Authority. Marathon EG Production Ltd., BP 742, Malabo, Equatorial Guinea.

Limiting conditions

3.75

- 1 **Controlling depths.** There are depths of 37 m in the vicinity of the terminal.

Tidal levels. At Malabo the mean spring range is about 1.6 m; mean neap range about 0.7 m. See information in the *Admiralty Tide Tables Volume 2*.

Maximum size of vessel handled. 60 000 dwt, 213 m in length.

- 2 **Local weather.** There are two distinct seasons, the rainy season, extending from approximately May through September and the dry season when it does not rain quite so much, extending from December through February. The variable season, between the wet and dry seasons, occupies the rest of the year.

Arrival information

3.76

- 1 **Port operations.** Berthing and unberthing in daylight hours only. Tankers must arrive with clean ballast suitable for overboard discharge.

- 2 **Port radio.** There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required. Send ETA 72, 48 and 24 hours in advance. See *Admiralty List of Radio Signals Volume 6(3)*.

Outer anchorage. A waiting area, the limits of which are indicated on the chart, is situated NE of the terminal. Mariners are advised to anchor N of latitude 3°47'N, and E of longitude 8°44'E. The bottom consists of mud and sand, good holding in a depth of about 40 m.

- 3 **Prohibited anchorage.** Anchoring is prohibited W of longitude 8°44'E, as indicated on the chart, due to the presence of a gas pipeline (3.65).

Pilotage Pilot is compulsory. Pilot boards about 1½ miles N of the terminal, as indicated on the chart, and remains on board throughout the loading. The pilot will also confirm cargo figures and provide all commercial documentation.

Tug is available.

Harbour

3.77

- 1 **General layout.** The harbour consists of an open roadstead with conventional mooring buoys. In 2004 a



Bioco – Punta Europa Terminal (3.74)

(Original dated 1998)

(Photograph – CMS Oil & Gas Co.–Equatorial Guinea)

second CBM terminal was being established W of Punta Europa.

Landmark:

Flare (3°46'·9N, 8°42'·9E).

Major light:

Punta Europa Light (3°46'·9N, 8°43'·0E) (3.16).

Directions for entering harbour

3.78

- 1 The chart is sufficient guide.

Berth

3.79

- 1 The berth consists of a four point buoy mooring, 5 cables E of Punta Europa. Vessels may be berthed either NW or SE. A submarine pipeline extends ENE to the loading terminal, from a position on the shore 2 cables ESE of Punta Europa Light. The manifold is marked by a light-buoy (special).

Port services

3.80

- 1 **Repairs.** Nil.
Other facilities: medical facilities in emergency only; no reception facilities for dirty ballast.
Supplies: no fuel oil; no fresh water; no stores.
Communications. Malabo airport.

OFFSHORE TERMINALS

Zafiro and Serpentina Terminals

Chart 1860

General information

3.81

- 1 **Position and function.** The two terminals serve Zafiro offshore oilfield which is located about 37 miles W of Punta Europa, the NW point of Bioco. The N part contains FPU *Zafiro Producer* (3°51'·2N, 8°06'·5E) moored bow-to-bow with FSO *Magnolia*, and an SBM. Production platform *Jade* is located roughly midway between the SBM and the two offloading vessels.

In the W part, FPSO *Serpentina* is moored in position 3°48'·0N, 8°04'·4E.

Terminal Authority. Mobil Equatorial Guinea Inc., PO Box 654, Malabo, Bioco.

Limiting conditions

3.82

- 1 **Controlling depth.** Depths within the oilfield range from 70 to 300 m.
Maximum size of vessel handled is up to 310 000 dwt at Zafiro Terminal and 350 000 dwt at Serpentina Terminal.
Local weather. See 3.7. The swell is greatest between June and September with average heights up to 2·5 m from SSW.

The predominant surface current is E at an average rate of ½ to 1½ kn but its rate and direction are variable and difficult to predict.

Thunder and lightning are common during the rainy season and can delay berthing and cargo loading operations.

- 2 The maximum parameters for berthing are: wind 25 kn, swell/waves 2·5m and current 2 kn.

The maximum parameters for cargo operations at FPSO *Serpentina* are: wind 35 kn, swell/waves 3·5 m and current 3 kn.

Arrival information

3.83

- 1 **Port operations.** Berthing is in daylight only but unberthing can take place at any time.

Port radio. For details see *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required. Send ETA 72, 48 and 24 hours in advance to Terminal Authority. Vessels proceeding to either terminal should establish VHF contact with FPU *Zafiro Producer* when within range.

Pilotage is compulsory. The pilot boards 4 miles N of FPU *Zafiro Producer* or 2 miles W of FPSO *Serpentina*. Under certain circumstances the pilot and boarding party may board by helicopter in daylight hours.

- 2 **Tugs** are available.
Anchorage outside the restricted area can be obtained about 6 miles N of *Zafiro Producer* in a depth of 65 m, good holding, or, more than 2 miles W of FPSO *Serpentina* in a similar depth. Vessels must not pass through the restricted area when proceeding to the anchorage.
- 3 **Restricted area.** The oilfield is enclosed within a restricted area in which vessels are advised not to enter without authorisation and without a pilot onboard. The restricted area comprises a circle of radius 4 miles centred on FPU *Zafiro Producer*, as shown on the chart. In 2004 it was proposed to extend the restricted area about 4 miles farther S.

- 4 Anchoring within the restricted area is prohibited.

Regulations. During loading operations the export tanker must have her engine ready for immediate use and a crew member is to be stationed on the forecastle with a walkie-talkie.

The national flag of Equatorial Guinea is to be flown by day.

Directions

3.84

- 1 When approaching from W, the course leads E approximately 35 miles offshore in order to avoid Nigerian oilfields. When clear of the restricted area enclosing Odudu Oilfield (3°57'N, 7°48'E) (see *Africa Pilot Volume I*) course can be adjusted NE to the pilot boarding position at Zafiro Terminal or maintained E for the pilot boarding position at Serpentina Terminal.

Berth

3.85

- 1 The SPM buoy is moored 2 miles NE of FPU *Zafiro Producer*.

FPSO *Serpentina* is 363 m LOA and 307 236 dwt and is anchored by means of an SPM turret at the bow. The export tanker moors in tandem with the stern of the FPSO and a tug will remain secured to the stern of the export tanker throughout the loading operation.

Services

3.86

- 1 No dirty ballast, waste oil or garbage reception facilities: no fuel, fresh water or stores available.

Limited medical facilities on the FPU. Helicopter link to Terminal Authority at Malabo. International airport at Malabo.

ILHA DO PRÍNCIPE

General information

Chart 1595 plan of Ilha do Príncipe

Description

3.87

- 1 Ilha do Príncipe is situated about 120 miles WNW of Cabo San Juan (1°11'N, 9°20'E) (4.201) the nearest point on the coast of Africa. and 116 miles SW of Bioco.

It lies between the parallels of 1°42'N and 1°32'N, and the meridians of 7°20'E and 7°28'E.

Its physical features and aspect make it one of the most remarkable islands in the world.

For general and other information see 1.103.

Route

3.88

- 1 From a position NW of Ponta Marmita (1°41'2N, 7°22'4E), directions circumnavigate the island in an anti-clockwise direction passing all features at a prudent distance.

Topography

3.89

- 1 The general aspect of the island, though resembling in some respects that of Bioco, is more singular in outline on account of the needle-shaped peaks and leaning mountain masses which rise abruptly from the high land of the interior. Luxuriant vegetation, which everywhere abounds, becomes rank to such a degree as to cause the island to be unhealthy. In many parts there are traces of extinct volcanoes and large tracts are covered with volcanic stones.
- 2 The N part of the island, though high, is not so grand in appearance when compared with the S portion, which latter consists of a series of steep and rugged mountains, surrounded by gigantic natural obelisks of most fantastic shapes, the whole culminating in Pico do Príncipe (3.92) which rises to and elevation of 947 m.

Depths

3.90

- 1 Depths of 200 m approach to within about 2 miles off the N and E sides of the island but a bank, over which the depths are less than 200 m, extends upwards of 17 miles in a S direction from it. Pedras Tinhosas, two islets, (3.108) are situated near the S extremity of the bank.

Natural conditions

3.91

- 1 **Current.** The current in the vicinity of Ilha do Príncipe is variable but said to be usually N or NNE at a rate of 1 to 2 kn.

Principal mark

3.92

- 1 **Landmark:**
Pico do Príncipe (1°35'0N, 7°23'2E).

Directions

Ponta Marmita to Ponta do Focinho de Cão

3.93

- 1 From a position NW of Ponta Marmita (1°41'2N, 7°22'4E), close off which there is a rock with a depth of less than 1.8 m over it, the track leads SSW, passing (with positions relative to Ponta Marmita):

WNW of Ponta Manjona (1 mile SSW). The coast between Ponta Marmita and this point is fringed

by rocks close inshore, but it is otherwise clear of off-lying dangers and there are depths from 16.5 to 21.9 m close to it. Thence:

- 2 WNW of Ponta da Pedra Furada (1¼ miles S), so called because an arch has been formed at its extremity by the action of the sea. To the S of the point is a small sandy bay, the S entrance point of which is Ponta Iola, a steep rocky point at the NW extremity of the central chain of mountains. Thence:
- 3 WNW of Ponta do Focinho de Cão, (not named on chart) (5½ miles SSW), a peak of the same name rises about 5 cables inland to an elevation of 263 m. The NW side of the point is fringed by rocks, some above water, to a distance of 1½ cables offshore. Focinho do Cão Light is exhibited from the point. There is a small sandy bay 7½ cables SE of Ponta do Focinho de Cão but there are rocks in the approach and it affords no shelter. A point 1½ miles SSE of Ponta do Focinho de Cão is marked by a small conical hill, close off which are two rocks.
- 4 Thence the track continues to a position W of Ponta do Focinho de Cão (5½ miles SSW).
- Useful mark:**
Radio mast (1°40'0N, 7°23'0E).

Ponta do Focinho de Cão to Ilhéu Caroço

3.94

- 1 From a position W of Ponta do Focinho de Cão (1°36'3N, 7°19'8E), the track leads SSE, to a position SW of Ponta do Grosso (not named on chart) 8 miles SSW of Ponta Marmita. Ponta do Grosso is rocky and steep-to. From it to N rises Barriga Branca, which when seen from a SE direction appears as two conical peaks.
- 2 From Ponta do Grosso, the S coast of the island as far as Ponta Pico Negro forms three bays separated by rocky points; the shores of these bays are high, rocky and wooded, and are commanded by the high peaks of the S range of mountains. They afford no shelter and the sea usually breaks along their shores.
- 3 The track leads SE, passing (with positions relative to Ponta Marmita (1°41'2N, 7°22'4E)):
Clear of, depending on draught, a shoal patch (8¾ miles S) with a depth of 14.3 m over it, thence:
SW of Isla Portinho (9 miles S), small, round and rocky over which the sea breaks heavily. Thence:
SW of Ponta Pico Negro (9¾ miles S), the S extremity of Ilha do Príncipe, a long narrow tongue of land with steep cliffs on both sides, thence:
- 4 SW of Ilhéu Caroço (10¾ miles SSE), steep, rocky, and covered with trees and brushwood. It is of a peculiar shape resembling a pointed cap, on account of which it is also known as Boné do Jóquei. When seen from S, it appears as part of Ilha do Príncipe. It is steep-to, but foul ground extends 2½ cables from the SE of the islet. On the S side of the islet is a low rock from which a light (white square tower, red bands; 5 m in height) is exhibited. The channel between Ilhéu Caroço and Ponta Pico Negro is clear of known dangers with depths about 40 m in mid-channel, fine black sand.

The currents in this channel are variable, and caution is required when using it.

- 5 Thence the track continues to a position S of Ilhéu Carço (10¼ miles SSE).

Ilhéu Carço to Ponta Chindela Light

3.95

- 1 From a position S of Ilhéu Carço (1°31'·0N, 7°25'·8E), the track leads NE, passing (with positions relative to Ponta Marmita (1°41'·2N, 7°22'·4E)):

SE of Ponta Café (8½ miles SSE). A spit with a depth of 5·2 m at its extremity extends 5 cables from the point. To the W of the point is a small bay with a sandy beach known as Praia Grande. Between this bay and Ponta Pico Negro the coast is high and rugged. Thence:

- 2 SE of Pedra Calundo (8 miles SSE), an above-water rock lying at the outer end of foul ground with many above and below water rocks projecting 7½ cables from the shore. Thence:

- 3 SE of Ponta Telha (7 miles SSE), steep-to. W of this point is the junction of the two mountain ranges which cross the island. In the S of the island these mountains descend steeply and abruptly to the coast. Between Ponta Telha and Ponta da Garça 3¼ miles NE, the coast forms a bay known as Baía Ancha (Broad Bay), the slopes of which are marked by red outcrops. Thence:

SE of Ponta Chindela Light (6½ miles SE), (white square tower, red bands, 5 m in height).

Ponta Chindela Light to Ilhéus dos Mosteiros

3.96

- 1 From a position SE of Ponta Chindela Light (1°37'·6N, 7°27'·8E), the track leads N, passing (with positions relative to Ponta Marmita (1°41'·2N, 7°22'·4E)):

E of Ponta da Garça (6¼ miles SE), a rounded rocky headland, and:

Clear of, depending on draught, a shoal patch (7½ miles ESE) with a depth of 18·5 m over it, thence:

- 2 E of Ponta Capitão (5½ miles E), a tongue of land which is steep-to, and which not only forms the N entrance point to Baía de Santo António, but also encloses close E Baía de Formiga with Praia Grande, a sandy beach, at its head. The coast to Ilhéus dos Mosteiros, 1 mile N, is rocky and fringed with breakers. Thence:

- 3 E of Ilhéus dos Mosteiros (20 m in height) (6 miles E). The islet lies 3 cables within the extremity of a spit of foul ground, containing several dangerous below-water rocks, and rocks awash, extending about 1¼ miles NE from Ponta dos Mosteiros the NE point of Ilha do Príncipe. The point consists of cliffs of moderate height against which the sea often breaks with violence. There is a black rock close off the point. Mosteiros Light (white square tower, red bands, 5 m in height) is exhibited from the islet.

Thence the track continues to a position NE of Ilhéus dos Mosteiros (6 miles E).

- 4 **Caution.** Vessels should keep at least 1 mile to seaward of Ilhéus dos Mosteiros Light. A strong N current will be experienced to S of this outlying danger.

Ilhéus dos Mosteiros to Ponta Marmita

3.97

- 1 From a position NE of Ilhéus dos Mosteiros (1°41'·2N, 7°28'·3E), the track leads W, passing (with positions relative to Ponta Marmita (1°41'·2N, 7°22'·4E)):

N of Ponta Banana (4¼ miles E), high, rocky and steep-to, it falls on its inshore side to a low neck, so that, when viewed from a distance, the point appears to be detached. On the hills which skirt the coast inland are some huts, partially concealed by foliage, and immediately E of the point is a sandy bay. Between Ponta Banana and Ilhéu Bom-Bom 2¼ miles WNW, the coast recedes to form a bay, the well-wooded shore of which is mostly rocky, with here and there small sandy bights. Thence:

- 2 N of Ilhéu Bom-Bom (2 miles NE), which in reality is the N point of Ilha do Príncipe, being connected to the mainland by a sandy spit, on the W side of which are two rocky islets. It is densely wooded, round in shape, and steep-to on its seaward side, against which the sea frequently breaks. Ilhéu Bom-Bom Light (white square tower, 4 m in height) is exhibited from the islet summit.

- 3 Clear of Pedra da Galé (2¾ miles N), small, bare, black rock of basaltic formation, on which the sea always breaks. It is very dangerous, and is covered by the red sector of Ilhéu Bom-Bom Light (above). The depths in the channel between the light and Pedra da Galé, which is free from any known danger, are greater than 15 m.

3.98

- 1 **Useful mark:**

Radio mast (position approximate) (1°41'·6N, 7°24'·3E).

Baía de Santo António

Chart 1595 plan of Baía de Santo António

General information

3.99

- 1 **Position and function.** Baía de Santo António (1°39'·5N, 7°27'·0E), is situated on the E side of Ilha do Príncipe. It is the most important bay and used as an anchorage. The great objection to this bay as an anchorage is that it is exposed to E and SE winds, from which tornadoes blow; but the holding ground is good.

The town of Santo António, which is sometimes inundated by the sea, stands at the head of the bay. It is sheltered by high wooded hills, and the climate is hot and humid.

The population is about 1000.

- 2 **Topography.** The inner part of the bay is not easily distinguished from seaward. The shores of the bay are rocky with numerous sandy coves. The houses are mainly of wood construction and are built on piles.

Approach and entry. The bay is approached from E, and entered between Ponta Capitão (1°40'·3N, 7°27'·8E) and Ponta da Garça 2½ miles S.

Local magnetic anomaly. Local deflection of the compass is reported to occur close inshore in the bay.

- 3 **Tidal streams** are weak at all times.

Port Authority. Empresa Nacional de Administração dos Portos, PO Box 437, Sao Tomé.

Limiting conditions**3.100**

- 1 **Tidal levels.** Mean spring range about 1.5 m; mean neap range about 0.7 m. See information in *Admiralty Tide Tables Volume 2*.

Density of water is 1.025 g/cm³.

Arrival information**3.101**

- 1 **Pilotage and tugs** are not available.

Directions for entering harbour**3.102**

- 1 From a position SE of Ponta Capitão (1°40'·3N, 7°27'·8E) the track leads W, passing, (with positions relative to Ponta Capitão):

S of Ponta Capitão, thence:

N of Ponta Cabra (1¼ miles SSW), steep-to and rocky, thence:

S of Ilhéu Santana (9 cables SW), brushwood covered, 20 m in height and surmounted by a conspicuous monument. Ponta Santana lies close W.

- 2 Thence the track leads SW towards the anchorages. At night the narrow white sector (239°–245°) of a light exhibited from the harbour office (3 miles SW) may provide a lead into the anchorages but it is reported that navigational aids are unreliable. The track passes:

NW of Ponta de Mina, a rocky promontory on the summit of which are the gardens of Government House and a light (red metal framework tower, white bands; 5 m in height) both enclosed within the ramparts of an ancient fortress.

Berths**3.103**

- 1 **Anchorage.** As the bottom, in the bay known as Baía de Formiga, off Praia Grande (1°40'·4N, 7°26'·9E) is composed of coral and shells, and as the bay is open to the SE, it would be imprudent to anchor here in the tornado season.

- 2 Three anchorages are indicated on the plan. Their positions relative to Ponta da Mina Light (1°39'·0N, 7°26'·4E) are 5 cables N in a depth of 11.7m, 4 cables NW in a depth of about 5 m and 5 cables W in a depth of about 3 m. The outer anchorage can accommodate vessels with a draught of 10 m in good holding but it is exposed to the prevailing SE wind and could be dangerous on the passage of a tornado.

Landing. There is a small pier for the use of lighters and small craft.

Port services**3.104**

- 1 **Other facilities:** hospital.

Supplies are not easily obtainable. Fuel and water not available.

Communications. Small airfield about 1 mile NW of the town.

Anchorage

Chart 1595 Plan of Ilha do Príncipe

East of Ilhéu Bom-Bom**3.105**

- 1 Good anchorage may be obtained for small vessels in a bay between Ilhéu Bom-Bom (1°42'·0N, 7°24'·4E) and Ponta Banana 2¼ miles ESE, in a depth of 15 m.

North-east of Ponta Marmita**3.106**

- 1 Anchorage may be obtained in a bay between Ponta Marmita (1°41'·2N, 7°22'·4E) and Ponta da Furna 1½ miles ENE. The bay is clear of dangers, sheltered from the prevailing wind, and affords good anchorage, its only drawback being that in common with all the bays of the island, it is subject to alternate calms and violent squalls, occasioned by the proximity of the mountains.

Chart 1595 plan of Baía das Agulhas

Baía das Agulhas**3.107**

- 1 **Description.** Baía das Agulhas affords the safest and best anchorage in the island, especially during the tornado season, being sheltered from SE winds. It is entered between Ponta Iola (1°38'·4N, 7°22'·0E) and Ponta do Focinho de Cão (3.93) 3 miles SW.

The bay is free from off-lying dangers and the depths decrease regularly towards the shore. The bay is sparsely inhabited.

- 2 **Topography.** When seen from the offing, the bay presents a remarkable aspect, as five hills lie close to its shore, and being connected by low ground which cannot be seen from afar, they appear as five conical islets. In the background tower the great peaks of Pico do Príncipe (3.92), João Dias Pai, 1¼ miles N, and Papagaio, 2 miles NNE. Numerous streams flow into the bay, through the valleys separating the lower hills. The shores of the bay are for the most part fringed by reefs, extending ½ cable offshore.

- 3 There are two beaches free of rocks, Praia Caixão and Praia de Lapa, 1¼ and 1¾ miles, respectively, S of Ponta Iola.

Directions. The chart is sufficient guide.

Useful mark:

Focinho de Cão Light (1°36'·3N, 7°19'·8E).

- 4 **Anchorage** may be obtained as indicated on the plan about 1¼ miles SSW of Ponta Iola in a depth of about 21 m, with Morro Iola (1°38'·4N, 7°22'·3E) bearing 023° and João Dias Pai 3½ miles SSE, bearing 119°.

If anchoring close inshore care must be taken to avoid a rocky ledge over which there are depths of 2.4 m extending 2 cables from the S shore of Ponta do Focinho de Cão (3.93).

- 5 Occasionally, if NW winds arise, it is prudent to be vigilant, but usually there is no danger.

Tornadoes blow from E and may be squally from coming over the high land. If at single anchor, the anchor may become fouled as the vessel swings from riding to the usual SW breeze.

Pedras Tinhosas

Chart 1595 Plan of Ilha do Príncipe

General information**3.108**

- 1 **Description.** Pedras Tinhosas are two small islets situated 11½ and 13 miles SSW of Ponta Pico Negro (1°31'·8N, 7°24'·2E).

Tinhosa Grande (1°20'·8N, 7°17'·6E) is the S and larger of the two. Tinhosa Pequena lies about 2½ miles NNW of it, and is covered by the red sector of Tinhosa Grande Light.

- 2 **Topography.** Both islets are covered with brushwood, and due to surf, landing is difficult; they are marked by white patches of guano. When seen from E or W, Tinhosa

Grande presents the appearance of two rounded peaks. Close SW of Tinhosa Pequena is a detached rock.

- 3 **Directions.** The islands may be passed at a prudent distance. The chart is sufficient guide.

Useful mark:

Tinhosa Grande Light (white square tower, red bands, 5 m in height) (1°20'·8N, 7°17'·6E), exhibited from the summit.

ILHA DE SÃO TOMÉ

GENERAL INFORMATION

Chart 1595 plan of Ilha de São Tomé

Area covered

3.109

- 1 This section describes Ilha de São Tomé, its coastal route together with the port of São Tomé and other anchorages and harbours.

It is arranged as follows:

Morro Carregado to Ponta Furada (3.119).
Ponta Furada to Ilhéu Gago Coutinho (3.125).
Ilhéu Gago Coutinho to Ponta Praião (3.130).
Ponta Praião to Ponta Cruzeiro (3.138).
Ponta Cruzeiro to Morro Carregado (3.149).

Description

3.110

- 1 Ilha de São Tomé is a much larger island than Ilha do Príncipe. It is situated about 82 miles SSW of Ilha do Príncipe and about 128 miles WNW of Cap Lopez (0°38'S, 8°42'E), the nearest point on the coast of Africa.

The island lies between the parallels of 0°25'N and 0°01'S, and between the meridians of 6°28'E and 6°46'E.

It is of great commercial importance but there are few sheltered anchorages. Calms, variable winds, and strong currents prevail in the vicinity.

The sea around the island is very clear, and the bottom can be distinctly seen in depths of 11 m.

For general and other information see 1.103.

Route

3.111

- 1 Directions circumnavigate the island in an anti-clockwise direction, passing all features at a prudent distance.

If approaching the island from NW see information on currents at 3.117.

Topography

3.112

- 1 The island of São Tomé is mountainous and in its central W part stands Pico (3.118); the sides of which are covered with dense forest and down which flow numerous streams.

- 2 About 2½ miles SE and 2 miles E respectively of this central peak are Pico de Ana Chaves and Calvário N. From this central mass, mountain ranges radiate E, SE, and S. In the SE range, which extends almost to the coast, are amongst others Pico Maria Fernandes and Micondó, whilst in the S part of the island are Pico Cabumbé, Pico Sintra, Pico Cão Grande and Pico Cão Pequeno; the two latter having sharp summits.

- 3 The N end of the island consists of a very fertile plain watered by numerous streams, and, from its centre at about 3 miles inland, rises an undulating chain of hills, the most N of which is Muquiqui.

The island when seen from NE at a distance of about 60 miles, presents three very remarkable mountains, namely Pico, whose summit is frequently hidden by clouds, Cão

Grande with its needle-shaped summit, and Pico Maria Fernandes the top of which resembles a sugar-loaf.

Navigation

3.113

- 1 Navigational aids are reported to be unreliable; they may be missing, unlit or out of position.

Marine farms

3.114

- 1 Several fish havens, established in 1995, the positions of which are indicated on the chart, lie up to 5 miles off the coast around Ilha de São Tomé. They are marked by unlit red buoys, fitted with bamboo masts, carrying red or yellow flags.

Fauna

3.115

- 1 During October and November the sperm whale is to be found off the S end of the island.

Industry and trade

3.116

- 1 São Tomé is divided up into plantations for the production and export of cocoa, coffee, and palm oil.

Natural conditions

3.117

- 1 **Local magnetic anomalies.** A local magnetic anomaly which increased/decreased the normal magnetic variation by up to 3° has been reported to occur between Ponta Praião (0°17'·8N, 6°46'·0E) and Ponta dos Morcegos 10 miles SW.

Local deflection of the compass is reported to occur on the NW coast between Fernão Dias (0°24'·5N, 6°40'·8E) and Ponta Diogo Vaz 12 miles SW.

No anomalies were found when HM Surveying Ship *Herald* transited the area in 1985.

- 2 **Current.** When approaching the island from NW, it is advisable to keep N of the parallel of 1°30'N until the meridian of 6°00'E, thereby avoiding the full influence of the South Equatorial Current. At certain times of the year the current surrounds São Tomé. On the E coast of São Tomé, a NNE to NNW current, rate 1½ kn is experienced. See 1.194.

Climatic table. See 1.226 and 1.234.

Principal mark

3.118

Landmark:

Pico, 2023 m in height (0°16'·2N, 6°32'·8E).

MORRO CARREGADO TO PONTA FURADA

General information

Chart 1595 plan of Ilha de São Tomé

Route

3.119

- 1 From a position N of Morro Carregado (0°24'·5N, 6°37'·0E), the route leads SW for about 19 miles to a position W of Ponta Furada (0°14'·6N, 6°28'·0E).

Directions**3.120**

- 1 From a position N of Morro Carregado (0°24'·5N, 6°37'·0E), the track leads SW, passing (with positions relative to Morro Carregado):

NW of Morro Carregado, high and peaked, with the point on which it stands faced by steep rocky cliffs. Lagoa Azul Light (rectangular tower, 5 m in height) is exhibited from the point. Thence:

NW of Ponta Figo (4¾ miles SW), Ponta Cadão lies 1½ miles SW, thence:

- 2 NW of Ponta Prainha (7¾ miles SW), thence:
NW of Ponta Diogo Vaz (9 miles SW), rounded and steep-to, thence:

NW of Ponta Alema, (11¾ miles SW).

- 3 Thence the track leads to a position W of Ponta Furada (the W extremity of Ilha de São Tomé), from which a light (rectangular tower, 5 m in height) is exhibited. The point is so called because the action of the sea has eroded an opening in the cliff face.

(Directions continue at 3.126)

Anchorage and harbours**Enseada da Rosema****3.121**

- 1 Enseada da Rosema (0°21'·8N, 6°34'·0E) is a shallow bight between Morro Carregado and Ponta Figo. A beach, known as Praia de Rosema, lies in the S part of the bay and is reported to have the best anchorage in the island with deep water close inshore and good landing facilities.

Neves**3.122**

- 1 Neves, a hamlet with a wharf, is situated close E of Ponta Figo (0°21'·7N, 6°33'·1E). Rio Provaz enters the sea at this place.

Supplies. fresh water; petrol; limited provisions.

Ponta Diogo Vaz**3.123**

- 1 A wharf, used for the export of produce from the local plantations, is situated 5 cables E of Ponta Diogo Vaz (0°19'·1N, 6°29'·9E).

Ponta Alema**3.124**

- 1 A wharf lies at a beach, known as Praia Santa Caterina, NE of Ponta Alema (0°16'·4N, 6°28'·7E).

**PONTA FURADA TO
ILHÉU GAGO COUTINHO****General information**

Chart 1595 plan of Ilha de São Tomé

Route**3.125**

- 1 From a position W of Ponta Furada (0°14'·6N, 6°28'·0E), the route leads SSE for about 20 miles to a position S of Ilhéu Gago Coutinho (0°00'·3S, 6°31'·6E).

Directions

(continued from 3.120)

3.126

- 1 From a position W of Ponta Furada (0°14'·6N, 6°28'·0E) the track leads SSE, passing (with positions relative to Ponta Furada):

WSW of Ilhéu Côco (2¾ miles S), lying close to the coast, it is high at its E end and wedge shaped, falling W in a straight line, thence:

WSW of Ilhéu de Córacóra (3¼ miles S), lying off a point surmounted by Morro Córacóra Grande. The coast for 3½ miles SSE is rocky and cliffy with a slight indentation. Thence:

- 2 WSW of Ilhéu São Miguel (6½ miles S), close offshore, thence:

WSW of Ilhéu Gabado (6¾ miles SSE), lying 2½ cables offshore. It is the largest of a group of five islets, of which the others lie between Ilhéu Gabado and the coast 5 cables NNE of it. Thence:

- 3 WSW of Ponta Azeitona (8 miles SSE), sharp, wedge shaped and fringed with rocks. Baía do Pilar lies close N, the shores of which are rocky, with a sandy beach at its head. This bay is well sheltered from E and SE winds. Thence:

- 4 WSW of Ilhéu dos Cocos (9½ miles SSE), a large rock of moderate height. The coast for 2½ miles S of the islet consists almost entirely of abrupt rocky cliffs with a few beaches. Thence:

WSW of Ponta Jálé (12 miles SSE), high and cliffy, with Ilhéu Jálé close off it, thence:

WSW of Ponta do Homen da Capa (13¾ miles SSE), thence:

- 5 WSW of Ilhéu Gago Coutinho (15¼ miles SSE), known locally as Ilhéu das Rolas. It is of volcanic origin, and is the largest of the islands lying off Ilha de São Tomé. The island is covered with large trees; it has two summits, the N of which is a conical hill. The island is inhabited and it is cultivated. In November it is visited by turtle. A passage known as Canal das Rolas, about 1 mile in width separates Ilhéu Gago Coutinho from the S extremity of Ilha de São Tomé. It should however be used with caution because of shoals which encroach both sides of the channel. Ilhéu Gago Coutinho Light (yellow square tower, red lantern, on dwelling, 9 m in height) is exhibited from the island.

Thence the track leads to a position S of Ilhéu Gago Coutinho (15¼ miles SSE).

(Directions continue at 3.131)

Anchorage**Praia Lança****3.127**

- 1 Anchorage may be obtained about 5 cables N of Ilhéu dos Cocos, off Praia Lança (0°06'·0N, 6°31'·0E). Rio das Pedras flows into the head of the bay.

Baía Lama Porco**3.128**

- 1 Anchorage may be obtained in Baía Lama Porco, entered between Ilhéu Jálé (0°02'·9N, 6°30'·6E) and Ponta do Homen da Capa 1¼ miles S. Local knowledge is required. The bay affords good anchorage during SE winds, but unsafe with the usual SW winds.

The best position to anchor is abreast a fishing village, in a depth of about 12 m, with the N cone of Ilhéu Gago Coutinho (3.126) open S of Ponta do Homen da Capa.

North-west of Ilhéu Gago Coutinho**3.129**

- 1 Anchorage may be obtained off the NW coast of Ilhéu Gago Coutinho, in depths of about 9 m with the higher

summit bearing about 120°. In this position shelter will be found from SE winds during tornadoes, and even if a vessel should drag her anchor she will drive seaward. The anchorage is not recommended during S and or SW winds.

In October, 1890, HMS *Swallow* anchored in a depth of 10·4 m, fine sand and stones, with the summit of the island bearing 164°, and the N extremity of Sete Pedras bearing 075°; the prevailing winds during her stay were S and W, but on this occasion caused only a slight swell.

Landing is impractical at the S end of the island but a good landing, free from surf, can be made abreast the village in the NW of the island. This landing place is sheltered by a reef which extends seaward for about ½ cable, and curves slightly E at its outer extremity. The sea generally breaks over this reef and great care should be taken by boats to avoid it but under its shelter a safe and dry landing can be effected.

ILHÉU GAGO COUTINHO TO PONTA PRAIÃO

General information

Chart 1595 plan of Ilha de São Tomé

Route

3.130

- 1 From a position S of Ilhéu Gago Coutinho (0°00'·3S, 6°31'·6E), the route leads NE for about 30 miles to a position E of Ponta Praião (0°17'·8N, 6°46'·1E).

Directions

(continued from 3.126)

Ilhéu Gago Coutinho to Punta Juntabudo

3.131

- 1 From a position S of Ilhéu Gago Coutinho (0°00'·3S, 6°31'·6E), the track leads NE, passing (with positions relative to Sete Pedras (0°02'·4N, 6°37'·7E)):
 - SE of Ilhéu Gago Coutinho (6¾ miles SW) (3.126), thence:
- 2 SE of Ponta Alegre (5 miles W), with several houses on it. Enseada do Iôgoiôgo is entered close NE of the point. It is relatively shoal with a charted depth of 6·8 m. Between this point and Ponta Lama Porco, 1½ miles SW, the coast is indented and has several drying rocks close off it. The coast between Ponta Baleia (0°02'·2N, 6°33'·9E) and Ponta Barro Preto 1½ miles NNE is rocky and fringed with rocks. Thence:
- 3 Either side of Sete Pedras, consisting of not as its name would indicate, a group of seven rocks but of a group of more than double that number. It is about 5 cables in extent and the central rock is the largest and 41 m in height. The rocks appear, when seen from N, as a vessel under sail. As they are steep-to they do not constitute a danger by day but at night they should be approached with caution or not at all. They are covered by a red sector (015°–035°) of Punta Juntabudo Light (see below).
- 4 SE of Ponta Bote (2¾ miles N), thence:
SE of Ponta Juntabudo (4¾ miles NNE), prominent and cliffy. Ponta Juntabudo Light (tower, 5 m in height) is exhibited from the point.

Punta Juntabudo to Ponta Praião

3.132

- 1 The track continues NE, passing:
SE of Ponta dos Morcegos (7¼ miles NNE). The coast between this point and Agua Izé 5½ miles NE (3.137), is irregular with rocky heads and sandy bays. In other places mountain streams enter the sea or there are steep perpendicular cliffs. Thence:
- 2 SE of Ponta Lebre (13¾ miles NNE), with several distinct clumps of trees, and the S side of the point is cliffy. Between this point and Ponta Praião 4 miles NNE, the coast forms several indentations, of which the two most important are, Praia Cana (15 miles NNE), with some rocks in it, and Praia do Almocharife (16 miles NNE), with rocks extending far offshore and a chapel at its head. Thence:
- 3 SE of Ilhéu de Santana (14¾ miles NNE), 50 m in height, rocky and its summit covered with bushes. It is steep-to. Ilhéu de Santana Light (rectangular tower, 5 m in height) is exhibited from the islet. The passage between Ilhéu de Santana and Ilha de São Tomé is free from known dangers but it is better to keep outside in order to avoid any squalls which might occur inshore.
- 4 Thence the track continues to a position E of Ponta Praião (17½ miles NNE), the E point of Ilha de São Tomé. It is of moderate elevation surrounded by rocks which dry; it stands near the SE end of the plain which constitutes the N part of the island, and S of it the land rises steeply. Sameiro, a small conical hill, stands 1 mile W of the point and there are numerous conspicuous radio masts which exhibit red obstruction lights close W.

3.133

- 1 **Useful mark:**

Chimney (0°13'·2N, 6°44'·2E).

(Directions continue at 3.140)

Anchorage

Baía de Praia Grande

3.134

- 1 Anchorage may be obtained, as indicated on the chart, in a depth of about 15 m, about 5 cables from the head of Baía de Praia Grande. It is entered between Ilhéu Quixibá (0°04'·5N, 6°35'·5E), connected to the mainland by a drying reef, and Ponta Barro Preto 1½ miles SW. On the W side of the bay is a village.

Angra de São João dos Angolares

3.135

- 1 Anchorage may be obtained by small vessels, in Angra de São João dos Angolares, entered between Ponta Mussandá (0°08'·0N, 6°39'·7E) and Ponta do Océ about 7 cables S. At the head of the bay is the settlement of Santa Cruz where there is a wharf.

Baía Luiza

3.136

- 1 Anchorage may be obtained off Baía Luiza (0°12'·7N, 6°43'·8E), as indicated on the chart, in a depth of 24 m, 5 cables SE of the entrance to Agua Izé (3.137). The anchorage is exposed to the prevailing wind and swell.

Small craft

Agua Izé

3.137

- 1 Agua Izé (0°13'·2N, 6°44'·2E) situated at the head of a sandy cove where there is a wharf and some houses, is only suitable for small boats. A stranded wreck lies at the entrance to the cove.

PONTA PRAIÃO TO PONTA DO CRUZEIRO

General information

Chart 1595 plan of Ilha de São Tomé and plan of Portos de Fernão Dias and São Tomé

Route

3.138

- 1 From a position E of Ponta Praião (0°17'·8N, 6°46'·1E) the route leads NW for about 12 miles to a position NE of Ponta do Cruzeiro (0°24'·8N, 6°40'·1E).

Depths

3.139

- 1 Banco de Ana Chaves is an extensive coastal bank with general depths of less than 10 m extending up to 2½ miles offshore between Ponta Praião and Ponta Cruzeiro. Isolated patches with depths of less than 5 m occur on the outer extremities of the bank NE of Ponta Okedelrey (0°21'·6N, 6°43'·9E). The bank is steep-to on its N and NE edges.

Directions

(continued from 3.133)

3.140

- 1 From a position E of Ponta Praião (0°17'·8N, 6°46'·1E), the track leads NW, passing (with positions relative to Ponta Praião):
- NE of Ponta Praião. Between this point and São Sebastião ¾ miles NNW the coast is rocky, indented and fringed with rocks. The ruined fort of São Jeronimo stands on a well wooded eminence, 1 mile S of São Sebastião. Two miles farther S is the mouth of Rio Manuel Jorge which enters the sea through Praia Melão. Thence:
 - 2 NE of São Sebastião (¾ miles NNW), low and rocky, on which stands Fortaleza São Sebastião, under which is a landing pier for small boats. The fort has white sides. São Sebastião Light (white round tower, red lantern, on fortress, 6 m in height) is exhibited from the fort. A triangle of reclaimed land projects 2 cables NNW from the point. The NW side of the reclaimed land is a wharf (3.146). Thence:
 - 3 NE of Ponta Okedelrey (4½ miles NW), prominent and rocky. Close NW is a shallow bay, at the head of which is Bela Vista. A dangerous wreck and unexploded ordnance, with a depth of 7·5 m over the latter, lie, about 6 cables and 2 miles E, respectively, of the point. The ruins of the old Fort São José stand on Ponta Okedelrey. Thence:
 - NE of Ponta Diogo Nunes (5¾ miles NW). Ponta Vasconcelos lies 2¾ cables S. Thence:
 - 4 NE of Ilhéu das Cabras (7½ miles NNW), on which are two hills resembling paps, about 90 m in height. Ilhéu das Cabras Light (white round tower, red lantern, 5 m in height) is exhibited from the summit. Thence:

NE of Ponta Maria Apolinária (7¾ miles NW), rocky point surmounted by Capela de São Francisco. Thence:

NE of Ponta do Cruzeiro (9¼ miles NW), the N extremity of Ilha de São Tomé.

(Directions continue at 3.150)

São Tomé

General information

3.141

- 1 **Position.** São Tomé (0°20'·7N, 6°44'·0E) situated on the NE side of Ilha de São Tomé, at the head of Baía de Ana Chaves, which is sandy.

Function. It is the capital and principal port of Ilha de São Tomé and Príncipe. The large anchorage is safe except during the tornado season. There is a wharf. Exports are cocoa, palm oil, coffee and copra.

The town of São Tomé is well laid out and contains some good buildings of modern construction.

The population is about 44 000.

- 2 **Topography.** The principal buildings are the palace, the Câmara Municipal or town hall, and the Alfandega or Custom house. There is also a cathedral and several churches. The Custom house is a large building in front of which is a pier.

Approach and entry. The port is approached and entered on the alignment of leading lights.

- 3 **Traffic.** In 2003, the port was used by 129 ships with a total of 614 914 dwt.

Port Authority. Empresa Nacional de Administração dos Portos (Enaport), CP 437, Largo da Juventude, São Tomé, São Tomé e Príncipe.

Limiting conditions

3.142

- 1 **Tidal levels.** Mean spring range about 1·5 m; mean neap range about 0·7 m. See information in *Admiralty Tide Tables Volume 2*.

Density of water is 1·025 g/cm³.

Arrival information

3.143

- 1 **Port radio.** There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required. Vessels should send ETA to the agent.

Pilotage is not compulsory. The Port Captain will board a vessel if requested.

Tugs. No information.

Harbour

3.144

- 1 **General layout.** The port is situated around Baía de Ana Chaves between Ponta Okedelrey and São Sebastião. A pier lies in the S part, and a wharf on the E side of the bay.

Current is weak and irregular but most often sets N or NNE.

- 2 **Landmark:**

Barracks (0°21'·2N, 6°43'·6E).

Tower (0°18'·0N, 6°41'·4E).

Climatic table. See 1.226 and 1.234.

Directions for entering harbour

3.145

- 1 Vessels approaching from SE or S should keep in a depth of more than 37 m, and at least 1½ miles offshore, until the leading lights are aligned.

Leading lights. The alignment (285°) of Ponta de São José Lights lead towards the preferred anchorages: In view of the shoaling, soundings should be taken frequently.

Front light (white tower, red bands, 5 m in height) (0°21'·5N, 6°43'·9E).

Rear light (similar structure) (80 m from front light).

Caution. The transit is very sensitive and the beacons are easily concealed by afternoon shadows.

2 **Useful marks:**

Hospital (0°21'·4N, 6°43'·7E).

Radio masts (white towers, orange bands, 30 m in height) (0°21'·3N, 6°43'·6E), red obstruction lights.

Berths

3.146

- 1 **Anchorage** with good holding ground, may be obtained on the alignment of leading lights (3.145) in a depth appropriate to a vessel's draught. Vessels work cargo to lighters.

The anchorages are exposed to the prevailing SE swell and vessels can roll fairly heavily. Vessels tend to lie to the current, generally on a SSE heading.

- 2 Small craft may enter Baía de Ana Chaves, and should anchor well inside the fort on São Sebastião, as long SE rollers (1.201) often enter the bay. At this anchorage smooth water may be expected. However, after tornadoes, or when the swell sets in, the sea breaks right across the bay.

During the tornado season small craft should anchor in the N part of the bay.

- 3 **Wharf** (0°20'·8N, 6°44'·6E) 200 m in length with a depth of 3 m alongside.

Pier (0°20'·5N, 6°44'·2E) extends from the shore in the S part of the bay with a depth of 1·5 m alongside.

Landing may be effected at either the pier or wharf mentioned above. When there is a large swell the wharf is better.

Port services

3.147

Repairs: minor; slipway for boats up to 12 m in length.

Other facilities. Hospital; Deratting can be carried out, Deratting and Deratting Exemption Certificates issued.

Supplies: fresh water, very expensive, and diesel on the wharf; provisions in small quantities.

Communications. Airport about 4 km NNW.

General information

Chart 1595 plan of Isla Pagalu

Description

3.151

- 1 Isla Pagalu (1°26'S, 5°38'E), formerly Annobón, together with Bioco, is part of Equatorial Guinea. It is the smallest of the chain of islands in the Bight of Biafra. It is situated about 100 miles SSW of São Tomé and about 190 miles WSW of Cap Lopez (0°38'S, 8°42'E), the nearest point on the coast of Africa. The population is about 2000 and is located in several small settlements, the largest being San António (also known as Pale) in the N of the island.

Anchorage and harbours

Chart 1595 plan of Portos de Fernão Dias and São Tomé
Fernão Dias

3.148

- 1 **Description.** The port of Fernão Dias lies 4 cables ESE of Ponta de Fernão Dias (0°24'·7N, 6°40'·5E), and provides an anchorage, together with a wharf and a pier. The port is easily distinguished by its white walls and red roofed buildings. Rio de Ouro, enters the sea 3 cables E of the port. There is surf on the bar at the mouth.

- 2 **Anchorage** may be obtained, as indicated on the plan, in a depth of about 13 m, 6½ cables NE of Ponta de Fernão Dias.

This anchorage is safe during the tornado season as the E winds blow clear to seaward.

Permission must be obtained to remain at anchor in this roadstead.

Berth. A concrete pier, lies about 4 cables ESE of Ponta de Fernão Dias, with a depth alongside of 1·8 m.

PONTA DO CRUZEIRO TO MORRO CARREGADO

General information

Chart 1595 plan of Ilha de São Tomé

Route

3.149

- 1 From a position NE of Ponta do Cruzeiro (0°24'·8N, 6°40'·1E), the route leads W for about 6 miles to a position N of Morro Carregado (0°24'·5N, 6°37'·0E).

Directions

(continued from 3.140)

3.150

- 1 From a position NE of Ponta do Cruzeiro (0°24'·8N, 6°40'·1E), the track leads W, passing (with positions relative to Ponta do Cruzeiro):

N of Morro Peixe (1¼ miles W), a small conical hillock. The coast between Ponta do Cruzeiro and this point being broken and fringed with rocks which dry.

Thence the track leads to a position N of Morro Carregado (3.120) (¾ miles W). Praia das Conchas a sandy beach, lies close E. It is reported that a radio mast with red and white bands stands close ESE of Morro Carregado.

(Directions continue at 3.120)

PAGALU

Route

3.152

- 1 Directions circumnavigate the island in anti-clockwise direction passing all features at a prudent distance and having regard to the dangers given at 3.154.

The W side of the island, though safe and steep-to, affords no shelter for shipping on account of the prevailing S and SW winds.

Topography

3.153

- 1 The island is mountainous and rises in varied and picturesque forms to a considerable elevation in its central part, forming three peaks, of which the most N is Pico del Fuego (455 m). This mountain is in the form of a truncated

cone, the sides of which are thickly wooded in places to within a short distance of its summit. Close to the foot of this peak, on its SW side, is a small fresh water lake filling what appears to be the crater of an extinct volcano. South of the lake is Pico del Centro (630 m) (1°26'·0S, 5°37'·9E), and 9 cables farther SE is Pico Surcado (655 m).

- 2 The central parts of the island are covered with orange and lime trees, and near its shores are groves of coconut palms and plantain trees.

Navigation

3.154

- 1 **Caution.** It should be borne in mind when navigating in the vicinity of Pagalu that the chart is based on a very old and incomplete survey. The coast should be approached with great caution.

The charted position of Pagalu (2001), is based on a ships report of 1991, which placed the island 1 mile E of its previously charted position. Mariners should exercise extreme caution when navigating in the vicinity.

Natural conditions

3.155

- 1 **Tidal streams** are always very weak.
- Current.** Pagalu lies in the path of the NNW to NW flowing South Equatorial Current with rates varying from ½ kn to 1¾ kn. The current is deflected by the island but the strength and direction of flow varies with the time of year. In October it is reported that there is a clockwise circulation around the island but for the greater part of the year the set is between NW and NE.

Principal mark

3.156

- 1 **Landmark:**
Pico Surcado (655 m) (1°26'·7S, 5°38'·5E).

Directions

Punta del Palmar to Punta Jiscoy

3.157

- 1 From a position N of Punta del Palmar (1°24'·2S, 5°37'·8E), the N extremity of Pagalu, the track leads SW passing (with positions relative to Punta del Palmar):
NW of Punta del Palmar. Misión de Santo Antonio Light (masonry tower, 7 m in height) is exhibited close SE of the point. The mission house and the village of San Antonio are situated S of the point. The land in the vicinity of San Antonio is difficult to identify when approaching from seaward, as the mountains are nearly always covered in clouds, and the village is not easily distinguished except when close to it. Thence:
- 2 NW of Punta d'Ave (9 cables SW), the NW extremity of Pagalu. It is formed of steep rocky cliffs which extend NE for about 3½ cables to Punta de la Isleta, a low point close off which is Islote Yebatelú, a rocky islet, and close NE of which are some above-water rocks near the coast. To the NE of these rocks is a sandy shore, which extends to Punta del Palmar.

- 3 Thence the track leads to a position W of Punta Jiscoy (11 cables SW), the W most point of the island. Islete Yemana lies about 2 cables SE.

Caution. It was reported (1999) that Misión de San Antonio Light was unreliable.

Punta Jiscoy to Punta de San Antonio

3.158

- 1 From a position W of Punta Jiscoy (1°25'·0S, 5°37'·1E), the track leads SSE, passing with positions relative to Punta Jiscoy):
WSW of Punta Jatupa (5 cables SSE). The coast SE is clifly consisting of Punta Penkadu, Punta Jojo and Punta Palanja, lying 2, 2½ and 7 cables SSE respectively. Thence:
 - 2 WSW of Punta Alvaro (2 miles S), surmounted by a moderately high peak, on the summit of which there are numerous pinnacles. Punta Consuix lies 3 cables NE, the S extremity of Bahia de Santa Cruz. The village of Santa Cruz is situated near the shore at the head of the bay.
 - 3 WSW of Punta de San Antonio (2¾ miles S), the SW extremity of the island. The point is rocky and rounded in form, with considerable off-lying rocks, on which the sea generally breaks, projecting about ¼ mile off it. In 1980, depths of 52 and 60 m were reported about 2½ miles SSW of the point.
 - 4 Thence the track leads to a position S of Punta de San Antonio (2¾ miles S), passing clear of three high conical islets or rocks, which may be seen at a distance of 18 miles. The S islet, Islote de Fernando Póo (3¾ miles S), the E, Islote de Santaren (3¾ miles S) and the N, Islote de Escobar (3¾ miles S), named after the three navigators who discovered the islands in Bight of Biafra. The locality has not been surveyed, but it is presumed that, like the coasts of Pagalu, the islets are steep-to.
- Caution.** It was reported (1999) that no light was observed on Punta de San Antonio.

Punta de San Antonio to Punta Dologany

3.159

- 1 From a position S of Punta de San Antonio (1°27'·6S, 5°37'·8E), the track leads NE, passing (with positions relative to Punta de San Antonio):
SE of Islote Adams (9 cables ESE), small, rocky, of moderate height, and presents two summits when seen from E or W, thence:
 - 2 SE of Punta Mofina (9 cables E), a low sharp point behind which the land rises to the summit of Pico Surcado (3.156). The coast between Punta Mofina and Punta Dajibu, 2 cables W, is high. Thence:
SE of Punta Dologany (1¼ miles E), a rocky and moderately high point from which the land rises to the summit of Pico Surcado (3.156), 8 cables NW.
 - 3 Thence the track continues to a position E of Punta Dologany (1¼ miles E).
- Caution.** The passage between Islote Adams and Punta Mofina is reported to be encumbered with rocks and should be avoided.

Punta Dologany to Punta del Paso

3.160

- 1 From a position E of Punta Dologany (1°27'·3S, 5°39'·1E), the track leads N, passing (with positions relative to Punta Dologany):

- E of Punta Lakotomfen (2½ cables N), thence:
 E of Punta de San Juan (8 cables N), thence:
 2 E of Punta Jasgaña (1¼ miles N). Bahía de San Pedro, at the head of which is the village of San Pedro, lies close N. Thence:
 E of Punta Budjiguelé (1½ miles N), thence:
 E of Punta del Paso (2¼ miles N), rocky, rising almost perpendicularly to a bluff, and on its seaward face are needle-shaped rocks of basaltic formation.

Punta del Paso to Punta del Palmar

3.161

- 1 From a position E of Punta del Paso (1°25'0S, 5°38'8E), the track leads NW, passing (with positions relative to Punta del Paso):
 NE of Punta del Paso. Between this point and Punta del Palmar 1¼ miles NW, the coast is fronted by a sandbank, which extends in some places for about 3 cables offshore and over which there are depths of less than 5 m. Thence:
 2 NE of Isote Tortuga (8 cables NE), 50 m in height, steep-to, with two rocks off its NE extremity. Isote del Paso, small and flat, lies midway between Isote Tortuga and Punta Yoyo, 7 cables SW. As far as is known, the passage between Isote Tortuga and the islet is safe, the least depth being 10 m, but the survey of 1829, has only a few soundings in the passage. Punta Yoyo, rounded, cliffy, moderate height is fronted by rocks; close S of of the point is a stream, off which there are usually breakers. Thence:
 3 NE of Punta Pedrinha (6½ cables NW), cliffy and fronted by rocks, thence:
 NE of Isote Piramide (1 mile NW), high, conical, bare and prominent, from which a reef extends in a NW direction, forming a natural breakwater about 1 cable in length. When there is no surf, small craft can use the passage between the rock and the shore. The surf is reported to be lightest between December and March.

Anchorage and landing

General information

3.162

- 1 **Local weather.** On the NE coast the land affords shelter against the prevailing S and SW winds, thus enabling vessels to ride safely in smooth sea. Only during the period from March to September, when tornadoes occur and strong E winds may blow directly into the anchorage, is any danger to be apprehended; but as the gloominess of the sky and the heavy thunder and lightning, by which they are preceded, nearly always give adequate warning, vessels not having good ground tackle may get under way and stand off until the storm, usually of short duration, has passed over.

North-east coast

3.163

- 1 The anchorages between Punta del Palmar (1°24'2S, 5°37'8E) and Punta del Paso 1¼ miles SE, should be approached with caution, as the locality has been but imperfectly surveyed, and patches of coral exist.
 2 Anchorage may be obtained, as indicated on the plan, off Pagalu, in depths from 22 to 27 m, sand, about 6½ cables NE of the village of San Antonio, with Isote Tortuga (1°24'3S, 5°39'2E) bearing about 120°, and Isote Yebatelu (1°24'5S, 5°37'4E) about 235°. The position is in smooth water and the holding ground is good.
 3 Alternative anchorage may be found 5 cables NNE of the mouth of a fresh water stream (3.161) near Punta Yoyo (1°24'8S, 5°38'6E), in about 13 m with Isote Tortuga bearing 080° and Isote del Paso 146°.

Landing

3.164

- 1 Landing can be effected at the steps on the W side of the ruined wharf extending N from near Misión de Santo Antonio Light, though it is difficult when the surf is heavy.

Communications

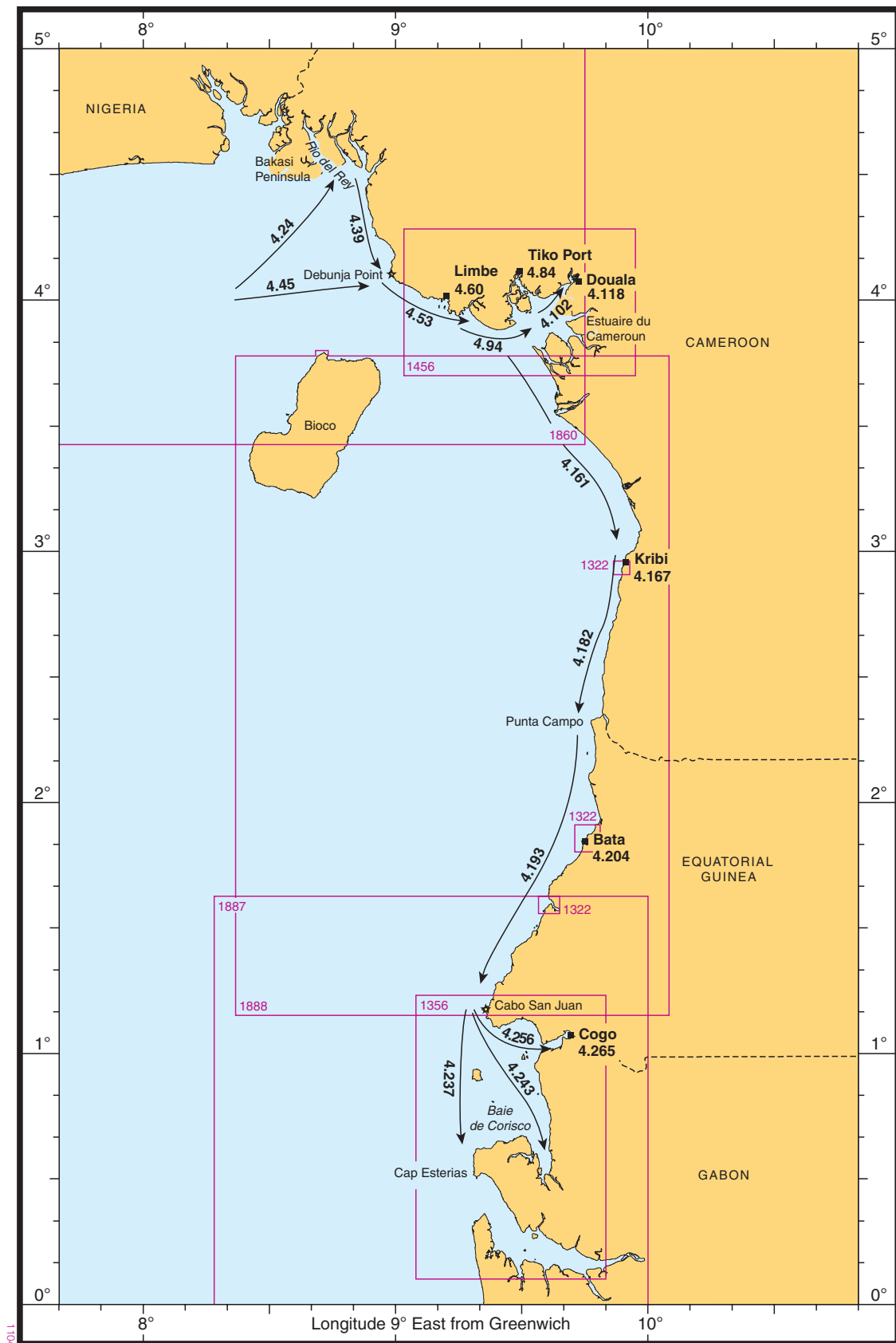
3.165

- 1 There is a grass airstrip 5 cables SW of Misión de Santo Antonio.

NOTES



Chapter 4 - Bakasi Peninsula to Cap Esterias



CHAPTER 4

BAKASI PENINSULA TO CAP ESTERIAS

GENERAL INFORMATION

Chart 3118

Scope of the chapter**4.1**

- 1 This chapter describes the coastal routes, anchorages and harbours in the Bight of Biafra from Bakasi Peninsula (4°30'N, 8°35'E) to Cap Esterias (0°37'N, 9°20'E), 233 miles S, excluding the four major islands therein which are described in Chapter 3. That part of the Bight of Biafra between Cape Formoso (4°17'N, 6°05'E) and Bakasi Peninsula is described in *Africa Pilot Volume I*.

The chapter is divided into the following sections:

- Offshore oil terminals and Rio del Rey (4.6).
- Debunja Point to Estuaire du Cameroun (4.50).
- Port de Douala and approaches (4.101).
- Estuaire du Cameroun to Cabo San Juan (4.157).
- Bahía de Corisco (4.231).

Topography**4.2**

- 1 At the head of the bight, and within a short distance of the coast, the massive Cameroon Mountains rise abruptly from the sea. Fako (4°13'N, 9°10'E) also known as Mount Cameroon is the highest peak at an elevation of 4095 m and is a volcano which was active on its W slope in 1922. Except in the vicinity of its rounded summit, its sides are clothed with trees and luxuriant vegetation.

- 2 Small Mount Cameroon, also known as Mongo ma Etindeh, lies about 9 miles SSW of Cameroon Mountain and about 3 miles inland. Numerous hills rise from the slopes of the Cameroon Mountains but they appear so inconsiderable when compared with the central peak, as scarcely to break the uniformity of its gradual incline.

4.3

- 1 To the N of Cameroon Mountains is a plain from which several small conical hills rise abruptly. The plain is bordered to the N by the Rumpi Mountains (not charted), which attain an elevation of 1830 m, and to the NNW by a range of mountains which include Mount Yuhan (5°10'N, 8°52'E) at an elevation of 1079 m. The latter mountains are extinct volcanoes and are visible from seaward.

Numerous rivers, including the Calabar, Rey, Cameroun and Gabon, drain into the Bight of Biafra.

Marine exploitation**4.4**

- 1 Marine exploitation is extensive in the area covered by this chapter. See 1.14.

Piracy**4.5**

- 1 Mariners are advised to be alert for pirates in the coastal waters of Cameroon.

OFFSHORE OIL TERMINALS AND RIO DEL REY

GENERAL INFORMATION

Chart 1860

Area covered**4.6**

- 1 This section describes the offshore oil terminals S of Bakasi Peninsula, Rio del Rey, and an offshore route from position 4°00'N, 8°23'E to Debunja Point (4°05'N, 8°59'E).

It is arranged as follows:

- Offshore Oil Terminals (4.9).
- Rio del Rey — South-west approach (4.24).
- Rio del Rey (4.29).
- Rio del Rey to Debunja Point (4.39).
- Offshore route — seaward to Debunja Point (4.45).

Restricted area**4.7**

- 1 A large restricted area, the limits of which are indicated on the chart, centred on (4°17'N, 8°30'E), covers the numerous oilfields, offshore oil terminals and storage tankers lying in the NW part of the area described in this section. Mariners are advised not to enter this area without authorization.

International boundary**4.8**

- 1 The international boundary between Nigeria and Cameroon is formed by Akpa Yafé River (4°40'N, 8°30'E).

OFFSHORE OIL TERMINALS

General information

Chart 1860

Description**4.9**

- 1 There are numerous offshore oilfields connected by submarine pipeline to two terminals situated in restricted areas lying SSW of Bakasi Peninsula (4°30'N, 8°35'E).

For notes on marine exploitation and submarine pipelines see 1.14 and 1.15.

Depths**4.10**

- 1 Depths in the restricted area (4.7) range from 4 m to 30 m.

Principal marks**4.11**

- 1 **Landmarks:**

Pico de Santa Isabel (3.16) (3°35'·0N, 8°45'·6E).
Cameroon Mountain (4°13'N, 9°10'E).

Major light:

Punta Europa Light (3°46'·9N, 8°43'·0E) (3.16).

Kole Oil Terminal**General information****4.12**

- 1 **Position.** Kole Oil Terminal (4°13'·5N, 8°33'·5E) is located about 15 miles S of Bakasi Peninsula.

Function. It is an offshore oil terminal comprising an FSO *Serepca 1* and two SBMs.

Port Authority. TotalFinaElf E & P, BP 2214, Douala, Cameroon.

Limiting conditions

4.13

- 1 **Controlling depths.** See 4.16. Minimum under-keel clearance 4.5 m.

Maximum size of vessel handled. 310 000 tonnes.

- 2 **Local weather.** Very strong E to SSE winds up to 45 kn but lasting for a short period can occur with the passage of tornadoes. See 1.218.

The predominant swell is SSW with an average height of 2.5 m.

Visibility is rarely excellent and is reduced to 2 miles or less during Harmattans (December to February) and in wet season torrential rains (June to September).

- 3 **Tidal stream.** Tides are semi-diurnal and occur about Douala -0100. The flood sets NNW and the ebb SSE; maximum rate is 3 kn.

Arrival information

4.14

- 1 **Port operations.** Mooring to the SBMs takes place in daylight only. In order to avoid delay vessels must arrive before 1600. Departure can take place by day or night.

Port radio. There is a port radio station. See the *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required. Send ETA 72, 48 and 24 hours prior to arrival.

- 2 **Waiting anchorage.** There is a waiting anchorage 1.5 miles S of KLB 2 SBM with a depth of 38 m and good holding. It is prohibited to anchor closer than 1 mile to KLB 2.

Restricted area. See 4.7.

Pilotage is provided by Douala pilots and is compulsory. Pilot boards in the vicinity of the waiting anchorage.

Tugs. A tug is available and an offshore supply vessel assists during berthing and stands by throughout the loading operation.

Directions

4.15

- 1 When approaching from W vessels should keep at least 35 miles off the coast in order to avoid Nigerian offshore oil and gas fields. Having passed clear of Zafiro Terminal (3°51'N, 8°07'E), course can be adjusted NE to Kole and Moudi Terminals passing NE of Alba A, B and C Platforms (3°58'N, 8°31'E).

The approach from SE is relatively free of hazards although offshore oil and gas activity may be encountered.

Berths

4.16

- 1 KLB 1 (4°15'·0N, 8°33'·0E), for vessels up to 150 000 tonnes. Depth of water 23.5 m. The SBM is a yellow cylindrical buoy and is lighted.

KLB 2 (4°13'·5N, 8°33'·5E), for vessels from 50 000 to 310 000 tonnes. Depth of water 30.5 m. The SBM is a yellow cube-shaped buoy and is lighted.

Port services

4.17

Repairs: nil.

Other facilities: no fuel oil; no fresh water; no de-ballasting facilities; no garbage.

Supplies: nil.

Moudi Marine Terminal

General information

4.18

- 1 **Position.** Moudi Marine Terminal (4°07'·0N, 8°29'·1E) is located about 22½ miles SSW of Bakasi Peninsula.

Function. It is an offshore oil terminal comprising an FSO *Moudi* and an SBM.

- 2 **Port Authority.** Perenco Douala, Cameroon.

Limiting conditions

4.19

- 1 **Controlling depth.** See 4.22.

Maximum size of vessel handled. 280 000 tonnes.

Local weather. See 4.13. The swell is less than at Kole Terminal, average maximum heights being about 1.2 m in the period October to February and 1.9 m in the period March to September.

Current and tidal streams. The Guinea Current (1.194) generally sets SW at less than 1 kn. Tidal streams are semi-diurnal and occur about Douala -0115 but further information is not available.

Arrival information

4.20

- 1 **Port operations.** Mooring to the SBM generally takes place during the day between 0600 and 1800. However the operation may take place at night with the agreement of the terminal operator. Unmooring can take place by day and night.

Port radio. There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required. Send ETA 72, 48 and 24 hours prior to arrival.

- 2 **Waiting anchorage** may be obtained in a designated anchorage, the limits of which, are indicated on the chart, about 2 miles ENE of Moudi Marine Terminal SPM (4°07'·0N, 8°29'·1E) in a depth of about 60 m.

Restricted area. The SBM lies within a restricted area centred on the production platform in position 4°08'·1N, 8°27'·4E, as shown on the chart. Anchoring within the restricted area is prohibited.

Pilotage is compulsory and is provided by Douala pilots. The pilot boards in the waiting anchorage.

Tugs. A small tug is available for mooring and stands by throughout the loading operation.

Regulations concerning entry. Engines must be available for immediate use at all times.

Directions

4.21

- 1 See 4.15. A flare burns from the production platform in position 4°08'·1N, 8°27'·4E.

Berth

4.22

- 1 An SPM (4°07'·0N, 8°29'·1E), for vessels up to 280 000 tonnes, moored in a depth of 57 m. The buoy is orange and is lighted.

Port services**4.23**

- 1 **Repairs:** nil.

Other facilities: no fuel oil; no fresh water; no de-ballasting facilities; no garbage.

Supplies: nil.

RIO DEL REY — SOUTH-WEST APPROACH

General information

Chart 1860

Route**4.24**

- 1 From the vicinity of 4°00'N, 8°23'E, the route leads ENE, then NE for about 27 miles, to the vicinity of 4°18'N, 8°42'E at the entrance to Rio del Rey.

Topography**4.25**

- 1 For general topography of the area see 4.2.

Marine exploitation**4.26**

- 1 See 1.14.

Principal marks**4.27**

- 1 **Landmarks:**

Pico de Santa Isabel (3°35'0N, 8°45'6E) (3.16).

Cameroon Mountain (4°13'6N, 9°10'5E) (4.2).

Major light:

Punta Europa Light (3°46'9N, 8°43'0E) (3.16).

Directions

(continued from Africa Pilot Volume I)

4.28

- 1 From the vicinity of 4°00'N, 8°23'E the track leads initially ENE, passing (with positions relative to West Point (4°30'5N, 8°42'9E)):

NNW of Alba A, B and C, offshore oil production platforms (34 miles SSW), thence:

SSE of Moudi Marine Terminal (28 miles SSW) (4.18).

- 2 The track then leads NE, passing:

SE of Kole Oil Terminal (19 miles SSW) (4.12), thence:

SE of Asoma oilfield (14 miles SSE) and Bravo Oilfield.

Thence the track continues to the vicinity of 4°18'N, 8°42'E at the entrance to Rio del Rey.

(Directions continue at 4.37)

RIO DEL REY**General information**

Chart 1860

Description**4.29**

- 1 The estuary of Rio del Rey is an extensive, open, shallow bay the entrance to which is about 13 miles in width and is entered between West Point (4°30'5N, 8°42'9E) and Betika Point 18 miles SE. Rivers Fiari, Ofa or Ndian, Meta, Andonkat, Massake, Lobe and Meme flow into the delta.

Bananas and other produce are shipped into ocean-going vessels which anchor off West Point.

- 2 Fiari River is the most W of four rivers which flow into the bay and is about 2 or 3 miles in width at its mouth. It is connected by several creeks to Akpa Yafe River and can be navigated by vessels of moderate draught.

Meta River enters the estuary between Erong Peninsula (4°34'N, 8°46'E) and Fiari Island 2½ miles ENE, and is apparently navigable for about 15 miles. Its entrance is obstructed by sandbanks over which there is a least charted depth of 2.7 m (9 ft). The approach to Meta River is marked by beacons.

- 3 Andonkat River is navigable for about 12 miles above its mouth, which is situated between Fiari Island (4°35'N, 8°50'E) and Pelican Peninsula 3 miles SE; but its entrance is obstructed by Soden Island (4°32'N, 8°51'E) and by sandbanks, over which there is a least charted depth of 2.1 m (7 ft).

- 4 Meme River, is entered between the S tip (4°30'N, 8°54'E) of Pelican Peninsula and Kolle Point 1¼ miles S, is navigable as far as Duben Falls, about 31 miles from its entrance. The river is connected to Andonkat River by a creek and by Massake River, both of which run through Pelican Peninsula.

- 5 Rio del Rey settlement (4°44'N, 8°38'E), is situated in a mangrove swamp on the W bank of Fiari River.

Routes**4.30**

- 1 From the entrance (4°18'N, 8°42'E) to Rio del Rey estuary, a channel leads NNE across a bar, thence N, between West Point (4°30'5N, 8°42'9E) and Erong Peninsula 3 miles ENE, into Fiari River.

Another channel leads NNE, to either Meta River, Andonkat River or Meme River.

- 2 Two channels lead W from Rio del Rey to the estuary of Calabar River (see *Africa Pilot Volume I*); one of which is known as Southern Creek and comprises Inyunto and Avosse Creeks and the Akwabana Channel. The other is Bakasi Creek.

The use of the former route between Rio del Rey and Calabar, on Calabar River, instead of the seaward route round Bakasi Peninsula saves a distance of about 43 miles.

Topography**4.31**

- 1 The shore of the bay, on the E side slopes down from the Cameroon Mountains (4.2) and that on the W side is formed by the SE extremity of Bakasi Peninsula. The shores are well populated and the coastal villages are visible from seaward.

- 2 The coast S of the entrance to Meme River, consists principally of low cliffs in which are many caves; two of the largest of these are connected by a gallery, the side of which is pierced at equal intervals, so that, from a distance, this portion of the cliffs resembles a fort excavated in the rock

Depths**4.32**

- 1 There is a least charted depth of 4.9 m (16 ft) across the bar, but as changes constantly take place, the depth cannot be relied upon.

Marine exploitation**4.33**

- 1 Numerous oil platforms exist to seaward on both sides of the river entrance. See 1.14

Local knowledge**4.34**

- 1 Buoyage in the estuary of Rio del Rey is liable to change and local knowledge is required.

Natural conditions**4.35**

- 1 **Tidal levels.** Mean spring range at the river entrance is about 2.2 m; mean neap range about 1.1 m. See information in *Admiralty Tide Tables Volume 2*.

Tidal streams. In Fiari River, off West Point, the tidal stream attains a rate of 1¾ kn at springs.

Principal marks**4.36**

- 1 **Landmarks:**
Pico de Santa Isabel (3°35'·0N, 8°45'·6E) (3.16).
Cameroon Mountain (4°13'·6N, 9°10'·5E) (4.2).

Directions

(continued from 4.28)

Seaward to Fiari River**4.37**

- 1 From the vicinity of 4°18'N, 8°42'E, at the entrance to Rio del Rey estuary, the track leads initially NNE thence N, passing (with positions relative to West Point (4°30'·5N, 8°42'·9E)):
- E of No 1 Buoy (port hand) (9¼ miles S). Platforms, marked by lights, lie 10 and 11 miles S and SSE respectively of West Point. Thence:
 - 2 E of No 2 Buoy (port hand) (5 miles SSE). A well-head (8 m in height: lighted) stands 8 cables SE. Thence:
 - E of No 3 Buoy (port hand) (1½ miles E).
- Thence the track leads NNW, passing between West Point and Erong Point (3 miles ENE). Beacons stand on both points. A stranded wreck lies on Erong Point. Cape Bakasi lies about 3 miles WSW of West Point.

Anchorage**West Point****4.38**

- 1 Anchorage for small ocean-going vessels may be found 1½ miles NE of West Point (4°30'·5N, 8°42'·9E) in a depth of about 6 m. For tidal stream see 4.35.

RIO DEL REY TO DEBUNJA POINT**General information**

Chart 1860

Route**4.39**

- 1 From position 4°18'N, 8°42'E at the entrance to Rio del Ray, the route leads SE for 20 miles to a position 5 miles SW of Debunja Point (4°06'N, 8°59'E).

Topography**4.40**

- 1 For general topography of the area see 4.2.

Marine exploitation**4.41**

- 1 For note on oil and gas fields in the area see 1.14.

Principal marks**4.42**

- 1 **Landmarks:**
Pico de Santa Isabel (3°35'·0N, 8°45'·6E) (3.16).
Cameroon Mountain (4°13'·6N, 9°10'·5E) (4.2).
Major lights:
Punta Europa Light (3°46'·9N, 8°43'·0E) (3.16).
Debunja Point Light (white tower, 8 m in height) (4°06'·0N, 8°58'·7E).

Directions**4.43**

- 1 From position 4°18'N, 8°42'E at the entrance to Rio del Rey, the track leads SE passing (with positions relative to Debunja Point (4°06'N, 8°59'E)):
- Clear of an above-water wellhead (unmarked) (10 miles NW). A wreck with a depth of 14.9 m (8.1 fm) lies 1 mile SW.
 - Thence the track leads to a position 5 miles SW of Debunja Point.
- (Directions continue at 4.58)

Anchorage**Bibundi Bay****4.44**

- 1 **Description.** Bibundi Bay is entered between Madale de Coto Point (4°15'·5N, 8°56'·2E) and Debunja Point 10 miles S. Bibundi River enters the bay 4 miles SE of Madale de Coto Point. The entrance to the river is narrow and difficult to make out from seaward; it is situated between a sandy spit on the N side and a steep, rocky bank on the S side. The river is always accessible to boats, but a vessel drawing 1.5 m or more, would have to wait until half in-going tide. Just within the entrance the river forms a small harbour.
- 2 Bibundi village, near which are some cocoa plantations, is situated 1 cable from the beach, and is concealed by trees; it is the trading centre for the country W of the Cameroon Mountains.

Topography. N of Bibundi River the shore of the bay is composed of black mud on which are mangrove bushes; to the S it is rocky.

Madale Rocks are a cluster of rocks extending up to 1 mile SW of Madale de Coto Point, the highest of which has an elevation of 1.2 m (4 ft). NW of the point is the extensive shallow mudbank which lies to seaward of the Rio del Rey delta.

- 3 **Local knowledge** is required.
Directions. From a position about 5 miles SW of Debunja Point (4°06'N, 8°59'E), the track leads NNE into Bibundi Bay keeping 1 to 1½ miles off the shore and in depths of not less than 10 m (33 ft).
4 **Anchorage** may be obtained off Bibundi in a depth of about 11 m (36 ft), mud, at a distance of 7 cables from the

coast. Anchorage may also be obtained in the S part of the bay, in a depth of 15 m (49 ft), sand and mud, with Debunja Point bearing about 189° and Njonje, a village bearing about 080°.

OFFSHORE ROUTE — SEAWARD TO DEBUNJA POINT

General information

Chart 1860

Route

4.45

- 1 From the vicinity of 4°00'N, 8°23'E, the route leads E for about 32½ miles to a position about 5 miles SW of Debunja Point (4°06'N, 8°59'E).

Topography

4.46

- 1 For general topography of the area see 4.2.

Marine exploitation

4.47

- 1 See 1.14.

DEBUNJA POINT TO ESTUAIRE DU CAMEROUN

GENERAL INFORMATION

Chart 1860

Area covered

4.50

- 1 This section describes the coastal routes, anchorages and harbours from Debunja Point (4°06'N, 8°59'E) to Estuaire du Cameroun (3°50'N, 9°30'E).

It is arranged as follows:

Debunja Point to Rivière Bimbria (4.53).

Rivière Bimbria (4.73).

Rivière Bimbria to Estuaire du Cameroun (4.94).

Topography

4.51

- 1 For general topography of the area see 4.2.

Marine exploitation

4.52

- 1 See 1.14.

DEBUNJA POINT TO RIVIÈRE BIMBIA

General information

Charts 1860, 1456

Route

4.53

- 1 From a position SW of Debunja Point (4°06'N, 8°59'E) the route leads SE for about 20 miles to a position about 4 miles SSW of Cap Bimbria (3°56'6N, 9°14'6E).

Marine exploitation

4.54

- 1 See 1.14.

Local magnetic anomaly

4.55

- 1 In April 1985, MV *Menestheus* reported a local deflection of the compass of up to 7½°W in the vicinity of 3°47'N, 9°06'E.

Principal marks

4.48

Landmarks:

- Pico de Santa Isabel (3°35'0N, 8°45'6E) (3.16).
Cameroon Mountain (4°13'6N, 9°10'5E) (4.2).

Major lights:

- Punta Europa Light (3°46'9N, 8°43'0E) (3.16).
Debunja Point Light (4°06'0N, 8°58'7E) (4.42).

Directions

(continued from Africa Pilot Volume 1)

4.49

- 1 From the vicinity of 4°00'N, 8°23'E, the route leads E, passing (with positions relative to Punta Europa (3°46'9N, 8°43'0E)):

N of Alba A, B and C (16½ miles NW), offshore oil production platforms.

Thence the track leads to a position SW of Debunja Point (4°06'N, 8°59'E), a bold headland terminating in cliffs of red limestone about 15 m in height. A light (4.42) is exhibited from the point.

(Directions continue at 4.58)

Principal marks

4.56

Landmarks:

- Pico de Santa Isabel (3°35'0N, 8°45'6E) (3.16).
Cameroon Mountain (4°13'6N, 9°10'5E) (4.2).

Major light:

- Debunja Point Light (4°06'0N, 8°58'7E) (4.42).

Other aids to navigation

4.57

Racons:

- Cap Cameroun (3°54'6N, 9°28'6E).
Pointe Suéllaba (3°49'0N, 9°33'1E).

See *Admiralty List of Radio Signals Volume 2*.

Directions

(continued from 4.49)

4.58

- 1 From a position SW of Debunja Point (4°06'N, 8°59'E) the track leads SE passing (with positions relative to Debunja Point):

SW of Izongo Point (2½ miles SE), from which a drying reef extends ½ cable, with, probable, submerged rocks beyond that distance. When seen from NW or SE, the point appears as a well defined bluff. Thence:

- 2 SW of Batoki Rock (Batoke) (9½ miles SE), connected to the coast by a reef of rocks. Habicht Rock over which there are depths from 0.9 to 1.8 m (3 to 6 ft) lies 7 cables SE and about 4 cables offshore. Foul ground extends from the coast to the rock.

The track continues, passing (with positions relative to (Pointe Limboh (4°00'2N, 9°07'6E)):

- 3 SW of Pointe Limboh. An oil terminal (4.59) is situated off the point with a restricted area, the limits of which are indicated on the chart. A rocky reef extends about 9 cables S from a point 1 mile NE of Pointe Limboh. A light (no description) is

exhibited from the head of the oil terminal jetty. Thence:

- 4 SW of Cap Nachtigal (6¼ miles SE), from which Cap Nachtigal Light (white tower, 13 m in height) is exhibited. A dangerous wreck lies 4 cables S of the cape. Man O'War Bay is entered between Cap Nachtigal and Reef Point 1¼ miles E.

Thence the track leads to a position SSW of Cap Bimbria (8 miles SE), the S extremity of the Cameroon Mountains, the land behind it rising gradually and regularly from the coast. A wreck with a depth of 1·8 m over it lies 4 cables E of the cape.

(Directions continue for Rivière Bimbria at 4.81 and for the coastal route at 4.100)

Limboh Terminal

General information

4.59

- 1 **Position and function.** Limboh Terminal, at Pointe Limboh (4°00'·2N, 9°07'·6E), consists of a sea berth with an SBM buoy and also a jetty extending seaward. The buoy is used to receive crude oil and to load fuel oil, while the jetty is used to load or receive petroleum products.

Approach and entry. The port is approached from S.

Traffic. About 1·2 million tonnes of crude and 600 000 tonnes of petroleum products are handled annually.

- 2 **Port Authority.** National Port Authorities, BP 456 Limbe, Cameroon.

Port operations. Berthing at the SBM is only permitted 0700–1800 hours. Unberthing can be carried out day and night. At the Jetty there are no restrictions.

Notice of ETA required. Send ETA 72, 48 and 24 hours prior to arrival.

Restricted area. An area, the limits of which are indicated on the chart, is restricted to vessels using the Limboh Terminal.

- 3 **Pilotage and tugs.** Pilotage is compulsory. Pilot boards 1 mile S of the SBM. There are 2 tugs.

Useful mark:

Chimney (red obstruction light) (4°00'·8N, 9°07'·6E).

Petit Mont Cameroon (4°04'·4N, 9°07'·0E) (4.2).

- 4 **Berths.** The SBM buoy (yellow with text *Sonara*) is moored about 1 mile S of Pointe Limboh. It can accommodate vessels up to 150 000 dwt, 243 m in length and a draught of 18 m. A submarine pipeline is laid between the buoy and the point.

The jetty extends 915 m seaward from Pointe Limboh, and can accommodate vessels up to 130 m in length with a depth alongside of 10 m. A light-buoy marking a rock is moored close to the jetty.

- 5 **Other facilities:** medical facilities approximately 5 km away at Limbe.

Limited quantities of oily ballast and slops accepted.

Supplies: fuel oil; fresh water.

Limbe

Chart 1456 and plan of Limbe

General information

4.60

- 1 **Position.** Limbe (4°00'·6N, 9°12'·8E), one of the principal ports of Cameroon is situated in Morton Bay at the head of Baie Ambas.

Although lying at the foot of the Cameroon Mountains and surrounded by bush-covered hills, Limbe is one of the healthiest places on the coast of West Africa; the nights are

comparatively cool, owing to the breeze coming down from the mountains, and in the daytime the sea breeze blows straight into Morton Bay.

- 2 **Function.** It is an anchorage port, with cargo worked by lighters. It is the seaport for Buea, 10 miles inland. Cargo handled includes cocoa, palm oil, palm kernel, rubber, coffee, tea and black pepper.

The town of Limbe fronts Morton Bay with the village of Bota lying close WNW. Morton Bay is open to the predominant wind and swell, the latter causing a heavy surf at times, with a backwash on the landing steps on the inshore side of the mole at Bota. See 4.61 for further information on swell.

- 3 **Topography.** Morton Bay lies at the head of Baie Ambas and is contained between a point, situated ¼ mile N of Lucke Islet (4°00'·3N, 9°11'·3E), and Morton Point 1¼ miles SE. The E shore of Baie Ambas, overlooked by four hills is bold from Cap Nachtigal (3°57'·0N, 9°12'·8E) to Morton Point 3 miles N.

The local government official's house stands in the botanic gardens. Limbe River flows down the mountainside into Morton Bay between this house and Limbe.

- 4 The ruins of an iron-pier stand 4 cables NE of Morton Point. The port office is situated close to the root of the ruined pier.

Approach and entry. Baie Ambas is entered between Ngeme Point (4°00'·4N, 9°09'·0E) and Cap Nachtigal 5 miles SE.

Port Authority. National Ports Authority, PO Box 456, Limbe, Cameroon.

Limiting conditions

4.61

- 1 **Tidal levels.** At Man O'War Bay (3°57'·4N, 9°13'·5E) the mean spring range is about 1·5 m; mean neap range about 0·8 m. See information in *Admiralty Tide Tables Volume 2*.

Density of water is 1·025 g/cm³.

Local weather. Swell between May and September is the chief obstacle to the development of Ambas Bay as a harbour. It rises very quickly and causes a heavy surf, making landing very dangerous, and, at times impossible.

- 2 This swell consists of two main parts, one setting fairly constantly into the bay from W between Ambas Island and Pirate Island, and varying in height according to the existing conditions; and the other, when the wind strengthens or after a tornado, entering from S or SW. This latter part runs straight into Morton Bay, turning and carrying with it the usual swell from W, and finally breaking on the rocks in the bay; it appears to have a definite W limit, extending from Ambas Island to the NW corner of Morton Bay.

- 3 The swell often takes a considerable time to settle down, especially if fresh winds spring up, or tornadoes occur during the periods of full and change of the moon. Between Mondole Island and the mainland lies the most sheltered area in the bay, being protected from SW and W by the island.

Arrival information

4.62

- 1 **Port radio.** There is a VHF radio station at Bota.
- 2 **Outer anchorage.** Baie Ambas provides excellent anchorage in all parts in depths of about 11 m. Although the anchorage is on a lee shore, it is said that the wind here, seldom blows strongly enough so as to endanger vessels, and that it is a secure anchorage all the year round.

Between May and September lighterage work is extremely difficult and dangerous at times due to the heavy swell (4.61).

- 3 During the tornado season the best anchorage is NE of Mondole Island.

Pilotage is not compulsory.

Tugs. Nil.

Harbour

4.63

- 1 **General layout.** The harbour is situated in the N part of Baie Ambas, consisting of 4 anchorage berths. There is a mole at Bota for use by lighters working cargo. A small craft anchorage lies NE of Morton Point.

- 2 **Traffic signals.** The following signals are displayed on a flagstaff on the pier at Bota to indicate the berth assigned to a ship:

Berth A — flag A above a black ball.

Berth B — black ball above flag B.

Berth C — flag C above a black cone, point up.

Berth D — black cone, point up, above flag D.

- 3 **Tidal streams.** The in-going stream sets S and the out-going stream N, in and out of Ambas Bay, between Ambas Island and Pirate Islands; both streams appear to be of equal duration, and at times are strong in the vicinity of Ambas Bay and Mondole Island.

Currents. There is no appreciable current; vessels at anchor swing to the wind, usually NE until about 1100, thereafter SW, most days.

Directions for entering harbour

4.64

- 1 It is preferable to enter Baie Ambas between Ambas Island (3°58'7N, 9°10'2E) and Mondole Island 1¼ miles E, on the alignment (032°) of Limbe Leading Lights, but by keeping in the centre of the channel, vessels from W, can enter between Pirate Islands and Ambas Island or, if approaching from S, between Mondole Island and the mainland.

The whole of the foreshore between Pirate Islands and Morton Point is fringed with rocks, and depths of less than 5 m extend 3 cables offshore in places.

- 2 **Limbe Leading Lights:**

Front light (white beacon, black bands) (4°00'6N, 9°12'1E).

Rear light (similar structure) (close NE).

This leading line is not very sensitive, but is improved by a white-washed mark on the rock below them. The lights may be obscured by vessels at anchor.

- 3 From a position about 2½ miles WNW of Cap Nachtigal (3°57'0N, 9°12'8E), the alignment (032°), of these lights leads NE, passing (with positions relative to Cap Nachtigal):

- 4 SE of the S tip (3 miles NW) of Ambas Island. It is a narrow ridge of rock, elevated at its S extremity, and tapering to a point at the N end. Excepting the N end which is bare rock, the island is well covered with trees, brushwood, and grass. Thence:

- 5 NW of Mondole Island (2 miles NW). It is the largest in the bay and composed of volcanic rock. Its steep sides are heavily wooded, but its summit has a level surface of rich soil. There are a few springs on the island, which are said to be always running.

Thence the track leads to anchorage D (4.67), or the required destination.

4.65

Leading lights:

Front light (4°00'6N, 9°11'1E).

Rear light (213 m from front light).

If proceeding to Anchorage A, B or C (4.67), after passing between Ambas Island (4.64) and Mondole Island (4.64), the alignment (009°) of these lights, leads towards anchorages A, B and C, passing:

- 2 E of Pirate Islands (4 miles NNW), a group of islands and rocks, situated on a shoal spit which extends 7½ cables S from the N shore of the bay, 1 mile W of Bota mole (4.67). Bovia Island is the N and largest of Pirate Islands, and is situated 1½ miles N of Ambas Island; it is more barren than the other islands in the bay. There is only a narrow shallow channel between it and the mainland. Although Bovia Island is much smaller than the other two large islands in the bay, it is densely populated, almost every conceivable spot on its rugged surface being occupied by a hut. It is perpendicular on all sides, and the only access to its summit is by a narrow path, the ascent of which is dangerous owing to the crumbling nature of the rock. The islanders are the principal fishermen of the bay, which in fine weather, they cover with their light canoes. On the spit, on which Pirate Islands are situated, are many rocks, the seven principal of which are above-water, and range from 2.7 to 33 m in height. The passages between these rocks should not be attempted.

4.66

Useful marks:

Church on Lucke Islet (4°00'3N, 9°11'3E) painted light green with a red roof, with spire on its W end.

Bota Pier Light (mast) (4°00'6N, 9°11'8E).

Bota Hill (4°00'8N, 9°11'9E).

Berths

4.67

- 1 **Anchorage** berths A, B, C and D are designated anchorages, the positions of which are indicated on the plan. They are as follows, with positions relative to Morton Point (3°59'9N, 9°12'4E):

Anchorage A — 13 cables WNW.

Anchorage B — 13 cables WNW.

Anchorage C — 11 cables WNW.

Anchorage D — 6 cables NW.

- 2 Signals (4.63) are displayed on a flagstaff on the mole at Bota, to indicate the berth assigned to a ship.

During the tornado season, however, it is inadvisable to use the anchorage berths A or B as, if the vessel should drag, the lee shore is not far distant.

Alongside. A small mole (4°00'7N, 9°11'7E) at Bota with a depth of 2 m alongside. The mole almost dries on its inshore side but lighters can get alongside at half tide.

Port services

4.68

- 1 **Repairs:** three slipways with lifting capacity for vessels up to 70 tonnes and 24 m in length.

Other facilities: hospital.

Supplies: limited provisions. No fresh water or fuel.

Communications: airport with connections to Douala and Lagos.

Small craft**4.69**

- 1 **Description.** An anchorage is situated NE of Morton Point (3°59'9N, 9°12'4E), where lighters and small craft may anchor in any weather provide the ground tackle is good.

- 2 **Directions.** Leading marks. The alignment (080°) of the following beacons leads through Morton Bay to the boat harbour:

Front beacon (triangular) (4°00'1N, 9°12'8E).

Rear beacon (diamond shape) (close E).

Caution. An underwater rock lies 1 cable N of Morton Point and close to the leading line.

After tornadoes, great care must be taken in navigating this channel as the sea sometimes breaks right across it at long intervals and without warning.

- 3 **Anchorage.** The best anchorage is ¾ cable S of a ruined pier, lying 5 cables NE of Morton Point, in a depth of about 1.4 m. This anchorage is protected from the full force of the swell by a large patch of rocky and foul ground lying SW of the pier.

- 4 **Repairs.** Minor repairs can be effected. Also there is a stretch of sandy beach, between the ruined pier (4°00'2N, 9°12'7E) and Morton point, where boats can be hauled up for repairs, but if left there during a heavy swell, difficulty may be experienced in refloating them, owing to the sand banking up round them.

Anchorage and harbours

Chart 1860

Izongo**4.70**

- 1 **General information.** Izongo, is situated in a small sandy bay with a pier, and some sheds at its head, close SE of Izongo Point (4°04'5N, 9°00'7E) (4.58). There are some rocks on the E side of the bay, beyond which vessels should not go, though lighters can proceed right in to discharge their cargo. Between Izongo and Batoki Rock (4.58), 6½ miles SE, are mouths of numerous streams.

Local knowledge is required.

- 2 **Directions.** Leading marks. From a position SSW of Izongo the alignment (036°) of beacons at the head of the bay, leads through a channel towards the berth.

Anchorage may be obtained off Bakingele village (Bakingili on Chart 1456), 2½ miles SE of Izongo Point, at a distance of 5 cables offshore, in depths of about 25 m (52 ft), uneven rock, with Izongo Point bearing about 300°.

Chart 1456

North-west of Batoki Rock**4.71**

- 1 Anchorage may be obtained as indicated on the chart about 3 cables off the shore, 2 and 3½ miles NW of Batoki Rock (4°00'8N, 9°06'4E) (4.58).

Batoki, a village (Batoke on Chart 1456) (4°01'7N, 9°05'8E) cannot be seen from seaward. Landing off Batoki is bad but a better landing place may be found about ¼ cable W of Batoki Rock.

South-west of Batoki Rock**4.72**

- 1 Anchorage may be obtained about 3 cables off Batoki Rock (4°00'8N, 9°06'4E) (4.58), in a depth of 18 m (59 ft), mud, with the rock bearing 050°, and Pointe

Limboh 1½ miles ESE (chart 1456) bearing 100°. Local knowledge is required.

RIVIÈRE BIMBIA**General information**

Chart 1456

Description**4.73**

- 1 Rivièrè Bimbïa connects Tiko Port (4.84) and Missellele (4.113) with the sea. Above Missellele Creek, the river is known by the name of Rivièrè Moungo (4.113), its course winding round the foot of the Cameroon Mountains and then pursuing a general N direction to its source near Ekangte (5°02'N, 9°41'E).

A number of creeks connect Rivièrè Bimbïa with Baie Mokouchou (4.112) and Baie Modéka (4.113) which lie on the N side of Estuaire du Cameroun (3°50'N, 9°30'E).

Route**4.74**

- 1 From a position about 5 miles SSW of Cap Bimbïa (3°56'6N, 9°14'6E) (4.58), the route leads generally NE, for about 18 miles to Tiko Port (4°04'0N, 9°23'9E).

Topography**4.75**

- 1 When approaching Rivièrè Bimbïa the first buildings to be seen will be factories of the Bamba Plantation, consisting of some large white buildings with white roofs, situated on the coast N of Nicol Isle (3°57'2N, 9°15'7E).

Depths**4.76**

- 1 The charted depths on the bar range from 2.7 m to 4.5 m but are subject to frequent change. Due to a ground swell, mariners are strongly advised to adjust the draught of their vessels to ensure that in all circumstances they have a minimum clearance of 0.3 m under the keel. Vessels usually pass over the bar at half speed; the bottom is soft, consisting of fine sand and mud, and vessels which touch the ground come to no harm.
- 2 Above Entrance Point (3°58'5N, 9°17'2E) the river deepens and there is a least charted depth of 9 m through to Ova Pool, thence about 5.0 m in mid-channel to Tiko Port.

Fishing stakes**4.77**

- 1 The entrance to Rivièrè Bimbïa is encumbered by fishing stakes.

Pilotage**4.78**

- 1 Pilotage is compulsory; the pilot comes from Port de Douala and boards the vessel in Baie Ambas, about 8 cables SSW of Morton Point (3°59'9N, 9°12'4E) as indicated on the chart. Request for a pilot should be sent to Douala or Limbe at least 24 hours prior to arrival. There is no pilotage at night.

For details of Douala pilots see *Admiralty List of Radio Signal Volume 6(3)*.

Natural conditions**4.79**

- 1 **Tidal levels.** See information on the chart and in *Admiralty Tide Tables Volume 2*.

Local weather. A ground swell of varying amplitude usually prevails on the exposed bar of Rivière Bimbia.

Principal marks

4.80

1 Landmark:

Cameroon Mountain (4°13'N, 9°10'E) (4.2).

Directions

(continued from 4.58)

4.81

- 1 From a position about 5 miles SSW of Cap Bimbia (3°56'·6N, 9°14'·6E) (4.58), the track leads initially NE over the bar passing (with positions relative to Cap Bimbia):

SE of a wreck (4 cables E) (4.58), thence:

SE of Fish Point (7 cables NE), thence:

- 2 SE of Nicol Isle (1½ miles NE), thickly wooded, with a shoal bank extending from its NE side and shoal patches between it and the coast; the N and S extremities of the island are moderately high and there is a low plain between them. Thence:

SE of Dikulu Point (2 miles NE). Dikulu Bay, which is very shallow, is entered between the point and Pegel Point 8 cables NE. Thence:

- 3 SE of Pegel Point (3 miles NE), thence:

Between Entrance Point (¾ miles NE), from which Entrance Point Light (red and white chequered square stone hut, 4 m in height) is exhibited, and the coast 5 cables E. The red sector of the light covers shoals and dangers along the W bank of the river below and above Entrance Point. Thence:

SE of Rocky Point (4 miles NE), thence:

- 4 NW of the entrance to Matumal Creek (5¾ miles NE) (4.112). A shoal patch with a depth of 1 m over it extends 1½ cables SW from the NE side of the entrance to Matumal creek.

- 5 Thence the track leads generally NE for about 5 miles, following the channel in deepest water, to the confluence of Missellele Creek and Tiko Creek at the N end of Ova Pool, from where the track leads N via Tiko Creek for 1¼ miles to Tiko Port.

4.82

1 Useful mark:

Monument (3°57'·8N, 9°14'·6E).

Small craft channel

4.83

- 1 A channel, navigable at HW, suitable for boats with a draught of 1·8 m, leads NE for about 2¾ miles, from 4°02'N, 9°22'E. The channel is a short cut to Tiko and Tiko Port.

Tiko Port

Chart 1456 and plan of Ova Pool to Tiko Port

General information

4.84

- 1 **Position.** Tiko Port (4°04'·0N, 9°23'·9E) is situated about 18 miles up Rivière Bimbia on the E side of Tiko Island, which is joined to the mainland by a narrow causeway.

Function. Formerly a small port used for the export of bananas, timber and rubber, it was reported (1990) that the amount of cargo shipped from Tiko was almost negligible. Tiko, a town lies about 1¾ miles NW.

Approach and entry. The port is approached up Rivière Bimbia.

Port Authority. Port Authority of Tiko, National Ports Authority, PO Box 456, Limbe, Cameroon.

Limiting conditions

4.85

- 1 **Controlling depths.** See 4.76.

Deepest and longest berth. Tiko Berth (4.90).

Tidal levels. Mean spring range about 1·9 m; mean neap range about 0·8 m. See information in *Admiralty Tide Tables Volume 2*.

Density of water is 1·012 g/cm³.

Maximum size of vessel handled. About 7000 tonnes.

Arrival information

4.86

- 1 **Notice of ETA required.** Send ETA at least 24 hours prior to arrival.

Outer anchorage may be obtained about 1¾ miles S of Tiko in Ova Pool. In 1961 MV *Lobito Palm*, 144 m in length, anchored in mid-stream, with 4 shackles of cable. The holding was good.

Pilotage is compulsory See 4.78.

Harbour

4.87

- 1 **General layout.** A dog-leg berth provides facilities for vessels and lighters. The main wharf lies with its frontage parallel to the river, the lighter wharf forming its N side.

Tidal streams rarely attains a rate of 3 kn.

Directions for entering harbour

4.88

- 1 For directions for Rivière Bimbia see 4.81.

Directions for berthing

4.89

- 1 It is usual for vessels to arrive off Tiko at the end of the in-going stream, drive their bows into the mud, then swing with the stream before going astern and berthing starboard side to the wharf. Alternatively, vessels can let go an anchor underfoot when S, of the wharf, swing to the in-going stream, and then drop alongside.

Berths

4.90

- 1 **Tiko Berth** (4°04'N, 9°24'E), 137 m in length, with a charted depth of 5·5 m alongside.

It was reported (1990) that the berth was disused but that small vessels with a draught of 2·5 m could go alongside.

Anchorage may be obtained in the middle of the river in the vicinity of the wharf.

Port services

4.91

- 1 **Repairs:** minor repairs to small craft; two slipways suitable for small vessels and lighters.

Other facilities: hospital.

Supplies: Limited provisions; no fuel or water.

Communications. Airfield. Connected by road to Douala and Limbe.

Anchorage

West of Nicol Isle

4.92

- 1 Anchorage may be obtained between the W side of Nicol Isle (3°57'·0N, 9°15'·8E) and King William Town 6 cables NW, in a depth of 2·3 m. There is a landing place near the factory 5 cables N of the town.

Dikulu Bay**4.93**

- 1 Anchorage may be obtained off Dikulu Bay (3°58'·0N, 9°16'·5E) in a depth of 7·3 m; it is said to be perfectly safe.

**RIVIÈRE BIMBIA TO
ESTUAIRE CAMEROUN****General information***Chart 1456***Route****4.94**

- 1 From a position about 5 miles SSW of Cap Bimbia (3°56'·6N, 9°14'·6E) (4.58), the route leads SE, for about 13 miles to a position about 3 miles SW of Wouri Light-Buoy (safe water) (3°45'N, 9°24'E)

Topography**4.95**

- 1 From the E entrance point of Rivière Bimbia the coast curves round in a SE to ENE direction for about 14 miles to Cap Cameroun; the shore is low and covered with mangroves, but is visible in clear weather for a distance of about 12 miles.

Depths**4.96**

- 1 There are charted depths from 9 to 14 m.
Bancs Bimbia with depths of less than 5 m extend up to 4 miles offshore and on these the sea breaks heavily.

Marine exploitation**4.97**

- 1 See 1.14.

Local magnetic anomaly**4.98**

- 1 Local deflection of the compass is reported to occur in the vicinity of 3°47'N, 9°06'E. See 4.55.

Other aids to navigation**4.99**

- 1 **Racons** transmit from:
Cap Cameroun (3°54'·6N, 9°28'·6E).
Pointe Suéllaba (3°49'·0N, 9°33'·1E).
See *Admiralty List of Radio Signals Volume 2*.

Directions*(continued from 4.58)***4.100**

- 1 From a position about 5 miles SSW of Cap Bimbia (3°56'·6N, 9°14'·6E) (4.58), the track leads SE, passing (with positions relative to Cap Bimbia):
NE of a dangerous wreck (3°43'·0N, 9°16'·0E), and an area of wreckage surrounding it, the limits of which are indicated on the chart.
Thence the track leads to a position about 3 miles SW of Wouri Light-Buoy (safe water) (3°45'N, 9°24'E).
(Directions continue for entry into Port de Douala at 4.108 and for coastal route at 4.165)

PORT DE DOUALA AND APPROACHES**GENERAL INFORMATION***Chart 1456***Area covered****4.101**

- 1 This section covers the approaches through Estuaire Cameroun and Rivière Wouri to the port of Douala. Above Douala, Rivière Wouri receives the waters of Rivière Abo and Rivière Sange, both not named on chart. Rivière Wouri is navigable, during the rainy season as far as Yabassi (4°29'N, 9°58'E), (not named on chart) a distance of 40 miles from the sea. During the dry season it is only navigable as far as a place known as Nono 18 miles below Yabassi.
- 2 Rivière Abo is normally navigable for small vessels as far as Miang (not named on chart), about 18 miles above Douala.

The section is arranged as follows:

Approaches to Port de Douala (4.102).
Port de Douala (4.118).

APPROACHES TO PORT DE DOUALA**General information***Chart 1456***Route****4.102**

- 1 From a position about 3 miles SW of Wouri Light-Buoy (safe water) (3°45'N, 9°24'E), the track leads generally NE, for about 15 miles, to the vicinity of B9 Base Light-buoy, 3¼ miles E of Cap Cameroun.

Topography**4.103**

- 1 The land on either side of Estuaire du Cameroun is low, the NW side being mangroves, whilst Pointe de Souéllaba (3°49'·0N, 9°33'·1E), has trees within 2½ cables of its extremity which appear much thinned out and ragged, while at the point itself, only the trunks remain. See 4.95.

Depths**4.104**

- 1 The minimum charted depth in the approach channel over the bar is 6·9 m.
Caution. In 2004 less water than charted was reported within the fairway between B6 Light-buoy and B9 Base Light-buoy.

Natural conditions**4.105**

- 1 **Local magnetic anomaly.** Local deflection of the compass is reported to occur in 3°56'N, 9°32'E close NE of Cap Cameroun.

Tidal levels. At Cap Cameroun the mean spring range is about 1·9 m; mean neap range about 1·0 m. See information in *Admiralty Tide Tables Volume 2*.

Abnormal tidal level. The level of the river in the rainy season is 0·4 m higher than in the dry season.

Tidal streams. The in-going stream attains its maximum strength about 2½ hours before, and the out-going stream about 3½ hours after, the time of HW at Bonny Town (see *Admiralty Tide Tables Volume 2*).

- 2 The maximum strength of either stream is usually about 2½ kn at springs, but during the rainy season the out-going

stream may run for as long as 8 hours, attaining a maximum rate of $2\frac{3}{4}$ kn, and the in-going for only $4\frac{1}{2}$ hours at a maximum rate not reaching 2 kn.

In the entrance S of Cap Cameroun, between B4/B5 Light-buoys and B9 Base Light-buoy, the out-going stream sometimes reaches 5 kn during the rainy season.

- 3 **Caution.** The out-going tidal stream sets strongly towards Têtes de Chiens shoals ($3^{\circ}50'N$, $9^{\circ}29'E$) (4.108), and mariners are cautioned against getting too close to the E side of the channel.

Marine exploitation

4.106

- 1 See 1.14.

Other aids to navigation

4.107

- 1 **Racons** transmit from:

Cap Cameroun ($3^{\circ}54'.6N$, $9^{\circ}28'.6E$).

Pointe Suéllaba ($3^{\circ}49'.0N$, $9^{\circ}33'.1E$).

See *Admiralty List of Radio Signals Volume 2*.

Directions

(continued from 4.100)

Sea buoy to pilot

4.108

- 1 If approaching from W and the weather is not clear, it is advisable to ascertain the position of the vessel by making landfall off Debunja Point ($4^{\circ}06'.0N$, $8^{\circ}59'.0E$) (4.49). If approaching from S and visibility is poor, it is advisable to proceed towards Baie Ambas ($4^{\circ}00'N$, $9^{\circ}10'E$) and to fix the position before attempting to locate Wouri Light-buoy. Cap Nachtigal (4.58), which has a light, and Cap Bimbria (4.58), which gives a radar echo at more than 20 miles, are two good marks in the vicinity of Baie Ambas.

Caution. Navigational aids are reported to be unreliable in the approach channel. They may be missing, unlit or out of position; their charted positions should not, therefore be relied upon.

- 2 From a position about 3 miles SW of Wouri Light-Buoy (safe water) ($3^{\circ}45'N$, $9^{\circ}24'E$), the track leads generally NE, for about 15 miles, through a channel marked light-buoys (lateral), to the vicinity of B9 Base Light-buoy, $3\frac{3}{4}$ miles E of Cap Cameroun, passing (with positions relative to Cap Cameroun ($3^{\circ}54'.6N$, $9^{\circ}28'.6E$)):

- 3 Either side of Wouri Light-buoy (safe water) ($10\frac{3}{4}$ miles SSW). The channel through Estuaire du Cameroun passes over a bar, vessels should reduce speed whilst crossing it. For depths see 4.104. Thence:

Between B2 and B1 Light-buoys ($8\frac{3}{4}$ miles SSW). An unmarked dangerous wreck lies about $1\frac{1}{4}$ miles W of B2 Light-buoy. Thence:

- 4 NW of B3 Light-buoy (7 miles SSW). Bancs Bimbria, (6 miles WSW), fronts the coast between Cap Cameroun and Rivière Bimbria $11\frac{1}{4}$ miles WNW. Têtes de Chiens ($4\frac{3}{4}$ miles S), a shoal, steep-to on its N side, is part of a larger shoal area extending NW and W, from Pointe de Souéllaba ($3^{\circ}49'.0N$, $9^{\circ}33'.1E$) (4.103). The sea always breaks heavily on these shoals except at slack HW. They are very dangerous to low powered vessels caught in the entrance by the out-going tidal stream (4.121), which rushes with considerable velocity over them, especially at spring tides. It should be noted that the coastal bank which extends S from Cap Cameroun is steep-to, and the shoal flats which

extend N from Pointe de Souéllaba are especially so; care should therefore be taken to avoid approaching them too closely. It was reported in 1980, that a stranded wreck on the W side of Têtes de Chiens shoals can be mistaken for a flat-topped buoy. SM1 tide gauge from which a light (pylon on hut) is exhibited, stands 2 miles SSW of Têtes de Chiens shoals. Thence:

4.109

- 1 Between B4 and B5 lateral Light-buoys ($5\frac{1}{2}$ miles SSW), thence:

NW of B7 Light-buoy (starboard hand) ($3\frac{1}{2}$ miles S), thence:

SE of B6 Light-buoy (port hand) (2 miles S). Pointe de Souéllaba (4.103), a long, low, and narrow point, which is gradually being eroded by the action of the sea lies 5 miles SE. Thence:

SE of B8 Light-buoy (port hand) ($2\frac{1}{4}$ miles SE). Cap Cameroun, a low but well defined point, the extremity of which is crowned by large bare trees, lies $2\frac{1}{4}$ miles NW. SM2 tide gauge from which a light (pylon on hut) is exhibited, stands $1\frac{1}{4}$ miles ENE of Cap Cameroun.

Thence the track continues to the pilot boarding position in the vicinity of B9 Base Light-buoy ($3^{\circ}54'.2N$, $9^{\circ}32'.4E$).

4.110

- 1 **Useful marks:**

Tower ($3^{\circ}54'.6N$, $9^{\circ}28'.6E$).

Tower (42 m in height) ($3^{\circ}49'.0N$, $9^{\circ}33'.1E$).

(Directions continue at 4.144)

Anchorage

Cap Cameroun

4.111

- 1 If obliged to do so anchorage may be obtained off the bar of Estuaire du Cameroun, out of the strength of the tidal streams, in a depth of 11 m with Cap Cameroun bearing 037° , distant 12 to 13 miles.

A vessel may anchor off this coast at all seasons of the year, but never in depths of less than 13 m, except in case of necessity, for in less than that depth the swell begins to assume the character of rollers (1.201) and causes the vessel to ride very uneasily.

Minor bays on the north-west side of Estuaire du Cameroun

Baie Mokouchou

4.112

- 1 Baie Mokouchou is a bight entered between Cap Cameroun ($3^{\circ}54'.6N$, $9^{\circ}28'.6E$), and Pointe Miandjou $4\frac{1}{2}$ miles NE, the S extremity of the island of the same name. At its head is Crique Mikanjé, which connects to Rivière Mounjo to NNE, Rivière Bimbria to NNW and Matumal Creek to W, and which is navigable by vessels drawing up to 4.0 m.

- 2 Crique Victoria and Crique Dengdé, the entrances to which are on the W side of the bay, are both small, but also connect with Matumal Creek. Crique Victoria is navigable by vessels drawing up to 2.7 m, but it is very narrow and tortuous.

Baie Modéka

4.113

- 1 Baie Modéka is entered between Pointe Miandjou ($3^{\circ}57'.9N$, $9^{\circ}31'.5E$) and Moukalatanda, a village $4\frac{1}{2}$ miles NE. A channel leads NNW through the bay to Mowasse Creek and thence to the entrance to Rivière Mounjo.

Missellele, a settlement with a wharf, lies to NW of Mowasse Creek but it can only be reached by small craft having a shallow draught.

- 2 Rivière Moungo is navigable by small craft and shallow draught vessels at all seasons as far as Malende (not named on chart) (4°19'N, 9°38'E), but the bar at its entrance is only navigable in the dry season by vessels drawing not more than 0.9 m. The settlement of Mpundu (not named on chart), with a wharf, lies 19 miles above the entrance.

- 3 At HW small craft from Douala can proceed to Tiko (4.84) through this bay, using either Crique Poka or Green Combo Creek, which routes are shorter and more sheltered than those through Baie Mokouchou, but not so deep. Île Mbosa Bombé and Heron Isle lie in the shallows between Baie Mondéka and Missellele.

Minor bay on the south-east side of Estuaire du Cameroun

Baie de Manoka 4.114

- 1 **Description.** Baie de Manoka is an extensive shallow bay entered between Pointe Manoka (3°52'1N, 9°37'7E), and Pointe Malimba 4½ miles NNE. At the head of the bay are the mouths of Crique Kwakwa (4.115), Crique Ndongo (4.116) and Rivière Dibamba (4.117), the latter flowing into its NE side.

Manoka, a village with a wharf and anchorage, lies close E of the point of the same name. The church and houses are visible when approaching the anchorage, but the village is hidden by mangroves.

- 2 **Depths.** There is a least charted depth of 6 m in the channel as far as Manoka.

Local knowledge. This channel should only be used by day and with a pilot, who will board at B9 Base Light-buoy. See 4.136.

- 3 **Tidal levels.** At Manoka the mean spring range is 2.0 m; mean neap range is 1.0 m. See information in *Admiralty Tide Tables Volume 2*.

Tidal streams. The out-going stream sets W with considerable strength, and tends to set a vessel on to the S side of the channel at the time of its maximum rate, which is about 5 hours after HW at Bonny Town. The in-going stream sets ENE with less strength.

Directions. From the vicinity of B9 Base Light-buoy (3°54'2N, 9°32'4E), Chenal de Manoka leads E through the bay. The channel is unmarked.

- 4 **Anchorage** Good anchorage may be obtained, sheltered from swell, in a depth of 10 m, sand and mud, as indicated on the chart, about 2¾ cables off the head of the wharf at Manoka and along the line of its projection. During the rainy season the out-going stream can be very strong at this anchorage, sometimes as much as 5 kn, and it is well to veer plenty of cable. There is a mooring buoy for lighters.

Small craft

Crique Kwakwa 4.115

- 1 Crique Kwakwa (3°50'N, 9°41'E) connects Estuaire Cameroun with Rivière Sanaga (4.176), and it can be navigated by large craft in the rainy season, but in the dry season is impassable. The current in this creek always sets N towards Baie de Manoka at 2 to 3 kn.

Crique Ndongo

4.116

- 1 Crique Ndongo (3°51'N, 9°44'E), is navigable by small craft as far as M'Banda, about 12 miles above its mouth. It too connects with Rivière Sanaga (4.176).

Rivière Dibamba

4.117

- 1 Rivière Dibamba (3°56'N, 9°40'E) is navigable for about 31 miles by small craft in all seasons, as far as the town of Yapoma, and by boats as far as Dibamba.

PORT DE DOUALA

General information

Chart 1456 and plan of Port de Douala

Position

4.118

- 1 Port de Douala (4°03'0N, 9°42'0E), is situated about 25 miles from the sea, on the SE bank of Rivière Wouri. Bonaberi stands on the NW bank N of Douala.

Function

4.119

- 1 Douala is a medium sized port, and the main port for Cameroon. It also serves interior states notably Chad and the Central African Republic. The principal exports are timber, aluminium, coffee, bananas, cocoa and cotton; principal imports are fuel, cereals, chemicals, alumina, building equipment and machinery.

The town of Douala is situated on elevated ground about 9 m high above the port. In 2002, the estimated population was 1 500 000.

Topography

4.120

- 1 The land is low lying, with the banks of the estuary and rivers fronted by mangroves.

The principal buildings at Douala are Government House and its offices, the hospitals, barracks, law court and the cathedral. The white domes of the latter may be seen in clear weather from Estuaire du Cameroun.

Approach and entry

4.121

- 1 The port is approached through Estuaire du Cameroun, between Cap Cameroun (3°54'6N, 9°28'6E), and Pointe de Souéllaba 7 miles SE.

Traffic

4.122

- 1 The port is visited by about 2410 ships annually and about 4.1 million tonnes of cargo are handled.

Port Authority

4.123

- 1 Port Authority of Douala, Maritime Affairs Centre, PO Box 4020, Douala, Cameroon.

Limiting conditions

Controlling depths

4.124

- 1 For depths in the approach channel see 4.104.

The Wouri channel has a maintained depth on the chart of 6.5 m but, in 2003, it was reported that the channel had been deepened to 7.0 m. However, lesser depths may occur from time to time due to silting and the port authority should be consulted for the latest situation.



Douala – Riverside berths (4.118)

(Original dated 2002)

(Photograph – mv Doulos)

Deepest and longest berth**4.125**

- 1 Container terminal (4.149).

Tidal levels**4.126**

- 1 Mean spring range about 2.0 m; mean neap range about 1.1 m. See information in *Admiralty Tide Tables Volume 2*.

Abnormal tidal level**4.127**

- 1 The level of the river in the rainy season is 0.4 m higher than in the dry season.

Bridge**4.128**

- 1 Wouri Bridge, with a vertical clearance of about 5 m spans the river between a point N of Douala and Bonaberi close W.

Density of water**4.129**

- 1 The density of the water varies from 1.012 to 985 g/cm³ depending on the season.

Maximum size of vessel handled**4.130**

- 1 Vessels up to 200 m in length and a draught of 8 m can navigate the river to Douala.
A vessel of 30 000 dwt, with draught of 8 m has been handled.

Local weather**4.131**

- 1 During the dry season, December to February, the SW sea breeze may attain a force of about 5 and, during the out-going stream at spring tides, produces a very nasty short sea, which is dangerous to small craft, especially in the vicinity of B9 Base Light-buoy (3°54'2N, 9°32'3E).
Tornadoes from E occur most frequently between February and April, generally developing during the night. See 1.218.

Arrival information**Port operations****4.132**

- 1 Vessels may only enter the port at HW and berthing is always made head to the tidal stream. Berthing can be carried out day and night but can be difficult at the NE end of the waterfront where the channel is narrow.
For vessels berthed port side-to, departure can be made at any time depending on draught and depths available in the channel. Vessels berthed starboard side-to should arrange to depart on the early or late in-going stream, to facilitate turning in the river.

Port radio**4.133**

- 1 There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required**4.134**

- 1 Send ETA at B9 Base Light-buoy, 24 hours prior to arrival. See *Admiralty List of Radio Signals Volume 6(3)*.

Outer anchorage**4.135**

- 1 Anchorage may be obtained in a designated anchorage, known as Suellaba Anchorage, about 4 miles ESE of Cap Cameroun (3°54'6N, 9°28'6E), the limits of which are indicated on the chart.
Caution. In 2004 less water than charted was reported in the anchorage.

Pilotage**4.136**

- 1 Pilotage is compulsory. The pilot boards in the vicinity of B9 Base Light-buoy (3°54'2N, 9°32'3E), as indicated on the chart. The pilot boat has an orange hull with a white superstructure and PILOT in black on the sides. By day she displays the international pilot flag. It has been reported that the pilot may request to embark or disembark in the vicinity of B22/B23 Light-buoys. See *Admiralty List of Radio Signals Volume 6(3)*.

Tugs**4.137**

- 1 Tugs are available, and compulsory for vessels over 600 grt.

Regulations concerning entry**4.138**

- 1 Whilst in the special anchorage (4.135) in the vicinity of B9 Base Light-buoy, and whilst navigating the approach channel to Douala, vessels are required to keep a VHF listening watch.

Maximum speed in Wouri channel is 14 kn but a lesser speed may be deemed necessary to prevent a vessel's wash from causing erosion to the banks.

Harbour**General layout****4.139**

- 1 The harbour lies between Banc du Cameroun (4°03'·0N, 9°40'·7E), and Douala, close SE. The whole of the waterfront is a continuous berthing area, providing berths for all types of vessels. There is a basin at either end of the berthing area. At Bonaberi, close N of Douala, 2 berths front the town.

Hazards**4.140**

- 1 **Driftwood.** Throughout the length of the river heavy driftwood may often be encountered.
Unlit small craft. A sharp lookout is necessary at night due to the presence of numerous unlit fishing craft.

Natural conditions**4.141**

- 1 **Local magnetic anomaly.** Local deflection of the compass is reported to occur in the vicinity of Cap Cameroun. See 4.79.

Tidal streams. At B9 Base Light-buoy the tidal stream is rectilinear setting NE on the flood with a rate of 2·3 kn at springs and SW on the ebb with a rate of 2·7 kn at springs. Upriver, in the vicinity of B27 Light-buoy, the flood sets NE at a spring rate of 1·7 kn and the ebb sets SW at a spring rate of 2·2 kn. For further information see the tidal stream data on the chart.

- 2 During the rainy season, the duration and strength of the flood tide is generally reduced whilst the duration and rate of the ebb is increased. At Douala, in the height of the rainy season, there is no longer any appreciable flood stream and, at most, only a half hour of slack water.

Climatic table. See 1.226 and 1.231.

Principal mark**4.142**

- 1 **Landmark:**
 Building (position approximate) (4°03'·0N, 9°41'·6E).
 White domes of cathedral (4°02'·7N, 9°41'·6E) (4.120).

Other aids to navigation**4.143**

- 1 **Racons** transmit from:
 Cap Cameroun (3°54'·6N, 9°28'·6E).
 Pointe Suéllaba (3°49'·0N, 9°33'·1E).
 See *Admiralty List of Radio Signals Volume 2*.

Directions for entering harbour

(continued from 4.110)

Pilot to berths**4.144**

- 1 From the pilot boarding position, in the vicinity of B9 Base Light-buoy (3°54'·2N, 9°32'·3E), the track leads generally NE for about 13 miles in a channel through Rivière Wouri marked by light-buoys (lateral) to Douala, passing (with positions relative to Cap Cameroun (3°54'·6N, 9°28'·6E)).

SE of a shoal (3½ miles E), reported in 1987, with a depth of 5·9 m over it. Less water was reported in 1987, to lie NW of the channel, in the vicinity of B9 Base Light-buoy, thence:

SE of Banc du Coude (7½ miles NE). SM3 tide gauge, from which a light (pylon on hut) is exhibited, stands close N. Chenal de Vase, a side channel, with charted depths from 2·6 to 3·9 m, leads NE between Banc du Coude and SM3 tide gauge. Three wrecks with depths from 2·4 to 3·4 m over them and 1 stranded wreck, lie in the channel. Thence:

NW of Pointe Olga (9¾ miles ENE) which is fronted by a large drying-bank on the N edge of which there is a stranded wreck, thence:

SE of Banc Bwapé which dries (10¾ miles NE), thence:

NW of Pointe Docteur (12¾ miles NE).

Thence the track leads to the required berth, passing SE of Banc de la Crique Moungo (4°03'·N, 9°39'·E) and Banc du Cameroun, 1 mile ENE, the latter with several stranded wrecks on its E side. SM4 tide gauge, from which a light (pylon on hut) is exhibited, stands close E of Banc du Cameroun.

4.145

- 1 **Useful mark:**
 Water tower (4°02'·9N, 9°41'·8E).

Berths to Bonaberi**4.146**

- 1 If proceeding to Bonaberi on the W bank of Wouri River above Douala, or anchoring above the berths, it should be noted that the greater depths are found on the E side of the river.

Basins and berths**General information****4.147**

- 1 There are 2750 m of waterfront, occupied mostly by general cargo berths with charted depths from 7·6 to 12·9 m, and, in addition, two basins and an oil berth. The principal specialised berths are given below (with positions relative to Pointe Bonaberi (4°04'·0N, 9°41'·6E)).

The port authority should be contacted for the latest information on depths.

Timber Port

4.148

- 1 Timber Port, a basin (2¼ miles SW), contains four mooring buoys and a berth on its NE side used by vessels loading logs. Charted depths near the entrance to the basin are about 5.0 m but in the middle there is a drying-patch.

A naval base is located at the SW entrance to the Timber Port.



Douala – Naval base (4.148)

(Original dated 2002)

(Photograph – mv Doulos)

Container terminal

4.149

- 1 A container and Ro-Ro terminal (1½ miles SW), with a total length of 500 m and a charted depth of 7.6 m alongside.

Tanker berth

4.150

- 1 The tanker berth, with dolphins (3 cables S) and mooring buoy, has a charted depth of about 7 m and can accept vessels up to 180 m LOA. A submarine pipeline is laid from this berth to the shore close SE.

No 2 Berth on the riverside is used as a bunker berth as well as for the discharge of alumina and the loading of aluminium.

Fishing port

4.151

- 1 A basin (4 cables ESE) is used by fishing vessels and for repairs.

Bonaberi

4.152

- 1 There are 2 berths (4°04'1N, 9°41'6E); one, a berth for loading bananas, is 150 m in length, the other, a bulk and general cargo berth, is 200 m in length. Alongside charted depths are about 7 to 10 m. The general cargo berth can accept Ro-Ro vessels.

Port services

Repairs

4.153

- 1 Repairs of all kinds can be carried out; three floating docks, the largest 10 000 tonne lift capacity, with a length of 130 m, and 33 m in width handling vessels up to 30 000 dwt. The repair berth in the fishing port has a length of 200 m.

Other facilities

4.154

- 1 Hospitals; laundry; deratting can be carried out, Deratting and Deratting Exemption Certificates issued; oily waste reception facilities; salvage facilities; 100 tonne floating crane.

Supplies

4.155

- 1 Fuel oil, diesel; fresh water; provisions; supplies.

Communications

4.156

- 1 International airport 2 miles SE of Douala; river service by small craft, in particular to Limbe (4.60) and Tiko (4.84).

ESTUAIRE DU CAMEROUN TO CABO SAN JUAN

GENERAL INFORMATION

Charts 1456, 1888

Area covered

4.157

- 1 This section describes the coastal routes, anchorages and harbours from Estuaire du Cameroun (3°50'N, 9°30'E) to Cabo San Juan (1°10'4N, 9°20'4E).

It is arranged as follows:

- Estuaire du Cameroun to Port de Kribi (4.161).
- Port de Kribi to Punta Campo (4.182).
- Punta Campo to Cabo San Juan (4.193).

Topography

4.158

- 1 Between Estuaire du Cameroun (3°50'N, 9°30'E), and Cabo San Juan (1°10'4N, 9°20'4E), 160 miles S, the hinterland is generally lower in the N part of the area than in the central and S portions.

The coast is uniformly low and thickly wooded, and the large trees of the forest which line the coast are visible from seaward at a distance of 12 to 15 miles.

- 2 The beaches are generally sandy with outlying rocky patches in some places. At times a heavy surf breaks all along this coast making landing dangerous.

Navigation

4.159

- 1 Coastal waters out to depths of more than 20 m have been reasonably well surveyed between Rivière Cameroun and Baie Campo, 90 miles S, but farther S the area has only been sketchily surveyed.

International boundary

4.160

- 1 The international boundary between Cameroon and Equatorial Guinea is formed by Rivière Campo. On the S bank, at the entrance, is a military post belonging to Equatorial Guinea.

ESTUAIRE DU CAMEROUN TO PORT DE KRIBI

General information

Charts 1888, 1322

Route

4.161

- 1 From a position about 3 miles SW of Wouri Light-Buoy (safe water) (3°45'·0N, 9°24'·0E), the route leads SE, for about 55 miles to a position about 4 miles W of Pointe Margaret (2°56'·3N, 9°54'·5E).

Topography

4.162

- 1 From Rivière Sanaga (3°32'·5N, 9°38'·8E) to Pointe Garajam SSE, the S entrance to Baie Panavia, the coast curves for about 37 miles in a general SSE direction.

Depths

4.163

- 1 Along the route there is a least charted depth of 14·9 m (49 ft) with depths decreasing gradually towards the shore.

Marine exploitation

4.164

- 1 See 1.14.

Directions

(continued from 4.100)

4.165

- 1 From a position about 3 miles SW of Wouri Light-Buoy (safe water) (3°45'·0N, 9°24'·0E), the track leads SE, passing (with positions relative to Wouri Light-Buoy):
SW of a lagoon known as Lagune de Malimba (17 miles SE) only separated from the sea by a narrow neck of sand. Thence:
SW of the estuary (19½ miles SE) to Rivière Sanaga (4.176), thence:
2 SW of the entrance (42 miles SE) to Rivière Njong (4.180). Three unmarked dangerous wrecks lie up to 5 miles SSW of the entrance. Thence:
SW of a rock (3°07'·9N, 9°52'·9E), with a depth of 4·5 m (15 ft) over it, thence:
3 SW of Pointe Garajam (3°00'·N, 9°56'·E), low and wooded. Being round in shape it is somewhat difficult to distinguish from a distance, but on the beach are some rocks, which show up distinctly against the white sand of which the point is composed. About 1 mile offshore are two groups of rocks, one of which is above-water, and on both of which the sea breaks. Thence:
4 SW of an unmarked dangerous wreck (2°57'·3N, 9°53'·5E), lying 1 mile WNW of Pointe Brima. A rock which covers and uncovers, marked by a beacon, lies close off Pointe Brima. Crique N'Goé (chart 1322 plan of Port de Kribi) is located close E of the point.

Thence the track leads to a position 4 miles W of Pointe Margaret (2°56'·3N, 9°54'·5E). A rocky ledge which dries about 1·5 m (5 ft) in places, extends nearly 1 cable NW from Pointe Margaret and should be given a wide berth. Port de Kribi front leading light (4.170) is exhibited from the point.

4.166

Useful mark:

- FSO vessel (2°55'·3N, 9°48'·1E) (4.188).
Radio mast (200 m in height) (2°55'·5N, 9°54'·9E).
(Directions continue at 4.186. Directions for Port de Kribi are given at 4.170)

Port de Kribi

Chart 1322 plan of Port de Kribi

General information

4.167

- 1 **Position.** Port de Kribi (2°56'·2N, 9°54'·6E).
Function. It is a small port with an outer anchorage. The entrance to Rivière Kienké forms a harbour providing excellent shelter for small craft. The town of Kribi consists of a number of bungalows, native huts, a hospital and a hotel which surround the port. The principal export is timber; imports include cotton goods, spirits, rice and salt.
- 2 **Topography.** At the head of the small harbour, Rivière Kienké descends over a cataract from 6 to 9 m high.
Approach and entry. The port is approached on the alignment of leading lights. The harbour is entered N of Pointe Margaret (2°56'·3N, 9°54'·5E).
- 3 **Traffic.** The port is visited by about 70 ships annually and about 118 200 tonnes of cargo are handled.
Port Authority. Cameroun National Ports Authority, Maritime Affairs Centre, PO Box 4020, Douala, Cameroun.

Limiting conditions

4.168

- 1 **Controlling depths.** There are depths of about 7 m in the anchorage.
There is a bar at the entrance to the harbour, which is subject to frequent changes, and though dangerous at times, is passable at HW, by small craft with a draught up to 1·8 m.
- 2 **Tidal levels.** Mean spring range about 1·6 m; mean neap range about 1·0 m. See information in *Admiralty Tide Tables Volume 2*.
Density of water is 1·025 g/cm³.

Harbour

4.169

- 1 **General layout.** The small harbour, well protected by a narrow entrance, is situated on both banks of the river.
Current. The surface current at the entrance is largely influenced by Rivière Kienké and is always setting out; its rate varying from 2 to 5 kn depending upon the state of the tide and the level of the river.
Climatic table. See 1.226 and 1.233.
Landmarks:
Pylon (2°56'·4N, 9°54'·8E).
Church spire (2°56'·1N, 9°54'·7E).

Directions for entering anchorage and harbour

(continued from 4.166)

4.170

- 1 **Anchorage.** Kribi Leading Lights:
Front light (white tower, red top, 15 m in height) (2°56'·2N, 9°54'·5E).
Rear light (belfry, 13 m in height) (555 m from front light).
- 2 From a position about 3 miles WNW of Pointe Margaret (2°56'·3N, 9°54'·5E), the alignment (115°) of these lights leads towards Pointe Margaret, passing (with positions relative to Pointe Margaret):
NNE of a dangerous wreck (1¼ miles W), thence:
Clear of a light-buoy (safe water) (1 mile WNW).

Thence the track leads to the anchorage, noting a wreck with a depth of 5.4 m lying close to the anchorage position as indicated on the plan.

- 3 **Harbour.** Local knowledge is required. From the approach light-buoy (safe water) mentioned above and after passing NNE of the wreck near the anchorage position, the track continues ESE, to pass over the bar (4.168), thence N of a breakwater, extending about 1 cable NNE from Pointe Margaret (4.165). The track then leads S to the entrance. A rock, which covers and uncovers, lies in the entrance close NNE of the point.

- 4 Inside the harbour, rocks known as Roches Wuriand which dry 3 m, are situated close S of Quai de Briex (4.174).

4.171

- 1 **Useful marks:**

FSO vessel (2°55'3N, 9°48'1E) (4.188).
Masts (3) (2°56'2N, 9°54'6E).
Radio mast (200 m in height) (2°55'5N, 9°54'9E).
Mont Nisus (not named on chart) (2°58'N, 10°05'E)
an isolated, conical summit, 10 miles ENE of Kribi.
Mont Elephant (2°47'N, 10°00'E).

Berths

4.172

- 1 **Anchorage** may be obtained on Kribi leading line, as indicated on the plan, about 8 cables WNW of Pointe Margaret in a depth of 7 m, sand and mud.

Alongside. Quai de Briex (4.174).

Port services

4.173

- 1 **Repairs:** slipway.
Other facilities: hospital.
Supplies Only local produce is obtainable.
Communications: airfield at Chutes, about 20 km SE of Kribi.

Small craft

4.174

- 1 **Kribi.** Quai de Briex on the N side of the harbour basin is a wharf 250 m in length, providing berths for lighters and small craft. Anchorage for small craft may be obtained about 40 m S of the berth. Owing to the strength of the current and tide rips it is not advisable to anchor in greater depths at the head of the harbour. A bridge spans the river at the head of the harbour.

For directions see 4.170.

Anchorage and minor harbours

Chart 1888

General information

4.175

- 1 Off this coast the bottom is generally clean, and consists of sand and mud, forming good holding ground, though in places there are patches of coral; the nature of the bottom should be ascertained before anchoring.

Rivière Sanaga

4.176

- 1 **Description.** Rivière Sanaga (3°32.5'N, 9°38.8'E), is navigable by small vessels for about 35 miles, to a town called Edea. It is an administrative centre, and a developing industrial town, with hydro-electric generators and a plant for the production of aluminium. Navigation of the river

will probably not be made without grounding, as there are several shallows in the first 15 miles of river.

- 2 Rivière Sanaga enters the sea as two rivers; Rivière Bengé the N outlet is only navigable by small craft, and Rivière Boungo the S outlet is the principal entrance. They are separated by Île Malimba. The islands and sandbanks at the mouths of the rivers undergo continual change. During the rainy season new channels are formed through the banks, but the two principal outlets remain unchanged.

Rivière Sanaga is connected to Rivière Cameroun by Crique Kwakwa (4.115) and Crique N'Donga (4.116).

- 3 **Topography.** There are plantation factories near the entrances of the rivers and also on Île Malimba near its seaward end.

Tidal levels. At Malimba the mean spring range is about 1.2 m; mean neap range about 0.6 m. See information in *Admiralty Tide Tables Volume 2*.

- 4 **Tidal stream.** During height of the rainy season, the stream always sets out of the river; a rate of 4 kn is attained on the out-going stream, which the in-going stream reduces to about 3 kn.

Local knowledge is required.

- 5 **Directions.** Rivière Bengé is reported to be barred by a sandbank within its entrance, over which there is a depth of only 0.6 m (2 ft), but it is also stated to be available for small craft. Rivière Boungo is obstructed by a dangerous bar on which the sea breaks heavily.

- 6 **Anchorage** may be obtained as follows:

Rivière Bengé, in the entrance, in a depth of 3.7 m (12 ft), $\frac{3}{4}$ cable from the shore, off the W wall of a fishery school. This anchorage is well sheltered by the entrance but the holding is bad.

Rivière Boungo, in the entrance, in depths from 5.8 to 14.6 m (19 to 47 ft), good holding ground, with the factory flagstaff bearing 082°. Small craft can find good shelter behind the sandbank at the entrance of Rivière Boungo.

Baie Panavia

4.177

- 1 In Baie Panavia (3°05'N, 9°54'E), depths vary from 9.1 to 12.8 m (30 to 42 ft), at distances of 3 to 6 miles offshore. Anchorage, may be obtained anywhere off the shore of the bay in depths from 9 to 11 m (30 to 36 ft), mud. Anchorage is secure, because the tornadoes (1.218) blow offshore.

Caution. The unmarked rock (3°07'9N, 9°52'9E) (4.165) should be given a wide berth.

Longji

4.178

- 1 **Description.** Longji (3°05'N, 9°58'E), a village, where there are several conspicuous factories, is situated at the head of Baie Panavia (4.177).

Directions. In order to avoid the rock in position 3°07'9N, 9°52'9E (4.165), vessels approaching from N should remain in depths of more than 11 m (36 ft) until they are E of the village, whence course can be adjusted E towards the anchorage.

A light (occasional) is exhibited from the point 5 cables SW of Longji.

Anchorage may be obtained in a depth of 7.3 m (24 ft), mud, off the settlement. A buoy (black conical) marks the anchorage.

Moolongwe**4.179**

- 1 **General information.** Anchorage may be obtained off plantation factories near Moolongwe about 3½ miles SSW of Longji. Local knowledge is required.

- 2 **Useful mark:**

White plantation factory, situated on a hill near Moolongwe.

Anchorage may be obtained on the alignment (121°) of beacons situated in the vicinity of the factories and at a distance of about 1 mile offshore in a depth of about 8 m (26 ft), where good holding of dark green clay will be found.

Roche Plantation, a rock which dries, lies 5 cables offshore abreast the factories and there are further dangerous rocks to S of it. The alignment of the beacons leads clear of these rocks and there is a landing place onshore.

Small craft

Chart 1888

Rivière Njong**4.180**

- 1 Rivière Njong, the entrance (3°15'·7N, 9°54'·1E) to which is scarcely visible from seaward, may be ascended by small craft for about 25 miles as far as a village known as Dihani but they may touch ground in places. The only guide to the entrance is Mount Beoundo, the first hill near the coast S of Cameroon Mountain and which is located 4½ miles SE of the mouth of the river. There is a bar at the entrance with depths of less than 2 m and the channel is subject to frequent change. Local knowledge is required.

Good anchorage may be obtained off the entrance in a depth of about 7·3 m (24 ft) sand and mud.

Rivière Lokoundje**4.181**

- 1 Rivière Lokoundje, the entrance (3°12'·6N, 9°55'·6E) of which is difficult to identify, is navigable by small craft to the village of Ebea about 14 miles above the entrance, where the river is 2 miles in width. There is a bar at the entrance, over which there is a depth of 1·5 m at half-tide. Navigation of the river is more difficult than Rivière Njong.

Three mooring buoys, for the use of barges, are moored 1½ miles W of the mouth of the river.

PORT DE KRIBI TO PUNTA CAMPO**General information**

Chart 1888

Route**4.182**

- 1 From a position about 4 miles W of Pointe Margaret (2°56'·3N, 9°54'·5E) (4.165), the route leads SSW for about 39 miles to a position W of Punta Campo (2°19'·0N, 9°46'·7E).

Topography**4.183**

- 1 For a distance of 19 miles S of Pointe Margaret the coast has a fine beach without mangroves. Farther S, the foreshore consists of densely wooded lowland, fronted by a beach of yellow sand which is interrupted in places by what looks like the mouths of small rivers.

- 2 Here and there, patches of a lighter green give evidence of plantations, and groups of brown huts prove the coast to be inhabited. Several landing places (4.192) are indicated on the chart near the various villages.

- 3 Baie Banoko, is a slight indentation in the coast extending for about 5½ miles S of Pointe Banoko on which stands the village of Grand Batanga (2°50'·4N, 9°53'·3E) (4.190). Baie Banoko is easily recognised from its position in relation to Mont Elephant, 6½ miles ESE. The shores of the bay are low and wooded, and near the centre is a thick clump of trees which, from a distance, appear as a dark hillock. It has a sandy beach on which there are some plantation factories. Rocks on which the sea breaks heavily, lie off its N and S points.

Marine exploitation**4.184**

- 1 See 1.14.

Principal marks**4.185**

- 1 **Landmarks:**

Mont Elephant (2°47'·0N, 10°00'·1E).

Les Mamelles (2°33'·5N, 9°58'·5E).

Directions

(continued from 4.166)

4.186

- 1 From a position about 4 miles W of Pointe Margaret (2°56'·3N, 9°54'·5E) (4.165), the track leads SSW, passing (with positions relative to Pointe Margaret):

WNW of Pointe Nagajango (1¼ miles SSW) (Chart 1322). Mabea, a town lies close inshore. Between Pointe Garajam (3°00'N, 9°56'E) (4.165) and about 23 miles S, rocks extend for a distance of 5 cables offshore in many places. It is desirable therefore to keep a good offing of at least 2 miles or in depths of about 24 m (13 fm). And:

ESE of Kome-Kribi 1 Marine Terminal (6½ miles W) (4.188), thence:

- 2 WNW of the village of Grand Batanga (5¾ miles S) (4.190). The cascade of a waterfall, from a river known as Rivière Lobé, which in the rainy season, and particularly when coming from N, assist in the identification of Grand Batanga, lies close N of Grand Batanga. Thence:

WNW of Ebome Marine Terminal (9 miles SSW) (4.189), thence:

- 3 WNW of Rocher Wolf (19 miles S), a regular truncated cone, 9 m in height, with a small beacon on its summit. It is surrounded by rocks on which the sea breaks violently. In the vicinity of Rocher Wolf the bottom is foul; between it and Rivière Campo, 16¾ miles S, the depths are not so regular as those N. Thence:

- 4 WNW of Pointe Gertrude (26 miles S), low, sandy and covered with trees; it does not possess any remarkable characteristics and would be hard to distinguish but for the beacon standing on it. Rocks extend 4 cables off the point. Thence:

WNW of a shoal patch (31½ miles SSW), with a depth of 2·7 m (9 ft) over it. Pointe Webber with a beacon lies about 2½ miles E. Thence:

- 5 WNW of two dangerous wrecks (34 miles SSW), the the position of the offshore wreck being approximate, thence:

Clear of a shoal patch (35 miles SSW) with a depth of 10 m (33 ft) over it, thence:

WNW of dangerous wrecks (35¼ miles SSW), the positions of which are approximate.

- 6 Thence the track continues to a position W of Punta Campo (2°19'·0N, 9°46'·7E), low and wooded with a sandy beach, fringed with a line of rocks and breakers extending 7 cables offshore, which should be given a wide berth. A dangerous wreck lies about 1¼ miles W of the point.

4.187

- 1 **Useful mark:**

Radio mast (200 m in height) (2°55'·5N, 9°54'·9E).
(*Directions continue at 4.199*)

Offshore oil terminals

Kome-Kribi 1 Marine Terminal

4.188

- 1 **Position and function.** Kome-Kribi 1 Marine Terminal (2°55'·3N, 9°48'·1E) is located 6½ miles W of Port de Kribi (4.167) and is the export terminal for petroleum derived from the interior state of Chad. The development comprises an FSO permanently connected by the stern to an associated SPM and a submarine pipeline connection to shore.

Terminal Authority. Cameroon Oil Transportation Company (Cotco), PO Box 3738, Douala, Cameroon.

- 2 **Controlling depth.** The SPM is moored in a depth of 35 m.

Maximum size of vessel handled. Vessels up to 320 000 dwt can be handled.

Local weather and sea state. The wind is generally SW Force 3 but squalls of 50 kn or more in association with tornadoes (1.218) may be experienced especially during the wettest part of the year between spring and autumn.

The direction and rate of the current is variable and unpredictable. Sudden changes may be experienced at any time.

Port operations. Berthing in daylight hours only. Vessels may depart at any time of the day.

Port radio. There is a port radio station at the terminal. For details see *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required. Send ETA 72, 48 and 24 hours prior to arrival. Any amendment of 6 hours or more hours should be reported.

Anchorage. A waiting anchorage is located 4 miles WNW of the SPM in a depth of about 40 m, as shown on the chart.

Pilotage. Pilotage is compulsory and is provided by Douala Port Authority pilots. The boarding party boards in the vicinity of the waiting anchorage. Boarding by helicopter may be arranged.

Tugs. Generally two tugs for mooring operations, one of which will remain secured aft throughout the loading and unmooring operations.

Restricted area. A circular restricted area with radius 8 cables is centred on the SPM. The restricted area should only be entered by export tankers with Pilot and Mooring Master embarked or by service craft.

Mooring. The export tanker moors bow to bow in tandem with the 350 000 dwt FSO.

Regulations. Throughout the entire operation, the export tanker must have its anchors secured and its engines ready for immediate use. A permanent lookout is to be stationed at the forecable and at the manifold.

Services. No reception facilities for dirty ballast or oily slops.

Ebome Marine Terminal

4.189

- 1 **Position and function.** Ebome Marine Terminal (2°48'·5N, 9°49'·3E) is situated close W of Baie Banoko (4.183). It consists of the FSO vessel *USF1* and a yellow SPM buoy, moored in a depth of 30 m.

Terminal Authority. Kelt Cameroon, BP 1225, Douala, Cameroon.

Tidal streams are scarcely felt at a distance of 3 miles offshore.

Local weather and sea state. The wind is generally SW Force 3 but very strong squalls in association with tornadoes (1.218) may be experienced especially during the wettest part of the year between spring and autumn.

The swell is usually from SSW about 0·6 to 1·6 m.

The current generally sets SW at less than 1 kn.

- 2 **Maximum size of vessel handled.** Vessels up to 230 000 dwt can be accommodated.

Port operations. Berthing is permitted in daylight hours only. Vessels may depart at day and night.

Port radio. There is a port radio station at the terminal.

Notice of ETA required. Send ETA 72, 48 and 24 hours prior to arrival.

- 3 **Pilotage** is compulsory. Pilot boards, as indicated on the chart in the anchorage area.

Restricted area. The terminal lies within a restricted area, as indicated on the chart. Only vessels using the terminal may enter this area.

Anchorage may be obtained in an anchorage, the limits of which are indicated on the chart, about 2 miles W of the SPM.

Mooring. The export tanker moors to the SPM buoy.

Anchorage

Grand Batanga

4.190

- 1 **Description.** Grand Batanga (2°50'·4N, 9°53'·3E), is a village with several factories situated on a point known as Pointe Banoko, about 6 miles S of Pointe Margaret. The houses and churches are visible from seaward and form good marks. Exports are dye woods and wax.

Local knowledge is required.

- 2 **Anchorage** may be obtained in a depth of about 11 m (36 ft) with a waterfall (4.186), in line with the S part of Mont Elephant (2°47'·0N, 10°00'·1E), bearing 122°. Alternatively, in depths from 10 to 12 m (33 to 39 ft), grey sand off Pointe Banoko.

Baie Campo

4.191

- 1 **Description.** Baie Campo is entered between Pointe Webber (2°25'·0N, 9°49'·2E) and Punta Campo 6½ miles SSW. Rivière Campo, also known as N'Tem, enters the sea at the head of the bay.

- 2 From the entrance which is about 1 mile in width, the river extends in a SE direction for about 12 miles, it then breaks up into various arms, which are inaccessible from seaward on account of falls known as Yengue Falls, situated about 8 miles from the coast. The river is tidal and navigable by boats as far as the falls. Rivière Bongola joins Rivière Campo about 3 miles from the mouth, where they become one river.

Exports are rubber and ebony.

- 3 **Topography.** Factories, the white roofs of which are prominent from seaward, are situated at Campo village, on the N bank of the river near its mouth.

Depths. The mouth of the river is obstructed by a bar, on which the sea breaks heavily, especially in the dry season; the depth over it is from 1.5 to 2.0 m (5 to 6½ ft). Within the entrance it is wide and deep.

- 4 **Local knowledge** is required.

International boundary. See 4.160.

Directions. The bay is approached from W, noting dangerous wrecks and shoal water (4.186), in the W part of the bay SW of Pointe Webber.

- 5 **Anchorage** may be obtained in the bay with the white roofs of the factories bearing 100° and clear of the unmarked wrecks (4.186). Vessels should not anchor in depths of less than 5.5 m (18 ft) on account of the swell and cross current. With strong W winds this anchorage is almost untenable by small vessels.

Small craft

Landing places

4.192

- 1 There are numerous landing places as indicated on the chart between Pointe Margaret (2°56'·3N, 9°54'·5E) (4.165) and Rivière Campo, 36 miles S. In addition, as follows:

Pointe Gertrude. Landing may be effected on the N side of Pointe Gertrude (2°30'·6N, 9°49'·5E).

Baie Campo. Landing on the S side of the bay.

- 2 Landing at Grand Batanga (4.190) and at Baie Banoko (4.183) is dangerous.

PUNTA CAMPO TO CABO SAN JUAN

General information

Charts 1888, 1887

Route

4.193

- 1 From a position W of Punta Campo (2°19'·0N, 9°46'·7E), the route leads SSW for about 74 miles to a position about 7 miles W of Cabo San Juan (1°10'·4N, 9°20'·6E).

Topography

4.194

- 1 Las Siete Colinas, a mountain range about 10 miles inland, when viewed from seaward presents seven distinct elevations, of which Monte Agoudo (4.198) is the central mountain. Monte Bata (not named on the chart) is a detached and conspicuous cone-shaped mountain situated about 7 miles ESE of Bata (4.204).
- 2 Between Punta Fromagers (1°34'·4N, 9°35'·8E) and Cabo San Juan 28 miles SW, the coast is low, undulating and wooded. Along the shore which is intersected by the mouths of several rivers, is a narrow sandy beach, fringed in many places with rocky shoals, some of which uncover. Inshore the land rises to a moderate elevation at La Mitra (1°20'·9N, 9°58'·7E) (4.198) and Monte Bombouanyoko (4.198), 23½ miles WSW.

Depths

4.195

- 1 The coast between Punta Campo (2°19'·0N, 9°46'·7E) and Cabo San Juan (1°10'·4N, 9°20'·6E), is imperfectly surveyed. Mariners are advised to keep at least 6 miles off the coast.

Tidal streams

4.196

- 1 The tidal streams near Cabo San Juan are complicated. The current setting NNE along the coast is influenced by the tidal streams in and out of Bahía de Corisco (4.231).

Navigational aids

4.197

- 1 Navigational aids are reported to be unreliable; they may be missing, unlit or out of position.

Principal marks

4.198

- 1 **Landmarks:**

Monte Agoudo (1°44'·4N, 9°53'·7E) at a height of 849 m (2786 ft).

La Mitra (1°20'·9N, 9°58'·7E), a double summit, height 1200 m (3938 ft).

Monte Bombouanyoko (1°16'·1N, 9°35'·7E) at a height of 585 m (1920 ft).

Major lights:

Punta Mbonda Light (8-sided brickwork tower, 35 m in height) (2°05'·5N, 9°45'·3E).

Cabo San Juan Light (red framework tower, 18 m in height) (1°10'·4N, 9°20'·6E).

Directions

(continued from 4.187)

Punta Campo to Punta Ngaba

4.199

- 1 From a position W of Punta Campo (2°19'·0N, 9°46'·7E), the track leads SSW, passing (with positions relative to Punta Campo):
- 2 WNW of Islas de Los Pajoras (7¼ miles SSW). A group of three rocks, about 5½ m in height, surrounded by depths of 16.5 m (54 ft). Viewed from some positions, the central, and largest rock which is whitened by guano, assumes the appearance of a sail, the other two rocks, N and S of it, being of a darker colour. At other times all three rocks are said to appear black, which may be accounted for by the absence of birds at certain seasons. The sea breaks violently on these rocks and it is not known whether there is a safe navigational channel between them and the mainland. Thence:
- 3 Clear of an oil wellhead (not charted) (11 miles SW), thence:
- WNW of Punta Mbonda (13½ miles S), low, rounded and wooded, with a reef extending 1½ miles offshore, beyond which the water deepens suddenly. Punta Mbonda Light (4.198) is exhibited from the point and there is a tower 8 cables NE of it. Thence:
- 4 WNW of a buoy (22 miles S) (white conical) (4.226), thence:
- WNW of Punta Eviondo (1°54'·5N, 9°47'·7E) (Chart 1322 plan of Bata Anchorage). A rocky reef extends 4 cables W from the point. Thence:
- WNW of Punta Evidkue (1°52'·6N, 9°46'·8E) (Chart 1322 plan of Bata Anchorage). A rocky fist extends W for 1½ cables, and foul ground N, and NE for 9 cables from the point. Thence:
- WNW of the port of Bata (4.204), the only sizeable town on the coast between Punta Campo and Cabo San Juan.

- 5 Thence the track continues to a position WNW of Punta Ngaba (1°45'·0N, 9°41'·1E).

Punta Ngaba to Cabo San Juan

4.200

- 1 From a position WNW of Punta Ngaba (1°45'·0N, 9°41'·1E), the track leads SSW, passing (with positions relative to Punta Ngaba):
- 2 WNW of Cabo Dos Puntas (6¾ miles SW), low and wooded, with a sandy beach. It is fringed with a submerged rocky reef which extends 1½ miles offshore. The sea breaks on the whole of the reef, but more violently on its N end. The point should always be given a wide berth, particularly at night. Thence:
- 3 WNW of Punta Mbode (9¼ miles SW). Shoals, with depths of 0·6 m, over which the sea breaks heavily during the out-going tide, extend for a distance of about 6½ cables NW of the point. Punta Mbode Light (light-grey metal framework tower, 12 m in height) is exhibited from the point. A dangerous wreck lies 1¾ miles W of the point. Thence: Clear of two well heads (10½ miles SW), (not charted), thence:
- 4 WNW of Punta Fromagers (12 miles SSW). A light (light-grey metal framework tower, 7 m in height) is exhibited from a point about 5 cables NE of the point.

4.201

- 1 The track continues, passing (with positions relative to Punta Fromagers (1°34'·5N, 9°35'·8E)):
- WNW of Punta Ilende (13½ miles SW) which is fringed by ledges extending 7 cables offshore. Rio Aye, enters the sea 2½ miles S of Punta Ilende. Between this point and Cabo San Juan 15 miles SW, the coast is fringed with reefs and numerous rocks awash lying up to 2½ miles from the shore. Thence:
- 2 WNW of Banco Mavela (16½ miles SW), and: ESE of Ceiba Oil Terminal (25¼ miles WSW) (4.220). A storage tanker *Sendje Ceiba* is moored in position 1°24'·6N, 9°13'·7E with a restricted area of radius 3 miles existing around the terminal. An anchorage for the terminal lies 4 miles E on Banco Mitra and a Wet Storage Area lies 4½ miles SSE. Thence:
- WNW of Banco Mumunien (21¾ miles SSW), a rocky shoal, thence:
- WNW of Roca Mumunien (24 miles SSW).
- 3 Thence the track leads to a position about 7 miles W of Cabo San Juan (1°10'·4N, 9°20'·6E). It is covered in trees, and when seen from a N direction appears as three distinct heads, rather high and easy of recognition. The base of the cape is rocky, the sea breaking violently for a distance of 2 cables offshore. Cabo San Juan Light (4.198) is exhibited from the cape.

4.202

Rio Naño enters the sea between the Catholic mission (4.203) and Cabo San Juan; some chimneys stand at the mouth and a stranded wreck lies close offshore.

- 1 The shores in the vicinity of Cabo San Juan are very low, but often when approaching from W, the large trees have the appearance of hillocks, whilst the trunks assume a greyish tint and appear elongated. This distortion, which is caused by a strong mirage, gives to the coast the appearance of cliffs, intersected where the trunks are hidden by foliage, by broad fissures or ravines. This

illusion is of frequent occurrence on this part of the coast, but it is dispelled on closing the land.

- 2 From Cabo San Juan to Punta Mosquitos (6 miles SSE) (4.261), the coast is very dangerous; there are no landmarks and in the dry season, June to August, the seas are high.

4.203

- 1 **Useful mark:**

Catholic mission (1°11'·6N, 9°22'·5E), a large white house.

(Directions continue for the offshore route at 4.240.

Directions for Bahía de Corisco are given at 4.246)

Bata

Chart 1322 plan of Bata Anchorage

General information

4.204

- 1 **Position.** Bata (1°52'·0N, 9°46'·0E), lies on the shore of Bahía de Bata, and is divided into old and new port areas.

Function. The town of Bata is the capital of continental Equatorial Guinea (Province Litoral) with a population at the last census in 1983 of 66 370. The climate in July and August is said to be pleasant, with refreshing sea breezes. Exports are timber, coffee, cocoa, palm oil and palm kernels.

Topography. The shores of the bay are low and wooded with a narrow sandy beach which is interrupted by the mouths of several rivers. See also 4.194.

- 2 **Approach and entry.** Bahía de Bata is entered between Punta Mbonda (2°05'·5N, 9°45'·3E) (4.199), and Punta Ngaba 20½ miles S (4.199). The anchorages and harbours are approached from W.

Traffic. In 2003, the port was used by 86 ships with a total of 1 633 454 dwt.

Port Authority. Bata Port Authority, Comandante de Marina, Ayudantia Militar de Marina, Puerto Macias Nguema, Equatorial Guinea.

Limiting conditions

4.205

- 1 **Depths** along the shore of the bay are irregular and the bay is inadequately surveyed. The bottom is generally mud, but in many places, especially in the S part there are patches of rock.

Tidal levels. Mean spring range about 1·4 m; mean neap range about 0·6 m. See information in *Admiralty Tide Tables Volume 2*.

Density of water is 1·025 g/cm³.

Arrival information

4.206

- 1 **Port operations.** Berthing at Puerto Macias Nguema is permitted during daylight hours only.

Port radio. There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Outer anchorage may be obtained off Bata, or Puerto Macias Nguema as given below.

- 2 **Bata Anchorage.** Anchorage may be obtained in depths from 5·5 to 7·3 m, as indicated on the plan, noting two wrecks lying 7 cables WNW and NW respectively from the head of the wharf. Also a vessel can anchor about 1½ miles offshore, with a tower, situated 7 cables SW of the head of the wharf, bearing 165°, in a depth of 11·7 m, sand. The holding ground here is good but the swell can be heavy. A vessel anchoring in this position should take care not to get too far S, owing to a dangerous wreck 9 cables NNW of the head of the wharf.
- 3 Vessels approaching the inner anchorages at night should do so by using the white sector of the light exhibited from

the head of the wharf, otherwise they should anchor in deeper water and move in closer in daylight.

Anchorage for vessels loading logs can be found 5 cables W of the mouth of Río Ecucu (4.211), as shown on the chart.

Puerto Macias Nguema. Anchorage may be obtained 1 mile W of the jetty, in a depth of 20 m.

- 4 **Pilotage** is available. Pilot boards about 5 cables W of the jetty at Puerto Macias Nguema, as indicated on the plan.

Tugs not available.

Harbour

4.207

- 1 **General layout.** The old harbour is situated close NW of the town and comprises an anchorage and a small enclosed harbour with a jetty. Puerto Macias Nguema, the new port, is located 3 miles SSW of the town and provides an L shaped jetty and a small boat basin.

Submarine pipeline A submarine pipeline extends 7 cables NW from a position on the shore 6¼ cables SW of the head of the wharf at Bata. Formerly used by tankers discharging petroleum in the anchorage, it has been superseded by facilities at the new port.

Directions for entering harbour

4.208

- 1 **Offshore oil and gas activity.** Vessels should approach the port with caution. See 4.4.
- 2 **Channels of approach** extend E of the meridian of 9°43'E between the parallels of 1°48'N and 1°54'N. This is divided by the parallel of 1°51'N into two parts, the N part being used for tankers proceeding to the anchorage and the S part for cargo or fishing vessels.
If approaching Puerto Macias Nguema from S, the position of a dangerous wreck should be noted, lying 5 cables SW of the jetty light (1°49'·6N, 9°44'·4E).
- 3 **Useful marks** (with positions relative to the light at the head of the wharf (1°52'·4N, 9°46'·3E)):
Church (4 cables S), twin domes surmounted by an iron cross.
Radio masts at Bata airport (2½ miles NE).
Radio masts (3½ cables SSW).
- 4 Wharf Light (aluminium mast, 8 m in height).
Monument (6 cables SSW).
Tower (7 cables SW).
Water tower at the hospital (9 cables S).
Puerto Macias Nguema Jetty Light (metal mast, 5 m in height) (3½ miles SW).

Basins and berths

4.209

- 1 **General information.** Alongside depths are reported depths. The port authorities should be contacted for the latest information.
The best time to berth is early in the morning when the land and sea breeze is weakest.
- 2 **Bata wharf.** A dog-leg wharf (1°52'·2N, 9°46'·3E), 370 m in length extends N and NNW from the shore. The end of the dog-leg is 75 m long with alongside depth about 3 m on the inshore side. Its use as a berth for lighters serving vessels at anchor has been superseded by the new port.
Puerto Macias Nguema. An L-shaped jetty (1°49'·5N, 9°44'·4E), extending 3½ cables W from the coast, thence 1¾ cables N, provides inner and outer berths 312 m in length on the N projection of the jetty. There are depths of 12 m at the outer berths and 11 m at the inner.

- 3 The jetty is constructed of concrete piles and therefore gives little protection against the swell at the inner berth. Mooring buoys are provided, and by use of an anchor, and hauling off lines, a vessel will lie about 3 m off the jetty to avoid damaging her structure. Vessels can expect to roll continuously whilst alongside.

At the root of the jetty there is a basin, protected by two moles with depths from 3 to 4 m.

Port services

4.210

- 1 **Other facilities:** hospital.
Supplies: fresh water; supplies are not available.
Communications: airport about 6 km NE of Bata.

Small craft

4.211

- 1 **Río Ecucu** is entered close S of Punta Ecucu (1°50'·5N, 9°44'·6E). There is a bar at its mouth over which the depth is less than 0·3 m. It can be ascended by boats for a distance of about 5 miles. At the last of the out-going tidal stream the water within the bar is fresh, but dark in colour and full of organic matter.

Río Benito

Charts 1888, 1322 Plan of Río Benito Anchorage

General information

4.212

- 1 **Position.** Río Benito, about 360 miles in length, is entered close N of Punta Joho (1°35'·5N, 9°37'·3E).
Function. At its entrance is an anchorage port used principally for the export of wood.
The town of Río Benito lies on the S bank of the river close within its entrance.
- 2 **Topography.** The village of Mbode lies close inland at Punta Mbode. The shore between this point and Punta Heybero 1¼ miles SE is fronted with rocky ledges interspersed with sandy beaches where landing is possible. The mission of Bolondo lies about 1½ miles SE of Punta Mbode.
Approach and entry. The river is approached between Punta Mbode (1°37'·4N, 9°36'·4E), and Punta Fromagers about 3 miles S, and entered between Punta Negra (1°35'·3N, 9°37'·9E) and Punta Joho 6¼ cables W.
Port Authority. Port Authority of Benito, Comandante de Puerto, Ayudantia Militar de Marina, Benito, Equatorial Guinea.

Limiting conditions

4.213

- 1 **Depths.** Least charted depth across the bar is about 2·2 m. However depths are subject to frequent change specially during the rainy season when alluvium can be transported down to the river mouth.
Tidal levels. Mean spring range about 1·4 m; mean neap range about 0·7 m. See information in *Admiralty Tide Tables Volume 2*.
Density of water. Brackish.
Maximum size of vessel handled. Up to 9000 grt.

Arrival information

4.214

- 1 **Port operations.** The best time to enter the river is a little before the slack water at HW.
Port radio. There is a port radio station.
Outer anchorage may be obtained in a depth of 12 m, mud, about 2½ miles WNW of Punta Mbode, as shown on the chart. A further anchorage is located about 1½ miles

NNW of Punta Fromagers, in a depth of about 8 m but during the dry season, May to November, there may be considerable swell in this position.

Pilotage. There is no official pilot but the assistance of a local pilot is advised for transiting the bar.

Harbour

4.215

- 1 **General layout.** The harbour fronts Río Benito consisting of a wharf and an anchorage berth in the river SE of Punta Joho. There is a small pier at Punta Negro.

Current. The resultant of the river current and the out-going tidal stream at times attains a rate of over 3 kn, and meeting the swell outside, causes the entrance to the river to appear as if barred by breakers. On the shoal banks at the entrance there is always a choppy sea.

Directions for entering harbour

4.216

- 1 On entering and leaving the river soundings must be taken frequently and the position of the vessel checked to guard against the effect of the current (4.215).

From a position about 4 miles WNW of Punta Joho (1°35'5N, 9°37'3E) the track leads SE passing S of an unmarked dangerous wreck, about 1¼ miles W of Punta Mbode (4.200). Thence keeping to the deepest water, pass over the bar and into the entrance to the river.

Caution. A sand spit extends 1½ miles NW from Punta Joho.

- 2 **Useful marks** with positions relative to Punta Negra Pier Head Light (1°35'3N, 9°37'9E):

Punta Mbode Lighthouse (2½ miles NW) (4.200).

Bolondo Mission (1 mile NNW) with galvanised roofs that reflect the sunlight and a white pigeon-loft on its N side.

Río Benito Pier Head Light (concrete column, 2 m in height) (5 cables W).

Punta Negra Pier Head Light (concrete column, 2 m in height).

Church with large belfry (1¼ miles WSW).

Forestry Service Lighthouse (light-grey metal framework tower; 7 m in height) (1½ miles WSW).

Berths

4.217

- 1 **Anchorage** in the river about 2 cables E of the town of Río Benito in a depth of about 7·8 m as indicated on the plan.

Port services

4.218

- 1 **Other facilities:** hospital.
Supplies not available.

Small craft

4.219

- 1 **River above the town of Río Benito.** Río Benito is navigable for a distance of about 12 miles above its mouth, or to 1 mile below the Yubi Falls at Senye (Sandyé) (1°35'N, 9°48'E). The current is swift and the holding ground poor. Small craft of not more than 1·8 m draught, intending to ascend the river, should depart the anchorage at the mouth at about half in-going tide.

- 2 Of the two channels available on either side of Isla Mugunene, 1 mile SE of Punta Negra, that which leads along the S bank of the river has the greater depths.

Below Yubi Falls two rivers, Río Ombé and Río Utongé enter Río Benito on the S side. The former is only

accessible to boats but the latter can be ascended by a small vessel as far as the village of Medume, where there is just enough room to swing.

Ceiba Terminal

Chart 1887

General information

4.220

- 1 **Position.** Ceiba Terminal (1°24'6N, 9°13'7E), is situated about 15 miles off the coast of Equatorial Guinea.

Function. It is an offshore oil terminal.

Approach and entry. The terminal is approached from seaward.

Port Authority. Triton Equatorial Guinea Inc, Triton House, Calle Acasio, Mañe, Malabo, Equatorial Guinea.

Limiting conditions

4.221

- 1 **Controlling depths.** There are depths of about 67 m in the vicinity of the CALM buoy (4.224).

Density of water is 1·025 g/cm³.

Maximum size of vessel handled. 350 000 dwt.

Arrival information

4.222

- 1 **Port operations.** Berthing and unberthing at any time at the discretion of the Mooring Master.

Port radio. There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required. Send ETA 72, 48 and 24 hours prior to arrival. See *Admiralty List of Radio Signals Volume 6(3)*.

- 2 **Waiting anchorage.** Anchorage may be obtained about 4 miles E of the terminal in a depth of about 35 m.

Pilotage is compulsory. Pilot boards vessel about 3 miles N of the FPSO.

Tugs are available.

Restricted area. A restricted area of 3 miles encompasses the FPSO.

A further restricted area used for the storage of anchors and anchor chains is located in a 2½ mile wide square centred on 1°20'2N, 9°14'8E. Within the area are buoys which are tethered to equipment on the seabed.

Directions

4.223

- 1 Vessels should proceed to a position 5 miles N of the FPSO and await berthing instructions.

Berth

4.224

- 1 An FPSO *Sendje Ceiba* is moored in 1°24'6N, 9°13'7E with a CALM buoy 1 mile SE.

Port services

4.225

- 1 **Repairs:** nil.
Other facilities: no oily waste reception facilities; no garbage facilities.
Supplies: none available.

Anchorage

Chart 1888, 1887

Rio Otondo

4.226

- 1 Anchorage may be obtained 3 miles off Rio Otondo (1°56'4N, 9°48'1E), in depths from 10 to 11·0 m (33 to

36 ft), mud. Otondo village, with a few scattered houses stands on the N bank and there is a factory on the S bank.

A mooring buoy, moored 4 miles WNW of the mouth, is used by tugs and lighters.

Punta Ndoté

4.227

- 1 Anchorage may be obtained about 1¼ miles N of Punta Ndoté (1°29′.1N, 9°33′.0E), as indicated on the chart. Rio Ndoté enters the sea close N of the point. The river mouth is blocked by a sandbank and fringed by rocks but may be entered at HW by small craft and is navigable for about 1½ miles. The town of Ndoté which stands on the N bank has a wharf. Local knowledge is required.

BAHÍA DE CORISCO

GENERAL INFORMATION

Chart 1356

Area covered

4.231

- 1 This section describes Bahía de Corisco, including Río Muni, Baie de Mondah and other inlets and harbours. In addition, an offshore route is described. Bahía de Corisco is entered between Cabo San Juan (1°10′.4N, 9°20′.6E), and Cap Esterias (0°37′.0N, 9°19′.6E), 33½ miles S.
- 2 It is arranged as follows:
Offshore route (4.237).
Cabo San Juan to Baie de Mondah (4.243).
Río Muni and approaches (4.256).

International boundary

4.232

- 1 The boundary between Equatorial Guinea and Gabon lies along the centre of Río Muni from its mouth situated between Punta Yeke (1°01′.6N, 9°35′.4E) and Pointe Coco Beach 1 mile S.

Marine exploitation

4.233

- 1 See 1.14.

Navigational aids

4.234

- 1 Navigational aids are reported to be unreliable; they may be missing, unlit or out of position.

Flow

4.235

- 1 The current and tidal streams often attain a rate of from 1 to 2 kn between the banks which encumber Bahía de Corisco, their directions varying in accordance with the state of the tide. Seaward of Isla de Mandyi, the current generally sets in a NNE direction at a rate of less than 1 kn. In the bay the tidal stream flows E on the in-going tide and W on the out-going tide.
- 2 In the S part of the bay the out-going W stream sometimes exceeds 3 kn in the rainy season; in the dry season it does not normally exceed 2 kn.
See also 4.196.

Punta Baga

4.228

- 1 Anchorage may be obtained about 3 miles WNW of Punta Baga (1°18′.9N, 9°26′.7E) in a depth of about 9 m (30 ft), sand, as indicated on the chart.

Cabo San Juan

4.229

- 1 Anchorage may be obtained about 2¼ miles N of Cabo San Juan (1°10′.4N, 9°20′.6E), as indicated on the chart.

Small craft

Landing place

4.230

- 1 **Punta Mbonda** (2°05′.5N, 9°45′.3E). Landing is practical in the lee of the reef (4.199).

Local weather

4.236

- 1 The name Corisco, derived from the Portuguese, was conferred upon this bay on account of the frequent thunderstorms which are experienced in this locality.

OFFSHORE ROUTE

General information

Chart 1356

Route

4.237

- 1 From a position about 7 miles W of Cabo San Juan (1°10′.4N, 9°20′.6E), the route leads S, for about 33½ miles to a position W of Cap Esterias (0°37′.0N, 9°19′.6E).

Flow

4.238

- 1 **Cap Esterias.** Seaward of Cap Esterias the current generally sets N with a rate of up to 2 kn, but it is influenced by the tidal streams and occasionally rates of up to 3 kn have been observed. At springs the streams are strong enough sometimes to cause a weak resultant flow to the S for an hour or two.
See also 4.196.

Principal marks

4.239

- 1 **Landmarks:**
Two houses (0°35′.1N, 9°18′.7E).
Major light:
Cabo San Juan Light (1°10′.1N, 9°20′.6E) (4.198).

Directions

(continued from 4.203)

4.240

- 1 **Caution.** For dangers off Cabo San Juan, and in the approaches to Bahía de Corisco, see 4.246.
From a position about 7 miles W of Cabo San Juan (1°10′.4N, 9°20′.4E) (4.201), the track leads S, passing (with positions relative to Cabo San Juan):
W of Banco Lauria (6¾ miles SW), comprising three separate shoal heads, the least charted depth being 3.2 m, thence:
W of a shoal patch (12¼ miles SSW), with a depth of 8 m over it, reported in 1959, the existence of which is doubtful, thence:
- 2

W of a shoal patch (13¼ miles SSW), with a depth of 8.5 m over it, reported in 1962, thence:

- 3 W of Punta Cucliva (14¾ miles SSW), the NW point of Isla de Mandyi. Isla de Mandyi Light (red square tower, 3 m in height) is exhibited from the N end of the island. The N, and W coasts of the island should not be approached within a distance of 2½ miles, or a depth of 12.8 m, and on its NE side an offing of 4 miles, or a depth of 24 m should be preserved, in order to clear the banks extending from the island. The coastal bank with depths of 3 m, extends 1¼ miles off the NW point. The island is moderately high and is remarkable for the luxuriance of its diversified scenery, consisting of hills, forests, prairies and lakes; all of which are necessarily on a diminutive scale. The W coast of the island is rocky; these rocks, especially on their S sides, are covered with patches of white, which can be seen at a distance. The effect of mirage (4.202) on the trees that line the coast is similar to that in the vicinity of Cabo San Juan. The climate of the island is considered unhealthy, but it is healthier than that of the neighbouring coast. The trees on the S coast of the island are thinly scattered as compared with those on the N and E coasts. The population is decreasing. Gobe, the principal village is near the centre of the S coast. The passage S of the island should only be used by mariners with local knowledge. Thence:

- 4 W of Punta Uguni (17 miles S), the SW point of Isla de Mandyi, rocky and bare.

4.241

- 1 **Caution.** Too much dependence should not be placed on the chart, as the sandbanks may shift from time to time.

The track continues S, passing (with positions relative to Punta Uguni (0°53'7N, 9°18'2E)):

W of Isote Leva (1 mile S), uninhabited and situated on the shoal surrounding Isla de Mandyi. It is of moderate height, covered with trees, and surrounded by breakers, especially on its N and E sides; on the latter side they extend 5 cables offshore. There is no passage N of Isote Leva except for canoes. The shoal that surrounds Isla de Mandyi extends 5 cables W of and 2 miles S of Isote Leva; also a reef, on which the sea breaks heavily, even in ordinary weather, extends 1½ miles S of the latter islet. An isolated shoal patch with a depth of 5 m over it lies 2¼ miles W of the islet. Thence:

W of Banco Laval (4 miles S), a dangerous drying bank, with some rocks. Stranded wreck of the vessel *Pierre Loti* lies 2 miles S of the bank. Thence:

W of Banco Mbañe (8 miles S). Isote Conga, a rock lies almost in the centre of the bank. Isla Mbañe, low and covered with high trees, lies about 1¼ miles NE. Thence:

W of a shoal patch (11¼ miles S) with a depth of 4.2 m over it. Another two shoal patches with depths of 4.6 and 5.0 m over them lie 2¾ and 4 miles S respectively.

Thence the track continues to a position W of Cap Esterias (0°37'0N, 9°19'6E), low and rocky, the S entrance point of Bahía de Corisco. Cap Esterias Light (white beacon, 18 m in height) is exhibited from the cape. An extensive shoal area, with depths of less than 5.5 m over it

extends off the S shore for about 2½ miles N from the cape. An isolated shoal patch with a depth of 5 m over it, lies 2¾ miles W of the cape. A rocky shelf on which the sea breaks heavily extends 5 cables N from the cape. Baie d'Abaga, between Cap Esterias and Pointe Idolo 1½ miles E is shallow and foul. The cape is not prominent from a distance offshore although it shows well from a short distance. The land 2 miles SSW is usually sighted first. There are some villages, the most important of which is Enyamba, situated close E of the cape.

(*Directions continue at 5.8*)

Anchorage

4.242

- 1 Fresh winds from seaward, particularly during the afternoon and evening, can make anchorage off Cap Esterias exposed and unsuitable.

CABO SAN JUAN TO BAIE DE MONDAH

General information

Chart 1356

Route

4.243

- 1 From a position W of Cabo San Juan (1°10'4N, 9°20'4E) (4.201), the route leads SE, and SSE for about 43 miles through Bahía de Corisco, to an anchorage in Baie de Mondah in the vicinity of 0°36'5N, 9°36'0E. The principal channel into Baie Mondah leads between Banc Marabout (0°44'0N, 9°32'8E) and Banc de L'Ouest 2 miles SW; the channel E of Banc Marabout is impractical.

Tidal streams

4.244

- 1 In Baie de Mondah, the tidal stream sets at a rate of 3½ to 4 kn at springs during the wet season (October to May). See also 4.238.

Principal marks

4.245

- 1 **Landmarks:**

Two houses (0°35'1N, 9°18'7E).

Major light:

Cabo San Juan Light (1°10'4N, 9°20'4E) (4.198).

Directions

(*continued from 4.203*)

Cabo San Juan to Punta Corona

4.246

- 1 **Caution.** In view of the dangers described at 4.202, the existence of several shoals in the approach to Bahía de Corisco, and the possibility of the existence of others which have not yet been discovered, vessels navigating in the vicinity and approaching the bay from N, should exercise great caution.
- 2 From a position W of Cabo San Juan (1°10'4N, 9°20'4E), the track leads SE for about 8¼ miles, following the recommended track as indicated on the chart, passing (with positions relative to Cabo San Juan):
 - SW of Cabo San Juan (4.201), thence:
- 3 SW of Punta Negra (2¼ miles SE), the intervening coast is fringed with rocks and they extend about 2½ cables off the point, thence:
 - NE of Banco Lauria (7 miles SW) (4.240), thence:
 - SW of Piedra Ugoti (4½ miles SSE), a dangerous underwater rock, and:

- 4 Clear of a shoal patch (5¼ miles SSE), with a depth of 8.3 m over it, thence:
SW of Bajo Kakulle (5 miles SSE). The coast NNW to Punta Negra is a sandy beach.
Thence the track leads to a position about 3 miles SSW of Punta Corona (4¾ miles SE).
(Directions for Río Muni are given at 4.261)

Punta Corona to Bañe Light-buoy 4.247

- 1 From a position about 3 miles SSW of Punta Corona (1°06'4N, 9°23'2E), the track leads SSE, passing (with positions relative to Punta Corona):
Clear of a shoal patch (6 miles S) with a depth of 7 m over it. Two other shoal patches, with depths of 10 and 9.6 m over them, lie 2 and 2½ miles E and SE respectively. Thence:
ENE of Banco Corisco (10 miles S), extending NNE for 3½ miles from Punta Italo, the NE point of Isla de Mandyi (4.240), thence:
2 WSW of Islote Elobey Grande (10¼ miles SE), about 1½ miles in length in a N/S direction. The coastline is formed of small, steep cliffs about 10 to 12 m in height. It is wooded and inhabited by Benga fishermen. Islote Elobey Chico, 8 cables NE, is completely flat. It is inhabited and coconut palms and fruit trees are cultivated. Bancos de Beñe, a cluster of rocks which cover and uncover, lies 8 cables E of Islote Elobey Grande. Thence:
3 ENE of Banco Nengueamegue (12½ miles S), on which there is a small islet and which dries in places, extends 2¼ miles E of Punta Yoco, the SE point of Isla de Mandyi, and:
4 WSW of a shoal patch (11 miles SSE), with a depth of 3.6 m over it. Another two shoal patches with 3.2 and 4.9 m over them lie 7 cables and 1¾ miles SE and S respectively. Pointe N'Dombo, from which a light (white square tower, 8 m in height) is exhibited lies about 3½ miles E of these shoals. The coast SSE from Pointe N'Dombo is wooded and intersected by the mouths of numerous small streams. It is also fringed with shoals with depths of less than 5.5 m that extend seaward for a distance of 3½ miles in places. Thence:
5 ENE of Bancos del Este (17¼ miles S), lying on the E side of Banco Mbañe (4.241). Islote Cocotier, a rock, lying on a small drying patch, lies on the E extremity of the bank.
Thence the track leads to a position NE of Bañe Light-buoy (black, conical) (0°48'8N, 9°27'2E). Récif Buyumba, a reef on which the sea breaks, and which dries 0.5 m at its SW end lies in position 0°49'8N, 9°33'8E, close W of a point of the same name.

Bañe Light-buoy to Rivière M'Bafon 4.248

- 1 From a position NE, of Bañe Light-buoy (black, conical) (0°48'8N, 9°27'2E), the track leads generally SE and is marked by buoys (lateral) (see 4.234), passing (with positions relative to Pointe Akanda (0°40'1N, 9°29'9E)):
SW of A buoy (port hand) (6¾ miles N), marking the NW extremity of Banc Marabout, extending SSE for about 10 miles to Baie de Mondah, thence:
2 NE of M1 Buoy (black, conical) (4 miles NNE), marking the NE side of Banc de L'Ouest, the NE part of Bank Akanda, which dries in a number of

places, and on which stands a tower (white) (0°41'6N, 9°29'4E).

- 3 The track then leads SSE, passing WSW of M2 Buoy (port hand) (4 miles E). Thence the track crosses the bar passing N, NE and E, of C Buoy (black, conical) (5 miles E). Thence the track leads S passing E of BB Buoy (black, conical) (6½ miles SE), moored about 2¾ miles ENE of Île Nendé, from which a light (white rectangle on tower) is exhibited, thence W of D Buoy (port hand) (7½ miles SE) off the entrance to Rivière M'Bafon.
4.249

Useful mark:

Akanda, Mont (0°38'8N, 9°30'8E).
Beacon (0°47'2N, 9°34'9E).

Side channel

South-east of Banco Mbañe 4.250

- 1 Although the distance between Banco Mbañe (0°47'0N, 9°20'0E) (4.241), and the S shore of Bahía Corisco is from 6 to 9 miles, the only available passage is close along the SE side of this bank.
The unmarked channel with a depth of about 6.4 m at HW, leads SW, for about 12 miles from the vicinity of Bañe Light-buoy (black, conical) (0°48'8N, 9°27'2E).
See caution and dangers in offshore directions at 4.241.

Anchorage

General anchorage 4.251

- 1 Anchorage may be obtained between Isla de Mandyi (0°54'6N, 9°19'2) and Islote Elobey Grande 10 miles ENE, at a moderate distance from the shores of either in depths from 14 to 22 m.

Pointe N'Dombo 4.252

- 1 Small vessels may obtain anchorage about 1 mile off Pointe N'Dombo (0°56'2N, 9°33'2E) in a depth of 3 m, good holding ground.

East of Isla de Mandyi 4.253

- 1 Anchorage may be obtained about 1¾ miles ESE of Punta Italo (0°55'4N, 9°20'2E), in a depth of about 6 m, mud, as indicated on the chart. This is a good anchorage, well sheltered from SW winds, and the holding ground is so good that the tornadoes from E need not be feared. Though the water is quite smooth at this anchorage, without any surf on the beach, it occasionally happens that a swell sets in without any apparent cause and the resulting rollers will break on all sides of Isla de Mandyi. See 1.201.
2 Anchorage may also be obtained, about 1 mile E of Punta Italo, in a depth of about 6 m, as indicated on the chart.

South of Banco Nengueamegue 4.254

- 1 Anchorage may be obtained S of Banco Nengueamegue (0°53'5N, 9°22'6E) (4.247), in the bight, between that shoal and Banco Mbañe 2½ miles S.

Baie de Mondah 4.255

- 1 **Description.** Baie de Mondah (0°38'0N, 9°34'0E) occupies the SE corner of Bahía de Corisco; navigation in it is rendered difficult by numerous banks and rocks. In addition to the shoals and the mud banks which extend

from the shores of the bay, a drying bank of soft mud lies at the head of the bay, and from it two long, narrow spits extend in a N to NW direction, dividing the bay into three narrow channels.

Rivière Mondah with its tributaries flow in to the head of Baie Mondah.

- 2 **Anchorage** may be obtained in depths from 5.8 to 7.3 m, as indicated on the chart, about $3\frac{3}{4}$ miles E of Pointe Akanda ($0^{\circ}40'1\text{N}$, $9^{\circ}29'9\text{E}$). Also, in depths from 5.4 to 6.2 m, as indicated on the chart, about 7 cables SW of Pointe Nombo ($0^{\circ}37'2\text{N}$, $9^{\circ}36'5\text{E}$). A further anchorage in a depth of 10 m is located 1 mile N of Pointe Kendjé at the confluence of Rivières Ikoi Mondah and N'Zémé at the S extremity of the bay (Chart 1887). Tidal streams at this anchorage can be very strong. See 4.244.

The last two anchorages are used by vessels loading wood. No pilotage service is available and local knowledge is essential.

RÍO MUNI AND APPROACHES

General information

Chart 1356

Route

4.256

- 1 From a position about 3 miles SSW of Punta Corona ($1^{\circ}06'4\text{N}$, $9^{\circ}23'2\text{E}$), the route leads E, ESE and ENE, for about 20 miles up Río Muni, following the charted track, to an anchorage off Cogo ($1^{\circ}05'3\text{N}$, $9^{\circ}41'6\text{E}$).

Topography

4.257

- 1 The E shore of the N part of Bahía de Corisco is known as Costa de los Mosquitos.

Depths

4.258

- 1 The least charted depth in the channel is about 6.2 m.

Tidal streams

4.259

- 1 Above Punta Yeke ($1^{\circ}01'6\text{N}$, $9^{\circ}35'4\text{E}$) and especially in the vicinity of Pointe Boutike, 5 miles ENE, the outgoing stream can attain a rate of 4 to $4\frac{1}{2}$ kn during the rainy season (October to May).

Principal mark

4.260

- 1 **Major light:**
Cabo San Juan Light ($1^{\circ}10'4\text{N}$, $9^{\circ}20'4\text{E}$) (4.198).

Directions

(continued from 4.246)

4.261

- 1 **Caution.** The buoys are not to be depended upon and continuous fixing of the vessel by shore objects should be made. The banks in the approaches to the river are liable to change.

From a position about 3 miles SSW of Punta Corona ($1^{\circ}06'4\text{N}$, $9^{\circ}23'2\text{E}$), the charted track leads initially E, passing (with positions relative to Punta Corona):

- S of Piedra Biguna (6 cables SE), awash, thence:
- 2 S of Punta Mosquitos ($1\frac{1}{2}$ miles ESE), covered with detached clumps of trees and which, with the bay

W of it, is fringed with rocks. The village of Calatrava lies close NE. Between this point and Punta Yeke $11\frac{1}{2}$ miles ESE there is a shallow bay with depths of less than 5.5 m extending up to $4\frac{1}{2}$ miles offshore in places. The W part of the bay is fringed with rocks. The shore of the bay is slightly elevated and on it stand several villages. Río Odingue enters the sea at the head of the bay close E of Punta Betika ($1^{\circ}07'9\text{N}$, $9^{\circ}30'1\text{E}$). Thence:

S of a light-buoy (port hand) (5 miles SE).

4.262

- 1 Thence the charted track leads ESE, passing:
NNE of Bancos de Elobey ($6\frac{1}{2}$ miles SE), thence:
NNE of Punta Bolo (10 miles SE), the N point of Islote Elobey Chico (4.247).

Thence the charted track continues to a position about $1\frac{1}{4}$ miles SW of Punta Yeke ($1^{\circ}01'6\text{N}$, $9^{\circ}35'4\text{E}$), low and wooded, fronted by rocks. Pointe Coco Beach, off which lies a stranded wreck, is situated $1\frac{1}{2}$ miles SSW. The point is recognisable by a large white edifice, a signal mast and small jetty. The settlement of Ukoko lies close, E where there is a Government station.

4.263

- 1 The charted track then leads E for about $1\frac{1}{2}$ miles, passing between Punta Yeke and Pointe Idolo about $1\frac{1}{4}$ miles S, to a position about 8 cables SSE of Punta Yeke.

Port de Cogo Direction Light. From a position about 8 cables SSE of Punta Yeke, the line of bearing 058° of this light (red framework tower, 16 m in height) leads ENE along the charted track for about 6 miles to an anchorage off Cogo, passing (with positions relative to Punta Yeke):

- 2 NNW of Pointe M'Bini ($1\frac{3}{4}$ miles SE), the W point of a bay into which Rivière Goumba and Rivière Mimouaba flow, and:
SSE of the entrance to Río Leme (8 cables NE), thence:
SSE of Punta Emdembe (2 miles ENE), thence:
SSE of Punta Neu Koko ($3\frac{1}{2}$ miles ENE), the W entrance point of Río Bansogo, thence:
NNW of Pointe Boutike (5 miles ENE).
- 3 The track then continues to a position S of the entrance to Río Congüe ($6\frac{3}{4}$ miles ENE), which is about 1 mile in width at its mouth and where there are depths from 3.7 to 5.0 m. Farther upstream the river is shallow.

4.264

Useful mark:

- 1 Pointe N'Dombo Light ($0^{\circ}56'2\text{N}$, $9^{\circ}33'2\text{E}$) (4.247).

Cogo

General information

4.265

- 1 **Position and function.** Cogo ($1^{\circ}05'\text{N}$, $9^{\circ}41'\text{E}$) lies about $11\frac{1}{2}$ miles up Río Muni and is situated on a hillside overlooking the point which separates Río Muni from Río Congüe. Vessels anchor in the river. It is used for the export of logs.

Approach and entry. The port is approached through the N part of Bahía Corisco and thence via Río Muni which is entered between Punta Yeke ($1^{\circ}01'6\text{N}$, $9^{\circ}35'4\text{E}$) and Pointe Coco Beach $1\frac{1}{2}$ miles S.

- 2 **Port Authority.** Puerto Cogo Port Authority, Comandante de Marina, Ayudantía Militar de Marina, Puerto Cogo, Equatorial Guinea.

Limiting conditions**4.266**

- 1 **Depths.** See 4.258.

Tidal levels. Mean spring range about 2·0 m; mean neap range about 1·0 m. See information in *Admiralty Tide Tables Volume 2*.

Density of water. Brackish.

Maximum size of vessel handled. About 9000 dwt with a draught of about 8 m.

Arrival information**4.267**

- 1 **Outer anchorage** see 4.272.

Pilotage is available but not compulsory. A pilot may be requested by sounding the appropriate international sound signal.

Directions for entering harbour**4.268**

- 1 The port is entered by proceeding up Río Muni. See 4.261.

Berths**4.269**

- 1 **Anchorage.** Small vessels may obtain anchorage 3 cables W of Islote Ivelo (1°04'·5N, 9°41'·6E), in depths of about 6·5 m, mud. Larger vessels may anchor in a depth of about 10 m close SW of the same islet. The current can attain 4 knots at these berths.

The limit of navigation for seagoing vessels on Río Muni lies W of Isla Gande, two miles upstream of Islote Ivelo.

- 2 **Alongside.** There is a wharf for lighters.

Port services**4.270**

- 1 **Other facilities:** hospital.

Supplies: no supplies available.

Small craft**4.271**

- 1 Río Muni, above Cogo, branches into a number of tributaries, which may be navigated by small craft with a draught of 1·8 m, for a few miles. Local knowledge is required.

Anchorage**Punta Mosquitos****4.272**

- 1 Anchorage may be obtained about 6 cables S of the point as indicated on the chart but see 4.202.

North of Islote Elobey Chico**4.273**

- 1 Anchorage may be obtained, with fair shelter inside Bancos de Elobey, about 1½ miles NE of Islote Elobey Chico (1°00'·0N, 9°31'·2E), in depths of about 8 m, mud.

Pointe Coco Beach**4.274**

- 1 Anchorage may be obtained 1½ miles NW of Pointe Coco Beach in a depth of 10 to 20 m.

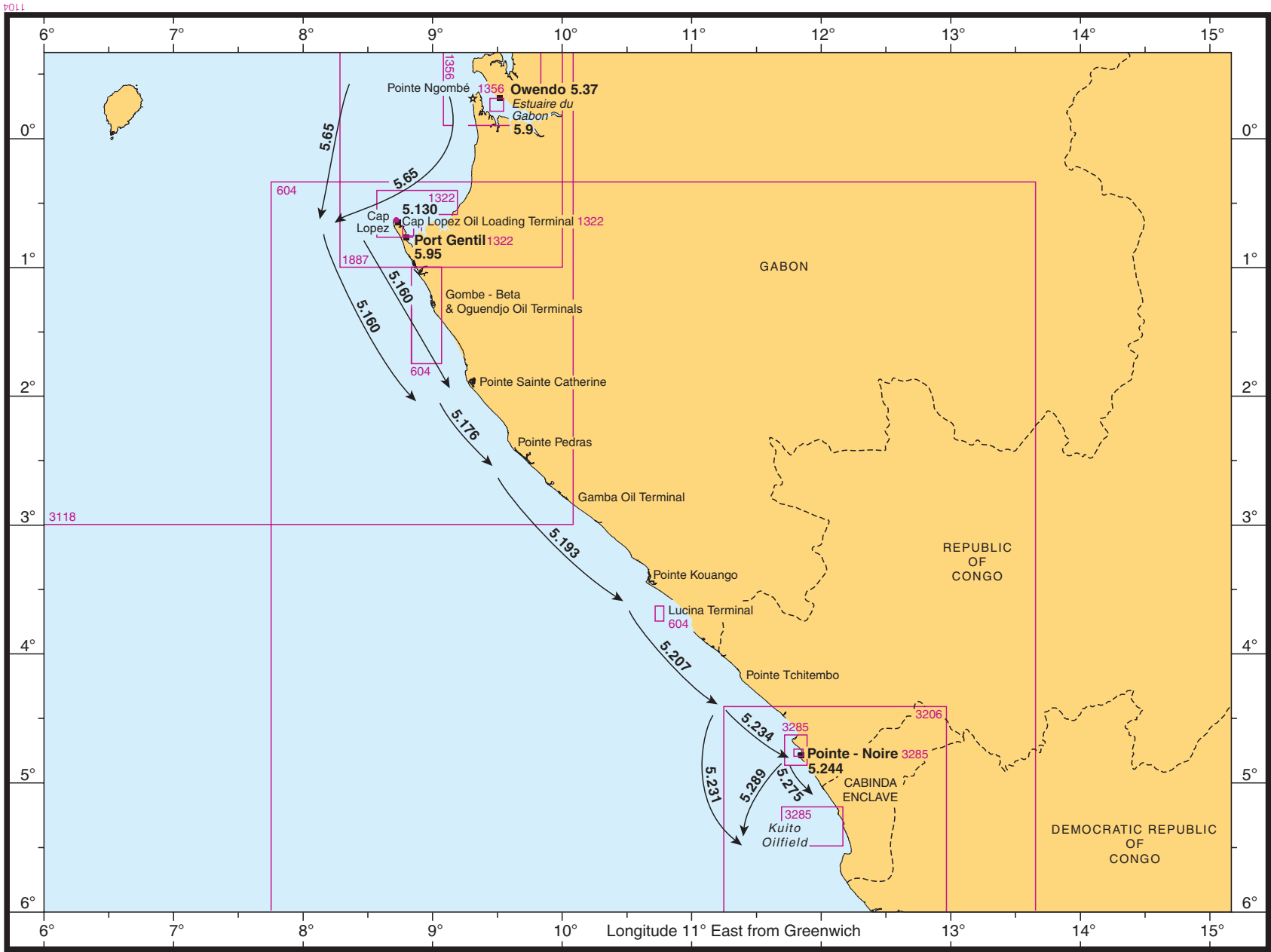
Pointe M'bini**4.275**

- 1 An anchorage used by vessels loading wood is located close ENE of Pointe M'bini (1°01'·0N, 9°36'·6E) in a depth of about 10 m. A conspicuous white building (not charted) stands on the beach close E of the point in the vicinity of the log park. The tidal stream can attain 4 kn at this berth.

NOTES



Chapter 5 - Cap Esterias to Rivière Massabi



CHAPTER 5

CAP ESTERIAS TO RIVIÈRE MASSABI

GENERAL INFORMATION

Charts 1887, 604

Scope of the chapter**5.1**

- 1 This chapter comprises the coastal and offshore routes, anchorages, harbours and oil terminals along the coasts of Gabon and Congo, from Cap Esterias (0°37'·0N, 9°19'·6'E), to Rivière Massabi (5°02'·0S, 12°01'·0E) about 375 miles SSE.

Numerous rivers flow into the sea along the coast, the most important of which is Fleuve Ogooue (5.83).

- 2 The chapter is divided into the following sections:
Cap Esterias to Cap Lopez (5.3).
Cap Lopez to Pointe Pedras (5.158).
Pointe Pedras to Rivière Massabi (5.190).

Marine exploitation**5.2**

- 1 Marine exploitation is extensive in the area covered by this chapter. See 1.14.

CAP ESTERIAS TO CAP LOPEZ

GENERAL INFORMATION

Chart 1887

Area covered**5.3**

- 1 This section describes the coastal and offshore route where applicable, anchorage and harbours from Cap Esterias (0°37'·0N, 9°19'·6'E), to Cap Lopez about 83 miles SSW. Also described is Estuaire du Gabon (0°25'·0N, 9°18'·0E), together with the ports of Owendo and Libreville. Port Gentil and Cap Lopez Oil Loading Terminal are also included.

- 2 It is arranged as follows:
Cap Esterias to Estuaire du Gabon (5.5).
Estuaire du Gabon (5.9).
Owendo (5.37).
Estuaire du Gabon to Cap Lopez (5.65).
Fleuve Ogooue (5.83).
Port Gentil (5.95).
Cap Lopez Oil Loading Terminal (5.130).

Navigational aids**5.4**

- 1 Navigational aids are reported to be unreliable; they may be missing, unlit, or out of position.

CAP ESTERIAS TO ESTUAIRE DU GABON

General information

Chart 1356

Route**5.5**

- 1 From a position W of Cap Esterias (0°37'·0N, 9°19'·6'), the coastal route leads S for about 11½ miles, to a position W of a light-buoy moored about 7½ miles SW of Cap Santa Clara (0°30'·4N, 9°19'·3E).

Depths**5.6**

- 1 In following the route mentioned above, W of the coastal bank, there are charted depths in excess of 10 m.

Principal marks**5.7**

- 1 **Landmarks:**

Two houses (0°35'·1N, 9°18'·7E).

Major light:

Pointe Ngombé Light (white tower, black band, 12 m in height) (0°18'·4N, 9°18'·4E).

Directions

(continued from 4.241)

5.8

- 1 From a position W of Cap Esterias (0°37'·0N, 9°19'·6') (4.241), the track leads S, passing (with positions relative to Cap Esterias):
W of a shoal patch (2¾ miles W) with a depth of 5 m over it, thence:
2 W of Pointe Megombié (2 miles SW), well wooded, and comparatively high. The coast for 5½ miles S to Cap Santa Clara appears as an unbroken line of level trees; it is formed by a succession of cliffs about 20 m high capped by trees, through which flow numerous streams during and immediately following the rainy season (November to July). At the foot of the cliffs is a sandy beach, which, during the dry season is continuous and closes the mouth of those streams. A bank with many shoal patches extends about 1¼ miles off the coast, in places between Cap Esterias and Cap Santa Clara 6½ miles S. Thence:
3 W of Pointe Mombalikito (6 miles S), a slight projection but not so easily distinguished as Pointe Ouquouëa, 5 cables SE, which latter point is very high and covered in trees. A rocky ledge with many below water rocks extends 5 cables W and 1½ miles S off Pointe Mombalikito. There are heavy breakers on the ledge in bad weather. On either side of Pointe Ouquouëa there are some sandy beaches and at the point near the mouth of a stream of the same name close S, there are some low cliffs. Thence:
4 W of Cap Santa Clara (6¾ miles S), on which a beacon (white conical, 5 m in height) is situated. A line of breakers fringe the cape in quiet weather at a distance of 5 cables from it, and in bad weather

at over 1 mile from the coast. Cap Santa Clara is a good mark.

Thence the track leads to a position W of a light-buoy (port hand) (13 miles SSW) moored about 7½ miles SW of Cap Santa Clara (0°30'·4N, 9°19'·3E) on the SW extremity of Banc de la Thémis. A stranded wreck lies on the SW extremity of the bank.

(Directions continue for Estuaire du Gabon at 5.15, the coastal route at 5.72, and an offshore route at 5.71)

ESTUAIRE DU GABON

General information

Charts 1356, 1887

Description

5.9

- 1 Estuaire du Gabon, is formed by tributaries which rise in the mountains in the SE corner of Equatorial Guinea. It provides anchorage with good shelter for a large number of vessels, also two ports. The numerous and extensive shoals which obstruct the entrance make navigation difficult.
- 2 The estuary is entered between Cap Santa Clara (0°30'·4N, 9°19'·3E) and Pointe Pongara 9½ miles SSE. The general direction of the estuary, upstream from its mouth, is SE for about 16 miles and thence ESE for about 19 miles to Pointe Pungue (0°07'·5N, 9°46'·5E), a promontory at the confluence of Rivière Ramboë with Rivière Komo, the two rivers being the largest tributaries of the Gabon.

Route

5.10

- 1 From a position W of a light-buoy (port hand) (0°25'·8N, 9°13'·6E) moored about 7½ miles SW of Cap Santa Clara (0°30'·4N, 9°19'·3E) the route leads generally SE for about 18 miles to a position SW of a light-buoy (safe water) (0°18'·0N, 9°26'·8E) marking the fairway to Owendo. Thence the route continues for about 9½ miles to a position NE of Île à Cailloux (0°10'·5N, 9°33'·2E), at the entrance to the upper reaches of Estuaire du Gabon where there are numerous tributaries.

Topography

5.11

- 1 **Estuaire du Gabon.** In general the land to the N of the estuary is high and to the S is very low. The banks on the S side are covered with rich vegetation and intersected by the mouths of numerous creeks
- 2 The E side of the estuary, for about 20 miles from Cap Santa Clara, is high and dominated by hills of calcareous formation, but it is not easy to distinguish the various summits. Of these Mont Bouet (5.14), is the most easily identified when approaching from seaward. The trees on Mont Baudin, situated 1¼ miles SE of Mont Bouet, have a ragged appearance. Close SE of Mont Baudin is L'Ombrelle, a hill, with an umbrella shaped tree on its summit. This chain of hills continues SE, but with decreasing elevation.
- 3 In the afternoon the sun shining upon the spire of the church at Libreville (5.24) makes it appear as a white obelisk which can be seen from a distance of about 12 miles. The corrugated iron buildings at Gegé (not charted), situated about 2 miles NW of Libreville, and the belfry and post office buildings at Libreville are all well-defined.

- 4 Close E of Cap Santa Clara lies Baie d'Akwango, fringed with rocks on its W side, and at its head is the mouth of a river known as Rivière Otandé. From this river to Pointe des Normands, 7 miles SE, the coast is low and consists of a sandy beach, which is bordered by large trees, and on which the sea breaks heavily in bad weather.

- 5 Between Pointe Lohuay (0°20'·5N, 9°28'·5E), S of which lies the entrance to Rivière Lowé, and Fausse Pointe Owendo 3 miles SSE the shore is mostly low and bordered with mangroves. It was reported in 1985 that reclamation was taking place 7½ cables each side of Rivière Lowé.

At Pointe Owendo (0°17'·1N, 9°30'·4E), the plateau of Owendo is partially cleared and cultivated, and is healthier than that of Libreville.

- 6 **Estuaire du Gabon above Pointe Owendo.** The shores of the river are fronted by large banks of sand, rocks, and mud, and the land is fairly elevated, flat and covered with trees and vegetation.

Depths

5.12

- 1 There is a least charted depth of 11 m in the fairway as far as Pointe Owendo. Above Pointe Owendo depths decrease from 9 m to less than 5 m, 5 miles farther SE.

Natural conditions

5.13

- 1 **Flow.** For flow outside the estuary see 4.238.
Tidal streams in Estuaire du Gabon are strong and influenced by the out-going current. The in-going stream sets N outside, and, upon entering the estuary, it alters its direction clockwise, until approaching Banc du Sud-Est (0°20'S, 9°23'E) it is setting SE. In Passe de la Pénélope (0°25'N, 9°17'E) it sets E towards the inner shoals. The in-going stream has a rate from 1½ to 2 kn at springs.
- 2 The out-going stream sets fairly through the channel, except in Passe de la Pénélope, where it sets W towards the outer shoals: outside it sets S. During the rainy season, off Libreville, this stream often continues for ten hours and frequently attains a rate of 4 kn, sometimes even 5 kn. At such times the strength and duration of the in-going stream are correspondingly reduced.
- 3 **Freshets** occur in Estuaire du Gabon, principally at the beginning of the rainy season (November), they are, however, occasionally experienced at other times, and are sometimes sufficiently violent to interrupt traffic for several days. During these floods a foul smell pervades over the whole estuary.
- 4 **Rollers** (1.201) occur during the dry season, at which times the outer shoals break and a heavy swell sets into the estuary. The shore at Libreville is then rendered difficult to approach.
- 5 **Local weather.** Strong winds are rare in the estuary, except during the tornado season (about October to May). The rainy season occurs from the middle of November to the middle of July.
There is no swell in the estuary except during the dry season, but during high winds the sea becomes extremely choppy.

Principal marks

5.14

- 1 **Landmarks:**
Mont Bouet (0°26'·2N, 9°28'·1E), wooded.
Water tower (0°25'·2N, 9°26'·7E), red obstruction light.
Radio mast (0°25'·2N, 9°29'·0E), red obstruction lights.

Spire (0°24'·2N, 9°26'·4E).

Major light:

Pointe Ngombé Light (0°18'·4N, 9°18'·4E) (5.7).

Directions

(continued from 5.8)

Approaches

5.15

- 1 When approaching Estuaire du Gabon and uncertain of the vessel's position, soundings will give a good indication of the distance off the land as the continental shelf as described by the 183 m (100 fm) contour is well-defined and runs parallel with the coast at a distance of about 25 miles from it.

Caution is necessary on account of the variable nature of the tidal streams (4.238).

- 2 Coming from N, vessels should endeavour to make the land in the vicinity of Cap Esterias (4.241), before approaching the shoals in the approach to the estuary.

Coming from S, vessels should first sight the lighthouse on Pointe Ngombé (Pointe Gonbé) (5.72). Pointe Ngombé itself is reported to be an excellent landmark, although the lighthouse is hidden by trees between 155° and 206°. When abreast that point, the land in the vicinity of Cap Santa Clara (5.8) should be visible.

On opening the mouth of the estuary, the principal marks (5.14) in the vicinity of Libreville may be identified.

- 3 Vessels should keep outside depths of 18·3 m (10 fm) until the position of the vessel has been ascertained accurately, and then proceed through Passe de la Pénélope.

If in consequence of poor visibility or approaching at nightfall, the marks leading through the channel cannot be identified, it would be prudent to anchor in a suitable depth outside. If anchoring see 4.238 and 5.13 for information on tidal streams.

Entrance to Owendo

5.16

- 1 **Cautions.** Too much dependence should not be placed on the chart, as it may be expected that the banks, acted upon by the strong currents and tidal streams (5.13), may shift from time to time.

It was reported (2003) that all the buoys in the entrance channel, including the light-buoy marking the Banc de la Thémis, were missing. It is absolutely necessary for mariners using the channels to use all aids to navigation and, if possible, use shore objects for fixing the vessel's position; soundings should be checked frequently.

- 2 It is advisable to ascertain the buoyage situation from the pilot at Owendo before arrival.

Line of bearing. In 1997, it was reported that the line of bearing 090°, of a water tower (5.14), leads through the centre of the channel in the approach to Passe de la Pénélope.

5.17

From a position about 7½ miles SW of Cap Santa Clara (0°30'·4N, 9°19'·3E), the track leads initially E, through Passe de la Pénélope, passing (with positions relative to Cap Santa Clara):

- 1 S of a light-buoy (port hand) (7½ miles SW), thence:
S of Banc de la Thémis (5½ miles SW) (5.8), thence:
N of an unmarked wreck (6¼ miles SSW) with a depth of 2·5 m over it, lying on the NW extremity of Banc de la Mouche. The sea breaks occasionally over this bank and it may be

distinguished, even in fine weather by the ripples over it. And:

S of Banc du Postillon (3¾ miles SSW), usually indicated by eddies.

- 2 Thence the recommended track, as indicated on the chart leads ESE, for about 4 miles, passing:

NNE of Banc du Pongara (7 miles S). The sea breaks over this bank and it may be distinguished, even in fine weather by the ripples over it. Thence:

NNE of a shoal patch (7 miles S) with a depth of 9·8 m over it, thence:

SSW of a light-buoy (port hand) (6½ miles S), moored on the S extremity of Banc du Caraïbe.

5.18

- 1 Thence the recommended track, as indicated on the chart leads SE, for about 8 miles, passing:

NE of Banc du Papillon (7½ miles S), thence:

NE of Pointe Pongara (9½ miles S), the N extremity of a low peninsula composed of alluvial deposits which the action of the sea has covered with sand. It is sterile, except for the tufts of grass with which it is covered. The point is being eroded by the action of the currents and tidal streams, and is liable to be of a different shape from that indicated on the chart. Great care must therefore be used when fixing the ships position by bearings of the land in this vicinity. A beacon (grey framework, cone topmark) stands on the point. Thence:

- 2 SW of a light-buoy (port hand) (9¾ miles SSE), moored on the S extremity of Banc du Sud-Est.

NE of Pointe Ogolo (12½ miles SSE). Between this point and Pointe Eguirigui, 11½ miles SE the bank of the estuary recedes and is indented by the mouths of many creeks and a river, Rivière Gongoué; the bay thus formed is filled with banks of mud, and in some places there are patches of rock. Thence:

- 3 SW of Pointe Glass (11¾ miles SE), fringed with rocks. Banc de la Malouine, mud and sand, extends 5 cables from the shore between Pointe Glass and Fausse Pointe Owendo 5 miles SSE.

Thence the track continues to a position SW of a light-buoy (safe water) (14½ miles SSE) in the vicinity of the pilot boarding position as indicated on the chart.

5.19

- 1 **Useful marks:**

Masts (0°25'·0N, 9°26'·1E), red obstruction lights.

Water tower (0°23'·6N, 9°27'·0E).

Radio mast (0°19'·9N, 9°30'·4E).

Radio mast (0°18'·8N, 9°30'·1E).

Punta Mina (0°15'·1N, 9°22'·0E) a remarkable wooded hillock.

(Directions continue for Owendo at 5.57.

Directions for Libreville are given at 5.28.)

Estuaire du Gabon above Owendo

5.20

- 1 From a position SW of a light-buoy (safe water) (0°18'·0N, 9°26'·8E) in the vicinity of the pilot boarding position, as indicated on the chart, the track leads SE, passing (with positions relative to Pointe Owendo (0°17'·1N, 9°30'·4E)):

- 2 SW of Pointe Owendo, beyond which are Montagnes de Conicoué (not charted). The point is about 24 m high, and the hills, attain an elevation of from 50 to 80 m. And:

NE of a shoal patch (4¼ miles SW) with a depth of 0.6 m over it, lying close N of Banc des Cigognes, thence:

- 3 SW of Île Conniquet (2 miles SE), well wooded and fertile. The N coast of the island is low, but its S point, which is faced with perpendicular cliffs, rises to a high conical hill. The island is steep-to N and S, but a mudbank extends about 4 cables offshore between Pointe N'Cogo, the NW point and Pointe Ikana, the SW point. A shallow shelf extends 5 cables E from the island. And:
- 4 NW of Île Perroquet (4 miles S), small, uninhabited, and thickly wooded, with a drying bank surrounding it, except on its S side which is steep-to. The channel between Île Perroquet and Pointe Eguirigui, (7 miles S), a low-lying point, is very shallow, with patches of stones and broken shells which dry; in the channel are Bancs de la Turquoise, Banc du Rubis, Banc du Pygmée, and Banc Eguirigui.
- 5 Thence the track continues to a position NE of Île à Cailloux (7¼ miles SSE).

Side channels

Cap Santa Clara to Libreville

5.21

- 1 **General information.** A channel, which is not recommended as there are no leading marks, leads ESE between the shoals in the entrance to Estuaire Du Gabon.

Directions. From a position SW of Cap Santa Clara (0°30'4N, 9°19'3E), the track leads ESE, passing (with positions relative to Cap Santa Clara):

SSW of Banc de la Recherche (1¼ miles SE), thence:
 NNE of Banc du Nisus (4 miles SSE), thence:
 SSW of Banc de l'Adour, (4 miles ESE) thence:
 NNE of Banc du Caïman (5½ miles SE).

Between Banc du Nisus and Roches Vialètes

5.22

- 1 **General information.** A channel, which should only be used by mariners with local knowledge, leads ESE between the shoals in the entrance to Estuaire Du Gabon.

Directions. From a position SW of Cap Santa Clara (0°30'4N, 9°19'3E), the track leads ESE, passing (with positions relative to Cap Santa Clara):

NNE of Banc du Postillon (3¼ miles SSW), thence:
 SSW of Banc du Nisus (4 miles SSE), thence:
 NNE of Roches Vialètes (5¼ miles SSE), thence:
 NNE of Banc du Milieu (6¼ miles SSE).

Between Banc du Milieu and Banc du Sud-Est

5.23

- 1 **General information.** A channel, leads E between the shoals in the entrance to Estuaire Du Gabon.

Directions. After passing through Passe de la Pénélope and SSW of a light-buoy (port hand) (0°23'9N, 9°20'8E), the track leads E, passing (with positions relative to Cap Santa Clara):

S of Banc du Milieu (6¼ miles SSE), thence:
 N of Banc du Sud-Est (8 miles SSE).

Libreville

General information

5.24

- 1 **Position.** The port of Libreville (0°24'N, 9°27'E) is situated on the W coast of Africa close to the equator.

Function. Libreville, with an estimated population of 523 000 in 1999, is the capital of Gabon. Owendo (5.37), the principal port, is located about 7 miles SSE of the city.

Topography. The shore between Pointe des Normands (0°26'N, 9°25'E), and Pointe Glass 4¼ miles SSE is fringed almost continuously with reefs. For general topography in Estuaire du Gabon see 5.11.

- 2 **Port limits** The port limits are described by a circle of 2 miles radius centred on the SSE extremity of the detached breakwater (0°23'9N, 9°26'1E).

Approach and entry. The port is approached through Estuaire du Gabon.

Port Authority. Office des Ports et Rades du Gabon, BP 1051, Libreville, Gabon.

Limiting conditions

5.25

- 1 **Controlling depths.** See 5.12. For the latest controlling depths the chart and the port authorities should be consulted.

Tidal levels. Mean spring range about 1.6 m; mean neap range about 0.8 m. See information in *Admiralty Tide Tables Volume 2*.

Local weather. See 5.13.

Arrival information

5.26

- 1 **Outer anchorage** may be obtained as indicated on the chart, as follows (with positions relative to the breakwater SE Light (0°23'8N, 9°26'2E)):

In a depth of about 8 m, mud and clay (9 cables SW).

In a depth of about 9 m (1.2 miles SSW).

Care must be taken to avoid the obstructions charted in the vicinity of these anchorages.

- 2 Anchorage may also be obtained farther S off Pointe Glass (0°22'0N, 9°27'6E) at a distance from 7½ cables to 1¼ miles offshore, according to the draught of the vessel; however when anchoring in this position or farther S care must be taken to avoid Banc de la Malouine (5.18).

At these anchorages a sea sometimes gets up at short notice, making communication with the shore, and movement of lighters difficult; this is especially so if the wind is against the tidal stream.

- 3 **Pilotage.** There is no pilotage service.

Harbour

5.27

- 1 **General layout.** The harbour comprises an anchorage (5.26) and, located in front of the cathedral, a wharf for small craft sheltered by a detached breakwater. A second jetty, in the form of a Y, is located 7 cables SSE of the breakwater and has partially collapsed.

Submarine cable. An area containing disused submarine cables and in which anchoring is prohibited, the limits of which are indicated on the chart, extends seaward from a position on the shore 2 cables N of the breakwater.

Submarine pipeline. A disused submarine pipeline, as indicated on the chart, extends 9 cables SW from a position on the shore 2 cables E of the breakwater SE Light.

- 2 **Landmarks:**

Mont Bouet (0°26'2N, 9°28'1E), wooded.

Water tower (0°25'2N, 9°26'7E) (5.14).

Radio mast (0°25'2N, 9°29'0E) (5.14).

Spire (0°24'2N, 9°26'4E).

Directions for entering harbour

5.28

- 1 From a position on the recommended track and E of Pointe Pongara (5.18), course is altered NE towards the

anchorage off Libreville, a distance of about 3 miles, passing:

SE of Banc du Sud-Est (5.18), the S extremity of which is marked by a light-buoy (port hand).

Useful marks:

Breakwater SE Light (white square tower, red top) (0°23'·8N, 9°26'·2E).

Breakwater NW Light (0°24'·1N, 9°26'·1E).

Berth

5.29

- 1 The detached breakwater is about 300 m long and is orientated NNW/SSE. Lights (5.28) are exhibited from its extremities. There is wreck with a depth of 2·2 m over it close off the NNW end of the breakwater and two stranded wrecks lie 2 cables S and SE of the SSE end.

The wharf extends about 250 m SW from the shore and is about 120 m wide at its end. Depths alongside are less than 3·0 m. It is used by small coasters, fishing vessels and lighters. The harbour office is located on the wharf.

The Y shaped jetty (5.27) is situated in front of the legislative assembly buildings: there are depths of about 2·0 m alongside the SW arm. The jetty has partially collapsed.

Port services

5.30

Repairs. Small repairs can be carried out and there is a slipway for vessels up to 500 tonnes displacement.

Other facilities: hospital.

Supplies: fuel oil and fresh water are available but in small quantities only.

Communications: airport; passenger ferry to Port Gentil.

Small craft

5.31

- 1 A small private jetty with depths from 1·2 to 1·5 m alongside, projects from the shore 2 cables SE of the breakwater.

Anchorage

Off Pointe Pongara

5.32

- 1 During the dry season, June to September, anchorage may be obtained off the S shore of the estuary, between Pointe Pongara (0°21'·2N, 9°21'·4E) and a creek known as Crique Rogolay, 3 miles SSE, in a depth of about 12·8 m, mud. The holding ground is excellent, but this anchorage is dangerous during the tornado season. The creek is infested with crocodiles.

Tributaries

Rivière Ikoy

5.33

- 1 **Description.** Rivière Ikoy is entered between Pointe Peni (0°17'·3N, 9°33'·0E) and Pointe Emenié 3 miles ESE. Off the E side a mudbank extends 5 cables offshore, restricting passage to the W side of the entrance, where a least depth of 2·7 m is found off the W entrance point. From 1 mile NE of Pointe Peni, the river deepens, and for 2½ miles there are depths from 4·0 to 8·5 m in the fairway.
- 2 About 3½ miles NE of Pointe Peni, Rivière Ikoy turns E and is joined by a river known as Rivière Macuma, flowing from N. There are depths in Rivière Ikoy of 4 m as far as

a place known as Vonmozel, 2½ miles above the junction of the rivers. In this reach of the river vessels should hug the S bank to avoid a mudbank which extends from the N bank.

A short distance above Vonmozel, Rivière Ikoy is only navigable by small craft.

Local knowledge is required.

- 3 **Anchorage**, with good holding, may be obtained anywhere in the channel but the best is off villages known as Ayaya and Rigoho, situated on the left bank about 2 miles above the entrance. Anchorage may also be obtained about 2½ cables below Vonmozel, which can easily be recognised by a castellated house standing on a promontory.

- 4 **Rivière Macuma** is reportedly navigable by small vessels until abreast a small creek beneath the foot of a hill known as Saint Pére (0°21'N, 9°34'E), which rises to an elevation of 150 m; above that it is obstructed by rocks and sandbanks but is navigable by small craft for about 2 miles as far as a village known as Macuma.

Rivière Igombiné

5.34

- 1 Rivière Igombiné is entered between shoal banks about 4½ miles ESE of Pointe Eguirigui (0°10'·3N, 9°31'·0E). There are depths of about 1·8 m between the shoal banks in the entrance, increasing to about 4·6 m within the entrance points; thence the river has a depth in it of more than 6 m for a distance of about 9 miles from the entrance up to a point about 1 mile below a place known as Macok, at which place there is a forestry establishment possessing a small pier. Local knowledge is required.

Rivière Komo

5.35

- 1 After passing Pointe Ozumbélé (0°08'·7N, 9°38'·8E), vessels proceeding to Rivières Komo and Ramboë must keep to the S bank of Rivière Gabon in order to avoid Roches de Surprise, a group of submerged rocks (not charted) in mid-stream about 6 miles E of Pointe Ozumbélé.

Rivière Komo enters Rivière Gabon between Pointe Assango (0°10'·0N, 9°48'·8E) and Pointe Pungue, 4 miles SW. With local knowledge the river is navigable by small craft for a distance of about 45 miles. The course of the river is encumbered by islets, rocks and mud-banks and the bottom is irregular.

The town of Komo, an important regional centre, is situated on the N bank about 20 miles above Pointe Pungue. The anchorage at Kango is a useful place to await the rising tide, which occurs about 3 hours after HW Libreville.

Rivière Ramboë

5.36

- 1 Rivière Ramboë is entered between Pointe Vidjue (0°06'·3N, 9°45'·8E) and Pointe Pungue, 1½ miles NNE. The river is navigable by small craft with local knowledge for a distance of about 30 miles above the mouth, at which point the tide is still perceptible. The current in the river attains a rate of about 2 to 3 kn.

The villages of Chinchua and Acondjo are located 6·5 and 24 miles respectively above the mouth. At Acondjo, the river is about 100 m wide and there is an anchorage with a depth of about 8 m. It is advisable to use an anchor at both ends to avoid swinging to the tide.



Owendo (5.37)
(Original dated 2002)

(Photograph – mv Doulos)

OWENDO

General information

Chart 1356 plan of Owendo

Position 5.37

- 1 The port of Owendo (0°17'·0N, 9°30'·4E) lies about 7 miles SE of Libreville.

Function 5.38

- 1 Owendo is the principal port in Gabon and serves Libreville, the capital: exports include manganese ore, timber and uranium; imports include manufactured goods, cereals and fish.

Topography 5.39

- 1 For Estuaire du Gabon see 5.11.

Approach and entry 5.40

- 1 The port is approached and entered through Estuaire du Gabon (5.9).

Traffic 5.41

- 1 In 2003, the port was used by 405 ships with a total of 8·2 million dwt.

Port Authority 5.42

- 1 Office des Ports et Rades du Gabon, BP 1051, Libreville, Gabon.

Limiting conditions

Controlling depths 5.43

- 1 There is a minimum charted depth in the approach channel of 11 m.

Deepest and longest berth 5.44

- 1 Manganese ore terminal (5.58).

Tidal levels 5.45

- 1 Mean spring range about 1·9 m; mean neap range about 0·9 m. See information in *Admiralty Tide Tables Volume 2*.

Density of water 5.46

- 1 The density of water is from 1·020 to 1·025 g/cm³.

Maximum size of vessel handled 5.47

- 1 Vessels up to 220 m loa and 9·0 m draught can berth at the manganese ore terminal.

Local weather 5.48

- 1 See 5.13.

Arrival information

Port operations 5.49

- 1 Vessels are berthed and unberthed at slack water. Berthing at the general cargo wharf can take place by day or night.

Port radio 5.50

- 1 There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required 5.51

- 1 Send ETA 24 and 12 hours prior to arrival. VHF contact with the pilot should be established upon passing the Banc de la Thémis Light-buoy (0°25'·7N, 9°13'·6E) (5.17). See *Admiralty List of Radio Signals Volume 6(3)* for further details.

Outer anchorages 5.52

- 1 There is a waiting anchorage in a depth of 11 m, mud, in position 0°16'·9N, 9°26'·9E, as indicated on the chart. See also 5.32 and 5.78.

Prohibited anchorage. Anchoring is prohibited within the area between the meridians of 9°28'·0E and 9°30'·7E, and N of the parallel of 0°16'·5N.

Pilotage

5.53

- 1 Pilotage is compulsory for vessels over 500 grt and available 24 hours. Pilot boards in the vicinity of the light-buoy (safe water) (0°18'·0N, 9°26'·8E) as indicated on the chart.

Tugs

5.54

- 1 Tugs are available and compulsory for vessels over 500 grt.

Harbour

General layout

5.55

- 1 The harbour of Owendo extends around Pointe Owendo. It comprises a deep-water bulk terminal, a general cargo quay with a short causeway to the point, two smaller specialised berths and a timber basin.

Mariners are advised that drifting logs may be encountered in the anchorage and alongside the berths.

Tidal stream

5.56

- 1 Tidal streams in the harbour can be very strong with the ebb flowing at up to 6 kn at springs during the rainy season. On the general cargo berth, the streams can be irregular and at times set obliquely to the wharf especially at its E and W extremities.

It is advised that vessels use extra moorings at all berths.

Directions for entering harbour

(continued from 5.19)

5.57

- 1 From a position SW of the light-buoy (safe water) (0°18'·0N, 9°26'·8E) the track leads ESE for about 4 miles towards Pointe Owendo. The chart is sufficient guide.

Useful marks:

Radio mast (0°19'·9N, 9°30'·4E).

Radio mast (0°18'·8N, 9°30'·1E).

Pointe Owendo Light (metal lattice mast, 10 m in height but surrounded by vegetation) (0°17'·2N, 9°30'·5E).

Pointe Owendo E Breakwater Head Light (white and black turret, 4 m in height) (0°17'·4N, 9°31'·0E).

Basin and berths

Alongside berths

5.58

- 1 **General Cargo Quay** (0°17'·0N, 9°30'·3E), 455 m in length providing Berths 1, 2 and 3, numbered from E to W, with charted depths from 4·5 to 11·0 m alongside. Dolphins extend 150 m WNW, from the W end of the quay to form berth No 4.

Manganese Ore Terminal (0°17'·5N, 9°30'·0E). The berth comprises dolphins and a loader which is connected to shore by a 900 m jetty supporting the conveyor. Charted depth alongside is about 11 m.

- 2 **Other berths.** There are two other berths at Pointe Owendo; one with mooring buoys, used for handling petroleum products, butane and bitumen, for tankers up to 100 m in length; the other, also with mooring buoys, used for handling cement and minerals, for vessels up to 130 m in length. It is reported that both berths can accept vessels up to a maximum draught of 5·8 m but the port authorities should be consulted for the latest information.



Owendo – General Cargo Quay (5.58)

(Original dated 2002)

(Photograph – mv Doulos)

Basin

5.59

- 1 A timber basin, protected by a breakwater at the head of which there is a light (5.57), lies on the E side of the point. It has a charted depth of about 2·0 m in the entrance and is used by tugs and lighters serving vessels in the anchorage.

Anchorage

5.60

- 1 Anchorage for vessels loading timber may be obtained about 1 to 2 miles SW of Pointe Owendo in a depth of 10 m, or, 1 mile SSE of Pointe Owendo in a charted depth from 7·5 to 8·5 m, sand and mud, good holding and sheltered from the swell. Other vessels may anchor about 2 miles SSE of Pointe Owendo in a charted depth of 8·5 m. The river current sets strongly in these locations.
- 2 Anchorage may also be obtained, either under the lee of Pointe Owendo, E of the prohibited anchorage (5.52), or in the middle of the channel between Pointe Peni (0°17'·3N, 9°33'·0E) and Île Conniquet 7½ cables S, in depths from 7·3 to 9·1 m, mud. However a bank with depths from 2·5 to 4·4 m has to be crossed to reach the latter anchorage.

Port services

Repairs

5.61

- 1 Minor repairs can be carried out. There is a slipway for vessels up to 21 m in length.

Other facilities

5.62

- 1 Hospitals at Libreville.

Supplies

5.63

- 1 Fresh water is available on the general cargo berth. Bunkers can be supplied from Port Gentil by coastal tanker. Provisions are expensive.

Communications

5.64

- 1 Airports 5 km N, and 20 km NW.

ESTUAIRE DU GABON TO CAP LOPEZ

General information

Charts 1356, 1887, 1322

Routes

5.65

- 1 **Coastal route.** From a position W of a light-buoy moored about 7½ miles SW of Cap Santa Clara (0°30'·4N, 9°19'·3E), on the SW extremity of Banc de la Thémis, the coastal route leads S, for about 40 miles, thence SW for about 40 miles, to a position W of Cap Lopez (0°37'·3S, 8°42'·9E).
- 2 **Offshore route.** From a position W of the light-buoy mentioned above, an alternative offshore route leads SSW for about 71 miles to a position W of Cap Lopez.

Topography

5.66

- 1 From Pointe Ngombé (0°18'·4N, 9°18'·4E) to Pointe Wézé (0°38'·5S, 9°06'·5E), the coastline trends generally S and SSW for a distance of about 60 miles. The coast is low and sandy, dissected by numerous small rivers and bordered by lush tropical vegetation; it is well-populated. A range of hills lie close inland about 6 miles SE of Pointe Nyonié (0°03'·0S, 9°20'·0E).

Between Pointe Wézé and Cape Lopez about 24 miles W, the coastline is broken up by the delta of Fleuve Ogooue (5.83) of which Baie de Nazaré and Baie du Cap Lopez form part. Port Gentil (5.95) and Cap Lopez Oil Terminal (5.130) are situated on the W shore of Baie du Cap Lopez.

- 2 Three rivers flow into Baie de Nazaré; Rivière Gangué, Rivière Osima and Rivière Rembo Kondjo, the latter being the E branch of Rivière Kondjo (5.92). The bay is dangerous to enter and should not be attempted; mud brought down by the rivers has almost filled it with an immense shallow bank.

Depths

5.67

- 1 The inshore waters described below are an area of offshore oil and gas activity (5.2). It is recommended that vessels should keep in depths of more than 20 m (11fm).

Natural conditions

5.68

- 1 **Current.** Off this part of the coast, the current sets generally NNE at a rate of less than ½ kn, only exceeding this rate after prolonged fresh SW winds or as a result of floods in Fleuve Ogooue. See also 1.193.

In the vicinity of Cap Lopez, an eddy current has been observed to set towards Banc du Loiret (0°37'·0S, 8°42'·5E) (5.75) or into Baie du Prince, close SE. Strong eddies and discoloured water will be found in the neighbourhood of the bank.

Discoloured water. It has been observed that from 4 miles S of Cap Lopez, to 7 miles N of it, the edge of the greyish-green water issuing from Fleuve Ogooue is in well-marked contrast to that of the ocean, and that the line of demarcation is also indicated by tide rips.

Submarine pipeline

5.69

- 1 A submarine pipeline is laid between Batanga (0°20'·9S, 9°18'·0E), Konzi Oilfield (0°16'·5S, 9°12'·9E) (5.74), and Cap Lopez 36½ miles SW, as indicated on the chart.

Principal marks

5.70

- 1 **Landmark:**
Building (0°12'·1S, 9°19'·0E).
- Major light:**
Pointe Ngombé Light (0°18'·4N, 9°18'·4E) (5.7).

Directions for offshore route

(continued from 5.8)

5.71

- 1 From a position W of the light-buoy (port hand) moored about 7½ miles SW of Cap Santa Clara (0°30'·4N, 9°19'·3E) on the SW extremity of Banc de la Thémis, the track leads SSW with no known danger, to a position W of Cap Lopez (0°37'·3S, 8°42'·9E).

(Directions continue for the offshore route at 5.165 and coastal route at 5.166)

(Directions for entry into Port Gentil are given at 5.117, and Cap Lopez Oil Loading Terminal at 5.153)

Directions for coastal route

(continued from 5.8)

Estuaire du Gabon to Pointe Ekoueta

5.72

- 1 From a position W of the light-buoy (port hand) moored about 7½ miles SW of Cap Santa Clara (0°30'·4N, 9°19'·3E) on the SW extremity of Banc de la Thémis, the track leads S, passing (with positions relative to Pointe Pongara (0°21'·2N, 9°21'·4E)):

W of Pointe Wingonbé (2½ miles SW), thence:

- 2 W of Pointe Ngombé (Pointe Gonbé) (4 miles SW), about 45 m high. It has some reddish patches on it, and distinctive trees beyond. A light (5.7) is exhibited from the point. Thence:

W of Pointe Kenguérié (8 miles SSW), (Pointe Kengéré on chart 1887), thence:

W of Pointe Goumbi (14 miles SSW), thence:

W of Ntsimbi (18½ miles S), a village, thence:

- 3 W of Pointe Nyonié (24 miles S). A small river flows into the bay N of the point and its course, which may shift by 5 cables in a short space of time, can be determined by a sudden break in the trees. There is a small airfield close N.

Thence the track leads to a position W of Pointe Ekoueta (33¾ miles S).

5.73

- 1 **Useful marks:**
Mount Mangouma (0°08'·1S, 9°25'·8E).
Mamelle Nord (0°13'·0S, 9°22'·0E).
Mamelle Sud (0°14'·4S, 9°21'·0E).

Pointe Ekoueta to Cap Lopez

5.74

- 1 From a position W of Pointe Ekoueta (0°12'·5S, 9°18'·4E), the track leads SW, passing (with positions relative to Pointe Ekoueta):

NW of Konzi Oilfield (7 miles SW). The oilfield consists of two lighted platforms and is encompassed by a prohibited area, as indicated on the chart. A submarine pipeline (5.69) is laid from the field to Cap Lopez as indicated on the chart. Thence:

NW of a shoal patch (8¼ miles SSW), with a depth of 5·1 m (17 ft) over it, thence:

- 2 NW of Roches Fanaës (14 miles S), thence:
NW of Pointe Sangatanga (19 miles S). The village of Sangatanga lies 3 miles NE. Thence:
NW of Pointe Tambinione (23 miles SSW). When seen from S it assumes an arched appearance. A reef of rocks extends 8 cables W from the point. Thence:
- 3 NW of a shoal bank (27 miles SW) (5.66), which dries in places, extending off the coast up to 12 miles, between Konzi Oilfield and Baie du Cap Lopez 36 miles SW, thence:
NW of Pointe Fétiche (31½ miles SW). Baie de Nazaré is entered between this point and Pointe Wézé 5½ miles E. Thence:
NW of the entrance (37½ miles SW) to Rivière Kondjo (5.92).

(Directions continue for entry to Port Gentil at 5.117)

5.75

- 1 The track continues SW, passing:
NW of the NE extremity (38 miles SW) of Banc du Prince, which is steep-to.
(Directions continue for entry to Cap Lopez Oil Loading Terminal at 5.153)
- The track continues SW, passing:
NW of Cap Lopez (43 miles SW). Capitaines Beacon Light (red and white pylon) is exhibited from a position 4 cables S of the NE extremity of the cape. The former extremity of the cape is now submerged, and forms Banc du Loiret, a coastal bank situated about 4 cables NW of the cape. It is advisable to round the cape at a distance of at least 1½ miles. Cap Lopez marks the S extremity of Bight of Biafra (3.1). It forms the N extremity of Île Lopez, known also as Île Mandji, a low wooded island formed by two of the mouths of Fleuve Ogooue (5.83). Seen from N the cape itself appears as an island and consists of a low plain, covered with pasture and bushes and mangroves for a distance of about 3 cables inland. The large mangroves which tower above the scrubby undergrowth may be seen at a distance of 15 or 16 miles.

Thence the track leads to a position W of Cap Lopez (0°37'3S, 8°42'9E).

5.76

- 1 **Useful marks:**
Mamelle Nord (0°13'0S, 9°22'0E).
Mamelle Sud (0°14'4S, 9°21'0E).
Radio mast, the position of which is approximate (0°23'6S, 9°20'8E).
(Directions continue for the coastal route to Pointe Sainte Catherine at 5.166 and an offshore route at 5.165)

Side channel

Chart 1322 plan of Baie du Cap Lopez

Banc du Prince

5.77

- 1 From a position about 2½ miles E of Cap Lopez (0°37'3S, 8°42'9E) (5.75), an unmarked channel, about 1½ miles in width with a least depth of 4·7 m in it, leads SE across Banc du Prince (5.75), for about 2 miles into Baie du Cap Lopez.

Anchorage

Chart 1887

Pointe Ngombé

5.78

- 1 Anchorage with good holding may be obtained W of Pointe Ngombé (0°18'4N, 9°18'4E) (5.72). Vessels should not anchor NW of Pointe Wingonbé, 1¾ miles NNE, where a rocky spit extends up to 2 miles NW of the point.

Pointe Nyonié

5.79

- 1 Anchorage may be obtained in the bight NW of Pointe Nyonié (0°03'S, 9°20'E), in a depth of about 13 m (43 ft), mud, with Mamelle Sud bearing 166°. Closer in than this position the bottom is rocky; landing may be obtained in the corner of the bight except when rollers set in heavily.

Pointe Ekoueta

5.80

- 1 Anchorage in a depth of about 10 m (33 ft), mud, may be found 2 miles offshore on the alignment of Mamelle Sud (5.76) with a conspicuous shed (5.70) in the village of Ekoueta.

Off Roches Fanaës

5.81

- 1 Anchorage may be obtained off Roches Fanaës (0°25'7S, 9°15'2E), in a depth of about 9 m (30 ft), 4½ miles offshore, with Mamelle Nord bearing 042°, distant about 16½ miles. This anchorage has been used by vessels loading timber.

Gongoué

5.82

- 1 Vessels loading timber may anchor off Gongoué (0°32'5S, 9°11'9E) which is connected by road to Lambaréné (5.83).

FLEUVE OGOOUE

General information

Charts 604, 1887

Description

5.83

- 1 Fleuve Ogooue, the delta of which forms the promontory of Cap Lopez, is one of the great rivers of Africa. It rises 550 miles from the sea, in the Congo, near Zanaga (2°50'S, 13°50'E). Its breadth, which is often reduced by islands, though navigation is not hindered by them, varies from ½ cable to over 1 mile. N'Djolé (0°11'S, 10°46'E), is the old commercial, administrative and military centre of Ogooue and is the limit of navigation for small craft drawing 1 m. From here the river runs parallel to and just S of the equator, a further 90 miles to KanKan, about 10 miles above Booué (0°06'S, 11°58'E), where it is joined by Rivière Ivindo from N. Thence Fleuve Ogooue can be followed SE to its source.
- 2 The river has an immense delta which begins at Lambaréné (0°42'S, 10°13'E), and is a region supremely damp and oppressive; indeed the whole of it and the country from Estuaire du Gabon (5.9) to Setté Cama (5.187), 130 miles SSE of Cap Lopez, is under water during the long wet season, save for the strange bubble-shaped mountains like Mount Sangatanga (not named on chart) (0°40'S, 9°12'E), and Mount Mandji near the W bank of Rivière Ramboë (5.36). The inhabitants of this area frequently abandon their villages.

3 Lambaréné is a fairly important centre, at which is the seat of the Administrator in charge of the whole of Bas Ogooue; all the important factories have establishments there and there is also a mission station and a famous hospital. There are road bridges across the river at Lambaréné with clearances of about 5m during the rainy season.

Above Lambaréné, navigation in the upper reaches of the Ogooue becomes very difficult on account of shifting sandbanks and the violence of the current. The banks of the river are densely populated and there is considerable trade.

4 Rivière N'Gounié (0°36'8S, 10°17'8E), joins Fleuve Ogooue about 3 miles above Lambaréné. There are some dangerous rocks at the entrance. The river is navigable during the wet season by well found vessels drawing up to 2.4 m (8 ft), for a distance of between 40 and 50 miles.

5 The most important entrance to Fleuve Ogooue is that through Rivière Kondjo (5.92) which flows into Baie du Cap Lopez in the vicinity of 0°42'S, 8°56'E. There is a customs house at Ngola (0°58'0S, 9°02'3E), about 17 miles above the entrance.

Topography

5.84

1 In the lower river, the banks are for the most part flat and covered with mangroves; these give way to plains of papyrus and still farther upstream, the banks, on which are magnificent trees, become gradually higher.

Hills appear in the neighbourhood of Lambaréné (5.83), situated about 80 miles from the coast, after which the land becomes flat again, only to rise as mountains in the vicinity of N'Djolé (5.83), about 43 miles farther up river.

Depths

5.85

1 The depths of Fleuve Ogooue vary greatly on account of the numerous banks which succeed one another almost without interruption, from its mouth to N'Djolé (5.83); between these banks at certain places, least depths of 0.9 m will be found; in other places and generally where the river is narrow, the least depth is from 9 to 11 m.

River level

5.86

1 The river usually attains its highest level at the end of April and in the month of May; at the end of May the dry season begins and the fall is very rapid; in July and August the river is lowest, and navigation becomes very difficult for a vessel drawing more than 0.9 m.

In about the first week of September, when the rainy season in the upper river begins, the rise commences; it increases rapidly in October and November, and ceases at about the end of the latter month. In December, the Little Dry Season begins and scarcely lasts the month, the river then falling. During the Little Dry Season the river is low but not so low as in July, and is quite navigable.

From about mid-January the river rises and falls alternately, until about mid-April, after which it rises very rapidly, and the high river season, lasting until about the end of May, begins.

In places the difference between the level of the river in the dry season and that in the wet season, is as much as 4 to 5 m.

Density of water

5.87

1 The density of water is 1000 g/cm³ about 14 miles within the river entrance.

Pilotage

5.88

1 Pilots are available at Port Gentil (5.95) and Ngola (5.83), but good pilots are scarce.

Current

5.89

1 At high river the mean velocity of the current has been found to be from 1 to 2 kn below Lambaréné (5.83), and from 2 to 3 kn between that place and N'Djolé (5.83). A very strong current sets from Lambaréné to abreast the arm, the farthest upstream, which leads to Lac Onangé, and also between N'Djolé and the village of D'Zoum about 10 miles below that place. In the rapids between the second islet at N'Djolé and the river bank, the current has been found to set at 5 kn.

Overhead cable

5.90

1 An overhead telephone cable crosses the river just below Falaba (not named on chart) (1°02'0S, 9°05'0E).

Directions

5.91

1 Navigation in Fleuve Ogooue is always tricky, and a master should be quick on the helm on account of the numerous turns which have to be negotiated to pass between the banks; the vessel should also have a good turn of speed to stem the current.

Except at the mouth of Rivière N'Gounié (5.83), there are no dangerous rocks, and when the river is high these can be cleared, as there will then be a depth of from 3 to 4 m (10 to 13 ft) over them. During the dry season it is preferable to anchor down stream of them.

It is always dangerous to navigate the river at night.

2 **Useful mark:**

Oil derrick (lights) (0°49'8S, 8°53'5E).

Rivers leading to Fleuve Ogooue from Baie du Cap Lopez

Rivière Kondjo

5.92

1 Rivière Kondjo is entered close E of Île Aparia (not named on chart) (0°44'S, 8°55'E), on the E side of Baie du Cap Lopez. It is the most important entrance to Fleuve Ogooue, which it joins 8 miles SE of Île Aparia. This island is slightly higher than the neighbouring coast and is surmounted by coconut palms. The river may be navigated by vessels with a draught of 2.0 m, at all states of the tide, but its approach is rendered uncomfortable for river steamers by the heavy swell. The channel leading to the mouth is marked by beacons which are not charted. Local knowledge is required.

Rivière Yombé

5.93

1 Rivière Yombé (Rivière Atadali on chart 604) is entered about 3 miles E of Pointe Akosso (0°43'6S, 8°47'8E) (chart 1322) in the S part of Baie du Cap Lopez. It is the most frequented of the branches leading to Fleuve Ogooue and is the most direct route from Port Gentil to that river. However, it cannot be navigated at all states of the tide, except by vessels drawing less than 1 m. In addition, it is

reported that there is only one beacon to mark the channel and therefore it is safer to await a rising tide.

- 2 About 12 miles above the river entrance is the village of Niolokoué (0°51'6S, 8°56'5E), above which the river combines with other channels of this vast and intricate delta system; channels which are of great importance locally.

River leading to Fleuve Ogooue from seaward south of Cap Lopez

Rivière Animba

5.94

- 1 The mouth of Rivière Animba is situated on the coast in 1°00'0S, 8°51'8E, 24 miles S of Cap Lopez but is not suitable as an entrance. It is formed between the S end of Île Lopez (5.75) and a long narrow sandspit, which runs parallel with the coast for about 6 miles. The sandspit, as well as the banks in its vicinity, are continually changing.

PORT GENTIL

General information

Charts 1887, 1322 plan of Baie du Cap Lopez and plan of Port Gentil

Position

5.95

- 1 Port Gentil (0°43'S, 8°47'E) is situated on the SW side of Baie du Cap Lopez.

Function

5.96

- 1 Port Gentil is the second most important port in Gabon after Owendo (5.37). Exports include logs, plywood, palm oil and petroleum; imports comprise general cargoes and petroleum products. It is an important bunkering port. Port Gentil, also known as Mandji, is the provincial capital of Ogooué Maritime and had a population of 164 000 in 1996.

Topography

5.97

- 1 The shores of Baie du Cap Lopez are low and covered with mangroves. At the head of the bay is the mouth of Rivière d'Oranga, and on its E side are those of Rivière Kondjo (5.92) and Rivière Yombé (5.93).

Approach and entry

5.98

- 1 The port is approached and entered through Baie du Cap Lopez.

Traffic

5.99

- 1 In 2003, the port was used by 217 ships with a total of 3.6 million dwt.

Port Authority

5.100

- 1 Office des Ports et Rades du Gabon, BP 43, Port Gentil, Gabon.

Limiting conditions

Controlling depths

5.101

- 1 There are depths in excess of 27 m in the approach to the pilot boarding position.

Deepest and longest berth

5.102

- 1 Commercial Quay (5.122).

Tidal levels

5.103

- 1 At Cap Lopez, the mean spring range is about 1.5 m; mean neap range about 0.7 m. See information in *Admiralty Tide Tables Volume 2*.

Density of water

5.104

- 1 The density of the water is 1.025 g/cm³.

Maximum size of vessel handled

5.105

- 1 Vessels up to 80 000 dwt and draught 10.1 m may berth at the Pointe Clairette oil terminal (5.120).

Arrival information

Port operations

5.106

- 1 Vessels calling at Port Gentil in order to bunker, take stores or change crew, may anchor within the restricted area (5.113) after having received the permission of the port captain and been assigned an anchorage berth. In this case pilotage is optional. Vessels at anchor within the restricted area must maintain a continuous listening watch on VHF. See *Admiralty List of Radio Signals Volume 6(3)* for details.

Berthing at the oil terminal or the commercial quay can be carried out at any time of the day. However, vessels requiring to anchor in the inner anchorage in order to load wood may only do so during daylight hours. Departure from this anchorage can take place at any time.

Port radio

5.107

- 1 There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required

5.108

- 1 Send ETA 48 and 24 hours prior to arrival.

Outer anchorage

5.109

- 1 Within Baie du Cap Lopez, vessels may anchor outside port limits in a depth of about 30 m, soft mud, 3.5 miles NE of Pointe Clairette. This anchorage is well sheltered from the prevailing swell.

Vessels waiting to embark a pilot may anchor within the restricted area in about 28 m, mud, with Pointe Clairette bearing 235° at 1.9 miles. See 5.106.

- 2 Tankers waiting to berth at the Pointe Clairette terminal may anchor in about 22 m, mud, 3 cables ESE of the berth as shown on the chart but noting an obstruction with a depth of 22 m over it 1 cable N of this berth.

Pilotage

5.110

- 1 Except as indicated at 5.106, pilotage is compulsory for all vessels over 150 grt and is available 24 hours. Pilot

boards vessel about 5¼ miles ESE of Cap Lopez, as indicated on the plan.

The pilot for the Pointe Clairette Oil Terminal is provided by Cap Lopez Terminal (5.130).

Tugs

5.111

- 1 The use of a tug is compulsory for all vessels over 150 grt.

Prohibited area

5.112

- 1 An area in which anchoring and fishing are prohibited is located 3 miles ENE of Pointe Clairette (0°40'8S, 8°46'9E). The area, limits of which are shown on the chart, is an area of offshore oil and gas activity and contains numerous obstructions.

Restricted area

5.113

- 1 An area NNE of Port Gentil, the limits of which are indicated on the plan, is a restricted area and is only to be entered when under pilotage or with the permission of the port captain.

Harbour

General layout

5.114

- 1 The harbour, which lies between Pointe Clairette (0°40'8S, 8°46'9E) and Pointe Akosso 3 miles SSE, comprises, from N to S, an oil terminal, a basin for fishing vessels and offshore supply craft, a general cargo quay, an inner anchorage for vessels loading wood and a naval base. Much of the shore fronting Port Gentil is encumbered by two shoals, Banc de l'Alcyon and Banc du Talisman.

Natural conditions

5.115

- 1 **Current.** For current in the approaches see 5.68.
Tidal streams at the inner anchorage are rotary causing a vessel to swing right round its anchor. The out-going stream sets NNW generally at a rate of less than 1 kn but it can attain 3 kn at the height of the rainy season.
Tornadoes (1.218) from NE can give rise to violent winds in the period from January to April. Vessels should consider anchoring with a long scope of cable, or an open moor with two anchors facing NE.
Climatic table. See 1.226 and 1.235.

Principal marks

5.116

- 1 **Landmarks** (with positions relative to Pointe Clairette (0°40'8S, 8°46'9E)):
 Building, a large shed, (1 mile S).
 Water tower (1½ miles SSW).
 Water tower (¾ miles S).
 TV mast (red obstruction lights; 124 m in height) (¾ miles SSE).

Directions for entering harbour

(continued from 5.74)

Cautions

5.117

- 1 Baie du Cap Lopez is encumbered with shoals and is an area of offshore oil and gas activity; it should be approached with great caution. A vessel approaching from N should be sure of her position before attempting to enter

the bay and for this purpose the petroleum storage tanks at Cap Lopez terminal give a good radar echo from about 25 miles offshore. In addition, the TV mast (0°44'4S, 8°47'6E) (5.116) can be observed from a great distance.

Too much dependence should not be placed on the positions of the banks as charted, as it may be expected that the banks, acted upon by the strong tidal streams and currents from the rivers, may shift from time to time.

It has been reported that navigational aids in the vicinity of Port Gentil are unreliable.

Entrance

5.118

- 1 From a position NW of the entrance (0°43'0S, 8°56'7E) to Rivière Kondjo, the track leads SW, passing (with positions relative to Pointe Clairette (0°40'8S, 8°46'9E)):
 SE of Banc du Prince (¾ miles N) (5.75), thence:
 NW of a dangerous wreck (¾ miles ENE).
 Thence the track leads to the vicinity of the pilot boarding position, ¼ miles NE of Pointe Clairette, as indicated on the plan, noting a prohibited area (5.112) and a restricted area (5.113). A dangerous wreck lies about 8 cables N of Pointe Clairette.
- 2 **Useful marks** (with positions relative to Pointe Clairette):
 Flare (2 cables SW).
 Platform (lighted) (4 miles E)
 Platform (lighted) (1½ miles SE).
 Radio mast (2 miles S).
 Spire (¾ miles S).
 Tower (3 miles S).
 Radio mast (red lights) (3 miles SSE).

Berths

5.119

- 1 Alongside depths are charted depths. The port authorities should be contacted for the latest information.

Oil Terminal

5.120

- 1 An oil terminal (0°40'9S, 8°46'8E) at Pointe Clairette with dolphins and mooring buoys in a depth of about 13 m, for tankers up to 80 000 dwt, 183 m LOA and draught 10.1 m.

Basin

5.121

- 1 At the N end of Commercial Quay, is a basin used by offshore supply vessels on the N side and fishing vessels on the S side. North Quay at the SE corner of the basin has a depth of 7 m alongside and is used occasionally by small cargo vessels.

Commercial Quay

5.122

- 1 Commercial Quay, 5 cables S of Pointe Clairette, 375 m in length, provides two berths, with depths up to 10.5 m alongside. It is used for general cargo, the loading of palm oil and the discharge of petroleum products.

Inner anchorage

5.123

- 1 For vessels loading logs and wood, the following anchorages off Vieux Port have been designated. The bottom is mud and the holding reported to be good.
 No 1 — 0°42'80S, 8°47'80E, for vessels with a draught of 10 m.
 No 2 — 0°42'55S, 8°47'80E, for vessels with a draught of 12 m.

No 3 — 0°42'·60S, 8°48'·10E, for vessels with a draught of 9 m.

No 4 — 0°42'·35S, 8°48'·10E, for vessels with a draught of 15 m.

No 5 — 0°42'·40S, 8°48'·35E, for vessels with a draught of 9 m.

Vieux Port

5.124

- 1 At Vieux Port, 2¼ miles S of Pointe Clairette, is a wharf with depths of about 1·2 m alongside used by lighters. A number of mooring buoys lie between 3 and 4 cables N, and 8½ cables SE of the head of the wharf.

A log pond (0°43'·2S, 8°47'·7E), the limits of which are indicated on the plan, lies SSE of Vieux Port.

Naval base

5.125

- 1 A naval base, which has been constructed on reclaimed land, is located at Pointe Akosso (0°43'·6S, 8°47'·9E) and has depths alongside up to 5 m. At the S end of the complex is a ro-ro ramp for the loading of small vessels.

Port services

Repairs

5.126

- 1 Two slipways, the largest for vessels up to 600 tonnes. Minor repairs can be carried out.

Other facilities

5.127

- 1 Hospital.

Supplies

5.128

- 1 Fuel oil can be supplied at Commercial Quay and at the anchorage. Fresh water is only available at the quay. Provisions are available.

Communications

5.129

- 1 There is an airport about 3 km W of the port and a ferry service connects with Libreville (5.29). Lambaréné (0°41'S, 10°13'E) (5.83), and La Lagune N'kome (5.166) are connected by river boats.

CAP LOPEZ OIL LOADING TERMINAL

General information

Chart 1322 plan of Baie du Cap Lopez and plan of Cap Lopez Oil Terminal

Position

5.130

- 1 Cap Lopez Oil Loading Terminal (0°37'·9S, 8°43'·2E) is situated on the E side of Cap Lopez and on the NW shore of Baie du Prince.

Function

5.131

- 1 It is an oil loading terminal exporting crude oil and petroleum products. Sheltered anchorage with good holding ground may be obtained in Baie du Prince.

Topography

5.132

- 1 For general topography see 5.75.

Approach and entry

5.133

- 1 The port is approached from NE, and entered through Baie du Prince, E of Cap Lopez (0°37'·3S, 8°42'·9E).

Traffic

5.134

- 1 The port is visited by about 90 vessels annually.

Port Authority

5.135

- 1 Elf Gabon, BP 525, Port Gentil, Gabon.

Limiting conditions

Controlling depths

5.136

- 1 There are depths in excess of 30 m in the approaches.

Deepest and longest berth

5.137

- 1 Loading Terminal (5.154).

Tidal levels

5.138

- 1 At Cap Lopez, the mean spring range is about 1·5 m; mean neap range about 0·7 m. See information in *Admiralty Tide Tables Volume 2*.

Density of water

5.139

- 1 The density of water is 1·025 g/cm³.

Maximum size of vessel handled

5.140

- 1 Length 340 m, draught 20·5 m, 250 000 dwt.

Local weather and sea state

5.141

- 1 From June to September, the prevailing wind is SSE and up to 25 kn at times. However, the berth is well-sheltered from the swell.

Tornadoes from NE, giving rise to violent winds, are most likely to occur between January and April. They can give rise to a very rough sea with wave heights of about 2½ m.

Arrival information

Port operations

5.142

- 1 Berthing is carried out during daylight hours only. Unberthing at any time.

Port radio

5.143

- 1 There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required

5.144

- 1 Send ETA 72, 48 and 24 hours prior to arrival. See *Admiralty List of Radio Signals Volume 6(3)*.

Outer anchorage**5.145**

- 1 Outer anchorage may be obtained in a depth of about 70 m, sand and mud, as indicated on the plan, about 1½ miles ENE of Cap Lopez 0°37'·3S, 8°42'·9E.

A vessel may anchor closer inshore in a depth of about 40 to 50 m but it is prohibited to anchor closer than 1 mile to the berth.

Pilotage**5.146**

- 1 Pilotage is compulsory. The pilot boards about 1½ miles E of Cap Lopez as indicated on the plan. See *Admiralty List of Radio Signals Volume 6(3)*.

Tugs**5.147**

- 1 Tugs are available and compulsory.

Restricted area**5.148**

- 1 A restricted area surrounding Cap Lopez Oil Loading Terminal (0°37'·9S, 8°43'·2E), the limits of which are indicated on the plan, can only to be entered when under pilotage.

Regulations concerning entry**5.149**

- 1 Tankers must have main engines and mooring equipment available for use at all times. When tornadoes are expected, cargo operations are generally suspended.

Harbour**General layout****5.150**

- 1 The harbour lies on the E side of Cap Lopez, consisting of a loading terminal constructed parallel to the shore.

Submarine pipeline**5.151**

- 1 A submarine pipeline which connects the terminal to Konzi oilfield (5.69) is laid around the S perimeter of Baie du Prince as indicated on the chart. It is marked by three buoys (white conical).

Principal marks**5.152**

- 1 **Landmarks:**
Tanks (0°38'S, 8°43'E).

Directions for entering harbour

(continued from 5.75)

Entrance**5.153**

Cautions. For cautionary notes see 5.117.

From a position NW of the NE extremity (0°36'·2S, 8°48'·7E) of Banc du Prince (5.75), the track leads SW to the pilot boarding position, as indicated on the plan, 1½ miles ENE of Capitaines Beacon Light (0°37'·7S, 8°43'·1E).

The chart is sufficient guide.

- 1 **Useful marks** (with positions relative to Capitaines Beacon Light):

Lighthouse (old) (white tower, black top, 30 m in height) (9 cables WSW).

Chimney (6 cables SW).

Flare (4 cables SW).

Beacon (1¼ miles SSE), W of Pointe Djolowe.

Berth**Oil Loading Terminal****5.154**

- 1 The berth comprises a concrete jetty 30 m long by 20 m wide flanked by mooring dolphins. An L shaped catwalk, 340 m long connects the berth to shore. The charted depth alongside is 25 m but the port authority should be contacted for the latest information.

Port services**Facilities****5.155**

There are no dirty ballast or oily waste reception facilities.

There is a hospital at Port Gentil.

Supplies**5.156**

Supplies are available but expensive; fuel oil and fresh water available but require 48 hours notice. Fresh water supplied by barge from Port Gentil.

Communications**5.157**

Airport at Port Gentil about 15 km.

CAP LOPEZ TO POINTE PEDRAS**GENERAL INFORMATION**

Chart 604

Area covered**5.158**

- 1 This section describes the coastal and offshore route, inlets and harbours from Cap Lopez (0°37'·3S, 8°42'·9E) to Pointe Pedras (2°40'·1S, 9°52'·5E), 142 miles SSE.

It is arranged as follows:

Cap Lopez to Pointe Sainte Catherine (5.160).

Pointe Sainte Catherine to Pointe Pedras (5.176).

Currents**5.159**

- 1 Between Cap Lopez and the mouth of the Congo, about 390 miles SE, the current sets steadily in a NW direction sometimes reaching a rate of about 2 kn. This current is the resultant of the Benguela Current augmented by the stream which flows out of the Congo, known as the Congo Stream. The united currents turn W off Cap Lopez and become part of the South Equatorial Current.

- 2 The NW-going current is usually more rapid close to the coast than it is offshore, its direction being influenced by the trend of the coast and its rate by the prevailing wind.

On rare occasions, when the wind has been from N, the current can reverse and set SSE. See 1.193.

CAP LOPEZ TO POINTE SAINTE CATHERINE

General information

Charts 1887, 604

Routes

5.160

- 1 **Coastal route.** From a position W of Cap Lopez (0°37'·3S, 8°42'·9E), the coastal route leads SSE for about 86 miles, to a position SW of Pointe Sainte Catherine (1°52'·1S, 9°16'·0E). This route passes through a restricted area which is encumbered with oil platforms. See 5.163.

Offshore route. From a position W of Cap Lopez (0°37'·3S, 8°42'·9E), the offshore route leads initially SW, then SSE, and then SE for a total distance of about 110 miles, to a position SW of Pointe Sainte Catherine (1°52'·1S, 9°16'·0E). This route passes outside the restricted area and the oil platforms.

Topography

5.161

- 1 Between Cap Lopez and Pointe Sainte Catherine 81 miles SSE, a narrow beach of sand extends along the length of the coast. On it a heavy surf breaks, particularly during the dry season, making a landing impossible except in a few places and then only on exceptionally fine days.
- 2 Between Cap Lopez and Fernan Vaz (1°35'·5S, 9°16'·5E), also known as Omboué, the coast is thickly wooded, but farther S, large patches of bare ground alternate with thick jungle.

Depths

5.162

- 1 Between Cap Lopez and Pointe Sainte Catherine depths between 9 and 13 m (30 and 42 ft) will be found at a distance of 2 miles offshore and the 200 m contour (109 fm), which is close inshore near Cap Lopez, lies about 30 miles offshore. In depths less than 100 m (55 fm) the bottom is generally sand, over that depth it is mud.

Restricted area

5.163

- 1 A restricted area, the Grondin Oil Drilling Area, the limits of which are indicated on the chart, extends up to 28 miles offshore, between 7 and 60 miles S of Cap Lopez. The area, encumbered with oil platforms and submarine pipelines, is marked by light-buoys (cardinal). Authorisation is required to enter the restricted area.

A charted coastal route through the restricted area is limited to use by vessels of less than 7 tonnes.

- 2 There is an area reserved for fishing extending 3 miles offshore, between the mouth of Rivière Animba (1°00'·0S, 8°51'·8E) and Barre des Portugais, 18 miles SSE. It is approached on a course of 020°, through a channel 3 miles in width, from a position 1½ miles E of the No 6 Light-buoy (S cardinal) moored in the middle of the S boundary of the restricted area.

Principal marks

5.164

- 1 **Landmarks:**

White house (0°45'·4S, 8°45'·4E).
Flare (1°28'·3S, 9°07'·5E).

Directions

(continued from 5.71 and 5.76)

Offshore route

5.165

- 1 From a position W of Cap Lopez (0°37'·3S, 8°42'·9E), the track leads SSW, passing (with positions relative to Cap Lopez):

WNW of Pointe du Phare (1 mile WSW), thence:

WNW of a light (36 miles SSW). The red sector (203°–341°) of this light covers the restricted area.

Thence the track leads SSE, passing:

WSW of a light-buoy (S Cardinal) (58½ miles SSW).

Thence the track leads SE, to a position SW of Pointe Sainte Catherine (81 miles SSE) (5.166).

(Directions continue for coastal route at 5.180)

Coastal route

5.166

- 1 From a position W of Cap Lopez (0°37'·3S, 8°42'·9E), the track leads SSE, passing (with positions relative to Cap Lopez):

WSW of Pointe du Phare (1 mile WSW), thence:

WSW of the entrance to Rivière Animba (24 miles SSE) (5.94), thence:

- 2 WSW of Barre de l'Arabe (40 miles SSE) at the N entrance to Golfe d'Olinde (5.175). During the wet season, Lagune N'Komi, also known as Lagune de Fernan Vaz, together with Rivière Animba discharge huge quantities of fresh water, which extend 4 or 5 miles seaward of the coast; at times the in-going tidal stream is unable to reverse these out-going streams of fresh water. Thence:

- 3 WSW of Barre des Portugais (42 miles SSE) at the S entrance to Golfe d'Olinde. The sand forming the bar between Barre de l'Arabe and Barre des Portugais is always shifting, and the sea breaks right across the entrance. Thence:

- 4 WSW of Pointe Iguéga (78 miles SSE), fringed with rocks.

- 5 Thence the track leads to a position SW of Pointe Sainte Catherine (1°52'·1S, 9°16'·0E), with a reef extending N from it, on which the sea breaks heavily. When navigating in this vicinity, the coast should not be approached closer than a distance of about 4 miles. From N, Pointe Sainte Catherine appears as an isolated clump of tall trees resembling an island but from S the coast appears craggy. Some small hills, situated S of the point give it a bold appearance. Behind the beach the land rises gently, and here and there are clearings. At Pointe Sainte Catherine is the mouth of Lagune d'Iguéla (5.189).

5.167

- 1 **Useful marks** (with positions relative to Capitaines Beacon Light (0°37'·7S, 8°43'·1E):

Old lighthouse (8 cables W) (chart 1322).

Chimney (6 cables SW) (chart 1322).

Flare (8 miles S).

Flare (11 miles SSE).

Flare (15½ miles SSE).

Stranded wreck (16½ miles SSE).

Beacon (red and yellow, marked K1) (20½ miles SSE).

Beacon (red and yellow, marked K2) (49 miles SSE).

Light (pylon) (66 miles SSE).

(Directions continue at 5.180)

Oguendjo Terminal

Chart 604 plan of Gombe-Beta and Oguendjo Terminals

General information

5.168

- 1 **Position.** Oguendjo Terminal (1°27'S, 8°55'E).

Function. It is an offshore oil loading terminal with an SBM to which the stern of the FSO *Bon Bateau* is permanently moored.

Approach and entry. The terminal is approached through an access lane, 1¾ miles in width, which passes through the Grondin restricted area (5.163).

Port Authority. Perenco Gabon SA, BP 780, Port Gentil, Gabon.

Limiting conditions

5.169

- 1 **Controlling depths.** There are charted depths in excess of 21.9 m (72 ft) in the approach and at the terminal.

Density of water is 1.025 g/cm³.

Maximum size of vessel handled. Maximum draught 18.2 m (60 ft), 170 000 dwt.

Arrival information

5.170

- 1 **Port operations.** Vessels are moored during daylight hours only. No mooring operations shall start after 1500. Unmooring at any time. Main engines must be kept on standby throughout the stay.

Port radio. There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required. Send ETA 7 days, 72, 48, 24 and 12 hours prior to arrival.

- 2 **Outer anchorage** may be obtained in a designated anchorage, the limits of which, are indicated on the plan, about 12 miles SSE of the storage tanker and outside the restricted area.

Pilotage is compulsory and available 24 hours. Pilot boards vessel 2 miles S of Platform C (1°28'4S, 8°54'0E).

Tug is available.

- 3 **Restricted area.** A restricted area surrounds the storage tanker and its two associated oil platforms, as indicated on the plan.

Regulations concerning entry. The national flag of Gabon should be flown from the foremast during daylight hours whilst in that country's territorial waters.

Directions

5.171

- 1 From a position 2½ miles E of the light-buoy (S cardinal) (1°36'S, 8°55'E), moored on the S boundary of the Grondin restricted area (5.163), the course leads NW via a designated access channel for about 7 miles to the pilot boarding position.

Berth

5.172

- 1 The export tanker moors bow to bow with the FSO.

Services

5.173

- 1 **Other facilities:** no oily waste or dirty ballast reception facilities; there is a hospital for emergencies at Port Gentil.

Supplies are not available.

Anchorage

Rivière Animba

5.174

- 1 Anchorage may be obtained off the mouth (1°00'0S, 8°51'8E) of Rivière Animba (5.94), but care must be taken to avoid anchoring too close to the spit which extends from the S entrance point. Local knowledge is required.

Golfe d'Olindé

5.175

Anchorage may also be obtained about 3 miles S of the mouths of Golfe d'Olindé (1°15'S, 9°00'E) in depths of 11 or 13 m (36 or 43 ft), about 2 miles off the coast. This anchorage is out of the current but is only used by a few vessels which go there to load timber. Local knowledge is required.

POINTE SAINTE CATHERINE TO POINTE PEDRAS

General information

Chart 604

Route

5.176

- 1 From a position SW of Pointe Sainte Catherine (1°52'1S, 9°16'0) (5.166), the route leads SE for about 60 miles to a position SW of Pointe Pedras (2°40'1S, 9°52'5E).

Topography

5.177

- 1 Between Pointe Sainte Catherine and Pointe Komandji, 34 miles SE, sandy beaches alternate with thick jungle which grows down to the water's edge.

- 2 Inland, the country is more elevated and a few hills form a chain running parallel with the seaboard.

The N end of a range of coastal hills which extend SE from Setté Cama (2°32'S, 9°45'E) are known as Monts Santo Espirito and they form the best mark by which to identify either Setté Cama or Pointe Pedras situated 12 miles SE of it.

- 3 There are several large clearings S of the Santo Espirito range which give the land a cultivated appearance. The coast is sparsely populated but here and there a few fisherman's huts are just visible.

Surf breaks heavily along the whole of this coast, except in a few places where landing might be effected in fine weather.

Depths

5.178

- 1 Between Pointe Sainte Catherine and Pointe Pedras there are charted depths of more than 10 m (33 ft) at a distance of 3 miles offshore, except in the immediate vicinity of Pointe Pedras (5.180). The water is reported to be very clear in fine weather.

Caution. An unmarked dangerous wreck lies 11½ miles W of Pointe Pedras (2°40'1S, 9°52'5E).

Principal marks

5.179

- 1 **Landmark:**

Gamba Oil Terminal Lighthouse (2°47'0S, 10°01'1E) (5.197).

Major light:

Gamba Oil Terminal Light – as above.

Directions

(continued from 5.165 and 5.167)

5.180

- 1 From a position SW of Pointe Sainte Catherine (1°52'1S, 9°16'0) (5.166), the track leads SE, passing (with positions relative to Pointe Sainte Catherine):

Either side of Tchatamba Terminal (14 miles SW) (5.181), with a restricted area surrounding it, and: SW of Iguéla (5 miles SE) a village (5.186), thence:

- 2 SW of Pointe Komandji (34 miles SSE), rounded and difficult of recognition from W. About 3 miles S of it, however, there are some large green patches which help to distinguish the locality; these patches are situated at the extremity of a rounded point known as Pointe du Gac, which stands out when seen from the anchorage at Setté Cama (5.187). The neighbouring coast is slightly elevated, and is covered with brushwood, through which wind several streams, whose large mouths form a succession of lagoons and marshes. Rocks which dry, fringe the coast and render approach to it dangerous; in addition, the sea breaks at a distance of about 1 mile offshore. There are some villages between Pointe Komandji and two small points Magamba and Milango 4 and 5 miles SSE respectively. Thence:

- 3 SW of the entrance to Lagune N'Dogo (5.188), a large expanse of water, interspersed with many islets, and extending about 30 miles ESE. Two small lagoons known as Lagune Sounga and Lagune Simba, which have a common entrance lie 4½ miles from the mouth. The settlement of Setté Cama (5.187) stands on the elongated spit which extends S from the entrance to Lagune N'Dogo. Thence:

- 4 Clear of a dangerous wreck (53 miles SE).

Thence the track leads to a position SW of Pointe Pedras (60 miles SE), which projects 1 mile from the line of the coast and shows up when approaching from S. On the point are several isolated sand-hills sloping S to the banks of Rivière Massetché (not charted), the mouth of which is only about 36 m in width. Rocks, some of which dry, extend about 2 miles NW from the point A shoal patch with a depth of 3-6 m (12 ft) lies 3 miles SW.

(Directions continue at 5.198)

Tchatamba Terminal

General information

5.181

- 1 **Position.** Tchatamba Terminal (2°04'7S, 9°09'4E) is situated about 13 miles SW of Pointe Sainte Catherine.

Function. It is an offshore oil loading terminal with an FSO *Madiela* connected by submarine pipeline to a production platform 2 cables ESE.

Port Authority. Marathon Petroleum Gabon LDC, BP 1976, Port Gentil, Gabon.

Limiting conditions

5.182

- 1 **Controlling depths.** The FSO is moored in a depth of 46 m (27 fm).

Density of water is 1.025 g/cm³.

Maximum size of vessel handled is 135 900 dwt.

Local weather and sea state. Berthing operations will be deferred if the wind is greater than 20 kn, the sea or swell greater than 2 m, or the current exceeds 2 kn.

Arrival information

5.183

- 1 **Port operations.** Berthing is normally carried out in daylight hours only. Vessels must arrive before 1500 to ensure that operations are complete by 1830. Unberthing at any time.

Port radio. There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required. Send ETA 5 days, 3 days, 48 and 24 hours prior to arrival.

- 2 **Outer anchorage** may be obtained, as indicated on the chart, about 5 miles N of the terminal, in a depth of 40 m (22 fm), sand or clay.

Pilotage is compulsory and available 24 hours. Pilot boards vessel, as indicated on the chart, 3 miles NW of the terminal.

Tug. A tug is available.

Restricted area. A restricted area with radius 3 miles is centred on the storage tanker. Vessels may not enter the restricted area without the permission of the terminal authority.

Regulations concerning entry. The national flag of Gabon should be flown from the foremast during daylight hours whilst in that country's territorial waters.

Berth

5.184

- 1 The FSO is permanently moored on a heading of 011° and the export tanker moors bow-to-bow with it. The tug remains attached to the stern of the export tanker throughout the loading operation.

Services

5.185

- 1 **Repairs:** nil.
Other facilities: no oily waste or dirty ballast reception facilities; hospital at Port Gentil for medical emergencies.
Supplies: none available.

Anchorage

Iguéla

5.186

- 1 **Description.** The village of Iguéla (1°55'5S, 9°19'0E), stands on the slope of a hill and is located on the narrow tongue of land which separates Lagune d'Iguéla (5.189) from the sea. The flagstaffs of several factories can be seen over the tops of trees from the anchorage. There is a custom house and post office in the village.

Directions. The alignment (051°) of the following beacons (not charted) lead towards the anchorage clear of dangers:

Front (surmounted by a square) (near the coast).

Rear (similar structure) (7 cables NE).

There is a mooring buoy (not charted) about 2 cables offshore near the leading line.

- 2 **Anchorage** may be obtained on the alignment (051°) about 1½ miles from the shore in a depth of 9 m (30 ft).

Setté Cama

5.187

- 1 **Description.** Setté Cama (2°32'S, 9°45'E) stands on the elongated spit which extends S from the entrance to Lagune N'Dogo. It is an administrative centre with a

telegraphic office and a customs office. There is also a commercial warehouse marked by a flagstaff.

- 2 **Directions.** A vessel approaching Setté Cama from seaward should keep at least 2 miles off the coast until the beacons mentioned below are sighted.

Front (white wooden pyramid, square topmark).

Rear (white wooden pyramid).

The alignment (055°) of the beacons (not charted) leads towards the anchorage.

- 3 **Anchorage** may be obtained on the alignment mentioned above in a depth of about 11 m (36 ft) about 1¼ miles offshore. A smaller vessel may proceed closer inshore and anchor on the alignment in a depth of about 6·7 m (22 ft) about 5 cables offshore. Two rocky shoals extending up to 1 mile from the shore with depths of less than 5·5 m (18 ft) lie either side of the inner anchorage. The channel between these shoals is about 3 cables wide.

- 4 There is usually a swell at the anchorage, the bottom is very uneven, and, when swinging to the tidal stream, the cable can become caught on the rocky bottom.

Landing is very difficult, and should not be attempted in ship's boats.

Communications: There is a small airfield at Setté Cama.

Lagune N'Dogo

5.188

- 1 It is reported that during the rainy season, the water level at the entrance to Lagune N'Dogo can rise sufficiently to permit small vessels up to 600 tonnes to enter the lagoon but local knowledge is required. Small craft, particularly those connected with oilfield activity, navigate within the lagoon.

Small craft

Lagune d'Iguéla

5.189

- 1 Pointe Sainte Catherine (5.166) stands close N of the entrance to Lagune d'Iguéla, also known as N'Gobé, a vast lagoon which extends 20 miles SE to the mouth of a river known as Rivière Rembo N'Gobé. The lagoon is divided into two basins; the N and smaller basin is encumbered with islets, and both are navigable by vessels drawing up to 0·9 m (3 ft). There are numerous villages on the shores of the lagoon. The tidal streams in the lagoon are very feeble. Although Rivière Rembo N'Gobé has been ascended for a distance of about 15 miles, the river and its tributaries are encumbered with weeds.

POINTE PEDRAS TO RIVIÈRE MASSABI

GENERAL INFORMATION

Chart 604

Area covered

5.190

- 1 This section describes the coastal routes and anchorages from Pointe Pedras (2°40'·1S, 9°52'·5E) to Rivière Massabi (5°02'·0S, 12°01'·0E) and, in addition, the offshore routes from Pointe Tchitembo (4°12'·0S, 11°23'·0E) and Pointe-Noire (4°47'S, 11°50'E) around Kuito Oilfield (5°28'·0S, 11°30'·5E). Also described is the port of Pointe-Noire.
- 2 It is arranged as follows:
Pointe Pedras to Pointe Kouango (5.193).
Pointe Kouango to Pointe Tchitembo (5.207).
Offshore route Pointe Tchitembo to Kuito Oilfield (5.231).
Pointe Tchitembo to Pointe-Noire (5.234).
Pointe-Noire (5.244).
Pointe-Noire to Rivière Massabi (5.275).
Offshore route Pointe-Noire to Kuito Oilfield (5.289).

International boundary

5.191

- 1 The seaward end of the international boundary between Gabon and the Republic of the Congo lies on the coast at approximately 3°56'S, 11°10'E, at the entrance to Lagune Mekoundgi.

Piracy

5.192

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

POINTE PEDRAS TO POINTE KOUANGO

General information

Chart 604

Route

5.193

- 1 From a position SW of Pointe Pedras (2°40'·1S, 9°52'·5E), the coastal route leads SE for about 66 miles to a position SW of Pointe Kouango (3°26'·0S, 10°38'·5E).

Topography

5.194

- 1 Between Pointe Pedras and Pointe Kouango the intervening coast is low and wooded, with high flat ranges inland.
From its entrance (2°47'·0S, 10°01'·5E), Lagune Badingo extends SE, parallel with the coast for about 10 miles, being separated from the sea by a very narrow tongue of sand; near its mouth is a village known as Yenzi.
- 2 Between Nyanga (2°59'·5S, 10°18'·0E) (5.205) and Pointe de Panga 22 miles SE the intervening coast is regular and featureless. This stretch of coast is a sandy beach, the land within being marshy and covered with brush, but nearer the point it becomes gradually more elevated.
- 3 S of Baie de Mayumba the vegetation becomes less vigorous, arid plains and bare hills appear and these evidences of more or less persistent drought become more pronounced on advancing farther S.

Depths

5.195

- 1 Depths of 200 m (109 fm) run parallel with the coast and about 35 miles off it, and the regularity of the soundings is of great assistance during the months of June, July and August when fog may envelop the land.

Current**5.196**

- 1 A current of about 1 kn may be expected to set N along this coast; at rare and uncertain intervals this current has been known to set in the opposite direction for 1 or 2 days.

Principal marks**5.197**

- 1 **Landmark:**
Gamba Oil Terminal Lighthouse (red and white pylon, 40 m in height) (2°47'0S, 10°01'1E).
- Major light:**
Gamba Oil Terminal Light — as above.

Directions

(continued from 5.180)

5.198

- 1 From a position SW of Pointe Pedras (2°40'1S, 9°52'5E) (5.180), the track leads SE, passing (with positions relative to Pointe Pedras):
SW of the entrance to Lagune Massetché (1 mile SE), thence:
SW of Gamba Oil Terminal (13 miles SE) (5.199), thence:
Clear of a shoal patch (27 miles SE), reported in 1976, with a depth of 5.7 m (19 ft) over it, thence:
- 2 SW of Nyanga (32 miles SE) (5.205). A stranded wreck lies 6 miles SE. Thence:
SW of Pointe de Panga (53½ miles SE). A reef extends 1 mile W from the point. Close N of the point is a cove in which landing is possible. The point when viewed from N, presents three or four saddle-shaped summits, and a remarkable dark red cliff, surmounted by dense woods, which forms one of the most prominent objects on this part of the coast, that cannot be mistaken. Several huts exist N of the point. A pillar stands about 2 miles N of Pointe de Panga.
- 3 Thence the track leads to a position SW of Pointe Kouango (66 miles SE) consisting of several hills sloping towards the sea, and terminating in a low point on which are some huts; it is fronted for a distance of about 2 cables by a reef of rocks, some of which dry. Farther offshore is a reef on which is an islet, just showing above-water, situated 6 cables NNW of the point; the passage between it and the point is reported to be impracticable.
- There is a radio mast (red and white) at the village of Mayumba (5.206) 1 mile NE of Pointe Kouango.

(Directions continue at 5.211)

Gamba Oil Terminal**General information****5.199**

- 1 **Position.** Gamba Oil Terminal (2°51'6S, 9°58'2E) is situated about 12 miles SE of Pointe Pedras.
- Function.** It is a crude oil loading terminal with two SBMs connected by submarine pipelines to a refinery onshore. It is reported that the inner SBM is disused.
- Approach and entry.** The terminal is approached and entered through a restricted area.
- Port Authority.** Shell Gabon Gamba, OLS/4, BP 48, Gamba, Gabon.

Limiting conditions**5.200**

- 1 **Controlling depths.** There is a charted depth of 22 m (72 ft) at the SBM.
- Density of water** is 1.025 g/cm³.
- Maximum size of vessel handled.** Maximum draught 17.25 m, 150 000 dwt.
- Local weather.** Heavy S to SW swell conditions can delay loading operations. Tornadoes, giving rise to violent winds, may be experienced between October and May. See 1.218.

Arrival information**5.201**

- 1 **Port operations.** Berthing takes place day and night. Main engines must be kept on standby throughout the stay.
- Port radio.** There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.
- Notice of ETA required.** Send ETA 96, 72, 48 and 24 hours prior to arrival.
- 2 **Outer anchorage** may be obtained as indicated on the chart about 2 miles NW of the SBM.
- Pilotage** is compulsory. Pilot boards vessel in the anchorage as indicated on the chart.
- Tugs.** are not available and the standby boat has limited capacity.
- Restricted area.** A rectangular restricted area encloses the SBMs and the pipelines leading to the refinery onshore. The positions of the two offshore corners of the area are 2°51'6S, 9°55'8E, and 2°54'0S, 9°59'0E. Vessels should not enter the restricted area without the permission of the terminal authority and fishing within the area is prohibited.

Directions**5.202**

- 1 On approaching the terminal, its light (5.197), flares and storage tanks are conspicuous. A jetty (not charted) 5 cables S of the light is reported to be radar conspicuous. The close approach to the SBM or the waiting anchorage should be made stemming the current, which generally sets NW with a maximum rate of about 2 kn.

Useful marks:

4 Flares (2°47'0S, 10°01'2E).

Berth**5.203**

- 1 An SBM (2°51'6S, 9°58'2E), 11 m in diameter, 4 m in height.

Services**5.204**

- 1 **Repairs:** nil.
- Other facilities:** hospital at Port Gentil for emergencies; no oily waste or dirty ballast reception facilities; no garbage facilities.
- Communications:** airfield at Gamba.

Anchorage**Nyanga****5.205**

- 1 **General information.** Nyanga (2°59'5S, 10°18'0E) is situated on a tongue of sand, 2 miles SE of the mouth of Rivière Nyanga, which in 1980, was about 1 cable in width, with a large shallow bar that is liable to change. Within the entrance are said to be depths of 7 m (23 ft) for about 16 miles upstream as far as some rapids, but the river

is encumbered with snags, the mudbanks are often submerged and the currents are strong.

Caution. A heavy sea runs on the bar. There is a considerable risk of capsizing when crossing it to enter the river.

- 2 Vessels anchor off Nyanga to load timber. Mayonami, a settlement 5 miles upstream from the river mouth, is used as a base for oilfield operations.

Port Authority. Office des Ports et Rades, BP 43, Port Gentil, Gabon.

- 3 **Density** of water is 1.025 gm/cm³.

Maximum size of vessel handled. It is reported that a vessel of 33 000 dwt and 176 m in length has used the anchorage.

Directions. When approaching the anchorage, care should be taken to avoid a shoal with a depth of 5.7 m (19 ft) over it which was reported (1976) to lie about 5 miles SW of the light-beacon that is located 1½ miles NW of the river mouth (See below).

The mouth of the river is reported to be radar conspicuous.

Useful mark:

Light (occasional) (white tripod) (2°56′.7S, 10°13′.9E).

- 4 **Anchorage** may be obtained in a depth of 12 to 13 m (39 to 42 ft), soft mud, about 1½ miles SW of the light mentioned above. Vessels anchored here can roll heavily due to a combination of the NW current and an onshore SW wind.

Mayumba

5.206

- 1 **Description.** Baie de Mayumba is entered between Pointe de Panga (3°15′.0S, 10°32′.5E) and Pointe Kouango 12 miles SE. It has a fine sandy beach, fronted by breakers throughout almost its entire length, and wooded hills, highest in the S part, rise behind its shore.

Vessels anchor in the bay N of Pointe Kouango (3°26′.0S, 10°38′.5E) to load timber. Mayumba, a town is situated close NE of the point.

- 2 Rivière Mayumba enters the head of the bay after running parallel to the shore from Lagune Banio about 26 miles SE. The mouth of the river shifts frequently. In 1992 it was located 4½ miles NNE of Pointe Kouango. A stranded wreck is reported to lie on the shore 3 cables S of the entrance.

The bay abounds with fish and oysters.

Port Authority. Office des Ports et Rades, BP 43, Port Gentil, Gabon.

Climatic table. See 1.226 and 1.236.

- 3 **Anchorage** The bay affords good shelter from S and SSE winds but it is exposed to SW winds. Anchorage may be obtained as follows:

About 1 mile N of Pointe Kouango, in a depth of about 11 m (36 ft); this position is about 4 cables NE of the islet (5.198) and partly sheltered from the SW swell. Small vessels may anchor nearer the shore depending on draught.

- 4 Vessels loading timber usually anchor about 4 to 5 miles N of Pointe Kouango and W of the entrance to Rivière Mayumba in depths of about 12 to 14 m (40 to 45 ft) riding to the starboard anchor in order to make a lee for the log rafts.

Landing can occasionally be effected but it is very risky.

Communications: There is an airfield.

POINTE KOUANGO TO POINTE TCHITEMBO

General information

Chart 604

Route

5.207

- 1 From a position SW of Pointe Kouango (3°26′.0S, 10°38′.5E), the route leads SE for about 64 miles to a position SW of Pointe Tchitembo (4°12′.0S, 11°23′.0E).

Topography

5.208

- 1 The coast from Pointe Kouango to Pointe Banda 30 miles SE, consists of a sandy beach backed by forest, and inshore the land rises in three ranges of hills.
- 2 From Pointe Tshibobo (3°49′S, 11°01′E) the coast affords no shelter, but is more populated than the shores of Baie de Mayumba (5.206), it is moderately high, and rises from a thick belt of trees to one or two ranges of hills, which are less elevated than those farther N. It is interrupted by the mouths of several rivers, of which the most important are known as the M'bia, Niafessa, Mekoundgi, Konkouati and Noubi, 4, 8, 13½, 20 and 28 miles respectively, SE of Pointe Banda; the first four are openings into lakes of the same name, which lie close within the coast.

Depths

5.209

- 1 Along this section of coast, the 200 m (109 fm) depth contour runs parallel to the shore and at an average distance of 35 miles from it. The 40 m (22 fm) contour lies between 6 and 12 miles offshore but inside it depths are more irregular and there are several off-lying shoals. See 5.211.

Submarine pipeline

5.210

- 1 A submarine pipeline is laid between Lucina Terminal (3°39′.6S, 10°46′.2E), and M'bya Terminal 17 miles SE.

Directions

(continued from 5.198)

5.211

- 1 From a position SW of Pointe Kouango (3°26′.0S, 10°38′.5E), the track leads SE, passing (with positions relative to Pointe Kouango):
 - SW of Rocher Noire (1.5 m in height) (not charted), (5 miles SE), lying ¼ cable offshore, thence:
- 2 SW of Roche Massanga (9½ miles SE). This rock and Rocher Noire lie on a bank which fringes the coast and extends 5 cables offshore. Thence:
 - NE of Etame Marine Terminal (20 miles SSW) (5.217), thence:
 - Clear of Lucina Marine Terminal (16 miles SSE) (5.212).
- 3 SW of Pointe Banda (30 miles SE), low, round and difficult to distinguish, though its position may be identified by two paps inland, known as Les Mamelles de Banda. In the foreground is a hill known as Colline Table, about 75 m in height and near which is a village. Banc de l'Antelope lies on the extremity of the coastal bank about 4 miles SSW of Pointe Banda. On the coast about 1½ miles SE of Pointe Banda is a village known as Sainte Marie, which stands on a hill 20 m in height. Thence:

- 4 SW of Pointe Tshibobo (33½ miles SE), surmounted by a rounded hill. The coast as far as Baie de Lécondé, 29 miles SE (5.230), is fronted by a coastal bank with depths of less than 9 m (30 ft), which extends as much as 5 miles offshore in places, also several shoals close inshore render navigation dangerous close to the coast. And:
- 5 Clear of M'bya Terminal (disused) (38 miles SE), thence:
SW of Banc Saint Paul (42 miles SE) with a depth of 4.9 m (16ft) over it and another shoal patch with a depth of 4.5 m (15 ft) over it, lying 2 miles NNE, thence:
- 6 SW of the entrance (50½ miles SE), of Rivière Konkouati, leading to Lagune Konkouati. A very heavy surf breaks at a distance of about 3½ cables from the mouth. A rocky patch with a depth of 6.4 m (21 ft) over it lies about 2 miles WSW, of the entrance to Rivière Konkouati but a depth of 5.5 m (18 ft) has been reported here (1962). A village known as Konkouati with an important timber trade stands on a sandspit at the entrance to Rivière Konkouati. The entrance is about 45 m wide. Thence:
- 7 SW of Banc du Haoussa (57 miles SE), thence:
SW of Banc du Prométhée (62 miles SE). A shoal patch, the existence of which is doubtful, with a depth of 3.9 m (13 ft) over it, lies on the SW edge of the bank. A rocky shoal, with a depth of 2.1 m (7 ft) over it lies on the E part of the bank. Between this shoal and the coast there is a passage with a least depth of 5.8 m (19 ft) but the passage itself is obstructed by other shoals. The shoals on Banc du Prométhée do not break in calm weather. Thence:
- 8 Clear of the tanker anchorage for Yombo Terminal (62 miles SE), and:
NE of Yombo Terminal (68 miles SE) (5.223).
Thence the track leads to a position SW of Pointe Tchitembo (64 miles SE). Close N is a small hill with a flat summit. Rocks which dry fringe the point and a point known as Pointe Lécondé 2 miles NNW.
(Directions continue for coastal route at 5.240, and offshore route to Kuito Oilfield at 5.233)

Lucina Terminal

Chart 604 plan of Lucina Terminal

General information

5.212

- 1 **Position.** Lucina Terminal (3°39'6S, 10°46'2E) is located 16 miles SSE of Pointe Kouango.

Function. It is an offshore oil loading terminal with an SBM connected by submarine pipeline to FSO *Banio*, 5 cables SW, which in turn is connected by submarine pipeline to seven production platforms..

Approach and entry. The terminal is approached through a restricted area.

Port Authority. Perenco Gabon SA, BP 780, Port Gentil, Gabon.

Limiting conditions

5.213

- 1 **Controlling depths.** There are depths of 32 m (17 fm) in the vicinity of the SBM.

Density of water is 1.025 g/cm³.

Maximum size of vessel handled is 130 000 dwt.

Arrival information

5.214

- 1 **Port operations.** From 0600 to 1800.

Port radio. There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required. Send ETA 7 days, 72, 48, 24 and 12 hours prior to arrival.

Outer anchorage may be obtained, outside the restricted area, in a position 2 miles NW of the storage tanker in a depth of 34 m (18 fm).

Pilotage is compulsory. Pilot boards vessel 2 miles NW of the SBM as indicated on the plan.

Tug. A tug is available.

- 2 **Restricted area.** Lucina Terminal lies in a restricted area which encloses the FSO and SBM. Vessels must not enter the restricted area without the permission of the terminal authority.

Regulations. Main engines must be kept on standby throughout the loading operation.

Berth

5.215

- 1 An SBM (3°39'6S, 11°46'2E), 8 m in diameter, 4 m in height.

Services

5.216

- 1 **Repairs:** nil.

Other facilities: no oily waste or dirty ballast reception facilities; no garbage facilities.

Supplies: None available.

Communications: airport at Gamba.

Etame Marine Terminal

General information

5.217

- 1 **Position and function.** It is an offshore marine terminal for Etame oilfield and comprises the FPSO *Petroleo Nautica* moored 20 miles offshore in position 3°45'3S, 10°31'5E.

Terminal Authority. Vaalco Gabon (Etame) Inc.

Limiting conditions

5.218

- 1 **Controlling depth.** The FPSO is moored in a depth of 76 m.

Maximum size of vessel handled. 150 000 dwt.

Local Weather. For tornadoes see 1.218; for climatic table see 1.226 and 1.238.

Arrival information

5.219

- 1 **Port operations.** Berthing takes place in daylight only. To avoid delay vessels should arrive three hours before the onset of darkness. Unberthing can occur in darkness but a daylight departure is preferred.

Port radio. For details see *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required. ETA should be sent on departure from last port and 72, 48 and 24 hours prior arrival. Having given 24 hours notice, the terminal is to be notified if the ETA changes by more than one hour. VHF contact should be established when within range.

Waiting anchorage. There is no designated anchorage for the terminal. In the event of a berthing delay, the decision to drift or to anchor is at the discretion of the Master. It should be noted that in areas of offshore oil and

gas activity some submerged obstructions and wellheads may not be charted. See also 1.15.

- 2 **Pilotage** is compulsory within the restricted area (see below) and is provided by the mooring master or a local pilot. The pilot boards 2 miles ENE of the FPSO.

Tugs. A tug will assist the berthing operation and will remain secured to the stern of the loading tanker during the loading operation. A second vessel will be in attendance.

Restricted area. A circular restricted area with radius of 2 miles is centred on the FPSO. Vessels are prohibited from entering the area without the permission of the terminal manager or without a pilot onboard. Anchoring within the restricted area is prohibited, see 1.15.

Port officials. Gabon customs, immigration and quarantine officials can be expected to visit the vessel.

Directions

5.220

- 1 **Principal marks.** Major lights:
Gamba Oil Terminal Light (2°47'·0S, 10°01'·1E) (5.197).
Pointe Noire Light (4°47'·6S, 11°50'·2E) (5.239).
Approach. When approaching from NW or SE a vessel should keep well offshore to avoid areas of offshore oil and gas activity most of which are located on the continental shelf in a depth of less than 200 m.

Berth

5.221

- 1 **FPSO.** The loading tanker moors bow-to-bow with the FPSO at a distance of 80 m from it.
It is reported that the predominant current in the vicinity of the terminal sets ENE at a rate of 0.5 to 2.0 kn.

Services

5.222

- 1 **Oily Waste.** No reception facility for dirty ballast or oily slops.

Yombo Terminal

General information

5.223

- 1 **Position.** Yombo Terminal (4°27'·4S, 11°06'·3E) is located 23 miles SW of Pointe Tchitembo.
Function. It is an offshore oil terminal with an FPSO *Conkouati* of 230 000 dwt and LOA 325 m. The FPSO is connected by submarine pipeline to two production platforms located in the S part of the restricted area.
Approach and entry. The terminal is approached through a restricted area.
Port Authority. CMS Nomeco Congo Inc, BP 212, Pointe-Noire, Congo.

Limiting conditions

5.224

- 1 **Controlling depths.** There are depths of about 100 m (55 fm) in the area.
Density of water is 1.025 g/cm³.
Maximum size of vessel handled. Length 280 m, beam 53 m, 155 000 dwt and loaded draught 15 m.
Local weather and sea state. Tornadoes (1.218) giving rise to violent winds and rough seas for a brief period can occur between November and March with January being the month of greatest frequency. For climatic table see 1.226 and 1.238.
The Benguela Current generally sets NW along the coast at rates up to 2 kn but offshore its strength and direction

is affected by the prevailing wind which blows most frequently from S to SW. In the vicinity of the FPSO currents are reported to be variable in strength and direction.

Arrival information

5.225

- 1 **Port operations.** Berthing is carried out in daylight only but unberthing can take place at any time subject to weather conditions.
Port radio. There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.
Notice of ETA required. Send ETA 72, 48 and 24 hours prior to arrival.
- 2 **Outer anchorage** may be obtained, as indicated on the chart, 12 miles NE of the terminal, within a circle of 1 mile radius centred on 4°16'·5S, 11°12'·5E in a depth of about 38 m (21fm).
Pilotage is compulsory. Pilot boards vessel in the anchorage area or just outside the restricted area.
Tugs are available.
Restricted area. The terminal lies in a square restricted area which is 6 miles wide and centred on 4°28'N, 11°06' E. Vessels are not permitted to enter the restricted without the permission of the terminal authority and without the pilot onboard.
Regulations concerning entry. Main engines must be kept on standby throughout the stay. The national flag of the Republic of Congo must be flown from the foremast during daylight hours.

Directions

5.226

- 1 **Approach.** When approaching from NW or SE a vessel should keep well offshore to avoid areas of offshore oil and gas activity most of which are located on the continental shelf in a depth of less than 200 m.

Berth

5.227

- 1 The FPSO is permanently moored on a heading of 030° and the export tanker berths starboard side alongside to the portside of the FPSO, the latter being provided with Yokohama fenders. Two tugs will remain in the vicinity during loading operations for safety.

Port services

5.228

- 1 **Repairs:** nil.
Other facilities: no oily waste or dirty ballast reception facilities; no garbage facilities.
Supplies: none available.

Anchorage

Baie de Banda

5.229

- 1 Anchorage may be obtained in Baie de Banda, on the N side of Pointe Banda (3°47'·0S, 11°00'·5E), in depths of 11 m (36 ft), mud, with good holding. This anchorage is sheltered from the predominant winds, and also from the effect of swell by Banc de l'Antelope (5.211). Local knowledge is required.

Baie de Lécondé

5.230

- 1 Baie de Lécondé (4°08'·5S, 11°23'·0E) which can only be entered by vessels of light draught is a slight indentation extending from the mouth of Rivière Noubi (4°06'·5S,

11°21'0E) to Pointe Tchitembo 6 miles SSE. A heavy swell sometimes sets in and landing is difficult on account of the surf. Anchorage may be obtained, in a depth of 8 m, 1¼ miles NNW of Pointe Lékondé (5.211) on the alignment of Pointe Kounda (5.240) with Pointe Tchitembo.

The mouth of Rivière Noubi, whose black waters flow into the N end of the bay, is very narrow and encumbered with rocks. Mandingo, a village stands on the E side of the river. Local knowledge is required.

OFFSHORE ROUTE POINTE TCHITEMBO TO KUITO OILFIELD

General information

Chart 604, 3206

Route

5.231

- 1 From a position SW of Pointe Tchitembo (4°12'0S, 11°23'0E), the route leads S for about 67 miles to a position W of Kuito Oilfield (5°28'0S, 11°30'5E).

Depths

5.232

- 1 The 40 m (22 fm) contour is situated about 10 miles SW of Pointe Tchitembo. Thereafter depths increase and the track is clear of charted dangers but see 5.2.

Directions

(continued from 5.211)

5.233

- 1 From a position SW of Pointe Tchitembo (4°12'0S, 11°23'0E), the track leads S, passing (with positions relative to Pointe Tchitembo):

Between Loango Oilfield and Yombo Terminal (18 and 24 miles respectively SW).

The track continues S, passing (with positions relative to Pointe Noire (4°47'1S, 11°49'4E):

W of Yanga Oilfield (25 miles W) (5.240), thence:

W of Sendji Oilfield (22 miles W), thence:

Clear of Kitina Oilfield (27½ miles WSW), thence:

Clear of N'Kossa waiting area (32 miles SW), thence:

W of N'Kossa Oilfield and its terminal (5.292) (32 miles SSW), thence:

W of Nemba Oilfield (38 miles SSW).

Thence the track leads to a position W of Kuito Oilfield (44 miles SSW).

(Directions continue at 6.8)

POINTE TCHITEMBO TO POINTE-NOIRE

General information

Charts 604, 3206

Route

5.234

- 1 From a position SW of Pointe Tchitembo (4°12'0S, 11°23'0E), the route leads SE, for about 43 miles to a

position about 5 miles W of the breakwater (4°46'3S, 11°49'4E) at Pointe-Noire.

Topography

5.235

- 1 From Pointe Kounda (4°13'S, 11°24'E), 1½ miles SSE of Pointe Tchitembo, the coastline trends SE for about 23 miles to the mouth of Rivière Kouilou; it comprises a sandy beach behind which stretches the forest, through which several streams flow into the sea. Small land-locked lagoons lie at a short distance inland.

Behind the forest there is a line of low, bare hills broken at one place by a river near Longobonda (not charted) situated about 10 miles SE of Pointe Kounda.

- 2 The coast between Longobonda and Rivière Kouilou is composed of dunes, which appear white from seaward, and on which there are a few palm trees. The hills cease abruptly, a short distance N of the mouth of Rivière Kouilou (4°28'0S, 11°41'5E).

- 3 From Rivière Kouilou, the land SE rises gently towards Loango 12½ miles SE (5.243). The action of the rain has scored the flanks of the hills into very visible ravines, the bright red colour of which is remarkable. A gently shelving sandy beach, on which the sea breaks in one long line of rollers, forms the coastline.

Depths

5.236

- 1 From Pointe Kounda (4°13'S, 11°24'E) to the mouth of Rivière Kouilou, the coast is not safe, as the sandy bottom is strewn with rocks. Five miles offshore, Mullet Bank (5.240) lies parallel to the coast and extends over a distance of 12 miles; there is a least known depth of 5.8 m (19 ft) on the bank 10 miles W of the mouth of Rivière Kouilou.

The coast between Pointe Kounda and Rivière Kouilou should not be approached within a depth of 20 m (64 ft) without local knowledge.

- 2 **Caution.** An unmarked dangerous wreck lies in position 4°21'S, 11°31'E.

Submarine pipelines

5.237

- 1 A submarine pipeline runs from Zatchi Oilfield (4°30'S, 11°25'E) 39 miles SE to Djeno (5.282) (4°55'S, 11°56'E) on the mainland, as shown on the chart. Anchoring and fishing are prohibited 5 cables either side of the pipeline.

A disused submarine pipeline lies between Loango Oilfield (4°30'S, 11°16'E) and Djeno.

Current

5.238

- 1 A strong NNE current may be experienced off Pointe Indienne (4°39'5S, 11°46'7E) from which a dangerous spit extends up to 4 miles NW. See 5.240.

Principal marks

5.239

- 1 **Landmarks:**

Clump of trees (4°30'3S, 11°45'6E).

House (white) (4°39'6S, 11°48'5E).

Radio masts (red lights) (4°46'9S, 11°51'6E).

Tank (4°47'6S, 11°49'8E).

Major light:

Pointe-Noire Main Light (black and white tower, 20 m in height) (4°47'·6S, 11°50'·2E).

Directions

(continued from 5.211)

5.240

- 1 From a position SW of Pointe Tchitembo (4°12'·0S, 11°23'·0E), the track leads SE, passing (with positions relative to Pointe Tchitembo):

SW of Pointe Kounda (not charted) (1½ miles SSE), a rounded, unremarkable promontory. Depths off it are irregular, rocks abound and the presence of uncharted shoal banks is possible. Thence:

NE of Loango Oilfield with associated oil platforms (19¾ miles SSW), thence:

- 2 SW of a dangerous wreck (5.236) (12 miles SE), and: SW of Mullet Bank (17 miles SE), a narrow ridge of hard sand and rock, lying parallel to the coast. The edges of the ridge are steep-to. See 5.236. And: NE of Zatachi Oilfield with associated oil platforms (18½ miles S), thence:

- 3 Clear of an obstruction (21 miles SSE), thence: SW of the entrance to Rivière Kouilou (25 miles SE) (5.242). The muddy waters of the river may be seen far offshore giving the appearance of shoal water. And:

NE of Yanga Oilfield (32 miles S), encompassed by a restricted area, the limits of which are as indicated on the chart, thence:

NE of Sendji Oilfield (37 miles S), encompassed by a restricted area, the limits of which are as indicated on the chart, thence:

- 4 SW of Pointe Indienne (4°39'·5S, 11°46'·7E), on which there is a ruined lighthouse. The point is low and wooded. Inland it rises to some bare hills of a reddish hue surmounting low cliffs covered with vegetation (5.235). A rocky spit with uneven depths of less than 10 m (33 ft) extends about 4 miles NW from the point and the sea breaks violently over it. A narrow sandy spit extends about 2 miles NE from Pointe Indienne enclosing a salt-water lagoon and there is shallow shelf of sand and mud which extends up to 6 cables seaward of it. Thence:

- 5 SW of Banc du Conflict (4°42'·0S, 11°45'·5E).

Thence the track leads to a position about 5 miles W of the breakwater (4°46'·3S, 11°49'·4E), at Pointe-Noire. Two unmarked dangerous wrecks lie 1 and 3 miles WNW of the head of the breakwater. Pointe Noire (4°47'·1S, 11°49'·4E) is low and largely built over.

Pointe-Noire Main Light (5.239) is exhibited from a position 8½ cables SE of Pointe Noire.

5.241

- 1 **Useful marks:**

Trees (position approximate) (4°25'·0S, 11°39'·5E).
House (4°26'·0S, 11°40'·5E).
Trees (4°31'·5S, 11°45'·5E).
Flare (4°40'·2S, 11°48'·8E).
Stranded wreck (4°40'·9S, 11°47'·1E).
Flare (11°44'·0S, 11°51'·1E).
Radio mast (4°44'·6S, 11°51'·2E).

(Directions continue for the coastal route at 5.280, and for an offshore route to Kuito Oilfield at 5.291)

(Directions for entering the port of Pointe-Noire continue at 5.264)

Anchorage**Kouilou****5.242**

- 1 **Description.** Rivière Kouilou (4°28'·0S, 11°41'·5E), is an important river which is spanned by a road bridge at its mouth but which is obstructed by rapids upstream. Bas Kouilou, a town, is situated within the mouth of the river on the S bank. Vessels anchor in the roadstead to load timber.

Depths in the approaches decrease gradually towards the bar, on which there is a depth of about 3 m (10 ft); within the river, depths of from 4 to 6 m (13 to 20 ft) have been found.

Tidal streams. The out-going stream from the river sets to the NW off the entrance, strongly so, when close inshore.

- 2 **Directions.** The approach to the roadstead is difficult to recognise, but from S a number of wooded hills are discernible and N of these is situated the mouth of the river (See 5.239). The entrance to the river is encumbered with shifting sand banks on which the sea breaks heavily; the bar has a bad reputation. During the dry season the entrance is dangerous on account of the constant, heavy, SW swell which breaks right across it.

Useful marks:

Trees (position approximate) (4°25'·0S, 11°39'·5E).

House (4°26'·0S, 11°40'·5E).

Two rocks (4°27'·7S, 11°40'·5E).

Anchorage may be obtained as indicated on the chart about 2½ miles W of the entrance in a depth of about 9·1 m (30 ft). Two rocks which do not cover are situated about 1½ miles WNW of the entrance.

Working of cargo is often suspended on account of wind and swell, or by the state of the bar.

Loango

Charts 3206, 3285

5.243

- 1 **Description.** The town of Loango (4°38'·0S, 11°49'·0E), is situated at the head of Baie de Loango which extends from Rivière Kouilou to Pointe Indienne. Seen from a distance of about 3 miles offshore, the bay appears as a thick line of trees of uniform height surmounting the beach. To the NE, and at a little distance inland, a flat-topped hill with precipitous shoulders shows above the tree-tops; to the SE, a continuous chain of hills decreases in elevation in that direction.

- 2 A short distance S of Baie de Loango are 2 groups of hills with bare summits; the vegetation on these hills grows in lines and exactly reproduces the appearance of cultivated fields separated by hedges.

- 3 **Principle marks:**

White House (4°39'·5S, 11°48'·5E).

Tree (4°39'·2S, 11°50'·8E).

It is reported that a radio mast with red obstruction lights, the top of which has an elevation of 178 m, is located on the N shore of the bay. Also, the aluminium building of the catholic mission, 3 cables ENE of the conspicuous white building, can be discerned from far off when approaching from NW.

- 4 **Anchorage** may be obtained in a depth of 8·7 m (29 ft) with Pointe Indienne bearing 190°, distant 2½ miles, with good holding ground. It is necessary to veer plenty of cable to guard against the E tornadoes, which are sometimes very violent during the rainy season from October to March. It is also necessary to keep a clearance of at least 3 m under the keel on account of rollers (1.201). It is not advisable to

anchor farther in on account of the broad shelf of sand and mud which fronts the SE side of the bay.

- 5 **Caution.** During the rainy season a strong current setting W towards the rocky spit off Pointe Indienne may be found close inshore.

- 6 **Other facilities:** hospital.

Supplies are scarce but fish is abundant in the bay.

POINTE-NOIRE

General information

Chart 3285

Position

5.244

- 1 The port of Pointe-Noire (4°47'S, 11°50'E) is situated at the head of Baie de Pointe Noire.

Function

5.245

- 1 It is the principal port of Republic of the Congo. There are facilities for general cargo, timber, manganese ore and oil.

In 1995 the population of Pointe-Noire was 576 206.

Topography

5.246

- 1 From Pointe Indienne (4°39'·5S, 11°46'·7E) the coast trends SE for about 8 miles and is mainly marshland fronted by a sandy beach. A ledge of flat rocks fringes the coast up to 3 miles W, SW and S of Pointe Indienne. The sea, forming several lines of rollers (5.246), breaks in places at a considerable distance offshore but the surf diminishes towards the S part of the bay.

- 2 Rivière Rouge enters the sea 4¼ miles SE of Pointe Indienne and Rivière Labendé and Rivière Songolo flow into a long shallow lagoon (4°45'·5S, 11°51'·1E) on the SE side of the bay. Between Rivière Rouge and the lagoon there is an oil refinery whose storage tanks and flares are conspicuous from offshore.

Oil production platforms are often anchored temporarily in the bay.

- 3 Pointe Noire (4°47'·1S, 11°49'·4E) (5.240) is mainly built over. Plage Mondaine (not charted), close ESE of the harbour, is a safe bathing beach.

Approach and entry

5.247

- 1 The port is approached from W through Baie de Pointe Noire and entered between breakwaters situated E of Dique Extérieure (5.261).

Traffic

5.248

- 1 In 2003, the port was used by 647 ships. About 2·8 million tonnes of cargo are handled annually.

Port Authority

5.249

- 1 Port Autonome de Pointe-Noire, BP 711, Pointe-Noire, The Congo.

Limiting conditions

Controlling depth

5.250

- 1 There is a minimum charted depth of 10·2 m in the approach to the harbour.

Deepest and longest berth

5.251

- 1 **Deepest.** Quai G (5.268).
Longest. Quai D (5.268).

Tidal levels

5.252

- 1 Mean spring range about 1·3 m; mean neap range about 0·7 m. See *Admiralty Tide Tables Volume 2*.

Density of water

5.253

- 1 The density of the water is 1·025 g/cm³.

Maximum size of vessel handled

5.254

- 1 Maximum permitted draught 9·5 m.

Arrival information

Port radio

5.255

- 1 There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required

5.256

- 1 ETA should be sent 24 and 12 hours prior to arrival.

Outer anchorage

5.257

- 1 **Anchorage** may be obtained as indicated on the chart about 7½ cables N of the head of Dique Extérieure in a depth of about 14 m. The holding is good but the anchorage is exposed to rollers which though not dangerous require an underkeel clearance of at least 3 m. During the rainy season from October to March vessels should anchor with a good scope of cable on account of tornadoes from E, which though fairly rare, can give rise to violent winds. See 1.218.

An anchorage berth for vessels proceeding to Djeno Terminal (5.282) is situated 4½ miles NW of Dique Extérieure as indicated on the chart.

Prohibited anchorage. A prohibited anchorage the limits of which are indicated on the chart, protects the harbour approach.

Submarine pipeline

5.258

- 1 A submarine pipeline extends SW for 1¼ miles from 4°43'·4N, 11°49'·7E on the NE side of Baie de Pointe Noire.

Pilotage

5.259

- 1 Pilotage is compulsory and available in daylight only for tankers but throughout 24 hours for other vessels. The pilot boards as indicated on the chart about 5 cables NNE of the head of Dique Extérieure. See *Admiralty List of Radio Signals Volume 6(3)*.

Tugs

5.260

- 1 Tugs are available.

Harbour

General layout

5.261

- 1 The harbour area fronts the town of Pointe-Noire and is enclosed by Digue Extérieure, extending N from Pointe Noire (4°47'·1S, 11°49'·4E), Digue Intérieure, extending E from a position about 5 cables N of Pointe Noire, and a long, detached breakwater to the E.
- 2 An oilfield support base (5.270) is situated on the opposite side of Baie de Pointe Noire, 1 mile E of the harbour.

Natural conditions

5.262

- 1 **Current.** The current in Baie de Pointe Noire usually sets NNE under the influence of the predominant wind at a rate from ¼ to ½ kn.

Tidal streams are weak.

Climatic table. See 1.226 and 1.238.

Principal marks

5.263

- 1 **Landmarks:**
Two silos on Digue Intérieure (4°46'·6S, 11°49'·6E).
Two silos on Digue Extérieure (4°46'·9S, 11°49'·4E).
Radio masts (red lights) (4°46'·9S, 11°51'·6E).
Tank (4°47'·6S, 11°49'·8E).
Building (4°47'·8S, 11°51'·0E).
Djeno Lighthouse (4°55'·0S, 11°55'·8E) (5.279)
- Major lights:**
Pointe-Noire Main Light (4°47'·6S, 11°50'·2E) (5.239).
Djeno Light (4°55'·0S, 11°55'·8E) (5.279).

Directions for entering harbour

(continued from 5.241)

Seaward to waiting anchorage

5.264

- 1 From a position about 5 miles W of the breakwater (4°46'·4S, 11°49'·5E), the track leads E, passing (with positions relative to head of Digue Extérieure):
Clear of an unmarked dangerous wreck (2¾ miles WNW), thence:
N of Banc des Anglais (1½ miles WNW). An unmarked dangerous wreck lies on the SE side of the bank. Banc du Sagittaire and Banc de la Syzgie, and Banc de la Pointe lie 7 cables, 1¼ miles and 1¾ miles respectively SE of Banc des Anglais. Thence:
N of the head of Digue Extérieure.
Thence the track leads to the waiting anchorage about 9 cables NNE of the head of Digue Extérieure.

Waiting anchorage to harbour

5.265

- 1 **Leading marks:**
Cathedral (4°47'·8S, 11°50'·8E) (5.266).
Pylon (540 m from Cathedral).
From a position in the vicinity of the waiting anchorage about 9 cables NNE of the head of Digue Extérieure, the alignment (150½°) of these marks leads SSE, for about 1 mile passing (with positions relative to the head of Digue Extérieure (4°46'·4S, 11°49'·5E)):
2 WSW of Banc de l'Astrolabe (1½ miles NNE), and:
WSW of Banc Songolo (1½ miles NE), thence:

ENE of a light-buoy (starboard hand) (3½ cables NE), thence:

ENE of the E edge of a sand trap (5¼ cables E).
Mariners are advised that in the past the sand trap has had a tendency to spread E thereby reducing depths on the W side of the approach channel.
Thence:

WSW of an anchorage for vessels loading timber (5.269).

Leading marks:

Pylon (4°47'·2S, 11°50'·0E).

Pylon (725 m from front pylon).

The alignment (177°) of these marks leads S for about 2 cables to pass between the breakwaters from which lights (5.266) are exhibited and into the harbour.

Useful marks

5.266

- 1 Flare (11°44'·0S, 11°51'·1E).
Grande Passe W Light (white tower) (4°46'·7S, 11°50'·0E).
Detached Breakwater N Head Light (white tower) (4°46'·7S, 11°50'·1E).
Cathedral (lighted) (4°47'·8S, 11°50'·8E).
Radio mast (4°44'·6S, 11°51'·2E).
Stranded wreck (4°46'·6S, 11°50'·6E).
Stranded wreck (4°46'·8S, 11°50'·5E).
Two water towers (4°47'·2S, 11°51'·5E).

Berths

5.267

- 1 Alongside depths are charted depths. The port authorities should be contacted for the latest information.

Alongside

5.268

- 1 **Quai G** (4°46'·7S, 11°49'·6E), provides a total length of 520 m with 3 berths and alongside depths from less than 10 m to 11·7 m.
Quai D (4°46'·9S, 11°49'·5E), provides a total length of 720 m with 5 berths and depths about 9 m alongside.
Mole No 1 (4°47'·0S, 11°49'·8E), provides 2 berths with depths from 5·1 to 9·4 m alongside. To the E of the mole is a large park for the storage of timber and a jetty for transferring logs either to the water or to lighters.
Oil Jetty (4°47'·0S, 11°49'·9E). There is an oil jetty at the head of Mole No 1 for the discharge of petroleum products with alongside depth about 10·0 m.

Anchorage

5.269

- 1 There is an anchorage (4°46'·5S, 11°50'·3E) with a general depth of about 7·0 m for vessels loading logs. Several mooring buoys are located within the anchorage.

Oilfield support base.

5.270

- 1 **General information.** The oilfield support base serves the local offshore oilfields.
Directions. A recommended track (116°) leads 1½ miles ESE from the vicinity of the pilot boarding position to the oilfield support base passing (with positions relative to the head of Digue Extérieure (4°46'·4S, 11°49'·5E)):
2 NNW of a light-buoy (starboard hand) (3½ cables NE), thence:
NNW of an anchorage (8 cables E) for vessels engaged in loading logs in which there are several unlit mooring buoys, thence:

SSE of an unmarked dangerous wreck (1¼ miles ENE), thence:

NNW of a stranded wreck (1¼ miles ESE).

Thence the track leads close inshore to the berth.

- 3 **Useful mark.** The S of two radio masts (red obstruction light, 65 m in height) (4°46'9S, 11°51'6E) will be ahead when on the recommended track.

Berth. The jetty is 600 m long and projects 60 m from the shore. Depths alongside range from 5 to 6.8 m. There is a slipway.

Port services

Repairs

5.271

- 1 A variety of hull, machinery and electronic repairs can be carried out and divers are available. There is a floating crane of 100 tonnes capacity.

There is a slipway for vessels 35 m in length, 15.4 m beam, 5 m draught, and up to 600 dwt.

Other facilities

5.272

- 1 Two hospitals and numerous clinics.

Supplies

5.273

- 1 Fuel oil; fresh water, stores.

Communications

5.274

- 1 An international airport 6 km SE of the town.

POINTE-NOIRE TO RIVIÈRE MASSABI

General information

Chart 3206

Route

5.275

- 1 From a position about 5 miles W of the breakwater (4°46'4S, 11°49'5E) at Pointe-Noire, the route leads SE for about 23 miles to a position SW of Rivière Massabi (5°02'0S, 12°01'0E).

Topography

5.276

- 1 From Pointe Noire (4°47'1S, 11°49'4E) to Rivière Massabi, the coast is sandy and straight. It is exposed to the prevailing wind and sea and the surf on it is very heavy.

Depths

5.277

- 1 Between Pointe Noire and Rivière Massabi, the 20 m (11 fm) contour lies between 1 and 3 miles offshore. Most of the coastal water inshore of this contour is unsurveyed, as shown on the chart.

International boundary

5.278

- 1 The mouth of Rivière Massabi (5°02'0S, 12°01'0E) forms the international boundary between the Democratic Republic of the Congo and Angola (Cabinda Enclave).

Principal marks

5.279

- 1 **Landmarks:**

Radio masts (4°46'9S, 11°51'6E) (5.263).

Two silos on Digue Extérieure (4°46'9S, 11°49'4E).

Tank (4°47'6S, 11°49'8E).

Pier (disused) (4°49'1S, 11°50'6E) (5.280).

Djeno Lighthouse (aluminium pylon, 17 m in height) (4°55'0S, 11°55'8E).

Major lights:

Pointe-Noire Main Light (4°47'6S, 11°50'2E) (5.239).

Djeno Light — as above.

Directions

(continued from 5.241)

5.280

- 1 From a position about 5 miles W of the breakwater (4°46'4S, 11°49'5E) at Pointe-Noire, the track leads SE, passing (with positions relative to Pointe Noire (4°47'1S, 11°49'4E)):

SW of a dangerous wreck (3 miles NW), thence:

SW of Banc des Anglais (2 miles NW). A dangerous wreck lies on the SE side of the bank. Banc du Sagittaire and Banc de la Syzzie, and Banc de la Pointe lie 7 cables, 1¼ miles and 1¾ miles respectively SE of Banc des Anglais. And:

- 2 NE of Tchibouela Oilfield (14 miles SW), encompassed by a restricted area, the limits of which are indicated on the chart, thence:

SW of Pointe Noire, thence:

SW of a disused pier (2 miles SE), extending 7½ cables seaward. The pier, which was formerly used for the loading of potash, supports two ruined gantries of more than 50 m height at its extremity. And:

Clear of a waiting anchorage (11 miles SW), the limits of which are indicated on the chart, and:

- 3 NE of Tchendo Oilfield (17½ miles SW), thence:

SW of Fausse (False) Pointe Noire (7 miles SE), rocky and steep-to, rising to a height of about 7 m. Care should be taken not to mistake it for Pointe Noire. A stranded wreck lies on the coast 1 mile NW of the point and the mouth of Lagune M'Vassa is located close NW of the point. Thence:

- 4 NE of Emeraude Oilfield (14 miles S), consisting of numerous platforms in two distinct clusters. The oilfield is encompassed by a restricted area, the limits of which are indicated on the chart. Likoula Oilfield lies about 11 miles SSW. And:

SW of Djeno Terminal (10¼ miles SE) (5.282), thence:

- 5 SW of a rocky point (11 miles SE), from which rocks, over which there are depths of less than 5 m, extend offshore for over 7 cables. The mouth of Rivière Malonda (not charted), is situated about 1½ miles SE of the above point. In its approach the bottom changes rapidly from soft mud to clay and from clay to shells.

Thence the track leads to a position SW of Rivière Massabi (19 miles SE) (5.288).

5.281

1 Useful marks:

Stranded wreck (4°51'·6S, 11°53'·0E).

Radio tower (red obstruction lights; 110 m in elevation) (4°55'·0S, 11°56'·0E).

(Directions continue at 6.28)

Djeno Terminal

General information

5.282

- 1 **Position.** Djeno Terminal (4°56'·4S, 11°54'·0E) is situated 10 miles SSE of Pointe Noire.

Function. The terminal is the hub for several offshore oilfields to which it is connected by submarine pipelines. Loading takes place at an SBM moored about 2 miles SW of the tank farm onshore.

Approach and entry. The terminal is approached from NW via Baie de Pointe Noire. The pilot boarding position and waiting anchorage are located in Baie de Pointe Noire.

Traffic. In 2003, the terminal was used by 44 ships. About 2·7 million tonnes of crude oil are exported annually.

Port Authority. Elf Congo, BP 761, Pointe-Noire, Congo.

Limiting conditions

5.283

- 1 **Controlling depths.** There are depths of 22 m (12 fm) in the vicinity of the SBM.

Density of water is 1·025 g/cm³.

Maximum size of vessel handled. Length 320 m, loaded draught 16 m. The maximum draught may be reduced in certain weather conditions.

- 2 **Local weather and sea state.** The current generally sets N or NNW at less than 1½ kn but occasionally stronger. It can also reverse and set S but this phenomenon rarely lasts more than 2 days.

The swell is generally from SSW with a height of less than 2·5 m.

Arrival information

5.284

- 1 **Port operations.** Berthing in daylight hours only, departure at any time.

Port radio. There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required. Send ETA 72, 48 and 24 hours prior to arrival.

- 2 **Outer anchorage** may be obtained in Baie de Pointe Noire 4½ miles NW of Dique Extérieure (4°46'·4S, 11°49'·5E) as indicated on the chart. It is reported that vessels have also anchored in the vicinity of the pilot boarding position (see below).

Pilotage is compulsory and provided by Pointe Noire pilots. The pilot boards about 2 miles W of Dique Extérieure (4°46'·4S, 11°49'·5E) as indicated on the chart.

Tugs are available from Pointe-Noire. A tug will remain attached to the stern of the export tanker throughout the loading operation.

Prohibited area. There is a prohibited area with 1 mile radius centred on the SBM. Only export tankers with a pilot onboard may enter the area.

Regulations concerning entry. Main engines must be kept on standby throughout the stay.

Principal marks

5.285

1 Landmark:

Djeno Lighthouse (4°55'·0S, 11°55'·8E) (5.279).

Major lights:

Pointe-Noire Main Light (4°47'·6S, 11°50'·2E) (5.239).

Djeno Light (4°55'·0S, 11°55'·8E) (5.279).

Directions

5.286

- 1 The approach SE from Baie de Pointe Noire is safe but caution is required in this area of offshore oil activity. See 5.2.

Services

5.287

- 1 **Repairs:** nil.

Other facilities: no oily waste or dirty ballast reception facilities; no garbage facilities. Hospitals at Pointe Noire.

Supplies: Bunkers and fresh water available by barge at Pointe Noire.

Communications: international airport at Pointe-Noire.

Anchorage

Rivière Massabi

5.288

- 1 **Anchorage** may be obtained about 1 mile off Rivière Massabi (5°02'·0S, 12°01'·0E), in a depth of about 10 m (33 ft), fairly good holding ground. Local knowledge is required.

Rivière Massabi is the entrance to Lagoa Massabi, a large lagoon which extends up to 7½ miles inland and into which flows the common continuation of Rivières Loémé and Massabi. The mouth of Rivière Massabi is about 60 m wide and its bar has a least depth of about 0·5 m.

OFFSHORE ROUTE POINTE NOIRE TO KUITO OILFIELD

General information

Chart 3206

Route

5.289

- 1 From a position about 5 miles W of the breakwater (4°46'·4S, 11°49'·5E) at Pointe-Noire, the route leads SW for about 8½ miles and thence SSW for about 39 miles to a position W of Kuito Oilfield (5°28'·0S, 11°30'·5E).

Depths

5.290

- 1 Depths along the route increase progressively from a least depth of 35 m (19 fm), 5 miles W of Pointe Noire.

Directions

(continued from 5.241)

5.291

- 1 From a position about 5 miles W of the breakwater (4°46'·3S, 11°49'·4E) at Pointe-Noire, the track leads SW, passing (with positions relative to Pointe Noire (4°47'·1S, 11°49'·4E)):

NW of Tchibouela Oilfield (14 miles SW).

Thence the track leads SSW, passing:

- 2 WNW of Tchibouela Oilfield, thence:
WNW of Tchendo Oilfield (17 miles SW), thence:
3 ESE of N'Kossa waiting area (32 miles SW), thence:
WNW of N'Kossa Oilfield (32 miles SSW) (5.292),
thence:

WNW of Lomba Oilfield (36 miles SSW). Nembra oilfield is situated about 3 miles SE.

Thence the track leads to a position W of Kuito Oilfield (44 miles SSW).

Caution. All the aforementioned oilfields are surrounded by a restricted area the limits of which are shown on the chart. Mariners are advised not to enter these areas unless authorised. See 5.2.

(Directions continue at 6.8)

N'Kossa Terminal

General information

5.292

- 1 **Position.** N'Kossa Terminal (FSO *N'Kossa 1*) (5°15'8S, 11°36'1E) is located 30 miles SW of Djeno Terminal (5.282).

Function. The terminal comprises two FSOs, *N'Kossa 1* for crude oil and, 2 miles NW, *N'Kossa 2* for petroleum gas. The oilfield also contains two production platforms and a large production barge from which a conspicuous flare is displayed at an elevation of 83 m.

Approach and entry. The terminal is generally approached from a waiting area located 13 miles NW of the oilfield.

There is also an approach channel, as shown on the chart, aligned 200°–020°, 14 miles long and 2½ miles wide, which passes between various oilfields and which leads from a waiting anchorage 10 miles W of Djeno Terminal (5.282).

Port Authority. Elf Congo, Avenue Poincarre, BP 761, Pointe-Noire, Congo.

Limiting conditions

5.293

- 1 **Controlling depths.** FSO *N'Kossa 1* is moored in a depth of 126 m (69 fm).

Density of water is 1.025 g/cm³.

Maximum size of vessel handled at FSO *N'Kossa 1* is 280 000 dwt.

Arrival information

5.294

- 1 **Port operations.** Berthing between 0600 and 1600 hours, or later with special permission. Unberthing at any time.

Port radio. There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required. Send ETA 72, 48 and 24 hours prior to arrival.

- 2 **Waiting area.** There is a waiting area with radius 3 miles centred on 5°06'4S, 11°24'1E. Vessels must not allow themselves to drift E of 11°27'5E.

There is also a waiting anchorage with radius 1½ miles centred on 4°56'9S, 11°44'1E. This anchorage, which may also be used by vessels calling at Djeno Terminal, can only be used with the permission of the terminal authority.

- 3 **Pilotage** is compulsory. Pilot boards vessel about 3 miles N of FSO *N'Kossa 1*, as indicated on the chart.

Tugs are available.

Restricted area. A restricted area, the limits of which are indicated on the chart, encompass N'Kossa Oilfield. Vessels must not enter the restricted area without the permission of the terminal authority and without a pilot embarked.

Regulations concerning entry. Main engines must be kept on standby throughout the stay.

Berth

5.295

- 1 The export tanker secures bow to stern in tandem with the FSO. The FSO rotates to wind and current about a bow turret.

A tug or supply vessel remains attached to the stern of the export tanker throughout the loading operation.

Services

5.296

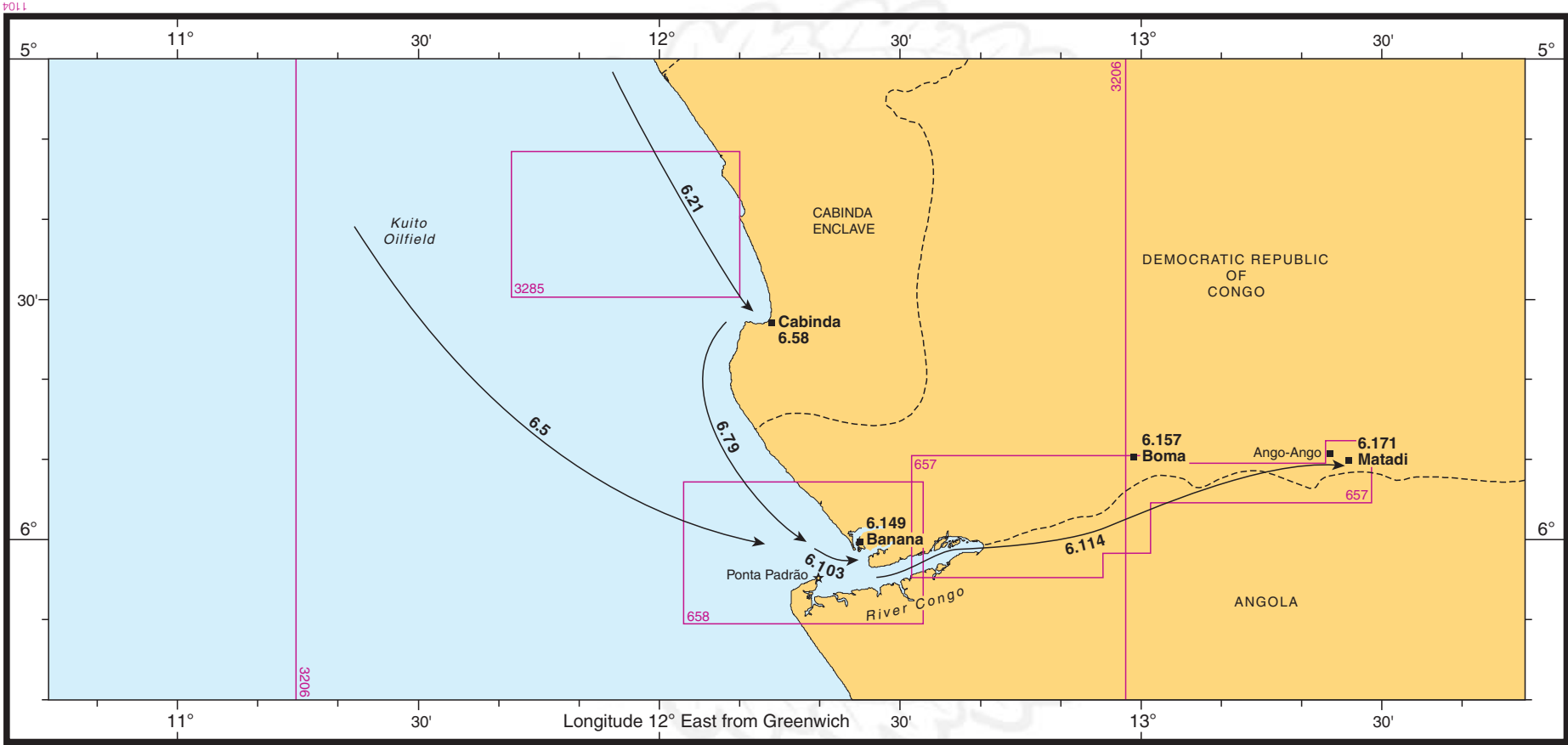
- 1 **Repairs:** nil.

Other facilities: no oily waste or dirty ballast reception facilities; no garbage facilities. Hospitals at Port Noire for emergencies.

Supplies: fuel oil, fresh water and provisions are available at Pointe Noire.

Communications: international airport at Pointe-Noire.

Chapter 6 - Rivi re Massabi to River Congo



CHAPTER 6

RIVIÈRE MASSABI TO RIVER CONGO

GENERAL INFORMATION

Chart 3206

Scope of the chapter**6.1**

- 1 This chapter comprises the coastal and offshore routes, anchorages, harbours and oil terminals along the coast of Angola (Cabinda enclave) from Rivière Massabi (5°02'0S, 12°01'0E), to Ponta Padrão (6°04'5S, 12°19'8E). Also included is River Congo.

The chapter is divided into the following sections:

Rivière Massabi to River Congo approach (6.4).

River Congo and approaches (6.97).

Marine exploitation**6.2**

- 1 Marine exploitation is extensive in the area covered by this chapter. See 1.14.

Piracy**6.3**

- 1 Mariners are advised to be alert for pirates in the coastal waters of Angola and The Democratic Republic of Congo.

RIVIÈRE MASSABI TO RIVER CONGO APPROACH

GENERAL INFORMATION

Chart 3206

Area covered**6.4**

- 1 This section describes the offshore and coastal routes, anchorages and harbours from Rivière Massabi (5°02'0S, 12°01'0E), to Ponta Padrão (6°04'5S, 12°19'8E) about 65 miles SSE. Also described is the port of Cabinda.

It is arranged as follows:

Offshore route Kuito Oilfield to River Congo approach (6.5).

Rivière Massabi to Cabinda (6.21).

Cabinda (6.58).

Cabinda to River Congo approach (6.79).

OFFSHORE ROUTE — KUITO OILFIELD TO RIVER CONGO APPROACH**General information**

Chart 3206, 658

Route**6.5**

- 1 From a position W of Kuito Oilfield (5°28'S, 11°30'E), the route leads SE for about 62 miles to a position about 9 miles WNW of Ponta Padrão (6°04'5S, 12°19'8E).

Depths**6.6**

- 1 There are depths in excess of 20 m (11 fm) in the offshore route.

Principal mark**6.7**

- 1 **Major light:**

Kupundji Light (5°53'5S, 12°17'7E) (6.87).

Directions

(continued from 5.291)

6.8

- 1 From a position W of Kuito Oilfield (5°28'S, 11°30'E), the track leads SE, passing (with positions relative to Ponta do Tafe (5°33'0S, 12°10'9E)):

SW of Kuito Oilfield (41 miles W), and:

Clear of Kuito waiting area (49 miles W), thence: SW of Kokongo and Bomboco Oilfields (27 miles WSW), thence:

- 2 SW of N'Dola North oilfield (26 miles WSW), thence:

SW of Sanha LPG Terminal (20½ miles WSW) (6.15) in the South Sanha Oilfield, thence:

SW of Livuite Oilfield (16 miles SW), thence:

SW of Lukami Oilfield (18 miles S), thence:

SW of a dangerous wreck, the position of which is doubtful (21½ miles S), thence:

SW of Moanda Terminal (25 miles S) (6.91).

- 3 Thence the track leads to a position about 9 miles WNW of Ponta Padrão (6°04'5S, 12°19'8E), from which Ponta Padrão light (white metal framework tower, 7 m in height) is exhibited. The framework tower is mounted on a carriage which enables it to be moved away from the heavy erosions of the river at that point.

- 4 **Caution.** Changes in depths have been reported off the point. Mariners should give the area a wide berth and keep at least 1 mile offshore.

(Directions continue for River Congo approaches at 6.108, for an offshore route at 7.8 and for a coastal route at 7.25)

Kuito Terminal**General information****6.9**

- 1 **Position.** Kuito Terminal (5°27'9S, 11°30'3E).

Function. It is an offshore oil terminal with an SBM and FPSO.

Approach and entry. The terminal is approached and entered through a restricted area.

Port Authority. Cabinda Gulf Oil Company, CP 40, Cabinda, Angola.

Limiting conditions**6.10**

- 1 **Controlling depths.** The SPM is moored in a depth of 414 m (226 fm).

Density of water is 1.025 g/cm³.

Maximum size of vessel handled. Length 350 m, 320 000 dwt. No draught restriction.

Local weather and sea state. See 6.44.

Arrival information

6.11

- 1 **Port operations.** Berthing between 0600 and 1800, unberthing at any time.

Port radio. A continuous VHF watch is maintained by Malongo Terminal (6.43) and the Kuito FPSO (callsign Kuito Control). See *Admiralty List of Radio Signals Volume 6(3)* for further details.

Notice of ETA required. Send ETA 72, 48 and 24 hours prior to arrival.

- 2 **Waiting Area.** A circular waiting area with radius 3 miles is centred on 5°34'S, 11°22'E. There is no designated anchorage due to the depth of water.

Pilotage is compulsory. Pilot boards vessel about 2¾ miles NW of the SBM (5°27'9S, 11°30'3E).

Tug. A tug is available.

Restricted area. A restricted area, the limits of which are indicated on the chart, encompasses Kuito Oilfield.

Regulations concerning entry. Main engines must be kept on standby throughout the stay.

Directions

6.12

- 1 Unless instructed to proceed directly to the pilot boarding position, vessels should make for the designated waiting area and await instructions.

- 2 The SPM light (Morse code "U") has a range of 10 miles. Drilling rig activities are continuously conducted in the vicinity of the FPSO. The rigs are well lit.

Berth

6.13

- 1 The export tanker moors to the SBM. The tug will remain secured to the stern of the export tanker throughout the loading operation.

Services

6.14

- 1 **Repairs:** nil.
Other facilities: No oily waste or dirty ballast facilities; no garbage facilities. Hospital at Cabinda for emergencies.
Supplies: nil.
Communications: airport at Cabinda.

Sanha LPG Terminal

General information

6.15

- 1 **Position.** Sanha LPG Terminal (5°38'2S, 11°51'2E).

Function. It is an LPG-FPSO producing propane and butane from the Sanha Oilfield and other oilfields in the vicinity. Eventually it will supersede the Cabinda LPG Terminal (6.47). Three miles SW of the FPSO are three platforms comprising a condensate complex. Crude oil from Sanha Field is pumped to Malongo Terminals (6.47).

- 2 **Approach and entry.** The terminal is approached from either NW or SW avoiding numerous offshore oil and gas fields. The FPSO is moored within a restricted area.

Port Authority. Cabinda Gulf Oil Company, CP 40, Cabinda, Angola.

Limiting conditions

6.16

- 1 **Controlling depth.** There is a least depth of 47 m (26 fm) in the SW approach to the Sanha pilot boarding position and 53 m (29 fm) in the NW approach.

Local weather and sea state. See 6.44.

Arrival information

6.17

- 1 **Port operations.** Berthing and unberthing between 0600 and 1800.

Port radio. A continuous VHF watch is maintained by Malongo Terminal (6.43) and the Sanha LPG Terminal. See *Admiralty List of Radio Signals Volume 6(3)* for further details.

Notice of ETA required. 7 days, 72, 48 and 24 hours prior arrival. Upon arrival contact Patrol Boat DA or DB on VHF.

- 2 **Pilotage** is compulsory. The pilot boards in position 5°35'0S, 11°53'0E, 3½ miles NE of the FPSO.

Restricted area. A restricted area, the limits of which are shown on the chart, encompasses Sanha FPSO, South Sanha Oilfield and N'Dola North Oilfield. Vessels should not enter the area without authorisation or without a pilot on board. Anchoring within the restricted area is prohibited.

Directions

6.18

- 1 An area of intensive offshore oil and gas activity extends about 60 miles NW of the FPSO. Approaching vessels are advised to avoid passing in-between the four restricted areas which enclose Nemba, Kuito, Bomboco/Kokongo and N'Dola North/South Sanha Oilfields as shown on the chart.

Not all platforms and pipelines may be charted. Masters are advised to navigate with extreme caution and not approach within 500 m of any structures and storage vessels or enter any restricted areas without authorisation.

Berth

6.19

- 1 The FPSO is 264 m in length and is moored in a depth of 62 m (34 fm). Export vessels secure either alongside or in tandem.

Services

6.20

- 1 See 6.14.

RIVIÈRE MASSABI TO CABINDA

General information

Chart 3206, 658

Route

6.21

- 1 From a position SW of Rivière Massabi (5°02'0S, 12°01'0E), the route leads SE and SSE for about 30 miles to a position about 4½ miles NW of Ponta do Tafe (5°33'0S, 12°10'9E).

Topography

6.22

- 1 The coastline between Rivière Massabi and Rio Chiloango, 12 miles SE, is straight and without indentations. Morro Praia, 97 m high, 9 miles SE of Rivière Massabi, is a coastal hillock which stands at the N end of a range of hills which run parallel to the coast as far S as the River Congo. These hills attain an elevation of up to 160 m.

The coast in the vicinity of Praia do Fútila (5°26'5S, 12°13'0E), is a broad low plain studded with palm trees. Rio Lulondo enters the sea 1½ miles SSE of Praia do Fútila.

Depths

6.23

- 1 Depths of 200 m (109 fm) lie at a distance of 30 to 37 miles off this part of the coast. The nature of the bottom near the coast and as far out as 20 m (11 fm) is mud. Farther out grey, muddy sand, sand and gravel, and sand mixed with coral are found, this last being more general in the mouth of the Congo. It is only in a few places that the bottom is rocky.

Submarine pipelines

6.24

- 1 Numerous submarine pipelines are laid between offshore oilfields and Malongo (5°23'5S, 12°11'8E) on the coast.

Traffic regulations

6.25

- 1 **Restricted Area.** A restricted area in which anchoring is prohibited encloses the greater part of Malongo oilfield. The limits are indicated on the chart and extend from a position on the coast about 1¼ miles N of Ponta de Malembo (5°19'8S, 12°10'0E) to a position on the coast 12½ miles SSE; the seaward limits extend up to 10 miles offshore.

Mariners are advised not to enter this area unless authorised.

Principal marks

6.26

- 1 **Major lights:**
Ponta do Tafe Light (white square framework tower, white hut) (5°33'0S, 12°10'9E).
Aero light (red metal framework tower, 57 m in height) (5°33'9S, 12°11'5E).

Other aid to navigation

6.27

- 1 **Racon:**
Malongo Oil Terminal (5°24'8S, 11°59'5E). See *Admiralty List of Radio Signals Volume 2*.

Directions

(continued from 5.281)

Rivière Massabi to Ponta de Cacongo

6.28

- 1 From a position SW of Rivière Massabi (5°02'0S, 12°01'0E), the track leads SE, passing (with positions relative to Ponta Cacongo (5°14'5S, 12°08'0E)):
SW of a shoal patch (12½ miles NW), with a depth of 4.2 m (14 ft) over it. Another shoal patch with 4.5 m (15ft) over it is located 1½ miles SE. Thence:
NE of an oil platform (13¼ miles WNW), part of Banzala Oilfield. A dangerous wreck the position of which is approximate, lies about 1½ miles SW. Thence:
Clear of a light-buoy (special) (8 miles NW) marking an obstruction with a depth of about 4 m over it. SW of the entrance to Rio Chiloango (2¼ miles NE) (6.55), thence:
2 NE of Numbi Oilfield (12 miles SW).
Thence the track leads to a position SW of Ponta de Cacongo (Ponta Cacongo), bold and bluff appearance, from which a light (6.30) is exhibited.

Ponta de Cacongo to Ponta do Tafe

6.29

- 1 From a position SW of Ponta de Cacongo (5°14'5S, 12°08'0E), the track leads SSE, passing (with positions relative to Ponta de Cacongo):
Clear of numerous oil platforms (5½ miles SSW) extending S towards Ponta do Tafe, forming part of Malongo Oilfields (6.43), and:
2 WSW of the coastal bank with depths of less than 2.4 m (8 ft) over it extending up to 1½ miles offshore. Between Enseada de Cacongo, N of Ponta de Cacongo, and Enseada do Malembo (6.57), vessels should not approach the coast into depths of less than 11 m (36 ft). Thence:
3 WSW of Ponta de Malembo (5¾ miles SE), a grassy tongue of land extending NNW from the base of some abrupt red chalky cliffs surmounted by vegetation, and here and there by trees. These red cliffs, which line the coast N and S of the bay, assist in identifying it. A narrow rocky shoal with depths of less than 5.5 m (18 ft) over it, extends about 1 mile NW from the point. Thence:
4 WSW of Malongo (10 miles SE), from which Malongo Leading Lights (6.35) are exhibited, thence:
Clear of numerous oil platforms (9 miles S) forming part of Malongo Oilfields (6.43), thence:
5 WSW of Futila Oil Terminal (13¼ miles S) (6.49). Light-buoys (special) are moored about 7½ cables NW, 1¼ miles WSW and 2¼ miles SSW respectively of the terminal. A dangerous wreck lies about 3 miles SSW of the same terminal. A shelf of sand and rock, with depths of less than 5.5 m (18 ft) over it fronts Praia do Futila (5°26'5S, 12°13'0E) for a distance of 1½ miles offshore and this extends S filling Enseada de Cabinda (6.60) for a distance of nearly 3½ miles from the head of the bay. On the outer edge of this bank there are depths of 4.6 m (15 ft) but the sea does not usually break upon it. Care should therefore be taken to sound frequently and to give this part of the coast a wide berth.
6 Thence the track leads to a position about 4½ miles NW of Ponta do Tafe (18¾ miles S), low and covered with bushes, from which Ponta do Tafe Light (6.26) is exhibited: a radio mast with aero light (6.26) stands 1 mile SE. Two shoal patches with depths of 4.9 m (16 ft) and 4.0 m (13ft), lie 1¼ miles WNW and W respectively of Ponta do Tafe. Three dangerous wrecks lie 1¼, 2 and 3 miles NW respectively of the point. Close off the point are submerged rocks on which the sea breaks.

Useful mark

6.30

- 1 Ponta de Cacongo Lighthouse (white square tower, 9 m in height) (5°14'4S, 12°07'9E).
(Directions continue at 6.88. Directions for the port of Cabinda are given at 6.73)

Malongo

General information

6.31

- 1 **Position.** Malongo (5°23'5S, 12°11'8E), lies about 10 miles N of Cabinda.
Function. It is the storage terminal and supply base for the oil fields situated to the W. A number of oil pipelines

make their landing at Malongo. The jetty is utilised by supply vessels, coasters, lighters and tugs.

Port authority. Cabinda Gulf Oil Company, CP 40, Cabinda, Angola.

Limiting conditions

6.32

Deepest and longest berth. Jetty (6.36).

Tidal levels. At Enseada de Cabinda the mean spring range is about 1.4 m; mean neap range about 0.6 m. See information in *Admiralty Tide Tables Volume 2*.

1 **Density of water** is 1.025 g/cm³.

Local weather and sea state. The jetty is subject to swell, the effect of which increases near the shore; so offshore swell conditions are not a good indicator of conditions at the jetty. Under some swell conditions the jetty may be closed to traffic.

Arrival information

6.33

1 **Port radio.** There is a port radio station. For details see *Admiralty List of Radio Signals Volume 6(3)*.

Outer anchorage. Accurate navigation is essential as there are numerous submarine pipelines in the area, not all of which are charted. Permission to anchor must be obtained from Cabinda Gulf Oil Company (CABGOC). The position of the anchor must be recorded and reported to CABGOC, and an anchor watch must be maintained at all times. Two anchorages have been designated by CABGOC as follows:

2 Cargo vessels: 5°31'S, 12°08'E, as indicated on the chart. See 6.69.

Caution. Unmarked dangerous wrecks lie SE of this anchorage. See 6.29.

3 CABGOC supply vessels: 5°22'.8S, 12°09'.4E.

Caution. An unmarked dangerous wreck lies in 5°22'.5S, 12°09'.1E, about 4 cables NNW of the anchorage.

4 **Pilotage** is not compulsory.

Tugs are available by special arrangement.

Restricted area. A restricted area which vessels are not permitted to enter lies S and seaward of the jetty. It extends from the S side of the jetty at right angles to the coast out to 12°10'E, thence S along that meridian to 5°25'S and follows that latitude to the shore.

Harbour

6.34

1 **General layout.** A supply base, consisting of an L shaped jetty.

Submarine pipelines. Numerous submarine pipelines are laid from the oilfields in the W to Malongo and are landed immediately SSE of the jetty.

Directions for entering harbour

6.35

1 **Leading lights.** The alignment (070°) of the following lights lead towards the harbour:

Front (white 3-sided tower, 10 m in height) (5°23'.6S, 12°11'.8E).

Rear light (similar structure).

Useful marks:

Pipelines (silver) on the hillside behind the jetty.

Radio tower (125 m in height), 5 cables SE of the leading lights.

Flare, close NW of the leading lights.

Berths

6.36

1 Alongside depths are reported depths. The port authorities should be contacted for the latest information.

An L shaped concrete jetty extending 183 m WSW from the shore then NW for 91 m, provides two berths on its N side with alongside lengths of 76 m and 61 m and a reported (1997) depth of 5 m.

Port services

6.37

1 **Facilities.** Doctor.

Supplies. Fuel and fresh water can be supplied by barge.

Takula Terminal

Chart 3285 plan of Takula and Malongo Terminals

General information

6.38

Position. Takula Terminal (5°13'.2S, 11°48'.7E).

Function. It is an offshore oil terminal with an SBM. It is only used in emergency as oil is now stored at Malongo and exported through the Malongo Terminal (6.43).

Approach and entry. The anchorage is approached from W through an area of intensive offshore oil and gas activity. Masters are advised to navigate with extreme caution and not to approach within 500 m of all structures and storage vessels.

Port Authority. Cabinda Gulf Oil Company, CP 40, Cabinda, Angola.

Limiting conditions

6.39

Controlling depths. There are depths of about 70 m (36 fm) in the vicinity of the SBM and the anchorage.

Density of water is 1.025 g/cm³.

Maximum size of vessel handled is 300 000 dwt.

Arrival information

6.40

Port operations. Berthing during daylight hours only. Unberthing at any time.

Port radio. There is a port radio station. See the *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required. Send ETA 72, 48 and 24 hours prior to arrival.

Outer anchorage. Anchorage may be obtained about 1½ miles NW of the SBM as indicated on the chart and noting wells in the vicinity.

Pilotage is compulsory. The pilot boards about 1½ miles NW of the SPM.

Tugs are available.

Berth

6.41

SBM (5°13'.2S, 11°48'.7E), moored in a depth of 68.5 m.

Port services

6.42

Other facilities: hospital at Cabinda.

Communications: airport at Cabinda.

Malongo Terminals

General information

6.43

1 **Position and function.** Malongo Terminals are the principal export terminals for Cabinda Enclave and comprise two petroleum terminals and one gas terminal

situated between 7 and 10 miles WSW of Malongo (5°23'5S, 12°11'8E) (6.31). The terminals are at the centre of numerous oilfields and associated platforms.

- 2 **Approach and entry.** The terminals are approached through an area of intensive offshore oil and gas activity. Not all platforms and pipelines may be charted. Masters are advised to navigate with extreme caution and not approach within 500 m of any structures and storage vessels or enter restricted areas without authorisation.

Traffic. In 2003, the terminals were used by 50 ships with a total of 2.1 million dwt.

Port Authority. Cabinda Gulf Oil Company, CP 40, Cabinda, Angola.

Limiting conditions

6.44

- 1 **Controlling depths.** See 6.47.
Density of water is 1.025 g/cm³.
Maximum size of vessel handled is 325 000 dwt.
- 2 **Local weather and sea state.** During the rainy season, from mid-October to end of April, Tornadoes (1.218) may be experienced, particularly from December onwards. These can be accompanied by heavy rains from 2 to 4 hours duration and squalls up to 75 kn giving rise to waves up to 4.5 m. Winds in general, however, are less than 20 kn and are from S. During the dry season a long SW swell, sometimes exceeding 4.5 m in height, affects the area.

Currents in the vicinity of the anchorage generally set between NW and NNW, sometimes exceeding 3 kn, being augmented by the tidal flow and freshets from the River Congo. In the dry season, a weak SSW current may be experienced.

Arrival information

6.45

- 1 **Port operations.** Berthing is carried out during daylight hours only. Unberthing at any time.
Port radio. There is a port radio station. See *Admiralty List of Radio Signals Volume 6*(3).
Notice of ETA required. Oil tankers send ETA 72, 48 and 24 hours prior to arrival: LPG vessels send ETA 7 days, 48 and 24 hours in advance.
- 2 **Waiting anchorage** may be obtained in a designated anchorage centred on 5°28'0S, 11°55'5E as shown on the plan: depth is about 41 m and the bottom mud.
Prohibited anchorage. A restricted area in which anchoring is prohibited encloses the Malongo oilfields. Limits of the area are shown on Chart 3206.
Restricted area. A circular restricted area of radius 1 mile encloses each of the three terminals. Vessels should not enter these areas without authority and without a pilot onboard. Anchoring within the areas is prohibited.
Submarine pipelines are laid in numerous directions connecting platforms and SBM's to the shore, as indicated on the chart and plan. See 1.15.
Pilotage is compulsory. The pilot boards in 5°28'0S, 11°58'0E, 1 mile E of the waiting anchorage.
- 3 **Tugs** are available.
Regulations concerning entry. The national flag of Angola is to be flown day and night.

Directions

6.46

- 1 **Racon.**
A racon transmits from G.S.'J' platform (5°24'8S, 11°59'5E). See *Admiralty List of Radio Signals Volume 2* for details.

- 2 It is preferable to approach the terminals by day rather than at night when the lights and flares of the oil platforms can be confusing and there may be unlighted obstructions. Each terminal exhibits an identifying morse light. Four platforms in a rectangular configuration that surrounds Malongo 2 Terminal exhibit red and green strobe lights. See chart for details.

Berths

6.47

- 1 **Malongo 1 Oil terminal** (5°26'2S, 12°04'7E) SBM, moored in a depth of 23 m, for vessels up to 325 000 dwt, 350 m loa and 16.7 m loaded draught.
Malongo 2 Oil terminal (5°27'6S, 12°01'8E) SBM, moored in a depth of 32 m, for vessels up to 325 000 dwt and 350 m in length.
- 2 **Cabinda LPG terminal** (5°25'0S, 12°01'2E), consists of FSO *Berge Troll* (55 000 dwt) secured to an SBM moored in a depth of 30.5 m. The terminal can be used by vessels up to 140 000 dwt. Vessels berth port side alongside to the storage vessel's starboard side. A pilot remains aboard the FSO throughout the loading operation. Two tugs are in attendance in order to keep the FSO and export tanker pointing into the swell and thereby reduce rolling.

Port services

6.48

- 1 **Repairs** no facilities. Repairs are not permitted whilst the vessel is at the terminals.
Other facilities: hospital at Cabinda.
Supplies: Fresh water and bunkers by barge from Malongo.
Communications: airport at Cabinda.

Futila Terminal

Chart 3206

General information

6.49

- 1 **Position.** Futila Terminal (5°27'5S, 12°10'6E) is situated 4 miles SSW of Malongo (6.31).
Function. It is an offshore oil terminal with a CBM and serves as an import/export facility for petroleum products which are stored at Futila.
Port limits. The terminal limits are marked offshore by four conical light-buoys in the following positions:
Green 5°30'1S, 12°10'1E.
Red 5°29'4S, 12°10'0E.
Yellow 5°27'9S, 12°09'8E.
Yellow 5°26'9S, 12°10'2E.
Port Authority. Cabinda Gulf Oil Company, CP 40, Cabinda, Angola.

Limiting conditions

6.50

- 1 **Controlling depth.** There is a least charted depth of about 6.4 m (23 ft) in the approach to the terminal and a reported depth of 6.8 m (22 ft) at the berth.
Density of water is 1.025 g/cm³.
Maximum size of vessel handled. Draught 4.5 m, 6500 dwt.
Local weather and current. See 6.44.

Arrival information

6.51

- 1 **Port operations.** Berthing by day only, unberthing at any time.
Port radio. There is a port radio. See *Admiralty List of Radio Signals Volume 6*(3).

Notice of ETA required. Send ETA 72, 48 and 24 hours prior to arrival.

Waiting anchorage may be obtained in Malongo Freighter anchorage (5°31'S, 12°08'E). See 6.33.

Restricted area. The terminal lies within the restricted area which encompasses Malongo oilfields. Anchoring within the restricted area is prohibited. See chart for area limits.

Submarine pipeline. A submarine pipeline connects the terminal to the shore. See 1.15.

Pilotage is carried out by the Mooring Master who will board in the Malongo Freighter anchorage.

Tugs. Normally no tug available.

Regulations concerning entry. Main engines must be kept on standby throughout the stay.

Directions for entering harbour

6.52

- 1 The terminal is approached from S, passing E between the pair of light-buoys (lateral) (6.49) and thence N towards the terminal. A wreck (position approximate) lies close S of the starboard hand light-buoy (5°30'·1S, 12°10'·1E).

Berth

6.53

- 1 The berth comprises three mooring buoys in a depth of about 6·8 m (22 ft). The vessel moors with both anchors before going astern and securing to the mooring buoys aft.

Port services

6.54

- 1 **Repairs** not available, and no maintenance allowed.
Other facilities: limited medical facilities.
Supplies not available.

Minor river and anchorages

Rio Chiloango

6.55

- 1 Rio Chiloango (5°12'·5S, 12°08'·1E) is entered over a bar which can be crossed by small vessels but it is dangerous on account of surf. For most of its 100 mile length the river is but a narrow stream and only navigable by launches.

The entrance to the river can be identified by some red hills which descend abruptly to the beach. Additionally, the sea is discoloured to a distance of about 7 miles offshore.

Porto Cacongo

6.56

- 1 **Description.** Porto Cacongo (5°13'·2S, 12°08'·3E) is situated at the head of Enseada de Cacongo. It is exposed to the prevailing SW wind and swell which cause heavy breakers on the beaches. Anchorage must be obtained a long way offshore and this combined with the swell make it a bad port. There are few modern facilities and it is little frequented by vessels.
- 2 **Useful marks:**
Hospital (red roof), 5 cables NNE of Ponta Cacongo Lighthouse.
Ponta Cacongo Lighthouse (5°14'·4S, 12°07'·9E) (6.30).
- 3 **Anchorage,** exposed, may be obtained about 3 miles offshore, in a depth of 9 m (30 ft), mud, or closer inshore

according to draught. In depths of less than 5·5 m (18 ft) the bottom is rocky.

Berth. There is a small wharf in a bad state of repair with a depth of 3 m alongside and close to the line of breakers.

Enseada do Malembo

6.57

- 1 **Description.** Enseada do Malembo (5°19'·0S, 12°10'·0E), is situated close N of Ponta de Malembo (6.29). Malembo a town lies about 7½ cables inland, ESE of Ponta de Malembo.

The climate, in comparison with other places in West Africa, is healthy owing to the absence of forests.

- 2 **Topography.** It is similar in form to all the small bays on the W African coast S of the Equator; each recedes in a SE direction and is protected by a shallow spit. This peculiarity of form is probably due to the continual action of the SW swell together with that of the prevailing current which flows N along the coast. These bays are very difficult to identify from offshore as the low points cannot be distinguished from the background and this is especially the case with regards to Enseada do Malembo.

- 3 **Rollers** are frequent and heavy and they occur more often than not during calms. Even small vessels sheltered by the shoal off Ponta de Malembo are unsafe unless well in towards the head of the bay. See 1.201.

Useful mark:

Water tower (not charted), 9 cables ENE of Ponta de Malembo.

Prohibited anchorage. See 6.25.

- 4 **Anchorage** may be obtained for large vessels about 5 miles NW of the bay in depths of about 9 to 11 m (36 ft) and outside the prohibited anchorage.
- 5 **Small craft** may obtain anchorage in smooth water well into the bay. Landing may be effected in a cove sheltered by Ponta de Malembo.

CABINDA

General information

Chart 3206

Position

6.58

- 1 The port of Cabinda (5°33'S, 12°11'E), lies about 30 miles N of the entrance to River Congo.

Function

6.59

- 1 It is the principal port of Cabinda Enclave (1.138), exporting ivory, gum, wax and honey, orchil and gum-copal, palm oil and kernels. Imports include supplies for the Malongo Terminal.

The town of Cabinda is hidden in the trees on the sides and summit of some elevated land 7½ cables E of Ponta do Tafe (5°33'·0S, 12°10'·9E). It is the principal town of Cabinda Enclave, which in 1992 had a population of 152 100.

Topography

6.60

- 1 The head of Enseada de Cabinda is formed by a sandy beach backed by lofty cliffs, green hills and deep valleys. Rio Lucola enters the bay 2 miles E of Ponta do Tafe. On the shores of the bay are several factories. Above the town of Cabinda is a three storied tower, originally built as a lighthouse but now used as a clock tower.

Approach and entry**6.61**

- 1 The port is approached from W through an area of intensive offshore oil and gas activity. See 1.14.

Traffic**6.62**

- 1 In 2003, the port was used by 63 ships with a total of 8.6 million dwt.

Port Authority**6.63**

- 1 Autoridade Portuaria de Cabinda, CP 68, Cabinda, Angola.

Limiting conditions**Controlling depth****6.64**

- 1 Depth in the outer anchorage is about 11 m (6 fm) and there is deeper water in the approach to it.

Tidal levels**6.65**

- 1 Mean spring range about 1.4 m; mean neap range about 0.6 m. See information in *Admiralty Tide Tables Volume 2*.

Density of water**6.66**

- 1 The density of the water is 1.025 g/cm³.

Local weather and sea state.**6.67**

- 1 The current generally sets NNW at between ½ and 2 kn and this factor together with the generally WSW swell can cause heavy rolling, specially in the latter part of the dry season (June to September). The predominant wind is SW and may be augmented by a land and sea breeze effect. Vessels at anchor should allow sufficient underkeel clearance for rolling and can expect cargo operations to be delayed by swell in the dry season.
- 2 Tornadoes (1.218) can occur in the rainy season, specially between December and April.

Arrival information**Port radio****6.68**

- 1 There is no port radio station. All port communication is through the agents. See *Admiralty List of Radio Signals Volume 6(3)*.

Outer anchorage**6.69**

- 1 Vessels anchor about 3½ miles NW of Ponta do Tafe (5°33'0S, 12°10'9E), in a depth of 11 m (36 ft), sand and mud, good holding.

Pilotage**6.70**

- 1 Pilotage is not available.

Harbour**General layout****6.71**

- 1 Large vessels anchor off the port and small vessels can anchor within Enseada de Cabinda. There is a small pier for the use of barges.

Principal marks**6.72**

- 1 **Major lights:**
Ponta do Tafe Light (5°33'0S, 12°10'9E) (6.26).
Aero light (5°33'9S, 12°11'5E) (6.26).

Directions for entering harbour*(continued from 6.30)***6.73**

- 1 **Outer anchorage.** From W, the approach to the outer anchorage is in safe water but caution is advised on account of numerous oil rigs in the vicinity.

Inner Anchorage Leading lights. From the outer anchorage, the alignment (110°) of the following lights leads ESE towards the inner anchorage.

Front light (white square tower, 9 m in height) (5°33'2S, 12°13'3E).

Rear light (similar structure, 12 m in height) (300 m from front light).

- 2 **Caution.** It should be noted that the leading line passes over or near the unmarked wrecks of three lighters as shown on the chart. Furthermore, it is reported that the leading marks are difficult to discern from the outer anchorage.

The track passes SSW of Baixo do Belé, a rocky salient of the coastal bank which covers the greater part of Enseada de Cabinda. Least charted depth on the bank is 1.8 m, about 2 miles NE of Ponta do Tafe Light.

Useful marks:

Stranded wreck (5°33'1S, 12°12'5E).

Monument (5°33'7S, 12°10'6E).

Catholic Mission (5°33'7S, 12°10'6E).

Aero light (occasional) (position approximate) (5°35'2S, 12°11'7E).

Berths**6.74**

- 1 **Anchorage** may be obtained about 3½ miles NW of Ponta do Tafe (5°33'0S, 12°10'9E) in a depth of 11 m (36 ft), sand and mud, good holding, or, closer inshore according to draught. Vessels should anchor outside the line where rollers begin to be affected by the bottom and accumulate a surface velocity. See 1.201.

Vessels of shallow draught may obtain anchorage in the lee of Ponta do Tafe in a depth of about 4.6 m (15 ft), 4 cables N of the pier.

- 2 **Pier.** An L shaped pier, 100 m in length, with a partially destroyed dolphin, projects NE from the shore, 6 cables E of Ponta do Tafe, with a depth of 3 m alongside.

Port services**Repairs****6.75**

- 1 Minor repairs only.

Other facilities**6.76**

- 1 Hospital; Deratting can be carried out, Deratting and Deratting Exemption Certificates issued.

Supplies**6.77**

- 1 Fuel oil and fresh water can be supplied by barge; abundant fish and local produce.

Communications**6.78**

- 1 Airport with daily service to Luanda. Road connections to Pointe-Noire, Banana and Boma.

CABINDA TO RIVER CONGO APPROACH**General information**

Chart 3206, 658

Route**6.79**

- 1 From a position about 4½ miles NW of Ponta do Tafe (5°33'·0S, 12°10'·9E), the route leads SSW and SSE, for about 36 miles to a position 9 miles WNW of Ponta Padrão (6°04'·5S, 12°19'·8E).

Topography**6.80**

- 1 From Ponta do Tafe, to the entrance to River Congo, a distance of about 30 miles, the country is particularly fertile and well populated.

The coast between Ponta do Tafe and a position about 4 miles SSE of Ponta Vermelha is low and fringed with forest but a short distance inland, and about 3 miles S of Cabinda, the land rises to hills of a reddish colour which extend with nearly uniform height to the N bank of the River Congo.

- 2 From Ponta Vermelha (5°39'·0S, 12°08'·7E), the coast SE for about 17 miles to Kupundji is fringed by a narrow beach. Farther S, the coast is broken by Mosquito Creek (5°55'·5S, 12°20'·1E), a narrow inlet which may be recognised by a remarkable grove of trees on its right bank known as Fetish Wood.

At the village of Moanda, close SE of Mosquito Creek, there is an airfield.

Depths**6.81**

- 1 The coastal bank as defined by the 10 m (5 fm) contour extends up to 7 miles off shore in the vicinity of Kupundji and is known as Banco Mona Mazea (6.89). It is composed of mud and sand.

Fishing**6.82**

- 1 Between Ponta do Tafe and the entrance to River Congo numerous fishing canoes may be encountered.

Traffic regulations**6.83**

- 1 **Restricted area.** A restricted area enclosing an area of offshore oil and gas activity and in which anchoring is prohibited extends from a position on the coast, about 8¼ miles SSE of Ponta Vermelha, SE to a position 5 cables SE of Kupundji Light. The area, whose limits are shown on the chart, extends up to 12 miles offshore and mariners are advised not to enter unless authorised.
- 2 **Development area.** An rectangular area, in which oilfield development is taking place, is located between the following co-ordinates: 5°40'·5S, 5°48'·0S, 11°59'·5E. 12°06'·0E. Mariners are strongly advised to avoid the area, the limits of which are indicated on the chart.

Submarine pipelines**6.84**

- 1 Numerous submarine pipelines are laid offshore. See 1.15.

Natural conditions**6.85**

- 1 **Current.** The current from the River Congo flows NW parallel with the coast but leaves an area of comparative slack water between it and the shore. This area of slack water can be utilised to advantage by vessels of low power proceeding S along the coast; the discolouration of the water of this current soon showing if the vessel is too far out. Sometimes, though very rarely, the current turns towards the coast N of Cabinda; when this happens it is said to set with considerable force.

- 2 **Rollers.** Between Ponta do Tafe and the entrance to River Congo, the coast is fronted by shoal water extending more than 1 mile offshore and on which there are breakers. Rollers have been known to break in depths of 13 m (42 ft) at a distance of 5 miles offshore, so this part of the coast should not be approached within a depth of 22 m (12 fm). See 1.201.

International boundary**6.86**

- 1 Three beacons lying along a line extending NE from a position about 8 miles SSE of Ponta Vermelha (5°39'·0S, 12°08'·7E), mark the international boundary between Angola (Cabinda Enclave) and The Democratic Republic of the Congo.

Principal marks**6.87**

- 1 **Major lights:**
Ponta do Tafe Light (5°33'·0S, 12°10'·9E) (6.26).
Aero light (5°33'·9S, 12°11'·5E) (6.26).
Kupundji Light (white metal tower, 9 m in height) (5°53'·5S, 12°17'·7E).

Directions

(continued from 6.30)

Ponta do Tafe to 5°44'S, 11°56'E**6.88**

- 1 From a position about 4½ miles NW of Ponta do Tafe (5°33'·0S, 12°10'·9E) (6.29), the track leads SW to seaward of two restricted and development areas (6.83), passing (with positions relative to Ponta do Tafe):
- 2 NW of Ponta Milende (3½ miles SSW), thence:
NW of Ponta Vermelha (6½ miles SSW), thence:
NW of an oil platform (11 miles SSW).
Thence the track leads to 5°44'S, 11°56'E.

5°44'S, 11°56'E to Ponta Padrão**6.89**

- 1 From 5°44'S, 11°56'E, the track leads SE, passing (with positions relative to Livute Oilfield (5°46'·5S, 12°06'·0E):
- 2 SW of two platforms in Livute Oilfield, thence:
SW of the restricted area (6.83) which encloses numerous oilfields and associated platforms located on or near Mona Mazea Bank (see below), thence:
SW of a dangerous wreck (9 miles SSE) the existence of which is doubtful, thence:
- 3 SW of Mona Mazea Bank (15 miles SE), an extensive shoal whose name signifies little water. The bank is reported to be extending W and there may be undiscovered dangers on it. The current from the River Congo always sets strongly over the bank,

which should be avoided on account of the almost constant swell and frequent rollers (1.201). The greatest caution is necessary in its vicinity. Thence:

- 4 SW of Moanda Terminal SBM (6.91) (13 miles SSE) with a waiting anchorage 2 miles NW, and a light-buoy marking a well moored 1 mile WNW, thence:

SW of Kupundji Light (6.87) (16 miles SE).

Thence the track leads to a position about 9 miles WNW of Ponta Padrão (25 miles SE) (6.8).

6.90

- 1 **Useful mark:**

Radio mast (5°37'·5S, 12°09'·4E).

(Directions continue for River Congo approaches at 6.108, for a coastal route at 7.25 and for an offshore route at 7.8)

Moanda Terminal

Chart 3206

General information

6.91

- 1 **Position.** Moanda Terminal (5°58'·0S, 12°08'·3E) is located 10 miles off the coast.

Function. It is an offshore oil terminal with an SBM and an FSO *Bellatrix Voyager* of 95 000 dwt.

Terminal Authority. Moanda International Oil Company, Kinshasa.

Limiting conditions

6.92

- 1 **Controlling depth.** see 6.95.
Density of water is brackish to salt.
Tidal level. The average range is about 2 m.
Maximum size of vessel handled. Draught 16-76 m, 160 000 dwt.
Local weather and sea state. Sea and swell are generally from SW, with a heavy swell between March and September.
Current. The current at the berth is a composite of the effect of the general NW drift and the outflow from the River Congo. This results in a current of 2 to 3·5 kn or

more in a N to W direction. The magnitude and direction of the current is affected by the level of the Congo River (6.121) and by the effect of the tidal streams. In extreme cases the resultant surface movement may be as great as 5 kn.

Arrival information

6.93

- 1 **Port operations.** Berthing during daylight hours only. Unberthing at any time.

Port radio. There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required. Send ETA 72, 48 and 24 hours prior to arrival. VHF contact should be made with the terminal when within range.

- 2 **Outer anchorage** may be obtained in a designated anchorage 2 miles NW of the SBM (5°58'·0S, 12°08'·3E).

Pilotage is compulsory and is conducted by the Mooring Master who will board in the anchorage.

Tugs are not available.

- 3 **Submarine pipelines** are laid to the terminal from associated platforms: Libwa Oilfield 5¼ miles ENE and Mibale Oilfield 7½ miles NNE.

Restricted area. The FSO and SBM are enclosed within a restricted area, see 6.83.

Directions

6.94

- 1 The chart is sufficient guide noting a dangerous wreck, the existence of which is doubtful, lying about 4 miles NNW of the terminal and a light-buoy marking a well moored about 1 mile WNW.

Berth

6.95

- 1 The SBM (5°58'·0S, 12°08'·3E) is moored in a depth of 22·9 m. The SBM is 12 m in diameter and exhibits a light.

Services

6.96

- 1 There are no dirty ballast or oily slops facilities at the terminal.
 Bunkers, fresh water and provisions are unavailable.

RIVER CONGO AND APPROACHES

GENERAL INFORMATION

Chart 3206, 658, 657

Area covered

6.97

- 1 This section describes River Congo and its approaches. It is arranged as follows:
 Approaches to River Congo (6.103).
 River Congo (6.114).
 Matadi (6.171)

Description

6.98

- 1 The estuary of this noble river is entered between Ponta Vermelha (5°39'·0S, 12°08'·7E), and Ponta da Moita Sêca, 29 miles SSE and extends 50 miles inland to Boma (5°51'·5S, 13°03'·3E). River Congo is the second longest river in Africa, being over 2700 miles in length and the fifth longest river in the world. In volume of water, however, depending on the season, it is second only to that of the Amazon.

It is navigable by ocean-going vessels as far as Matadi (5°49'·2S, 13°27'·5E), about 80 miles from the sea.

- 2 Although Matadi is the limit of navigation for ocean-going vessels, between Pool Malebo (4°10'·0S, 15°30'·0E), and Stanley Falls, a distance of about 1600 km, continuous navigation is practicable and stern-wheelers as large as 800 tonnes ply between Kinshasa (4°20'·0S, 15°19'·0E) and Kisangani (0°31'·0N, 25°12'·0E). Pool Malebo is a lake, 27 km in length and 21 km in width, the middle of which is filled by Île Mbamou and sandbanks. The current sets along the S shore at up to 5 kn, carrying with it islands of water-hyacinth. Above Stanley Falls navigation is possible for a distance of 320 km, between Ubundu (0°22'·0S, 25°29'·0E) and Kindu (2°57'·0S, 25°53'·0E), and again between Kongolo and Bukama (9°13'·0S, 25°51'·0E) for 640 km, but only under favourable conditions.

- 3 The largest tributary of River Congo is Rivière Oubangui, which is broken in places by rapids, but is otherwise navigable by vessels as far as Mokoange

(4°50'·0N, 19°02'·0E), and during the high river season as far as Moboyi a further 160 miles up river.

The other large tributary coming from N, is Rivière Sangha which joins River Congo at Mossaka, about 70 miles SW of the confluence of Rivière Oubangui with River Congo.

- 4 River Congo was first roughly surveyed, for about 300 miles, by Captain Maxwell in 1793 and was more completely examined for the same distance by the unfortunate expedition of Captain Tuckey, RN., which reached Isangila (5°13'·0N, 13°54'·0E) in 1816 but succumbed to malaria. The mouth of the estuary was surveyed by Captain Vidal, RN, in 1825.

In 1974–1975, a scientific and explorative expedition, led by Lieutenant-Colonel J. Bashford-Snell, retraced the course taken by the famous explorer HM Stanley (1.132).

ETA

6.99

- 1 Vessels should send ETA 5 days in advance, confirming 24 hours prior to arrival. See *Admiralty List of Radio Signals Volume 6(3)*.
- 2 Because there is no nighttime navigation on the River Congo (6.120), vessels proceeding to Matadi should endeavour to arrive early at the pilot boarding station thereby avoiding the need to anchor at either Boma (6.159) or Matadi (6.148) waiting anchorages overnight. Passage time from the pilot boarding station to the berths at Matadi is about seven to ten hours depending upon the strength of the river current and vessel's speed.

Outer anchorages

6.100

- 1 Anchorage may be obtained as follows:
 - Between 1 and 5 miles W of Ponta da Moita Seca (6°06'·5S, 12°16'·6E), out of the river current, in depths of about 14 m.
- 2 About 1 mile W of Ponta Padrão (6°04'·5S, 12°19'·8E), in depths of about 12 m but see caution at 6.8. The current at this anchorage has been found to set continually W only slackening on the in-going tide.
- 3 About 2½ miles WSW of Pointe Française (6°01'·5S, 12°24'·3E) in the vicinity of Stella No 2 Light-buoy, in a depth of about 8 m. It should be noted that in 1987 less water was reported in this vicinity. On account of the dangers associated with Banco Mona Mazea (6.89) this anchorage should only be regarded as a temporary anchorage for vessels waiting to embark a pilot.

Pilotage

6.101

- 1 Pilotage for River Congo is compulsory for vessels over 500 grt, and is available between 0800 and 1800 hours. Pilot boards vessel as indicated on the chart, S of Pointe Française (6°01'·5S, 12°24'·3E), between Stella No 2 Light-buoy and Pointe Bulabemba, or at No 16 Light-buoy. See *Admiralty List of Radio Signals Volume 6(3)*.
- 2 Pilots are sometimes changed at Boma (5°51'·5S, 13°03'·3E). Because of a shortage of pilots a vessel may be given any of the following directions:
 - Pilot available — embark pilot as above.
 - No pilot available — anchor in vicinity of Stella Light-buoy (6.100).
- 3 Pilot available on a departing ship — the pilot will arrange a rendezvous in the vicinity of No 16

Light-buoy by radio and instruct the pilot launch to proceed there from Banana. The vessel should follow the pilot launch to No 16 Light-buoy and wait there, stemming the current.

- 4 Pilot at Boma — the pilot will come downstream by speed boat to No 16 Light-buoy. The vessel will be told the ETA at the buoy and should proceed to the buoy and await his arrival.

Quarantine

6.102

- 1 Vessels bound for ports in River Congo must obtain clearance from the health officer at Banana.

APPROACHES TO RIVER CONGO

General information

Charts 3206, 658

Route

6.103

- 1 From a position about 9 miles WNW of Ponta Padrão (6°04'·5S, 12°19'·8E), the route leads E, for about 13½ miles to the vicinity of the pilot boarding position S of Pointe Française (6°01'·5S, 12°24'·3E).

Topography

6.104

- 1 **North side of approach.** On Presqu'île de Banana, the S tip of Pointe Française (6°01'·5S, 12°24'·3E), are the white buildings of Banana.

South side of approach. Ponta Padrão (6°04'·5S, 12°19'·8E) is the NE end of a narrow peninsula on the E side of which is Baía de Diogo Cão. There is a village on Ponta Padrão, and about 3 cables within the point is a small cemetery, the inscriptions therein showing that it has been used by HM vessels since 1857. Near the extremity of the point is a marble column, which was set up by the famous Portuguese navigator Diogo Cão in 1486; it is about 5 m high, and bears an inscription.

Depths

6.105

- 1 The Continental shelf with depths of less than 200 m extends 30 or 40 miles W of the estuary, but this shelf is cut by a remarkable deep gully, 2 to 8 miles in width, in which there are depths of over 1463 m. This deep gully extends right into the mouth of the river. Its sides are steep and irregular and depths of over 183 m are found 12 miles E of the S entrance point.

Natural conditions

6.106

- 1 **Currents.** A current setting N at about 1 kn may be encountered between latitudes 2°N and 6°S. It was reported in 1944, that a river current increased to about 3 kn off the mouth of River Congo.

During the rainy season small floating islands and debris of all kinds are met far out to sea, sometimes as far N as Pagalu (1°26'S, 5°38'E) (3.151).
- 2 **Density.** The surface water is still quite fresh at a distance 9 miles seaward of the mouth of the Congo, and it is only partially mixed with that of the sea at a distance of 40 miles from the coast; whilst discolouration caused by the fresh water, and also a perceptible current, has been reported 300 miles offshore.

Principal marks**6.107****1 Landmark:**

Flare (5°57'·9S, 12°25'·0E).

Radio Tower (lighted) (white tower, red bands; 45 m in height) (6°07'·2S, 12°21'·7E).

Major light:

Kupundji Light (5°53'·5S, 12°17'·7E) (6.87).

Directions

(continued from 6.8 and 6.90)

Seaward to pilot**6.108**

- 1 From a position about 9 miles WNW of Ponta Padrão (6°04'·5S, 12°19'·8E), the track leads E, passing (with positions relative to Ponta Padro):

S of a conical buoy (5½ miles NW), marking the S extremity of Mona Mazea Bank (6.89), which lies in the N part of the approaches, thence:

- 2 N of Ponta da Moita Seca (3¾ miles WSW) (7.26), thence:

N of Ponta Padrão (6.8), thence:

S of Stella No 2 Light-buoy (3½ miles NE). In 1987, less water was reported NW of the buoy. Anchorage (6.100) may be obtained in the vicinity of the buoy.

- 3 Thence the track leads to the vicinity of the pilot boarding position S of Pointe Française (5¼ miles NE). Banc Stella extends about 5 cables S from Pointe Française and is steep-to. Pointe Française is the S tip of Presqu'île de Banana, a low, narrow, sandy spit 2½ miles in length enclosing the W side of Crique de Banana (6.156). When large rollers on the coast coincide with equinoctial tides, the greater part of Presqu'île de Banana is flooded.

6.109**1 Useful marks:**

Radio masts (S of two) (6°00'·4S, 12°23'·9E).

Obstruction light (6°07'·6S, 12°21'·8E).

Sazaire Oil Terminal Light (platform) (6°05'·9S, 12°22'·9).

(Directions for Congo River continue at 6.127.

Directions for Banana are given at 6.153)

Minor ports**Kwanda****6.110**

- 1 **Description.** Kwanda (6°07'·3S, 12°19'·3E), lies at the head of Baía de Diogo Cão. It is used as a supply base by the oil industry. A channel, 80 m in width and a turning basin at its S end, are dredged (1989) to a depth of 6 m. It is reported that permission is required before entering the channel.

Traffic. In 2003, the port was used by 16 ships with a total of 132 446 dwt.

- 2 **Port Authority.** Fina Petroleos de Angola, Essungo Terminal, Marine Division, CP 1320, Luanda, Angola.

Tidal levels. Mean spring range about 1·4 m; mean neap range about 0·6 m. See information in *Admiralty Tide Tables Volume 2*.

Density of water is 1·013 g/cm³.

- 3 **Port operations.** Berthing during daylight hours only, unberthing at any time.

Outer anchorage may be obtained, as indicated on the chart, in a depth of about 8 m, 2 cables N of Soyo Light-buoy, which is moored 2½ miles ESE of Ponta Padrão.

- 4 **Pilotage** is not available.

Directions for entering harbour. The port is approached through the entrance to River Congo.

From a position 4 cables E of Ponta Padrão, the approach channel, marked by light-buoys and buoys (lateral), leads SSW along the W side of the bay to Kwanda, 3 miles S of the point.

- 5 **Useful marks:**

Tower (aero light) (white radio tower, red bands, 45 m in height) (6°07'·2S, 12°21'·7E).

Obstruction light (6°07'·6S, 12°21'·8E).

Exposed wreck (6°06'·7S, 12°19'·1E).

Berths. Alongside depths are reported depths. The port authorities should be contacted for the latest information.

At Kwanda there are two berths, each 200 m in length with a depth of 6 m alongside and there is a Ro-Ro berth.

Communications: airfield at Soyo about 5 km E.

Soyo**6.111**

- 1 **Description.** Soyo (6°07'·5S, 12°21'·9E) is situated on the S bank of River Congo close inside the entrance and on the E side of Baía de Diogo Cão. The port is approached through a short buoyed channel at the entrance to Canal de Soyo.

The port is currently closed for commercial operations.

Controlling depths. There is a least charted depth of 1·3 m on the leading line over the bar of the river.

Tidal levels. See 6.110.

- 2 **Density of water** is 1·013 g/cm³.

Outer anchorage. See 6.110.

Pilotage is not available.

Current. A current sets strongly N, at the entrance to Canal de Soyo.

- 3 **Directions for entering harbour.** Leading lights. From a position between No 1 and 2 Light-buoys, moored 2¼ miles SE of Ponta Padrão (6°04'·5S, 12°19'·8E), the alignment (152¼°) of the following lights leads SSE for about 1¼ miles, in a channel marked by beacons and buoys, into the harbour.

Front light (white triangle, apex up, red stripe, on tower) (6°07'·5S, 12°22'·0E).

Rear light (white triangle, apex down) (150 m from front light).

- 4 **Caution.** Aids to navigation in River Congo are reported to be unreliable. They may be missing, unlit, or out of position. Mariners should navigate with particular caution.

- 5 **Useful marks:**

Beacon (6°06'·3S, 12°21'·9E).

Tower (aero light) (white radio tower, red bands, 45 m in height) (6°07'·2S, 12°21'·7E).

Obstruction light (6°07'·6S, 12°21'·8E).

Berth. There is a wharf, 10 m in length, used by vessels with a draught of less than 4 m.

- 6 **Repairs:** slipway, 176 m in length, 6·2 m in width.

Other facilities: hospital with restricted facilities.

Supplies: fresh water; petrol in small quantities; provisions.

Communications: airfield.

Sazaire Oil Terminal**6.112**

- 1 Sazaire Oil Terminal (6°05'·9S, 12°22'·9E) is situated about 3½ miles ESE of Ponta Padrão. It consists of a platform from which a light (6.109) is exhibited and is connected to the shore by a submarine pipeline. Small tankers and barges load crude oil at the terminal for transfer to larger tankers anchored off Ponta Padrão.

Small craft

Rio do Cutelambeje

6.113

- 1 Rio do Cutelambeje (6°06'8S, 12°24'0E) is situated about 1½ miles SE of Sazaire Oil Terminal, but its entrance, marked by a beacon standing on its E side, is almost completely barred by a large drying sandbank, and the creek itself is very narrow and shallow.

RIVER CONGO

General information

Charts 657, 658

Route

6.114

- 1 From the vicinity of the pilot boarding position S of Pointe Française (6°01'5S, 12°24'3E), the route leads up River Congo for about 77 miles to Matadi (6°49'2S, 13°27'5E).

Topography

6.115

- 1 Between Pointe Bulabemba (6°03'3S, 12°26'3E) and Pointe da Quissanga, 13 miles ENE, the banks of the river formed by alluvial deposits, are covered with a dense growth of palms and giant mangroves; one species of the latter grows to a considerable size, with a straight stem sometimes upwards of 30 m in height, supported by an arch of roots which rise as much as 6 m from the ground. The spaces between these mangroves are filled with various trees of smaller size.
- 2 The country near the river is low and swampy, intersected by numerous creeks but, at some distance inland, low ranges of hills from 60 to 150 m in height, may be seen on either side; these hills are covered with grass and occasional patches of trees.
As the river is ascended this dense vegetation tends to disappear, and its place is taken by low banks of coarse hippopotamus grass.
- 3 Above Quissanga Beacon (6°02'2S, 12°37'1E), River Congo widens out and is obstructed by numerous islands. All these islands are low, covered with grass and bushes almost level with the water, and are intersected by creeks and fringed with drying banks.
Crocodiles are particularly numerous in this part of the river, and grow up to 9 m in length.
- 4 Between Ponta do Feitico (5°55'0S, 12°57'8E) and Île des Princes, 9 miles ENE, the character of the country changes; the low swampy land gives place to hills, some of which rise to a height of over 150 m. Fingal's Shield is a prominent granite monolith on the N bank adjacent the E end of Grande Île Mateba (5°54'N, 12°52'E).
- 5 Above Île des Princes (5°53'5S, 13°07'2E), the character of the river undergoes a change. The river, which up to this point is broad and uninteresting, is now confined within narrower limits by high hills on either side, which for some distance are covered with luxuriant vegetation.
- 6 Between Ponta Bumbu (5°52'7S, 13°10'3E), and Senga Bongo (5°53'8S, 13°19'0E), the S bank of the river rises steeply to hills 60 to 90 m high; there is vegetation at the foot of these hills, and a few isolated trees may be seen on the skyline, but the hills themselves are generally bare. At a distance of 2 or 3 miles inland on the S side opposite Pointe Muzuku (5°54'3S, 13°21'5E), the land rises to hills

about 300 m high, and is covered with dense vegetation, the intervening country being very rough, with isolated hills and ridges.

Depths

6.116

- 1 Formerly, the authorities, by frequent surveying and dredging, endeavoured to maintain a depth of 9 m throughout the year in the sandy passes of the wandering portion of River Congo between Malela (5°59'7S, 12°36'6E) and Boma. However, due to the break up of banks or intensive shifting of sands when the river is in spate, the depths cannot be maintained.
- 2 In January 1995, when a substantial change was made to the direction of the buoyed channel, it was reported that the maximum draught for vessels ascending the river was limited to 6.4 m and for vessels descending the river to 6.7 m. In November 1998 after a civil war, the maximum draft was further reduced to 5.5 m. For the latest controlling depths the port authorities should be consulted.
- 3 Above Boma the depths of the river are appreciable all the way to Matadi, a distance of about 30 miles. However, the currents and eddies are stronger than in the lower part of the river and there are, in addition, several rocks which are well known to the pilots.

Ship handling

6.117

- 1 The great difference between the rates of the surface and undercurrents in the estuary of the Congo fully accounts for the difficulty in steering so often reported. With good speed, and proceeding directly with or against the surface stream, this is not so much felt; but if broadside on to the current and proceeding slowly, a vessel is at times almost unmanageable.
- 2 Vessels grounding on the banks where the current is strong have had the sand piled up against one side nearly to the surface of the water in a few hours, and then a sudden swirl of the current has washed it all away and left them in deep water.
- 3 It is stated by one local authority that, on grounding, the anchor should never be let go, as sooner or later the current will wash bank and ship together down the river until deep water is reached. Another local opinion however, is that the above statement is open to question depending on the position of the ship in relation to the bank on grounding. Consideration of the action to be taken is therefore necessary in each case. See also 6.123, 6.124 and 6.145.

Minimum speed

6.118

- 1 It is reported that for the safety of navigation, vessels proceeding to Matadi must be capable of 10.5 to 11 kn and sometimes speeds greater than 12 kn, depending upon the season and prevailing conditions.

Local knowledge

6.119

- 1 The channels and depths in the River Congo are subject to frequent change specially between Ponta da Quissanga (6°02'2N, 12°37'1E) and Ponta do Feitico (5°55'0N, 12°57'8E). The buoyage and other aids to navigation are adjusted accordingly. For mariners intending to navigate in the River Congo the charts are for general guidance and planning purposes only and mariners should seek local knowledge.

Navigational aids

6.120

- 1 **Buoyage.** The adopted buoyage system in the River Congo is IALA System A. Lateral buoys are numbered in sequence commencing from the vicinity of the pilot boarding station thence into Porte de Banana and thereafter up the River Congo itself as far as Matadi.

The buoys which are frequently altered by the Department of Navigable Waterways as necessity arises, are often towed under by the current, or swept away altogether by the floating islands that come down the river during the wet season (6.123); they cannot therefore be depended upon, and moreover, missing buoys are temporarily replaced by others not necessarily in accordance with the general system.

- 2 **Beacons.** In the narrow reaches of the river between Boma and Matadi the following system of channel marking is employed:

Beacon topmarks on the N bank of the river



Beacon topmarks on the S bank of the river



Anchorage beacon topmarks

Yellow V

Transit beacon topmarks

Triangle apex up or down

Boma and Matadi beacons (6.120)

- 3 **Lights.** It was reported in 1995 that all former lights above Pointe Bulabemba (6°03'3S, 12°26'3E) were unlit and that nighttime navigation was prohibited.

Natural conditions

6.121

- 1 **Water level.** Because the tributaries of this river are distributed on both sides of the Equator (6.98) the lower Congo is well supplied with water throughout the year. The levels of the Congo system are usually either rising or falling and seldom remain at their mean level for any length of time.

- 2 The left bank affluents of Congo have two high levels and two low levels in the year, whereas the right bank affluents have only one high level and one low level in the course of the year.

River Congo is low in March and July, and high in May and December. The July low level is usually lower than that in March.

- 3 The mean river level at Matadi is about 26 m above MSL. The differences between high river, and low river levels at the following places are:

Banana (6°02'S, 12°25'E) — 0.6 m.

Mateba (25 miles above Banana) — 1.5 m.

Ponta do Feitiço (6.132) (10 miles above Mateba) — 2.1 m.

Boma (5°51'5S, 13°03'3E) (7 miles above Ponta do Feitiço) — 2.7 m.

Matadi — 7.0 m.

6.122

- 1 **Tidal levels.** There is no tidal data for Matadi, and insufficient data for any place above Pointe Bulabemba. See information in *Admiralty Tide Tables Volume 2*.

At Boma the tidal influence is perceptible, but the range is less than 0.3 m.

- 2 At Matadi a slight regular rise and fall of about 0.1 m was recorded by HM Surveying Vessel *Rambler* in late 1899, but it could not be confirmed as to whether this was due to tidal influence.

MV *Akassa Palm* and MV *Lobito Palm* both reported that, in December 1961, River Congo at Matadi reached the highest level ever recorded, the level of the water being only a few centimetres below the top of the wharf.

6.123

- 1 **Currents.** During the rainy seasons of the Congo basin, the current is very rapid and bears along with it floating islands of papyrus and water hyacinths, which it has torn away from the banks in its course. Some of these islands are more than ½ cable in length, and, whilst being dangerous to vessels under way, are even more so to those at anchor; in addition, they frequently sweep away the buoys marking the channels. Even in the low river seasons these floating islands are encountered in the river, but not of sufficient size to be dangerous.

- 2 The maximum rates observed by the Hydrographic Service in the river are as follows:

Area	River Season (knots)	
	High	Low
Banana to Ponta da Quissanga	4	2
Ponta da Quissanga to Ilhas Monroe	4*	3*
Ilhas Monroe to Volta de Camões	3	2¾*
Volta de Camões to Ponta do Feitiço	4*	3½*
Ponta do Feitiço to Boma	4¾	3½
Boma	4¾	—
Boma to Matadi	7	6
Chaudron d'Enfer (13 kn reported in December 1961)	10–11	6
Matadi	7½	

*Note** these rates were probably observed when the channels differed from those which now exist.

6.124

- 1 **Whirlpools.** In November, 1947, HMS *Nereide* of 1350 tonnes displacement and 86 m in length, encountered no whirlpools of sufficient size to render steering difficult below Les Trois Soeurs (5°53'4S, 13°20'0E), but between those islets and Matadi they were often severe. She found it best to use full helm at once to counteract the slightest tendency of the ship to swing, as, if even a small sheer were taken, the current tended to turn her rapidly broadside on to the channel. For information on ship handling see 6.117.

However, in November 1982, SS *Shabonee*, 25 000 dwt and 170 m in length, reported that while it was found necessary to use the helm at once to counteract the slightest swing, full helm was neither necessary nor

desirable, as this tended to overcorrect very quickly before the helm could be removed. The pilots preferred the use of 10° or less helm to maintain a steady course. The vessel also reported strong eddies and whirlpools off Ponta Diamantes (5°52'·5S, 13°23'·2E).

6.125

- 1 **Sub-surface current and silt.** Observations made by Commander Cust, RN, in HM Survey Vessel *Rambler*, in September and October 1899, indicate that the fresh water of the Congo extends from the surface to the bottom until just below Ponta da Quissanga (6°01'·6S, 12°39'·8E) where it encounters a body of salt water filling the deep gully at the mouth of the river; it then flows over this denser water with decreasing depth and increasing velocity. This layer of fresh water also decreases in depth as the estuary widens but it is deeper on the out-going tide than on the in-going tide. About 5 miles below Ponta da Quissanga it extends from 5·5 m to 9·1 m below the surface whereas after passing Pointe Bulabemba (6°03'·3S, 12°26'·3E) it is only about 1 m in depth.

- 2 The deep body of salt water is either perfectly still, or has a very slight tidal flow of from ¼ to ½ kn, up river with the in-going tide, and down with the out-going tide.

The nature of the bottom in the Congo itself, with the exception of that in the deep gully, is almost invariably sand, though in places hard clay may be found. In the gully, there is everywhere a deep deposit of soft mud and decayed vegetable matter; another proof of the tranquillity of the water near the bottom. Mud is found in the small creeks in the upper part of the river, and also on the mangrove-covered banks which extend down river from Ponta da Quissanga.

- 3 The water of the river itself is heavily charged with sand, and it would appear that a very large proportion of the mud found in the gully is from the washings of the immediate neighbourhood, which is a vast expanse of mangrove swamp, with a network of innumerable creeks, drained at every tide.

Density of water. Between 1·025 g/cm³ and 1·000 g/cm³.

Principal marks

6.126

- 1 **Landmark:**
Flare (5°57'·9S, 12°25'·0E).
- Major light:**
Kupundji Light (5°53'·5S, 12°17'·7E) (6.87).

Directions

(continued from 6.109)

General information

6.127

- 1 It is not considered appropriate to give a detailed description of the islands and banks of River Congo as the channels are constantly changing, especially during the wet season, and at times new islands are formed, and old ones swept away by the violence of the current.
- 2 For details of navigational aids see 6.120.

Pilot to Ponta da Quissanga

6.128

- 1 From the vicinity of the pilot boarding position, S of Pointe Française (6°01'·5S, 12°24'·3E), the track leads

initially SE keeping in the deepest water, passing (with positions relative to Pointe Bulabemba (6°03'·3S, 12°26'·3E)):

- 2 SW and S, of Pointe Bulabemba, low, but can be identified by the lighthouse (white metal tripod). There is a small pier 2 cables E of the light and a village close N of the pier. And:
- 3 N of Rio do Fuma-Fuma (2¾ miles S). An extensive shoal, with depths of less than 10 m over it, extends up to 3 miles off the coast between Ponta Padrão (6°04'·5S, 12°19'·8E) and the entrance to Canal de Porto Rico, 10 miles E.

6.129

- 1 Thence the track leads generally ENE, passing:
SSE of No 12 Light-buoy (1¼ miles ESE) and N of Canal do Porto Rico (3½ miles SE). Thence:
SSE of No 14 Light-buoy (3 miles E) and N of Ponta da Cafumbila (5 miles ESE).
- 2 The track continues ENE, passing (with positions relative to Ponta da Cafumbila (6°04'·7S, 12°31'·4E)):
SSE of Banc Leman Beacon (2 miles N). In 1995 it was reported that Banc Leman had become an island.
SSE of No 16 Light-buoy (¾ miles NE). Anchorage may be obtained in the vicinity of the buoy (6.147). Thence:
SSE of No 18 Light-buoy (5¾ miles ENE) marking approximately the SW extremity of shoals which extend S from Banc de Malela (7 miles NE) to constrict the navigable channel at this point.
- 3 Thence the track leads E to a position N of Ponta da Quissanga (6°02'·6S, 12°39'·4E) keeping in the deepest part of the channel close to the shore of Ilha da Quissanga.

6.130

- 1 **Useful marks:**
Radio masts (S of two) (6°00'·4S, 12°23'·9E).
Sazaire Oil Terminal Light (platform) (6°05'·9S, 12°22'·9).
Beacon (6°02'·5S, 12°31'·3E).
Beacon (6°01'·7S, 12°33'·4E).
Beacon (6°01'·4S, 12°34'·6E).
Quissanga Beacon (overgrown) (6°02'·1S, 12°37'·1E).

Ponta da Quissanga to Ponta do Feitiço

6.131

- 1 Between Ponta da Quissanga (6°01'·6S, 12°39'·5E) and Ponta do Feitiço, 20 miles ENE, River Congo broadens out to a width of about nine miles and is encumbered by numerous islands.

Owing to the changeable nature of the river in this section, detailed directions are inappropriate. The reported route (1995) which is marked by buoys (lateral) can be seen on the chart. Much of the route passes off the S shore of Grande Île Mateba (5°54'N, 12°52'E), a large island about 17 miles long and 2 miles wide.

Ponta do Feitiço to Boma

6.132

- 1 **Leading marks:**
Selonga Beacon (5°53'·1S, 13°00'·8E).
Sacra Ambaka Beacon (5°52'·1S, 13°02'·8E).
- 2 From a position 1 mile W of Ponta do Feitiço, the alignment 064½° of these marks leads 4 miles ENE through Passe Ntua-Nkula to a position close SW of Ilhéu de

Selonga passing (with positions relative to Ponta do Feitiço):

- 3 NNW of Ponta do Feitiço, a prominent grassy ridge, 35 m in height, on which there is a military observation tower. The village of Quissacala with an airfield lies 1 mile farther S. Thence:
NNW of a dangerous wreck (not charted) (1½ miles ENE) lying about 1 cable off the S bank, thence:
- 4 SSE of Banc Ntua Nkula (2½ miles NE) a shallow bank extending SE from the E end of Grande Île Mateba.

Thence the track leads to a position close SW of Ilhéu de Selonga.

- 5 **Caution.** A very strong current with numerous eddies and whirlpools can be experienced in Passe Ntua-Nkula. Moreover the current through Passe Portugaise (5°54'S, 13°02'E) sets vessels towards Banc Ntua Nkulu.

6.133

- 1 From a position close SW of Ilhéu de Selonga (5°53'S, 13°02'E) the channel, which is narrow and marked by buoys (lateral) leads 3 miles NE to Boma Roads passing (with positions relative to Selonga Beacon (5°53'1S, 13°00'8E)):
- 2 NW of Ilhéu de Selonga, low and grass-covered. Selonga Beacon stands near the SW tip of the island. And:
SE of shoals which extend more than 1 mile SE of the E extremity of Grande Île Mateba, thence:
NW of Ilhéu do Sacra Ambaka. Sacra Ambaka Beacon stands near the N end of the island.

Useful marks:

- Spire (5°51'2S, 13°03'4E).
Tanks (5°51'4S, 13°02'3E).

(Directions for Boma are given at 6.161)

Boma to Matadi

6.134

- 1 From Boma to Matadi, a distance of 30 miles, River Congo narrows to about 5 cables and is enclosed by hills (6.115). For much of the passage the track is defined by a series of leading lines based on transit marks and the river banks are marked by beacons numbered in ascending order from Boma to Matadi. See 6.120. Mariners should note that the leading lines do not always connect directly with each other and a timely controlled alteration of course is required at the bends.
- 2 From a position at the W end of Boma roadstead, the track leads 2½ miles E to the first leading marks, passing (with positions relative to Sacra Ambaka Beacon (5°51'2S, 13°02'8E)):
- 3 S of the mouth of River Kalamu (6 cables N), thence:
S of Boma waterfront (7 cables NNE) and N of Ilhéu do Sacra Ambaka, thence:
N of Buoys 91A (1½ miles E) and 91B, 6 cables farther E, that mark the NE limit of a shallow bank extending E from Ilhéu do Sacra Ambaka.
- 4 **Useful mark.**
Brewery (5°51'7S, 13°04'8E).

6.135

- 1 **Leading marks:**
Front mark (5°54'6S, 13°07'2E).
Rear mark (2½ cables SE of front mark).
Front mark (white) (5°51'7S, 13°04'8E).
Rear mark (white) (5 cables from front mark).

- 2 The alignment (141°) ahead of the first pair of marks and (321°) astern of the second pair of marks, leads SE, for about 2½ miles to the end of the leading line, passing:
Between Ilhéu Rocca, rising near its E end to a rocky well-wooded hill 87 m high, and Île des Princes (5°53'5S, 13°07'2E), thence:

N of Ponta Puelo (5°53'8S, 13°06'1E).

Thence the track alters NE on the alignment of the next pair of leading marks.

Useful mark.

No 93 Buoy (starboard hand) (5°54'4S, 13°06'9E).

6.136

- 1 **Leading marks:**

Front mark (white) (5°52'5S, 13°09'8E).

Rear mark (white) (7½ cables from front mark).

The alignment (056°) of these marks leads NE, for about 1½ miles to the end of the leading line, passing NW of No 19 Beacon (5°54'1S, 13°08'0E) standing on the N side of Ilhéu Libulu:

6.137

- 1 **Île des Princes Leading Marks:**

Front mark (white) (5°53'4S, 13°08'1E).

Rear mark (white) (1 mile from front mark).

The alignment (248°) astern of these marks leads ENE, for about 1¾ miles, to the end of the leading line N of Ponta Bumbu Beacon (No 21) (5°52'7S, 13°10'3E), passing NNW of Ponta Kimongoa Beacon (5°53'3S, 13°09'0E):

Thence the track leads E for about 1 mile to the beginning of Binda leading line.

6.138

- 1 **Binda Leading Marks:**

Front mark (white) (5°51'4S, 13°13'6E).

Rear mark (6 cables from front mark).

The alignment (066¾°) of these marks leads ENE, for about 1¾ miles to the end of the leading line passing NNW of Ponta Quinzambi Beacon (No 23).

6.139

- 1 **Leading marks:**

Front mark (white) (5°51'6S, 13°12'5E).

Rear mark (white) (3½ cables from front mark).

The alignment (279½°) astern, of these marks leads E for about 2¾ miles to the end of the leading line N of Ponta Senga (5°52'3S, 13°15'7E) passing:

- 2 N of Ponta Macala Beacon (No 25) (5°52'0S, 13°13'4E), thence:
S of the entrance to Rivière Belizi (5°51'6S, 13°14'9E).

6.140

- 1 **Leading marks:**

Front mark (white) (5°51'5S, 13°14'5E).

Rear mark (white with triangular topmark apex down) (1¼ miles from front mark).

The alignment (297½°) astern, of these marks leads SE, for about 3 miles to the end of the leading line, passing:

- 2 SW of Îlot Oscar (5°52'9S, 13°17'5E), a wooded islet surmounted by No 28 Beacon. And:
NE of Ponta Andila Beacon (No 29) (5°53'2S, 13°17'4E).

6.141

- 1 **Leading marks:**

Front mark (white) (5°54'0S, 13°21'0E).

Rear mark (1½ cables from front mark).

The alignment (101°) of these marks leads E for about 1½ miles to the end of the leading line N of Ponta Tridente passing:

N of Senga Bongo (5°53'·8S, 13°19'·0E), a rock surmounted by No 33 Beacon, thence:

S of Les Trois Soeurs, islets which lie in a bight off the N bank of the river. The S islet of Les Trois Soeurs is surmounted by No 36 Beacon.

- 2 **Caution.** Between Senga Bongo and Pointe Muzuku, 1½ miles farther E, the current can be exceptionally strong (6.123) and whirlpools and strong eddies may be encountered above Les Trois Soeurs See 6.124.

6.142

- 1 **Muzuku Leading Marks:**

Front mark (white triangle apex up) (5°54'·6S, 13°21'·9E).

Rear mark (white triangle apex down) (2 cables from front mark).

Front mark (Beacon No 34) (5°53'·6S, 13°19'·4E).

Rear mark (Beacon No 32) (9 cables from front mark).

- 2 The alignment (114°) (charted as 112¾°) ahead of the first pair of marks and (292¾°) astern of the second pair of marks leads ESE for about 1¾ miles to the end of the leading line, passing:

NNE of Ponta Tridente Beacon (No 35), thence:

NNE of Cabo Muzuku (5°54'·6S, 13°20'·7E), and:

SSW of No 94 Buoy (port hand) moored close off the N shore, 4 cables W of Pointe Muzuku (5°54'·3S, 13°21'·5E), thence:

- 3 SSW of Pointe Muzuku.

Thence the track alters to port through more than 90°, passing ESE of No 40 Beacon standing 3 cables E of Pointe Muzuku and onto the next leading line.

6.143

- 1 **Leading marks:**

Front mark (Triangular topmark apex up) (5°51'·9S, 13°22'·8E).

Rear mark (Triangular topmark apex down) (2½ cables from front mark).

Front mark (white triangle apex up) (5°54'·6S, 13°21'·9E).

Rear mark (white) (8½ cables from front mark).

- 2 The alignment (019¼°) ahead of the first pair of marks and (198°) (charted as 199¼°) astern of the second pair of marks leads NNE for about 2 miles to a position near the end of the leading line, passing:

- 3 ESE of Pierres Muzuku, a cluster of rocks and shoals lying in mid stream in the vicinity of No 40 Beacon (5°54'·3N, 13°21'·8E), thence:

- 4 ESE of Îlot Kongolo (5°53'·4S, 13°21'·9E), situated near the S end of a shelf, marked by No 42 Beacon, with a least depth of 2·6 m and extending N for about 1¼ miles as far as Kongolo. Thence: WNW of No 95 Buoy (starboard hand) (5°52'·8S, 13°22'·6E), marking the W side of a shoal with a least charted depth of 6·4 m extending NNE.

- 5 Thence the track alters E for about 1 mile, passing: N of Rocha Diamantes (5°52'·4S, 13°23'·1E), a rock surmounted by No 43 Beacon (white with triangular topmark apex up), thence: N of Ponta Diamantes (5°52'·5S, 13°23'·2E).

Thence the track leads to the beginning of a leading line NE of Ponta Diamantes.

6.144

- 1 **Leading marks:**

Front mark (white) (5°52'·5S, 13°22'·0E).

Rear mark (white) (3½ cables from front mark).

The alignment (262¾°) astern, of these marks, together with No 43 Beacon leads E for about 1¾ miles, passing:

S of Cap Luse Beacon (No 46) (5°52'·1S, 13°23'·9E), thence:

S of a group of five beacons at Ikungulu (5°51'·9S, 13°24'·7E), where there is a waiting anchorage (6.148) for Matadi.

Thence the track leads to a position W of Pedra de Noqui Beacon (No 49) (5°52'·0S, 13°25'·8E). The Angolan port of Noqui comprising a wharf of about 100 m length aligned N to S is situated close S of the beacon.

6.145

- 1 From a position close W of Pedra de Noqui Beacon, the track leads N and NE for 2¾ miles to a position N of Pointe Underhill Beacon (No 57) (5°49'·7S, 13°26'·0E) passing:

- 2 W of a jetty (5°51'·4S, 13°26'·0E) at the S end of the port of Ango-Ango (6.164), thence:

W of a pontoon (5°50'·7S, 13°25'·9E) connected to the shore by two catwalks and used by tankers discharging at Ango-Ango, thence:

- 3 Through Chaudron d'Enfer, (The Cauldron of Hell).

On the W side, the high hills on the N bank of the river fall 183 to 244 m in sheer precipices to the dark gloomy basin below. At this point the river is very deep and the current violent; numerous eddies and heavy whirlpools necessitate special caution in steering, and the greater the speed that can be used the better. Although in the dry season, Chaudron d'Enfer is not formidable, it is said that in December, at the height of the wet season, it fully justifies its name, the current in places attaining a rate from 10 to 13 kn (6.123). According to the pilots, at this time of year steering for vessels over 167 m in length could be extremely difficult and such vessels could be unmanageable. See 6.117. There is a stranded wreck on the N shore of Chaudron d'Enfer.

6.146

- 1 From a position N of Pointe Underhill Beacon the track leads ENE for 8 cables to a position NNW of the berths in Matadi harbour, passing through a narrow gorge spanned by an overhead cable and a bridge (6.177).

(Directions for Matadi are given at 6.190)

Anchorage in River Congo

Banana to Boma

6.147

- 1 **Banana Anchorage** (6°03'·5S, 12°29'·0E). See 6.154.
- 2 **Malela.** Good anchorage for small vessels may be obtained about 2 cables off Malela (5°59'·7S, 12°36'·6E), in a depth of about 11 m. The anchorage is approached from SW by Passe Rambler which is unmarked. Details of available depths can be obtained from the pilot.

Boma to Matadi

6.148

- 1 **Boma Waiting Anchorage.** See 6.159.
- 2 Between Boma and Matadi are several anchorages. These are known to the river pilots and local knowledge is required for anchoring in them. They are as follows:
- Kinlele, (5°52'·4S, 13°05'·7E), on the N bank, about 2½ miles above Boma.
- Île des Princes, off the SE side (5°53'·8S, 13°07'·6E), as indicated on the chart.
- Bumbu, between Ponta Kimongoa (5°53'·3S, 13°09'·0E) and Ponta Bumbu, 1½ miles ENE.
- Binda (5°51'·6S, 13°13'·7E).
- North of Îlot Oscar (5°52'·9S, 13°17'·5E).

Muzuku (5°54'·0S, 13°20'·8E), on the N bank, 1 mile ESE of Les Trois Soeurs.

Diamantes (5°51'·9S, 13°22'·9E), on the N bank opposite Ponta Diamantes.

- 3 The foregoing anchorages have depths ranging from about 8 m to 20 m, are partially protected from the full force of the current and the holding is reported to be good.

- 4 The following anchorages are recognised as waiting anchorages for Matadi either because a berth may not be ready or because there is insufficient daylight remaining to proceed through Chaudron d'Enfer (6.145). However, if longer delays are expected it is safer to anchor at Boma (6.159).

Ikungulu (5°51'·9S, 13°24'·9E) on the N side, 1¼ miles W of Noqui. This anchorage will take one ship. It is out of the current in a depth of 17·5 m with good holding ground.

WSW of the jetty (5°51'·4S, 13°26'·0E) at Ango-Ango but about 180 m off the W bank in depths 15 m to 18 m. The current in this anchorage is reported to be fairly weak.

Off Ango-Ango in position 5°50'·7S, 13°25'·9E, as shown on the chart. Although the bottom is sand and the holding is good, the current is very strong necessitating two anchors and engines at standby.

Banana

General information

6.149

- 1 **Position.** The port of Banana (6°01'S, 12°24'E) is situated on the N bank of River Congo close within the entrance.

Function. It is a medium sized port used for handling general and oil cargoes.

The town of Banana lies 5 cables N of Pointe Française (6°01'·5S, 12°24'·3E) and an oil refinery is located 3½ miles NNE of the point.

Topography. See 6.104 and 6.108.

- 2 **Approach and entry.** The port is located in Crique de Banana (6.156) which is entered between Pointe Française and the S extremity of Îlot des Pêcheurs, 5 cables E.

Port Authority. Banana Port Authority, Office National des Transports (ONATRA), BP 98, Kinshasa, Congo (Democratic Republic).

Limiting conditions

6.150

- 1 **Controlling depths.** In 1997, the maximum draught for vessels crossing the bar into Crique de Banana, within 30 minutes of HW, was 5·5 m.

Deepest and longest berth. See 6.154.

Tidal levels. At Bulabemba the mean spring range is about 1·4 m; mean neap range about 0·6 m. See information in *Admiralty Tide Tables Volume 2*.

- 2 **Density of water.** The water is brackish.

Maximum size of vessel handled. At Banana anchorage (6.154): LOA 190 m and draught 11·5 m.

Arrival information

6.151

- 1 **Port radio.** There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required. Send ETA 5 days in advance, confirming 24 hours prior to arrival. See *Admiralty List of Radio Signals Volume 6(3)*.

Outer anchorages. See 6.100.

- 2 **Pilotage** is compulsory for vessels over 500 grt, and available during daylight hours only. Pilot boards vessel as indicated on the chart, S of Pointe Française (6°01'·5S, 12°24'·3E), between Stella No 2 Light-buoy and Pointe Bulabemba. See *Admiralty List of Radio Signals Volume 6(3)*.

If proceeding to anchor E of Pointe Bulabemba, see 6.154.

Tugs are available.

Harbour

6.152

- 1 **General layout.** Crique de Banana affords alongside facilities for small vessels. Larger vessels anchor in the river.

- 2 **Tidal streams.** There is a regular tidal stream in the creek. The in-going stream having a rate from ½ to 1 kn, and the out-going stream from 1½ to 2 kn in the dry season.

Occasionally, during the out-going stream a set towards the W side of the entrance will be experienced in the vicinity of the outer buoys, above which the stream will be found to set in the general direction of the channel.

- 3 In the river at the anchorage berths there is a strong current of between 4 and 5 kn.

Climatic table. See 1.226 and 1.239.

Landmark:

Flare (5°57'·9S, 12°25'·0E).

Major light:

Kupundji Light (5°53'·5S, 12°17'·7E) (6.87).

Directions for entering harbour

(Continued from 6.109)

6.153

From the vicinity of the pilot boarding position S of Pointe Française (6°01'·5S, 12°24'·3E), the track leads N, through a channel marked by buoys (lateral), passing (with positions relative to Pointe Française):

- 1 Between Nos 2A and 3 Buoys (5 cables SE) marking the entrance bar close E of Banc Stella (6.108), thence;
E of Pointe Française, the S tip of Presqu'île de Banana, and;
W of Pointe des Pêcheurs (5 cables E) at the S tip of Îlot des Pêcheurs, thence;
W of Pointe Huard (8 cables NNE), the W extremity of Île de Rosa. A dangerous wreck lies 2 cables W of Pointe Huard. In 2000 it was reported that the wreck was marked by an isolated danger light-buoy.

Thence course is adjusted towards the harbour on the W side of Crique de Banana.

- 2 **Caution.** In 2000 it was reported that with the exception of Nos 2A and 3 Buoys, the majority of the channel buoys were missing.

Berths

6.154

- 1 **Banana anchorage.** Anchorage may be obtained for vessels of greater draught than 5·5 m in the river, about 3 miles E of Pointe Bulabemba (6°03'·3S, 12°26'·3E), in a depth of about 13·7 m. This anchorage is where tankers discharging to, or loading from the refinery at Banana anchor, cargo being worked by lighters of up to 2000 dwt. Pilots are not always available for ships proceeding to this anchorage, but an officer from the refinery will assist with berthing if requested.

Vessels anchoring here should lay out 2 anchors upstream and lie with 7 to 8 shackles of cable on each.

- 2 The best anchorage according to the pilots, is in the vicinity of No 16 Light-buoy. At this anchorage, however the round trip for lighters is considerable, and long delays may result. To achieve a speedy turn-round it is preferable that a vessel should anchor as close as possible to the refinery, between Nos 12 and 14 Light-buoys. This anchorage is normally satisfactory in the dry season, but during the wet season, starting in October, the current in the river increases considerably, and vessels frequently drag their anchors. Vessels must therefore be ready to move at short notice and engines must be on immediate notice.

- 3 **Crique de Banana anchorage.** Temporary anchorage may be obtained in the middle of Crique de Banana, abreast the two small piers situated 5 cables N of Pointe Française (6°01'5S, 12°24'3E).

- 4 **Alongside.** There is a quay (6°00'7S, 12°24'2E), 76 m in length for use by vessels with a draught of not more than 5.2 m but the port authority should be consulted for the latest depth.

Port services

6.155

- 1 **Supplies:** fuel oil available by barge; fresh water and provisions available.

Other facilities: doctor for emergency cases; oily waste reception facilities.

Communications: airfield at Kitona (5°55'S, 12°25'E), 13 km NNE of Banana.

Small craft

6.156

- 1 **Crique de Banana** can be ascended by small craft to Chimpeza (5°54'S, 12°35'E) (not charted), 15 miles ENE, the channel to which appears clear and deep, but becomes narrow in the upper reaches. A short channel E of Île de Rosa (6.153) connects Crique de Banana with Crique des Pirates (6°02'S, 12°26'E) from whence another channel leads E to Malela (5°59'7S, 12°36'6E) (6.147).

- 2 Crique de Banana and Crique des Pirates are the main outlets of a network of channels, on the N side of the estuary of the River Congo, which extend from Pointe Française to Malela and form a convenient route for small craft, by which the strong current and rough water of the main river can be avoided.

Boma

General information

6.157

- 1 **Position.** The port of Boma (5°51'5S, 13°03'3E), lies on the N bank of River Congo about 43 miles from the pilot boarding position.

Function. It is a small port exporting tropical timber, bananas, cacao, coffee and palm products. The town of Boma, dating from about 1886, was once the capital of Belgian Congo. The business part is on flat ground close to the river and the residential part on a plateau, about 60 m above the river.

- 2 **Topography.** The land in the vicinity is hilly and covered with coarse grass. Fort Shinkakasa stands 41 m above the river, about 1 mile W of Boma.

Approach and entry. The port is approached and entered from River Congo.

Traffic. In 2003, the port was used by 40 ships with a total of 671 467 dwt.

Port Authority. Boma Port Authority, Office National des Transport, (ONATRA) BP 143, Boma, Congo (Democratic Republic).

Limiting conditions

6.158

- 1 **Controlling depths.** See 6.116.
Deepest and longest berth. Quay (6.162).
Tidal levels. Insufficient data. See information in *Admiralty Tide Tables Volume 2*.
Density of water is 1.005 g/cm³.
Local weather. See 6.180.

Arrival information

6.159

- 1 **Port operations.** Berthing during daylight hours only. If no berth is available, vessels should use the Waiting Anchorage.

Port radio. There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

- 2 **Notice of ETA required.** Boma is handled by the port of Banana. Send ETA 5 days in advance, confirm 24 hours prior to arrival. See the relevant edition of *Admiralty List of Radio Signals Volume 6(3)*.

Outer anchorage may be obtained, as indicated on the chart, in the Waiting Anchorage. The holding is reported to be good and there is accommodation for three vessels.

In the case of a long wait vessels should lie at 2 anchors, and use a stern anchor if available, in order to avoid swinging onshore, on account of the sea breeze which blows upriver in the afternoon.

- 3 **Pilotage** is handled by the port of Banana and is compulsory for vessels over 500 grt. See 6.101 and *Admiralty List of Radio Signals Volume 6(3)*.

Tugs are available.

Local knowledge. See 6.119.

Harbour

6.160

- 1 **General layout.** The harbour lies alongside the river bank fronting the town of Boma.

Current. The maximum current normally experienced at the quay is 3 kn. Little or no current is felt close in to the river bank during the dry season.

Directions for entering harbour

(continued from 6.133)

6.161

- 1 The port of Boma is entered directly from the river. Generally, vessels berth portside alongside using the starboard anchor. See 6.160.

Berths

6.162

- 1 **Anchorage berth.** Anchorage may be obtained as given at 6.159. Vessels can work cargo into lighters at this berth using ships gear.

Alongside. Quay (5°51'5S, 13°03'3E), 450 m in length with depths from 8 to 9.8 m alongside and accommodation for three ocean-going vessels. The port authority should be contacted for the latest information.

Port services

6.163

- 1 **Repairs** are available; two floating docks, with lifting capacities of 1524 and 2540 tonnes, are available. The former can accommodate vessels up to 1500 dwt, 70 m in length, 15 m beam and a draught of 6 m. The latter, vessels up to 82 m in length, 14 m beam and a draught of 5.1 m.

- 2 **Other facilities:** hospitals; Deratting can be carried out, Deratting and Deratting Exemption Certificates issued; pipeline for loading palm oil from the quay; oily waste reception facilities.

Supplies: fresh water; provisions.

Communications: airport 3 km.

Ango-Ango

General information

6.164

- 1 **Position.** The port of Ango-Ango (5°50'·7S, 13°26'·1E), lies on the E bank of River Congo about 2½ miles downstream from Matadi.

Function. It is a subport of Matadi used for the discharge of petroleum and dangerous cargoes and also for ships not powerful enough to negotiate Chaudron d'Enfer (6.145).

- 2 **Topography.** The land in the vicinity is hilly and covered with coarse grass.

Approach and entry. The port is approached and entered from River Congo.

Port Authority. See 6.174.

Limiting conditions

6.165

- 1 **Controlling depths.** See 6.116.
Deepest and longest berth. Floating pontoon (6.169).
Tidal levels. Insufficient data. See information in *Admiralty Tide Tables Volume 2*.
Density of water is 1·000 g/cm³.
Maximum size of vessel handled. See 6.169.
Local weather. See 6.180.

Arrival information

6.166

- 1 **Port operations.** Berthing during daylight hours only.
Port radio. See 6.182.
Notice of ETA required. Ango-Ango is handled by the port of Banana. Send ETA 5 days in advance, confirm 24 hours prior to arrival. See *Admiralty List of Radio Signals Volume 6(3)*.
Outer anchorage See 6.148.
- 2 **Pilotage** is handled by the port of Banana and is compulsory for vessels over 500 grt. See 6.101 and *Admiralty List of Radio Signals Volume 6(3)*.
Tugs are not available.
Local knowledge. See 6.119.
Regulations concerning entry. Main engines must be kept on standby throughout stay.

Harbour

6.167

- 1 **General layout.** The harbour lies alongside the river bank fronting the town of Ango-Ango.
Current. A strong current of from 3 to 7 kn depending on the height of the river, is normally experienced at this berth.

Directions for entering harbour

6.168

- 1 The port is approached directly from the river. The chart is sufficient guide.

Berths

6.169

- 1 Alongside depths are reported depths. The port authorities should be contacted for the latest information.

A pontoon, 61 m in length, with a depth of 9·1 m alongside, connected to the shore by 2 bridges. Vessels of 195 m in length, 8000 dwt can use the pontoon. Vessels berth head up stream. This berth is used by tankers, vessels bunkering and occasionally by vessels loading palm oil.

A quay, 123 m in length, lies 7½ cables S of the pontoon. This berth is used for the discharge of dangerous cargoes and occasionally for the discharge of general cargoes when the port of Matadi is congested.

Port services

6.170

- 1 **Repairs** are available at Matadi.
Other facilities: hospital at Matadi; Deratting Exemption Certificates issued at Matadi.
Supplies: fresh water; fuel oil; provisions.
Communications: Airport at Tshimpi 8 km. Rail link to Matadi.

MATADI

General information

Chart 657

Position

6.171

- 1 The port of Matadi (5°49'·2S, 13°27'·5E), lies on the S bank, about 80 miles from the entrance of River Congo. It is the limit of navigation for ocean-going vessels because of rapids at Kisi, 3 miles above Matadi.



Matadi (6.171)

(Original dated prior to 2004)

(Photograph – OT Africa Lines)

Function

6.172

- 1 Matadi is a medium sized port and the principal port of Democratic Republic of Congo. Exports include coffee, cocoa, rice, timber, palm products, cotton, copal, and minerals. The town of Matadi with a population of 179 000 (1996), stands on the steep and rocky slope of the river bank. Shut in on all sides by high mountains, it is extremely unhealthy in the hot season, although there are few cases of malarial fever.

Traffic

6.173

- 1 In 2003, the port was used by 351 ships with a total of 3·4 million dwt.

Port Authority

6.174

- 1 Port Authority of Matadi, Boulevard du 30 June, BP 98, Kinshasa, Congo (Democratic Republic).

Limiting conditions**Controlling depths****6.175**

- 1 See 6.116.

Deepest and longest berth**6.176**

- 1 Quay (6.191).

Bridge and overhead cable**6.177**

- 1 A road bridge with a vertical clearance of 52.7 m allowing for a maximum rise in the river during the rainy season of 8 m, spans River Congo from a position close E of Pointe Underhill (5°49'7S, 13°26'0E). A datum mark, which indicates the actual clearance at any time, is situated on the N bank.

An overhead telephone cable with a vertical clearance of 40 m above high river level, spans the river at Pointe Underhill.

Density of water**6.178**

- 1 The density of the water is 1.000 g/cm³.

Maximum size of vessel handled**6.179**

- 1 Maximum length 179 m but see 6.145.

Local weather**6.180**

- 1 Heavy thunderstorms and torrential rains fall in the wet season. Tornadoes are frequent, and land and sea breezes are marked.

Arrival information**Port operations****6.181**

- 1 Berthing during daylight hours only.

Port radio**6.182**

- 1 There is a port radio station. See *Admiralty List of Radio Signals Volume 6*(3).

Notice of ETA required**6.183**

- 1 ETA should be sent 5 days, thence 24 hours prior to arrival. See *Admiralty List of Radio Signals Volume 6*(3).

Outer anchorage**6.184**

- 1 See 6.100, 6.148 and 6.159.
The anchorage at Matadi is not recommended owing to strong currents in mid-stream and a tendency for vessels to swing about to a strong breeze which blows upriver during the afternoon.
Naval vessels can find anchorage downstream of the harbour berths.

Pilotage**6.185**

- 1 Pilotage is compulsory for vessels over 500 grt. See 6.101 and *Admiralty List of Radio Signals Volume 6*(3).

Tugs**6.186**

- 1 Tugs are available.

Local knowledge**6.187**

- 1 See 6.119.

Harbour**General layout****6.188**

- 1 The harbour lies on the S bank fronting the town of Matadi.

Natural conditions**6.189**

- 1 **Current.** In the dry season there is little current close in, but in the wet season it sets strongly at the upper end of Matadi quay, and sometimes vessels experience considerable difficulty in getting alongside. The current varies in strength between 1 and 6 kn. At the two down stream berths the current is deceptively strong, and sets onto the quay; the current is least felt at the centre berths.
- 2 Great care is necessary when approaching Kala-Kala Wharf, the downstream berth, where deep water approaches most closely to the quay and the current sets onto the shore. Before a ship makes her approach to this berth, a length of cable should be veered on the port anchor, so that the anchor can be let go off the berth to give a good scope of at least 5 shackles.

Climatic table. See 1.226 and 1.239.

Directions for entering harbour*(continued from 6.146)***6.190**

- 1 The port of Matadi is entered directly from the river. Vessels berth starboard side alongside, having dropped the port anchor on the approach. For information on currents see 6.189.

Berths**6.191**

- 1 A quay (5°49'3S, 13°27'3E) 1615 m in length with alongside depths ranging from 6 to 10 m, provides 10 berths.

Port services**Repairs****6.192**

- 1 Minor repairs only, carried out by the railway workshop.

Other facilities**6.193**

- 1 Hospital; Deratting Exemption Certificates issued.

Supplies**6.194**

- 1 Fuel oil at Ango-Ango (6.164); fresh water, provisions and stores.

Communications**6.195**

- 1 Airport at Tshimpi 8 km. Rail and road links to Kinshasa the capital, distance approximately 200 miles.

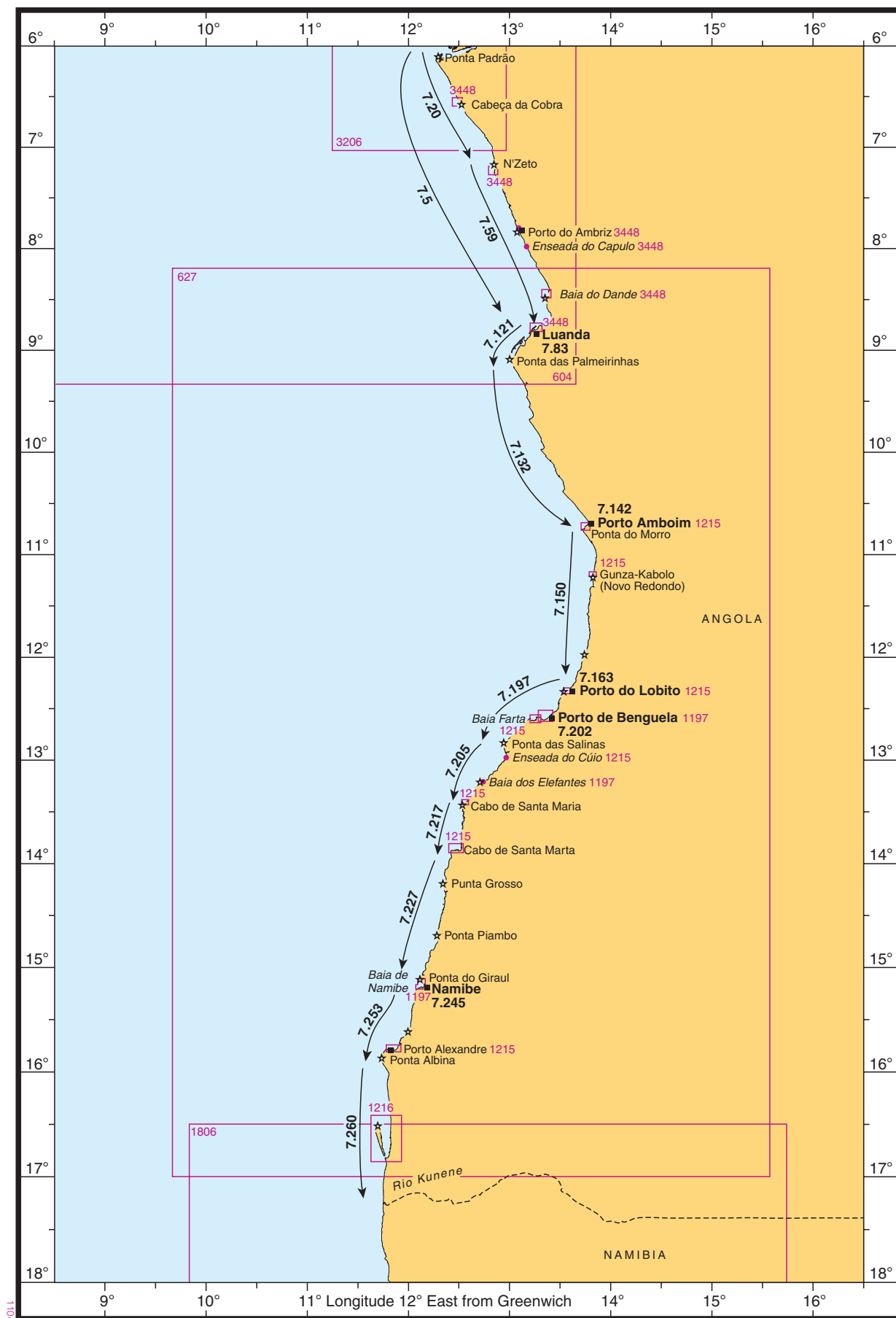
Small craft**6.196**

- 1 A short distance up-river from the quay mentioned at 6.191 there are some pontoons and a quay for the use of small craft.

NOTES



Chapter 7 - River Congo to Rio Kunene



CHAPTER 7

RIVER CONGO TO RIO KUNENE

GENERAL INFORMATION

Charts 604, 627, 1806

Scope of the chapter**7.1**

- 1 This chapter comprises an offshore route, a coastal route, anchorages, harbours and oil terminals along the coast of Angola from Ponta Padrão (6°04'·5S, 12°19'·8E) to Rio Kunene (17°14'·8S, 11°45'·6E).

The chapter is divided into the following sections:

River Congo to Ponta das Palmeirinhas (7.3).

Ponta das Palmeirinhas to Cabo de Santa Marta (7.130).

Cabo de Santa Marta to Rio Kunene (7.224).

Piracy**7.2**

- 1 Mariners are advised to be alert for pirates in the coastal waters of Angola.

RIVER CONGO TO PONTA DAS PALMEIRINHAS

GENERAL INFORMATION

Chart 604

Area covered**7.3**

- 1 This section describes an offshore route, coastal routes, anchorages, harbours and oil terminals from Ponta Padrão (6°04'·5S, 12°19'·8E) to Ponta das Palmeirinhas (9°04'·0S, 12°59'·2E) about 185 miles SSE. Also described is the port of Luanda.

- 2 It is arranged as follows:
Offshore route (7.5).
River Congo to N'zeto (7.20).
N'zeto to Luanda (7.59).
Porto de Luanda (7.83).
Luanda to Ponta das Palmeirinhas (7.121).

Marine exploitation**7.4**

- 1 Marine exploitation is extensive in the area covered by this section. See 1.14.

Artificial reef. An unmarked artificial reef, which is associated with offshore oil and gas activity, has been established in a 5 mile by 2½ mile rectangular zone centred on 6°38'·7S, 12°07'·7E, as shown on the chart. Mariners are advised to give the area a wide berth.

OFFSHORE ROUTE

General information

Chart 658, 3206, 604

Route**7.5**

- 1 From a position about 9 miles WNW of Ponta Padrão (6°04'·5S, 12°19'·8E) (6.8), the route leads SSW, for about 33 miles to a position about 30 miles W of Cabeça da Cobra (6°32'·8S, 12°30'·2E), thence SSE for about 150 miles to a position WNW of Ponta das Palmeirinhas (9°04'·0S, 12°59'·2E).

Depths**7.6**

- 1 There are charted depths in excess of 20 m (11 fm) in the offshore route.

Principal marks**7.7****Landmarks:**

Flare (5°57'·9S, 12°25'·0E).
Soyo-Quinфуquena radio mast (6°14'·5S, 12°21'·5E), the position of which is approximate.

Major lights:

Kupundji Light (5°53'·5S, 12°17'·7E) (6.87).
Soyo-Quinфуquena Aero Light (radio mast) (6°14'·5S, 12°21'·5E).
Cabeça da Cobra Light (6°32'·8S, 12°30'·2E) (7.24).
Ponta Quinzau Light (6°53'·3S, 12°45'·4E) (7.24).
N'zeto Light (7°15'·2S, 12°50'·9E) (7.24).
Ambriz Light (7°50'·1S, 13°06'·0E) (7.63).
Ponta das Palmeirinhas Light (9°04'·0S, 12°59'·3E) (7.126).

Directions

(continued from 6.8 and 6.90)

7.8

- 1 From a position about 9 miles WNW of Ponta Padrão (6°04'·5S, 12°19'·8E) (6.8), the track leads SSW, passing (with positions relative to Cabeça da Cobra (6°32'·8S, 12°30'·2E)):

ESE of Safueiro Oilfield (37 miles NW). A light (6°08'·4S, 12°03'·5E) is exhibited from a platform. Thence:

WNW of Essungo Oilfield (28 miles NW) with three platforms (lighted), thence:

WNW of Bagre Oilfield (13 miles NW) with platforms (lighted).

Thence to a position about 30 miles W of Cabeça da Cobra. The track then leads SSE, passing:

WSW of an unmarked artificial reef (23 miles WSW) (7.4), thence:

WSW of Lombo East Terminal (18 miles SSW) (7.30), thence:

WSW of Palanca Terminal (25 miles SSW) (7.37), thence:

WSW of Canuku Terminal (33 miles S) (7.44), thence:

WSW of Kiame Terminal (49 miles S) (7.50), thence:

ENE of Girassol Terminal (7°39'·1S, 11°40'·8E) (7.19).

- 2 Thence the track leads to a position WNW of Ponta das Palmeirinhas (9°04'·0S, 12°59'·2E) (7.127).

(Directions continue at 7.138. Directions for Porto de Luanda are given at 7.107)

Xikomba Terminal

General information

7.9

- 1 **Position and function.** Xikomba Terminal comprises an FPSO (6°02'·7S, 11°01'·5E) with associated subsea wells and is located 70 miles offshore in a depth of 1300 m.
- Terminal authority.** Esso Exploration Angola Ltd.

Limiting conditions

7.10

- 1 **Maximum size of vessel handled.** 350 000 dwt.
- Local weather and sea state.** Light to moderate SE Trades predominate but Tornadoes (1.218), which are usually preceded by a dense cloud belt, can give rise to squalls with gusts exceeding 50 kn.
- A S to SW swell generally less than 2·0 m is not uncommon and is generated by storms in the South Atlantic or off the coast of Namibia.

Arrival information

7.11

- 1 **Terminal operations.** Berthing takes place in daylight only provided that the wind is 25 kn or less, the waves are less than 2·5 m and the current less than 2 kn.
- Maximum limits for station keeping and unberthing are wind less than 35 kn, waves less than 3·5 m and current less than 3 kn.

Port radio. See *Admiralty List of Radio Signals Volume 6(3)* for details.

- 2 **Notice of ETA required.** Notice is to be given upon departure from last port and 72, 48, 24 and 4 hours prior arrival. Significant changes in ETA are to be reported.

VHF contact is to be established when within range.

Waiting area. A waiting area is located 3 miles N of the FPSO.

Restricted area. A circular restricted area with radius 2·5 miles is centred on position 06°02'·7S, 11°00'·9E. Vessels are prohibited from entering the area without the permission of the terminal operator.

- 3 **Pilotage** is compulsory within the restricted area and is provided by the Mooring Master who will board in the vicinity of the waiting area.

Tug. A tug will be used to assist in berthing and will remain secured to the stern of the export tanker throughout the loading operation.

Terminal regulations. The main engine is to be tested astern prior to berthing and is to remain on immediate notice for use during the loading operation. Anchors are to be fully secured throughout and a watchman with portable radio is to be stationed on the forecastle after berthing is completed.

- 4 **Customs and Health.** The terminal lies within the Angola EEZ. Customs, immigration and health officials can be expected to board with the Mooring Master.

Terminal

7.12

- 1 **General.** The FPSO is a converted tanker of 256 000 dwt, LOA 366 m and it is moored by means of an SPM turret at the bow. Lights are exhibited from the FPSO

and it is fitted with a racon. A fog signal is sounded in restricted visibility.

The export tanker moors in tandem to the stern of the FPSO.

- 2 **Tide rips.** The Benguela current sets NW but is generally weak so that the resultant direction of the surface current is influenced by tidal streams.

Tide rips, which occur irregularly and which are difficult to predict, give rise to strong and sudden changes of the the surface current. Their influence may necessitate a halt to cargo operations and bring about preparations to disconnect hoses and the mooring hawser.

Services

7.13

- 1 **Facilities.** There are no reception facilities for dirty ballast or oily waste. Vessels must arrive with clean or segregated ballast only.

Stores. No fresh water, bunkers or stores available.

Communications. No normal links to Luanda but medical evacuation available in emergencies.

Kizomba A Terminal

General information

7.14

- 1 **Position and function.** Kizomba A Terminal comprises an FPSO (6°19'·2S, 11°03'·2E), a CALM buoy, a drilling and wellhead platform and associated subsea wells. It is located in a depth of about 1180 m at a distance of 73 miles offshore.

Terminal authority. Esso Exploration Angola Ltd.

Limiting conditions

7.15

- 1 **Local weather and sea state.** See 7.10.

Arrival information

7.16

- 1 **Terminal operations.** Mooring is normally between 0600 and 1500. Unberthing takes place at any time.

Notice of ETA. Notice is required at 72, 48, 24 and 4 hours prior to arrival. Any change of more than 1 hour after 24 hours notice has been given is to be notified.

Pilotage. Pilotage is compulsory. The pilot boards in the waiting area.

- 2 **Tugs** are available.

Waiting area. There is a waiting area 5 miles NW of the FPSO bounded by the following: 6°16'·0S, 6°18'·0S, 10°57'·8E and 11°00'·0E.

Restricted area. A restricted area with radius of 4 miles is centred on the FPSO. Vessels are prohibited from entering the restricted area without the permission of the terminal operator.

Terminal

7.17

- 1 **General.** Lights are exhibited from the FPSO and it is fitted with a racon. A fog signal is sounded in restricted visibility. The CALM buoy (lighted) is located about 1 mile NNW of the FPSO.

Tide rips. See 7.12.

Services

7.18

- 1 No dirty ballast facility; no fuel, fresh water or provisions; no crew change capability.

Girassol Terminal

General information

7.19

- 1 **Girassol Terminal** comprising an FPSO (7°39'·1S, 11°40'·8E) and nearby SBM, is located 74 miles offshore in a depth of about 1800 m. A circular restricted area radius 7 miles is centred on the FPSO and contains a waiting area for oil tankers.

RIVER CONGO TO N'ZETO

General information

Charts 658, 3206, 604

Route

7.20

- 1 From a position about 9 miles WNW of Ponta Padrão (6°04'·5S, 12°19'·8E) (6.8), the route leads SSE for about 82½ miles to a position WSW of N'zeto Light (7°15'·2S, 12°50'·9E).

Topography

7.21

- 1 From a position about 3 miles S of Ponta da Moita Seca (6°06'·5S, 12°16'·6E), red cliffs appear, and form the coast for many miles S; inland of these cliffs, a tableland runs parallel to the coast in a continuous double line, which is easily identified when it has once been seen. The regularity of the unbroken line of cliffs, which extend for 37 miles to Ponta do Quipai (6°39'·7S, 12°33'·6E), is such that no definite landmark can be identified.

Depths

7.22

- 1 Between Ponta da Moita Seca and N'zeto 76 miles SSE, depths of less than 11 m (6 fm) extend up to 6 miles offshore.

Great caution should therefore be exercised when navigating in this vicinity; continuous soundings should be taken and vessels should keep in depths of more than 15 m (8 fm).

Rollers (1.201) often occur without warning and frequently break in depths of 9 m (5 fm).

Traffic regulations

7.23

- 1 **Restricted area.** A restricted area, in which anchoring is prohibited, the limits of which are indicated on the chart, extends from positions on the coast 8 and 11 miles SSE of Ponta da Moita Seca (6°06'·5S, 12°16'·6E) up to 13½ miles offshore.

A further restricted area, the limits of which are indicated on the chart, encompasses Palanca Terminal (6°58'·0S, 12°24'·2E) and the Palanca, Impala and Pacassa Oilfields.

Mariners are advised not to enter restricted areas unless authorised.

- 2 **Prohibited area.** Entry is prohibited without authorisation to the Kiame Oilfield (7°20'·8S, 12°24'·0E).

Principal marks

7.24

- 1 **Landmarks:**

Flare (5°57'·9S, 12°25'·0E).

Soyo-Quinfuquena radio mast (6°14'·5S, 12°21'·5E), the position of which is approximate.

Major lights:

Kupundji Light (5°53'·5S, 12°17'·7E) (6.87).

Soyo-Quinfuquena Aero Light (6°14'·5S, 12°21'·5E).

- 2 Cabeça da Cobra Light (6°32'·8S, 12°30'·2E) (white square tower and dwelling, 13 m in height).

Ponta Quinzau Light (yellow square tower, black bands, white dwellings; 15 m in height) (6°53'·3S, 12°45'·4E).

N'zeto (Ambrizete) Light (white square tower, small white dwelling; 20 m in height) (7°15'·2S, 12°50'·9E).

Directions

(continued from 6.8 and 6.90)

7.25

- 1 **Caution.** The route passes through a restricted area of offshore oil and gas activity. See 7.23.

Ponta Padrão to Cabeça da Cobra

7.26

- 1 From a position about 9 miles WNW of Ponta Padrão (6°04'·5S, 12°19'·8E), the track leads SSE, passing (with positions relative to Ponta Padrão):

- 2 WSW of Ponta da Moita Seca (3¾ miles WSW), of moderate elevation, and, when seen from N at a distance of about 7 miles, appears as a steep cliff. The point derives its name, which signifies dry thicket, from stunted vegetation which covers the crest. Red cliffs (7.21) extend SSE from a position about 3 miles S of the point. A stranded wreck lies in position 6°05'·8S, 12°17'·3E. Thence:

- 3 WSW of two platforms (lighted) in Cuntala Oilfield (13 miles S), thence:

- 4 Clear of a platform (lighted) in Raia Oilfield (16 miles S), thence:

Clear of a group of three platforms (lighted) in Estrela and Bagre Oilfields (21 miles S), thence: WSW of the mouth of Rio Lombo (20 miles SSE), thence:

- 5 WSW of an oil terminal (26¼ miles SSE) from which a light (platform surmounted by a metal column) is exhibited.

Thence the track leads to a position about 7 miles WSW of Cabeça da Cobra (30 miles SSE), a rounded projection with a rocky base surmounted by a moderately high hill from which Cabeça da Cobra Light (7.24) is exhibited. Baixo de Fora, an isolated rocky shoal with a least depth

of 4 m (13ft) over it and Baixo de Dentro, a shallow and rocky shoal, lie 3½ miles SW and 1 mile W respectively of the light. (See chart 3448).

Cabeça da Cobra to N'zeto

7.27

- 1 From a position about 7 miles WSW of Cabeça da Cobra (6°32'·8S, 12°30'·2E) (7.26), the track leads SSE, passing (with positions relative to Cabeça da Cobra Light (6°32'·8S, 12°30'·2E)):

WSW of a shoal patch (9 miles S) with a depth of 10·6 m (35 ft) over it, thence:

- 2 WSW of Ponta do Quipai (7¾ miles SSE), with lofty cliffs, surmounted by shrubs and overlooked by a hill, the summit of which is round and bare. Beyond Ponta do Quipai is a remarkable clump of mangroves, which are visible at a distance of about 15 miles and serve to indicate the position of a factory at a place known as Mazomandomba 2 miles SE. About midway between the factory and the point is the mouth of Rio Lucolo. Rio Sange enters the sea 2 miles SE of Mazomandomba. Thence:

- 3 WSW of a shoal patch (14¾ miles SSE) with a depth of 10·6 m (35 ft) over it, thence:

WSW of four suspended wellheads (16½ miles S) with depths of less than 11 m (36 ft) over them, thence;

- 4 ENE of Lombo East, Sulele, Tubarão and Tamboril oilfields (20 miles SSW) comprising several platforms (lighted). A flare is exhibited from a platform in 6°51'·5S, 12°23'·5E. For Lombo East Terminal see 7.30. Thence:

ENE of Palanca Oilfield (27 miles SSW), including Palanca Terminal (7.37), thence:

- 5 WSW of Ponta do Quinzau (26½ miles SSE). Ponta Quinzau Light (7.24) is exhibited from a position about 1 mile NNW of the point. Enseada do Quinzau lies about 1½ miles N, and a tower stands 7½ miles N of the point.

7.28

- 1 The track continues:

WSW of Enseada de Mucula (32 miles SE) (7.57). The mouth of Rio Lucunga, indicated by some clumps of trees close to the beach, lies about 5 miles NW of the bay. The white factories of Mucula (7.57) are situated near the head of the bay. The 10 m (33 ft) depth contour is located about 3½ miles offshore. And:

- 2 ENE of Canuku Terminal (7.44) (33 miles S), thence: ENE of Kiame Oilfield (49 miles S), including Kiame Terminal (7.50), thence:

- 3 WSW of Ponta Palmas (7°12'·0S, 12°51'·0E), the N entrance point of Rio M'Bridge. It is wooded, its dark hue contrasting strongly with the yellow tint of the cliffs on the S bank of the river. The mouth of the river is fronted by breakers which extend seaward for about 3 cables; the river is only available to small craft. The coast S of the river is composed of low cliffs, on the level summit of which are here and there some thick clumps of trees. Inland of the mouth of the river is a range of hills, the highest, and S, of which is Monte Couza (not named on chart).

- 4 Thence the track leads to a position WSW of Porto N'Zeto (7.58) situated in the slight indentation between Ponta Palmas and a bluff headland, 3½ miles S, which rises

in a high, almost sheer cliff, covered with vegetation. When seen from S, the bluff projects seaward, and can, in clear weather, be recognised at a distance of about 15 miles; but when viewed from N, it is less prominent. Inland there is a range of hills, the S, and highest of which, from its flat top, is known as the Table of Juma (not named on chart), and is not only the best mark for making N'zeto, but may be easily identified at a distance of about 25 miles.

- 5 N'Zeto Light (7.24) is exhibited from the bluff. A small white dwelling stands close W, and a disused lighthouse close N of the light.

7.29

Useful marks:

Radio mast (7°13'·5S, 12°51'·6E).

Radio mast (7°13'·6S, 12°51'·4E).

(Directions continue for coastal route at 7.64)

Lombo East Terminal

Chart 3206

General information

7.30

- 1 **Position.** Lombo East Terminal (6°50'·0S, 12°21'·6E), lies about 48 miles SSE of the entrance to River Congo.

Function. It is an offshore oil terminal.

Port Authority. Texaco Panama Inc (Bloco 2), Angola Offshore District, CP 5897, Aveninda Commandante Gika 225, Luanda, Angola.

Limiting conditions

7.31

- 1 **Controlling depths.** There are charted depths of 29 m (16 fm) in the area.

Density of water is 1·025 g/cm³.

Maximum size of vessel handled. 175 000 dwt.

Arrival information

7.32

- 1 **Port operations.** Berthing during daylight hours only. Unberthing at any time.

Port radio. There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required. Send ETA 72, 48 and 24 hours prior to arrival. See *Admiralty List of Radio Signals Volume 6(3)*.

- 2 **Outer anchorage** may be obtained about 2½ miles NW of the SPM.

Pilotage is compulsory. Pilot boards vessel about 3¾ miles WNW of the SPM as indicated on the chart. See *Admiralty List of Radio Signals Volume 6(3)*.

Tug is available.

Terminal

7.33

- 1 **General layout.** The terminal comprises an SBM.

Current. A NW current of about 1 kn is normally experienced in the area, but the rate and direction are much influenced by the strength of the N-going Benguela Current (1.193) and the flow of water from the River Congo; see 6.106. At most times, the Benguela Current is dominant, but sometimes, especially during the rainy season (November to May), it may be abruptly weakened by the outflow from River Congo. By day, the muddy front of such an outflow can be seen approaching.

- 2 **Submarine pipeline.** A submarine pipeline is laid between Lombo East Oilfield and Safueiro Oilfield 49 miles NNW.

Major light:

Cabeça da Cobra Light (6°32'·8S, 12°30'·2E) (7.24).

Directions**7.34**

- 1 The chart is sufficient guide.

Useful marks:

Lombo East Terminal Lights (6°50'·0S, 12°21'·6E), SBM, SPM and FPSO, other installations, some marked by lights, exist in this area.

Berth**7.35**

- 1 An SPM (6°50'·0S, 12°21'·6E) moored in a depth of 36·5 m.

Port services**7.36**

- 1 **Repairs:** none available.
Other facilities: medical facilities in emergency only; no oily waste reception facilities; no garbage facilities.
Supplies: none available.
Communications: airport at Quinzau 24½ miles E.

Palanca Terminal**General information****7.37**

- 1 **Position.** Palanca Terminal (6°58'·0S, 12°24'·2E), lies about 57 miles SSE of the entrance to River Congo.
Function. It is an offshore oil terminal.
Approach and entry. The oil terminal is approached and entered through a restricted area.
Port Authority. Elf Exploration Angola, CP 2610, 13 Rua Marechal Broz Tito, Luanda, Angola.

Limiting conditions**7.38**

- 1 **Controlling depths.** There are charted depths of 42 m (23 fm) in the area.
Density of water is 1·025 g/cm³.
Maximum size of vessel handled. 150 000 dwt when moored bow to bow with the storage vessel. 300 000 dwt when moored at the SBM. Depending on sea and wind conditions this latter figure may be reduced to 280 000 dwt.

Arrival information**7.39**

- 1 **Port operations.** There is no berthing after 1500 hours local time. Vessels will wait until 0700 the following morning.
Port radio. There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.
Notice of ETA required. Send ETA 72, 48 and 24 hours prior to arrival. See *Admiralty List of Radio Signals Volume 6(3)*.
2 **Outer anchorage** may be obtained about 5½ miles NW of the SBM, as indicated on the chart.
Pilotage is compulsory. Pilot boards vessel as indicated on the chart about 2¼ miles NW of the SBM. See *Admiralty List of Radio Signals Volume 6(3)*.
Tug is available.
Restricted area. The oil terminal lies in a restricted area, marked by light-beacons, 19 m in height, the limits of which are indicated on the chart.

Terminal**7.40**

- 1 **General layout.** The terminal comprises an FPSO and an auxiliary SBM.

Submarine pipelines are laid in Palanca Oilfield also between the oilfield and Lombo East Oilfield NNE.

Directions**7.41**

- 1 The chart is sufficient guide.

Useful marks:

Palanca Terminal P1 Light (6°58'·0S, 12°24'·2), other installations, some marked by lights, exist in the area.

Berths**7.42**

- 1 There are two berths as follows:
Bow to bow with FPSO *Palanca*, 274 000 dwt, moored to an SBM in position 6°58'·0S, 12°24'·2, in a depth of 44 m.
Auxiliary loading buoy SBM (CALM) (6°57'·0S, 12°23'·7E), moored in a depth of 42 m.

Port services**7.43**

- 1 **Repairs:** none available.
Other facilities: production platform PAL P1 is equipped with helicopter landing facilities; no oily waste reception facilities; no garbage facilities.
Supplies: none available.
Communications: airport at Quinzau 22½ miles ENE, and at Luanda.

Canuku Terminal*Chart 604***General information****7.44**

- 1 **Position.** Canuku Terminal (7°05'·7S, 12°28'·2E) lies about 66 miles SSE of the entrance to Rio Congo and 21 miles offshore.
Function. It is an FPSO serving the Canuku offshore oilfield.
Port Authority. Sonangol P & P.

Limiting conditions**7.45**

- 1 **Controlling depth.** The FPSO is anchored in a depth of about 83 m. No draught restrictions apply.
Density of water is 1·025 g/cm³.
Maximum size of vessel handled. 150 000 dwt.

Arrival information**7.46**

- 1 **Port operations.** Berthing in daylight only. Unberthing may be carried out in darkness by agreement between the FPSO, the export vessel and loading master.
Port radio. There is a port radio station. For details see *Admiralty List of Radio Signals Volume 6(3)*.
Notice of ETA required. Send ETA 48 and 24 hours prior to arrival or at any time if ETA changes by more than two hours.
2 **Waiting anchorage.** Vessels may be directed to anchor 3 miles NE of the FPSO. Vessels must not anchor in any other location due to obstructions on the seabed especially in the vicinity of the FPSO.
Pilotage is compulsory. The pilot boards 2½ miles NE of the FPSO.
Tug. A tug will assist during berthing and throughout the loading operation.
Restricted area. The terminal is surrounded by a 500 m restricted area centred on the FPSO. Vessels are not

permitted to enter the restricted area without the permission of the loading master or pilot.

Directions

7.47

1 Major lights:

Cabeça da Cobra Light (6°32'·8S, 12°30'·2E) (7.24).
Ponta Quinzaú Light (6°53'·3S, 12°45'·4E) (7.24).
N'Zeto (Ambrizete) Light (7°15'·2S, 12°50'·9E) (7.24).

Ambriz Light (7°50'·1S, 13°06'·0E) (7.63).

- 2 The approach should be made keeping well clear of numerous production platforms and offshore terminals for which the chart is the best guide.

Berth

7.48

- 1 **General.** The export vessel moors bow to bow in tandem with FPSO *Ocean Producer*, a converted 78 000 dwt tanker, which lies on a heading of 022½°.

Caution. The predominant current sets strongly NW but it can reverse and mariners are advised to be vigilant.

Services

7.49

- 1 **Facilities.** There are no ballast or oily waste reception facilities at the terminal.

Stores. No water, bunkers or stores available.

Communications. Airports at Quinzaú, 23 miles NE, and at Luanda.

Kiame Terminal

Chart 604

General information

7.50

- 1 **Position.** Kiame Terminal (7°20'·8S, 12°24'·0E) lies about 79 miles SSE of the entrance to River Congo.

Function. It is an offshore oil terminal used for the export of crude oil.

Approach and entry. It is approached and entered through a prohibited area.

Port Authority. Ranger Angola Limited, Rua Dos Enganos 1-1, CPS 876, Luanda, Angola.

Limiting conditions

7.51

- 1 **Controlling depths.** There are charted depths in excess of 91 m (50 fm) in the area.

Density of water is 1.025 g/cm³.

Maximum size of vessel handled. 150 000 dwt, no draught restrictions.

Arrival information

7.52

- 1 **Port operations.** Berthing and unberthing during daylight hours only.

Port radio. There is a port radio station.

Notice of ETA required. Send ETA 72, 48 and 24 hours prior to arrival.

- 2 **Outer anchorage** may be obtained outside the normal exclusion zone of the terminal, as selected by the master of the vessel.

Pilotage is compulsory. Pilot boards vessel about 3 miles NW of the terminal.

Tug is available.

Prohibited area. The terminal lies within a prohibited area (7.23).

Terminal

7.53

- 1 **General layout.** The terminal comprises an FPSO.

Directions

7.54

- 1 The chart is sufficient guide.

Useful mark:

Kiame Oilfield Light (7°20'·8S, 12°24'·0E).

Berth

7.55

- 1 Vessels berth bow to bow with FPSO *Petroleo Nautipa* (7°20'·8S, 12°24'·0E), 141 330 dwt, which is permanently moored in a depth of 142 m.

Two well-heads lie 90 m from the starboard side (amidships) of the FPSO. Vessels are not permitted to approach within 500 m of the FPSO starboard side for any reason.

Port services

7.56

- 1 **Repairs:** none available.

Other facilities: emergency medical evacuation facilities by helicopter to Luanda; no oily waste reception facilities; no garbage facilities.

Supplies: none available.

Communications: airport at Luanda.

Anchorage and harbours

Enseada de Mucula

7.57

- 1 **Description.** Enseada de Mucula is entered from a position about 5 miles S of Ponta do Quinzaú (6°54'·0S, 12°45'·5E). The village of Mucula lies at the head of the bay, which is but a slight indentation.

Topography. For topography in the vicinity see 7.28.

Local knowledge is required.

- 2 **Directions.** Vessels approaching the anchorage should not close the coast to a lesser depth than 9 m (30 ft) until the factories bear 085°, whence they may be steered for.

Anchorage, with no shelter, may be obtained in a depth of about 6.4 m (21 ft), off Mucula.

Landing is difficult during the months of June to September and should not be attempted in a ships' boat.

Chart 3448 plan of Porto N'zeto

Porto N'zeto

7.58

- 1 **Description.** Porto N'zeto (6°13'·8S, 12°51'·3E), is protected by a breakwater in the vicinity of which there has been considerable silting. It lies in a small indentation of the coast to S of Rio M'Bridge (7°12'·2S, 12°51'·0E) (7.28) on rising ground stretching in the direction of the bluff 3½ miles S. The town of N'zeto stands at the head of the indentation.

Depths of less than 5.5 m (18 ft) extend 1 mile offshore between N'zeto and the bluff.

Local knowledge is required.

- 2 **Directions.** Vessels passing the bluff, should give it a berth of at least 2 miles. Approaching from S, the factories are not visible until they bear more than 045°.

Useful marks:

Radio mast (red obstruction light) (7°13'·5S, 12°51'·6E).

Radio mast (red obstruction light) (7°13'·6S, 12°51'·4E).

- 3 **Anchorage** may be obtained in a depth of 9.1 m (30 ft), as indicated on the plan, with the red roof of the mission

bearing 107° and 1¼ miles offshore. South of this bearing, the bottom changes from sand and mud to rock and stones. The constant rolling of the vessel makes this anchorage uncomfortable.

- 4 **Landing.** Owing to the constant heavy surf, landing is only practicable in surf boats; the surf is heaviest from May to October. Rollers (1.201) frequently break off N'zeto in a depth of 9.1 m (30 ft).

Communications: airfield. Road connections to Matadi and Luanda.

N'ZETO TO LUANDA

General information

Chart 604

Route

7.59

- 1 From a position WSW of N'zeto Light (7°15'·2S, 12°50'·9E), the route leads SSE, for about 90 miles to a position about 4 miles NW of Morro das Lagostas (8°45'·3S, 13°18'·4E).

Topography

7.60

- 1 From N'zeto Light (7°15'·2S, 12°50'·9E), the coast trends SSE to form a sandy bay known as Baía de Juma (7.77), a slight indentation in the coast. The coast SSE of Baía de Juma is bold and cliffy with occasional sandy coves. Trees surmount white cliffs, the tops of which latter show up in a serrated outline.
- 2 Ararat Hills (not named on chart) rise inland a little S of Ponta do Musserra (7°35'·7S, 12°59'·5E) and run parallel to the coast for 5 or 6 miles. They are steep, of basaltic formation and, except for a little brushwood, are bare. These hills are the highest elevations between River Congo and Luanda, rising to 200 m and are brown and arid in appearance, contrasting strongly with the verdant country S of Rio Quicembo. Though the surrounding country is open, with detached groves of trees here and there, the hills are covered with superb masses of pink-coloured granite which rise in picturesque forms.
- 3 The summit of a hill 163 m (535 ft) in height, situated 7½ miles SE of Ponta do Musserra, rises in the form of a remarkable 18 m high pillar, that provides an excellent landmark, being visible at a distance of 20 miles offshore in clear weather.
- 4 On the S slopes of Ararat Hills there are two villages, the S of which, situated abreast the sandy beach about 2 miles N of Rio Quicembo, is prominent, as its conical huts are much lighter in colour than the dark trees in the background.

Depths

7.61

- 1 Between N'Zeto and Luanda, the bottom profile is fairly regular but shelving quite steeply in places close inshore. The 20 m (11 fm) contour lies between about 4 and 1 mile off the coast.

Current

7.62

- 1 SW of Luanda (8°47'·8S, 13°15'·0E), the current has been known to set E or directly onto the coast, at the rate of 15 or 20 miles a day; and although this in-draught is not constant, it is by no means infrequent.
- For general circulation see 1.193.

Principal marks

7.63

Major lights:

- N'zeto (Ambrizete) Light (7°15'·2S, 12°50'·9E) (7.24).
- Ambriz Light (white square tower, 14 m in height) (7°50'·1S, 13°06'·0E).
- Ponta do Dande Light (white square masonry tower, red stripes) (8°28'·1S, 13°20'·8E).

Directions

(continued from 7.29)

N'zeto to Ponta do Ambriz

7.64

- 1 From a position WSW of N'zeto Light (7°15'·2S, 12°50'·9E), the track leads SSE, passing (with positions relative to N'zeto Light):
- 2 WSW of Ponta do Musserra (22 miles SSE), forming the S entrance point of a small bay, where anchorage (7.78) may be obtained. The shores of the bay are low, but at its S point cliffs rise abruptly to a considerable height, and are distinguished by a cross erected on their summit. The factories of the settlement of Musserra are situated in this bay. The coast in the vicinity of these factories is foul for a short distance offshore. There is a shoal which dries N of Musserra about 5 cables offshore. Between Ponta do Musserra and the mouth of Rio Quicembo, about 8 miles SSE, the cliffs are succeeded by a sandy beach. Thence:
- 3 WSW of the entrance to Rio Quicembo (30 miles SSE) (7.79), low and wooded on the N bank. The S bank is bordered by a perpendicular whitish cliff which extends for 1 mile and is succeeded by a sandy coast which stretches for 5 miles to Rio Loge. Ponta Two Tree (not named on the chart), situated 2 miles NNW of the mouth of Rio Quicembo, is a low, sloping and grassy point on which are two remarkable isolated palm trees, one near the point and the other about 1½ cables farther inland. Thence:
- 4 WSW of the entrance to Rio Loge (36 miles SSE), (7.76) the position of which is indicated by some unusually light green, lofty trees and a wooded hummock. Ponta Loge (not named on chart), from which a light (white container) is exhibited, is somewhat ill-defined, being a low, sandy point, fringed by a bank on which the sea always breaks. The point lies S of the entrance to the river.
- 5 Thence the track leads to a position WSW of Ponta do Ambriz (38 miles SSE), a high, white, and perpendicular cliff which, when first seen from seaward, appears as three wooded hummocks. Ambriz Light (7.63) is exhibited from the point, with a disused lighthouse standing close by. As the land near the coast for some distance N is low, this headland assumes, especially in misty weather, the appearance of being detached. A narrow rocky bank, with depths of 3 to 4 m (10 to 13 ft), marked by a light-buoy (N cardinal) moored 4 cables off its N edge, extends 1 mile NNW from Ponta do Ambriz. Foul ground extends 2 cables NW of the point.
- 7.65**
- 1 **Useful marks:**
- Cross on Ponta do Musserra (7°35'·7S, 12°59'·5E).
- Radio mast (red obstruction lights) (7°50'·2S, 13°06'·0E).

Radio tower (red obstruction lights) (7°50'·2S, 13°06'·1E).

(Directions for entering Porto do Ambriz are given at 7.73)

Ponta do Ambriz to Luanda

7.66

- 1 From a position WSW of Ponta do Ambriz, the track leads SSE, passing (with positions relative to Ponta do Ambriz):
- 2 WSW of Enseada do Capulo (10 miles SSE) (7.80). A mountain known as Monte Bamba, with a rounded summit and sloping sides, which, on an E bearing, appears detached from the other hills in the vicinity, is situated about 2 miles inland, E of the bay. The coast in this locality presents an arid appearance, with here and there a clump of trees. A rocky shoal, with a least depth of 7·3 m (24 ft) over it, lies 5 cables off the N entrance point of the bay. A rocky bank, with depths of less than 9 m (28 ft) over it extends 5 cables WNW from the S entrance point. Anchorage (7.80) may be obtained in the bay. Thence:
- 3 WSW of the entrance to Rio Lifune (37 miles SSE), distinguished by masses of lofty trees which line the coast for some distance and contrast strongly with the red colour of the land. The coast between Enseada do Capulo and this river is composed of white cliffs of uniform height, fringed for nearly half its length by a reef extending 1 mile offshore. The S end of this reef is at the entrance of a river known as Rio Onzo, which flows into Enseada do Mussulo (not named on chart) (25 miles SSE). The mouth of this river is indicated by a deep fissure in the cliffs, forming a valley which is filled with a mass of verdure. Running parallel with and at a short distance within the coast is a range of hills, irregular in outline; whilst at about 10 or 11 miles inland are the peaks of a range known as Mussulo Hills, which form an excellent landmark. Anchorage may be obtained in Enseada do Mussulo (not named on chart) (7.81). Thence:

7.67

- 1 WSW of Ponta do Dande (40½ miles SSE), from which Ponta do Dande Light (7.63) is exhibited. Ponta do Dande is the S entrance point of Baía do Dande (7.82), a bay, backed by a chain of hillocks, separated by wooded valleys. The E shore of the bay is sandy. Ponta do Dande is the sloping base of steep and lofty cliffs, which form a bold headland and appear vertical when seen from SW. These cliffs continue E for about 1½ miles along the S shore of the bay; they terminate at a sheer bluff on the W side of the mouth of Rio Dande, which is indicated by some trees at the head of the bay. The coastal bank, with depths of less than 5·5 m (18 ft) over it extends 1 mile offshore at the head, and in the N part of the bay. A rocky shoal, with a least depth of 4 m (13 ft) over it lies 1¾ miles NNE of Ponta do Dande. Thence:
- 2 WSW of Ponta Spilimberta (47 miles SSE), the N entrance point of Baía do Bengo.
Thence the track leads to a position about 4 miles NW of Morro das Lagostas (56½ miles SSE), a perpendicular cliff of yellowish tint, surmounted by trees. Above-water rocks lie at the base of the point, which is steep-to and may be approached to a distance of 2 cables. The town and

fort of Cacuo is situated 4 miles E of Morro das Lagostas, at the termination of some red and white cliffs which contrast with the low land at the head of the bay. Rio Bengo enters the bay 2 miles NE of Cacuo. Morro das Lagostas Light (white square tower and dwellings, 14 m in height) is exhibited from the point. The lighthouse is partly obscured by trees.

7.68

Useful mark:

Chimney, 1 mile ESE of Morro das Lagostas Lighthouse (8°45'·4S, 13°18'·4E).

(Directions continue for the coastal route at 7.127, and for entering Luanda at 7.107)

Porto do Ambriz

Chart 3448 plan of Porto do Ambriz

General information

7.69

- 1 **Position.** Porto do Ambriz (7°50'·0S, 13°06'·2E), lies at the S end of a slight indentation in the coast between Rio Loge and Ponta do Ambriz.

Function. It is used as a supply base for the oil industry. There are good fishing grounds about 12 miles offshore.

- 2 **Topography.** See 7.64.

Approach and entry. The port is approached from W, and entered on the alignment of leading lights.

Port Authority. Ambriz Port Authority, Marine Port Authority, CP 30, Cabinda, Angola.

Limiting conditions

7.70

- 1 **Controlling depths.** The entrance channel has a least charted depth of 3·3 m (11 ft).

Deepest and longest berth. (7.74).

Tidal levels. Mean spring range about 1·3 m; mean neap range about 0·6 m. See information in *Admiralty Tide Tables Volume 2*.

Local weather and sea state. It should be noted that the predominant SW swell is at right angles to the channel and when accompanied by a cross wind renders the passage difficult. The highest swells are experienced between May and September.

- 2 Land and sea breezes are a significant feature with the sea breeze blowing from between SW and W during the afternoon. Between January and April brief storms from E may be experienced with heavy rain and gusts up to 40 kn.

Arrival information

7.71

- 1 **Port operations.** Vessels should not enter the channel without permission.

Port radio. There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

- 2 **Outer anchorage** may be obtained in a depth of 10 m (34 ft), as indicated on the plan, 1¼ miles NW of Ponta do Ambriz.

Anchorage may be obtained by smaller vessels, closer inshore, in a depth of 6·7 m (22 ft), as indicated on the plan, 7 cables N of Ponta do Ambriz.

Pilotage is compulsory and is available during daylight hours only. See *Admiralty List of Radio Signals Volume 6(3)*.

Harbour

7.72

- 1 **General layout.** The port lies on the S bank of Ria Ambriz. The harbour consists of a basin near the river

mouth, 200 m square, dredged to a depth of 5 m, and with an adjacent quay.

Current usually sets NNW, parallel to the coast at a rate of about 1 kn.

Major light:

Ambriz Light (7°50'1S, 13°06'0E) (7.63).

Directions for entering harbour

7.73

- 1 **Line of bearing.** The line of bearing 085° of Rio Loge Light (white container) (7°48'9S, 13°05'9E) may be of use approaching the port. It should be noted that this line of bearing passes through the position of a light-buoy (N cardinal), 8 cables offshore.

From a position N of the buoy, the course continues E for about 6 cables onto the alignment of leading lights.

- 2 **Leading lights.** The alignment (154°) of the following lights leads SSE for about 1 mile, through a channel 90 m in width, marked by light-buoys (lateral), into the harbour, passing ENE of Pedras Marinas and about 1½ cables WSW of the coastline:

Front light (red and white triangle, apex up, on post) (7°50'1S, 13°06'2E).

Rear light (similar structure, apex down) (450 m from front light).

- 3 **Useful marks:**

Radio mast (7°50'2S, 13°06'0E).

Radio tower (7°50'2S, 13°06'1E).

Berth and landing

7.74

- 1 **Berth.** There is a quay on the S bank (7°50'0S, 13°06'2E).

Landing. In order to effect a landing from the anchorage, boats should follow the track described at 7.73 and keep well clear of Pedras Marianas. However, when the rollers are heavy landing is impossible, the sea breaking all along the offshore bank. See 1.201.

Port services

7.75

Supplies: diesel.

Communications: small landing strip. Road connections to N'Zeto and Luanda.

Small craft

7.76

- 1 Rio Loge (7°48'7S, 13°05'8E), is an unimportant stream which flows into the head of the bay 1½ miles N of Ponta do Ambriz; its mouth is barred, and will scarcely admit small craft, but within there are depths of 3-7 m (12 ft). The river, which is about 180 miles in length, is said to be navigable nearly to its source.

Anchorage and harbours

Baía de Juma

7.77

- 1 **Description.** Baía de Juma (not named on chart), is a slight indentation in the coast SE of N'zeto Light (7°15'2S, 12°50'9E). It extends for 5 miles and in its S part there is a sandy beach 3 miles in length. From the N part of the bay an unbroken line of cliffs rises to the bluff at N'Zeto (7.58). Rio N'zeto flows into the N part of the bay and its mouth, which is barred by sand, is about 2½ cables in width.

- 2 **Local knowledge** is required.

Anchorage may be obtained in Baía de Juma but it is not good, the bottom being foul, whilst a heavy swell sets in and causes considerable surf on the beach.

Landing is not recommended.

Off Ponta do Musserra

7.78

- 1 **Description.** For a description of the small bay N of Ponta do Mussera (7°35'7S, 12°59'5E) see 7.64.

Local knowledge is required.

Anchorage. Vessels without local knowledge should anchor in depths of more than 16 m (9 fm), about 2 miles offshore with the pillar on Ararat Hills (7.60) bearing about 116°. Closer inshore the bottom is rocky.

Rio Quicembo

7.79

- 1 **Description.** Rio Quicembo (7°43'3S, 13°03'4E) (7.64), is apparently an insignificant stream. From January to June, during the rainy season, the mouth of the river is situated just N of the village of Quicembo. Landing is then effected by entering the river and landing at the factories. During the remaining months of the year the river is closed by a sandbar on which landing can only be effected by surf-boats.

Local knowledge is required.

Anchorage may be obtained off Rio Quicembo, nearer to the beach than is usually the case along this coast.

Chart 3448 plan of Enseada do Capulo

Enseada do Capulo

7.80

- 1 **Description.** Enseada do Capulo (7°59'0S, 13°09'9E), a bay about 1½ miles in width between its rocky entrance points, lies about 9½ miles SSE of Ponta do Ambriz. Rio Uezo enters the bay at its S end and there is a village at the head of the bay. For information on dangers in the approaches see 7.66.

Local knowledge is required.

Anchorage may be obtained, as shown on the plan, about 6½ cables NNW of the S entrance point of the bay, in depths of about 11 m (36 ft), sand and shells.

Chart 604

Enseada do Mussulo

7.81

- 1 **Description.** Enseada do Mussulo, (not named on chart), lies about 16 miles SSE of Enseada do Capulo (7°59'0S, 13°09'9E) (7.80).

Local knowledge is required.

Anchorage may be obtained in the bay in depths of 15 m (45 ft).

Chart 3448 plan of Baía do Dande

Baía do Dande

7.82

- 1 **Description.** Baía do Dande is entered between Ponta do Catumbo (8°24'8S, 13°23'1E) and Ponta do Dande, 4 miles SW. A village stands on the SW bank of Rio Dande near its mouth.

The river is said to be navigable by small sea-going vessels up to and beyond the town of Caxito, situated 20 miles up-river on the S bank.

A considerable trade is carried on between this river and Luanda.

- 2 **Topography.** For topography in the vicinity see 7.67.
Useful mark:
 Radio tower (red and white, 49 m in height)
 (8°28'2S, 13°22'1E).
Anchorage may be obtained, as indicated on the plan,
 5 cables N of Ponta do Dande, in a depth of 10 m (33 ft).

PORTO DE LUANDA

General information

Chart 3448 plan of Porto de Luanda

Position

7.83

- 1 The port of Luanda (8°47'8S, 13°15'0E) is situated on the coast of Angola, 22 miles NE of Ponta das Palmeirinhas (7.127).

Function

7.84

- 1 Luanda is the capital and principal port of Angola. Its sheltered, natural harbour is one of the finest on the W coast of Africa.
 Exports include coffee, palm kernels, palm oil, sugar, cotton, diamonds, maize, wax, salt, manganese and petroleum products: imports include motor vehicles, cotton goods, iron and steel, cement, machinery, flour, coal and crude oil.
 The city of Luanda is situated on a plateau in the S part of the harbour and in 1999 the population was 2 550 000.
 The port is being developed in the aftermath of civil war and with the expansion of the offshore oil industry.

Topography

7.85

- 1 Baía de Luanda opens between Morro das Lagostas (8°45'3N, 13°18'4E) at its NE extremity and the termination of Ilha do Cabo, 2¼ miles WSW. The bay extends about 4 miles SW and is about 1½ miles wide at its entrance, narrowing gradually towards the head. Ilha do Cabo is a low, sandy spit covered with scattered palm trees. Morro das Lagostas is a prominent headland composed of steep, yellowish cliffs surmounted by a lighthouse (7.67) which is partly obscured by trees.
 2 At the S end of the bay is a plateau which terminates at its SW end in a whitish escarpment on which stands Fortaleza de São Miguel. The walls of the fortress are yellow and at night it is illuminated, making it an excellent landmark.
 3 Fortaleza de São Pedro da Barra (8°46'3S, 13°17'3E) is low and formed by a cutting in the solid cliffs. It has a double tier of gun-ports.

Approach and entry

7.86

- 1 The port is approached from N and entered between Morro das Lagostas (8°45'3S, 13°18'4E), and Ilha do Cabo, 2¼ miles WSW.

Traffic

7.87

- 1 In 2003, the port was used by 514 ships with a total of 9.2 million dwt.

Port Authority

7.88

- 1 Empresa Portuaria de Luanda, CP 1229, Luanda, Angola.

Limiting conditions

Controlling depths

7.89

- 1 There are charted depths of more than 27.5 m (15 fm) in the approach to the harbour.

Deepest and longest berth

7.90

- 1 **Deepest.** Cement Jetty (7.116).
Longest. Container Terminal (7.112).

Tidal levels

7.91

- 1 Mean spring range about 1.4 m; mean neap range about 0.6 m. See information in *Admiralty Tide Tables Volume 2*.

Density of water

7.92

- 1 The density of the water is 1.025 g/cm³.

Maximum size of vessel handled

7.93

- 1 Largest vessel handled at the container terminal is 300 m loa and draught 10.4 m: largest vessel handled at the tanker terminal is 230 m loa and draught 13.1 m.

Local weather and sea conditions

7.94

- 1 During the rainy season from October to May there are frequent thunderstorms accompanied by E'ly squalls. On rare occasions between December and May, tropical storms (Tornadoes) of short duration may occur. These give rise to NNE to ESE squalls of up to 40 to 50 kn. See 1.218.
 During the dry season, known as the "cacimbo," mist and haze may be experienced in the mornings, most commonly, between June and August.

Arrival information

Port operations

7.95

- 1 Berthing during daylight hours only. Unberthing is not permitted after midnight.

Port radio

7.96

- 1 There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required

7.97

- 1 ETA should be sent 72 and 6 hours prior to arrival. See *Admiralty List of Radio Signals Volume 6(3)*.

Outer anchorage

7.98

- 1 Waiting anchorage with good holding in sand and mud may be obtained within the bay. There are separate anchorage areas for large and small vessels, the limits of which can best be seen on the plan.
 Tankers waiting to berth at the tanker terminal anchor 1½ miles W of Morro das Lagostas Light, as indicated on the plan.
 2 **Caution.** An unmarked wreck with a minimum depth over it of 9 m (29 ft) lies in the large ships anchorage in approximate position 8°47'0S, 13°15'4E.
 3 **Prohibited anchorage.** A prohibited anchorage, the limits of which are indicated on the plan, encompasses the oil berth (8°46'4S, 13°17'0E).
 A further prohibited anchorage, the limits of which are indicated on the plan, surrounds the Commercial Quay and the Container Terminal.

Pilotage**7.99**

- 1 Pilotage is compulsory for vessels over 300 grt and is available from 0800 to 2200. The pilot boards, as indicated on the plan, about 2 miles WSW of Morro das Lagostas (8°45'3S, 13°18'4E). The pilot cutter has a white hull and flies flag H.
- 2 It is reported that pilotage is not compulsory for vessels anchoring within the bay.

Tugs**7.100**

- 1 Tugs are available and their use is compulsory for berthing.

Regulations concerning entry**7.101**

- 1 **Speed limit** in the harbour is 9 kn.
Prohibited area. A prohibited area, the limits of which are indicated on the plan, extends 3½ miles NE from a position on the shore close to Fortaleza de São Miguel (8°48'4S, 13°13'5E) to a position on the shore SE of Ilha do Cabo Light.

Harbour**General layout****7.102**

- 1 The main commercial berths lie in the S part of the harbour fronting the city. A petroleum terminal is situated on the E side of the bay and a naval base on the W side. There is a cement jetty outside the bay, close E of Morro das Lagostas.

Development**7.103**

- 1 In 2004, it was planned to modernise and extend the container terminal, to dredge in the approaches and remove certain wrecks.
Work is in progress (2004) on the construction of a supply base for the offshore oil and gas industry. The project will include a 400 m quay with an alongside depth of 12.5 m.

Measured distance**7.104**

- 1 There is a measured distance, indicated on the plan, on the NW side of Ilha do Cabo (8°46'5S, 13°15'0E) as follows:
NE limit marks. Ilha do Cabo Light in line with a beacon about 2¼ miles SE bearing 135°.
SW limit marks. Beacon on Ilha do Cabo in line with a post 2 miles SE bearing 135°.
Distance. 1 mile.
Running track 045°/225°.

Natural conditions**7.105**

- 1 **Current.** See 7.124.
Tidal stream. Within the bay, the ebb sets NE and the flood SW at rates of about ½ kn. Off the Commercial Quay, the flood stream is deflected along berths fronting the Container Terminal.
Climatic table. See 1.226 and 1.240.

Principal marks**7.106****Landmarks:**

- Fortaleza de São Miguel (8°48'4S, 13°13'5E).
- Hotel (8°47'3S, 13°13'8E).
- Building (a commercial bank with illuminated sign) (8°48'6S, 13°14'2E).

Major light:

- Ponta do Dande Light (8°28'1S, 13°20'8E) (7.63).

Directions for entering harbour*(continued from 7.8 and 7.68)***Landfall****7.107**

- 1 Approaching from N, the first land to be identified should be Morro das Lagostas (8°45'3S, 13°18'4E) (7.66), and then Fortaleza de São Miguel (8°48'4S, 13°13'5E), which is floodlit at night, together with the upper part of the city. Ilha do Cabo will not be raised until closer in.
- 2 Approaching from S, the foreshore between Ponta das Palmeirinhas and Ilha do Cabo is low with scattered palm trees but Fortaleza de São Miguel is sighted at about 16 miles.

Seaward to pilot**7.108**

- 1 From a position about 4 miles NW of Morro das Lagostas Light (8°45'3S, 13°18'4E), the track leads SE for about 3 miles, passing (with positions relative to Morro das Lagostas Light):
NE of No 1 Light-buoy (starboard hand) (2 miles WNW), marking the NE extremity of a shoal spit extending 6½ cables NE from the NE end of Ilha do Cabo, and from which Ilha do Cabo Light (white round column with red stripes, 11 m in height) is exhibited.
From a position 1 mile NW of Morro das Lagostas Light, course is adjusted SW for 1½ miles to the vicinity of the pilot boarding position, about 2 miles WSW of Morro das Lagostas Light.
- 2 **Caution.** Navigation aids are reported to be unreliable; they may be missing, unlit or out of position.

7.109

- 1 **Useful marks** with positions relative to Ilha do Cabo Light (8°45'5S, 13°15'9E):
Monument (white cross) (1¾ miles E).
Fortaleza de São Pedro da Barra (1½ miles ESE).
Tanks and three chimneys of refinery (2¼ miles ESE).
- 2 Radio mast (obstruction lights) (2½ miles SE).
Stranded wreck (2 miles SSE).
Pedras da Mãe Isabel Light (2¾ miles SE) (white tower on masonry base, black bands, 5 m in height).
Observatory (4 miles SW).

Berths**General information****7.110**

- 1 Alongside depths are charted depths. The port authorities should be contacted for the latest information.

Petroleum terminal**7.111**

- 1 A floating platform (8°46'4S, 13°17'0E), from which lights are exhibited, provides two oil berths with mooring buoys, two of which exhibit lights. The outer berth can

accommodate tankers 230 m in length with a draught of 13.1 m; the inner berth up to 110 m in length with a draught of 11 m. Oil pipelines are laid between the platform and the shore SE.

Fishing harbour

7.112

- 1 The fishing harbour (8°47'1S, 13°16'9E) is located on the E side of the bay and comprises a quay and a small protective mole.

Commercial Quay

7.113

- 1 Commercial Quay (8°47'8S, 13°14'9E), at the W end of the main port complex, comprises a jetty 350 m long and 160 m wide projecting NNE from the shore. The head of the jetty and the SE side have alongside depths of 10 m. However, on the NW side silting has occurred, and depths range from about 3 m inshore to 10 m near the head.

Container Terminal

7.114

- 1 The Container Terminal and general purpose quay (8°47'9S, 13°13'5E) extends ENE from the root of Commercial Quay and provides 1400 m of quayside with an alongside depth of 10 m. Ro-Ro facilities are available.

Naval base

7.115

- 1 The Naval base (8°47'1S, 13°14'2E) is situated within a prohibited area on the W side of the bay and provides one quay 295 m in length, with an alongside depth of 12 m.

A T-shaped jetty, a former coaling pier, is located 7 cables NE of the Naval base.

Cement Jetty

7.116

- 1 A T-shaped jetty (8°45'5S, 13°19'1E) used for loading cement, extends 5 cables NNW from the coast, 7 cables E of Morro das Lagostas. The head is 210 m in length with a depth of 14.3 m alongside.

Port services

Repairs

7.117

- 1 Minor ship repairs can be carried out. There are two slipways with a lifting capacity of 500 tonnes and a floating dock which can accommodate vessels up to 3000 dwt.

Other facilities

7.118

- 1 Deratting can be carried out and Deratting and Deratting Exemption Certificates issued; oily waste reception and garbage disposal facilities available also.

There is a government hospital and numerous private clinics.

Supplies

7.119

- 1 Fuel oil; fresh water of suspect quality; stores and provisions tend to be expensive.

Communications

7.120

- 1 International airport, about 5 km S of Luanda.

LUANDA TO PONTA DAS PALMEIRINHAS

General information

Chart 627

Route

7.121

- 1 From a position about 4 miles NW of Morro das Lagostas (8°45'3S, 13°18'4E), the route leads SW, for about 29 miles to a position WNW of Ponta das Palmeirinhas (9°04'0S, 12°59'0E).

Topography

7.122

- 1 The low sandy spit of which Ilha do Cabo is the NE extremity, extends SW for 25 miles to Ponta das Palmeirinhas, and encloses along its whole length an extensive shallow lagoon, which communicates with the sea through an opening about 4 miles in width, known as Barra da Corimba, situated 10 miles SW of Ilha do Cabo Light and a further smaller gap, 20 miles SW of the light.

Depths

7.123

- 1 The coastal waters are deep with no charted dangers. Approaching Ponta das Palmeirinhas, depths reduce, there being a charted depth of 44 m (24 fm) 3 miles offshore, 5 miles NW of the point.

Current

7.124

- 1 In the vicinity of Ponta das Palmeirinhas (9°04'0S, 12°59'2E), the current has been known to set E or directly onto the coast, at the rate of 15 or 20 miles a day; and although this in-draught is not constant, it is by no means infrequent.

For general circulation see 1.193.

Local magnetic anomaly

7.125

- 1 Local deflection of the compass has been reported in the vicinity of Ponta das Palmeirinhas (9°04'0S, 12°59'0E).

Principal marks

7.126

- 1 **Landmark:**

Ponta das Palmeirinhas Lighthouse (white square tower, 38 m in height) (9°04'2S, 12°59'3E).

Major light:

Ponta das Palmeirinhas Light — as above.

Directions

(continued from 7.68)

7.127

- 1 From a position about 4 miles NW of Morro das Lagostas (8°45'3S, 13°18'4E), the track leads SW, passing (with positions relative to Morro das Lagostas):

- 2 NW of Ponta do Mussulo (12 miles SW), the S entrance point of Barra da Corimba, an opening 4 miles in width, which has depths of less than 1 m over it and which leads into an extensive but shallow lagoon. There are depths of 23 m (70 ft) in the deep part of the lagoon E of the point, but the lagoon shoals and dries in places. Within the lagoon there are several low, sandy islands, the largest of which is known as Ilha de São João da Cazanga. A hill known as Morro da Cruz, rises to an elevation of 54 m, 6 miles SSW of Ponta do Mussulo.

- 3 Thence the track leads to a position WNW of Ponta das Palmeirinhas (27 miles SW), which derives its name from a

clump of palm trees on it. Ponta das Palmeirinhas Light (7.126) is exhibited from a position $1\frac{3}{4}$ miles N of the point.

7.128

1 Useful mark:

Radio masts (red obstruction lights), 3 miles S of Ponta do Mussulo ($8^{\circ}52'0S$, $13^{\circ}08'5E$).

(Directions continue at 7.138)

PONTA DAS PALMEIRINHAS TO CABO DE SANTA MARTA

GENERAL INFORMATION

Chart 627

Area covered

7.130

- 1 This section describes the coastal routes, anchorages and harbours from Ponta das Palmeirinhas ($9^{\circ}04'0S$, $12^{\circ}59'0E$), to Cabo de Santa Marta ($13^{\circ}53'4S$, $12^{\circ}25'0E$). Also described is the port of Lobito.

It is arranged as follows:

- 2 Ponta das Palmeirinhas to Ponta do Morro (7.132).
Ponta do Morro to Porto do Lobito (7.150).
Porto do Lobito (7.163).
Porto do Lobito to Ponta das Salinas (7.197).
Ponta das Salinas to Cabo de Santa Maria (7.205).
Cabo de Santa Maria to Cabo de Santa Marta (7.217).

Navigation

7.131

- 1 **Caution.** From Ponta do Sombreiro ($12^{\circ}35'4S$, $13^{\circ}18'0E$), to Cabo de Santa Marta ($13^{\circ}53'4S$, $12^{\circ}25'0E$), great depths are found close to the coast, thus rendering anchorage impossible except in a few sheltered bays. In all cases, and especially in sailing vessels during light winds or calms, it is advisable to maintain a good offing, as the swell sets a vessel towards the coast.
- 2 On account of the light sandy nature of the low-lying foreshore, and the extreme haziness of the atmosphere which generally prevails, great caution is necessary to avoid over-estimating the distance from the land. This is particularly the case with respect to Ponta de São José ($12^{\circ}36'0S$, $13^{\circ}12'5E$) and Ponta das Salinas ($12^{\circ}51'0S$, $12^{\circ}56'3E$), many vessels having run ashore in their vicinities on fine nights.

PONTA DAS PALMEIRINHAS TO PONTA DO MORRO

General information

Chart 627

Route

7.132

- 1 From a position WNW of Ponta das Palmeirinhas ($9^{\circ}04'0S$, $12^{\circ}59'0E$), the route leads SSE for about 113 miles to a position W of Ponta do Morro ($10^{\circ}45'9S$, $13^{\circ}43'2E$).

Topography

7.133

- 1 Between Punta das Palmeirinhas and Punta do Morro, there is a succession of small bays which are open NW and which are generally surrounded by cliffs. Inland, a line of hills with elevations of 100 m (320 ft) to 150 m (490 ft) follows the coastline SSE.

Anchorage

Enseada do Buraco

7.129

- 1 Anchorage may be obtained in Enseada do Buraco ($9^{\circ}01'2S$, $13^{\circ}00'5E$), a small inlet on the seaward side of the sand spit (7.122), in a depth of 11 m (36 ft), 6 cables offshore.

Depths

7.134

- 1 Between Ponta das Palmeirinhas and Punta do Morro, depths are fairly regular and with no charted off-lying dangers. Soundings tend to reduce more rapidly near headlands, particularly off Punto do Morro. On this leg, the 40 m (22 fm) contour lies between 4 and 10 miles offshore but reduces to 1 mile offshore in the vicinity of Punto do Morro.

Marine exploitation

7.135

- 1 There is offshore oil and gas activity in the coastal waters between Punta das Palmeirinhas and Cabo Ledo ($9^{\circ}41'2S$, $13^{\circ}12'1E$). See 1.14.

National park

7.136

- 1 The land between Rio Cuanza on the N, and Rio Longa on the S, for a distance of 40 miles inland, is reserved as Parque Nacional de Quiçama (1.146). In this locality there are few human inhabitants, but leopard, many kinds of antelope, and other wild animals exist in great numbers.

Principal marks

7.137

Landmarks:

Ponta das Palmeirinhas Lighthouse ($9^{\circ}04'2S$, $12^{\circ}59'3E$) (7.126).

Monument ($9^{\circ}18'0S$, $13^{\circ}08'2E$).

Major lights:

Ponta das Palmeirinhas Light ($9^{\circ}04'2S$, $12^{\circ}59'3E$) (7.126).

Cabo Ledo Light (white 6-sided stone tower and dwellings, 12 m in height) ($9^{\circ}41'2S$, $13^{\circ}12'1E$).

Directions

(continued from 7.8 and 7.128)

7.138

- 1 From a position WNW of Ponta das Palmeirinhas ($9^{\circ}04'0S$, $12^{\circ}59'0E$), the track leads SSE, passing (with positions relative to Ponta das Palmeirinhas):
WSW of the entrance to Rio Cuanza (15 miles SSE) (7.148), its muddy waters discolour the sea for a distance of about 10 miles offshore, thence:
WSW of Ponta das Perdizas (24 miles SSE), thence:
2 WSW of Ponta do Sangano (30 miles SSE). Enseada de Sangano and the small settlement of Sangano lie 2 miles NE of the point. Baía do Suto (7.146), where anchorage may be obtained, lies between Ponta do Sangano and Cabo Ledo, 6 miles farther S. Baixo do Suto, a rocky shoal with a depth of 5.3 m (17 ft) over it, lies in the middle of the bay, 2 miles NNE of Cabo Ledo. Thence:
3 WSW of Cabo Ledo (36 miles SSE), a high, black, rugged promontory, covered with trees, which is

easily identified from seaward as it presents the appearance of a truncated cone. When seen bearing about 186° it appears in the form of a recumbent lion, the trees and long grass forming the mane. Cabo Ledo Light (7.137) is exhibited from the point. When making Cabo Ledo from NW, a mountain shows up prominently as a dark knob lying E of a gap in the coast at the mouth of Rio Cuanza. Between Cabo Ledo and Cabo São Braz 19 miles SSE, the coast is bordered with remarkable white cliffs. Thence:

- 4 WSW of the entrance to Rio Menguêje (Rio Menezes) (50 miles SSE). Enseada de São Braz (7.147), where anchorage may be obtained lies between Cabo São Braz and Rio Menguêje.

7.139

- 1 The track continues:
WSW of Cabo São Braz (58 miles SSE), steep-to, with depths of 8 m (27 ft) ½ cable offshore, thence:
- 2 WSW of Ponta do Longa (72 miles SSE), a bluff headland, covered with brushwood, which offers no lee for anchoring. Cabo Falso São Braz lies about 10 miles NNW, the intervening coast being backed by a high tableland. Between Ponta do Longa, and Cabo das Tres Pontas 14 miles SSE, there is a bay into which flows Rio Longa. Except at the entrance to the river, which is well wooded, the shores of the bay are composed of high, white, irregular cliffs. In the bay there are depths of about 20 m (11 fm), mostly mud, about 3 miles offshore.

7.140

- 1 The track continues:
WSW of Cabo das Tres Pontas (83 miles SSE), a prominent headland. Cabo das Tres Pontas Light (white square tower and dwellings, 14 m in height) is exhibited from the point. Between Cabo das Tres Pontas and Ponta do Morro (Ponta do Morro de Benguela Velha on chart 1215), 25 miles SSE, is Baía de Porto Amboim, where there are no known dangers, and depths of 18.3 m (60 ft) will be found at about 2 miles offshore.
- 2 Thence the track leads to a position W of Ponta do Morro (107 miles SSE), from which Porto Amboim Light (white square tower and dwellings, 12 m in height) is exhibited. It is one of the most remarkable headlands on this part of the coast being very high with perpendicular cliffs on its seaward side. Its summit is covered with tall cactus trees of peculiar appearance. Porto Amboim (7.142) lies about 2½ miles NE of the point. Enseada de Benguela Velha lies between Ponta do Morro and Porto Amboim. A river known as Rio Torrombo enters the head of the bay when in flood.

7.141

- 1 **Useful mark:**
Radio tower (50 m in height, obstruction lights) (9°38'5S, 13°18'2E).
(Directions continue at 7.154)

Porto Amboim

Chart 1215 Porto Amboim

General information

7.142

- 1 **Position.** The port of Amboim (10°43'7S, 13°45'1E), lies about 120 miles SSE of Luanda.

Function. It is a small port of local importance. Vessels anchor offshore and cargo is transported to and from the harbour by lighters. Exports comprise fish meal, fish oil, dried fish, palm oil, copra, coffee, cotton wool and sisal.

Salt pans, into which sea water is pumped into many small basins and pools and left to evaporate, are located about 1 mile SSW of the town.

- 2 The town of Porto Amboim has a population of about 11 000.

Port Authority. The port is administered by a maritime delegation under Porto do Lobito but the running of the port is carried out by Companhia do Caminho de Ferro do Amboim.

Directions for entering harbour

7.143

- 1 Morro do Benguela Velha (10°45'3S, 13°43'4E) (7.140) and Morro Cambiri (10°43'8S, 13°45'1E) provide good landmarks and radar targets when making a landfall off Porto Amboim.
- 2 **Cautions.** A wreck with a depth of 3.2 m over it lies 4½ cables SW of the jetty (10°43'8S, 13°45'2E).
Between 5 cables and 2 miles NE of Morro Cambiri, 6 piers carrying suction pipes extend up to 150 m offshore; these pipes convey fish from fishing craft moored at the pierheads to fish meal factories onshore.
- 3 **Useful marks:**
Masts (red obstruction lights) (10°43'2S, 13°46'0E).
Monument (10°43'5S, 13°45'3E).
Jetty Lights (column, 3 m in height) (10°43'7S, 13°45'1E) NW and SW corner.
Morro Cambiri (65 m in height) (10°43'8S, 13°45'1E).
Cambiri Light (white hut) (10°43'8S, 13°45'1E).
Radio mast (red obstruction lights) (10°44'1S, 13°45'7E).

Anchorage

7.144

- 1 Good anchorage in sand and mud may be obtained off the port but it is exposed to the predominant SW swell, which can be deflected between NW and SW around Morro do Benguela Velha. The following anchorages are suggested:
In a depth of 18.3 m with Cambiri Light (10°43'8S, 13°45'1E) (7.143) bearing 160° distant 3½ cables.
In a depth of 22 m with Cambiri Light bearing 132° distant 4 cables and the seaward slope of Morro de Benguela Velha bearing 221°.

Port services

7.145

- 1 **Lighterage:** launches facilitate the passage of lighters and personnel between vessels and the jetty. However surf boats must be employed when the surf is heavy and the jetty cannot be used. The jetty is 130 m long with an alongside depth of about 2 m.
Other facilities: hospital.
Supplies in small quantities.
Communications: airfield about 2 km NE. Railway line connecting the port to towns inland.

Anchorage and harbours

Baía do Suto

7.146

- 1 **Description.** Baía do Suto is entered between Ponta do Sangano (9°33'8S, 13°11'9E) and Cabo Ledo, 6 miles S. Baixo do Suto, a rocky shoal with a depth of 5.3 m (17 ft)

over it, lies in the middle of the bay, 2 miles NNE of Cabo Ledo.

There is a sandy cove 4 cables ESE of Cabo Ledo at the head of which is a river known as Rio Suto. This river sometimes dries, though in the rainy season it appears to have a good flow. Its mouth is choked with sand.

Local knowledge is required.

- 2 **Anchorage** may be obtained for small vessels, sheltered from SW winds, in a depth of 10 m (33 ft), with Cabo Ledo bearing 225°, distant 9 cables; but at times the heavy swell sets round the cape, causing a vessel to roll, and raises a heavy surf on the beach. The depths shoal gradually towards the shore, and the cove is apparently free from dangers.

Enseada de São Braz

7.147

- 1 **Description.** Enseada de São Braz is entered N of Cabo São Braz (9°59'·8S, 13°18'·6E). Depths of about 8 m (27 ft) ½ cable offshore, continue around the bay to a sandy spit about 2½ cables in length. Within this spit there is a small salt-water lake in which fish are plentiful, including sharks and saw-fish. At the foot of the hills S of the bay is a large swamp.

Local knowledge is required.

Anchorage may be obtained in depths from 7 to 15 m (24 to 50 ft).

Landing. It has been reported that landing was possible inside the lagoon formed by the sandy spit. However, on other occasions the entrance was completely closed and landing became impracticable.

Rio Cuanza

General information

7.148

- 1 **Description.** Rio Cuanza, the mouth (9°19'·0S, 9°08'·2E) of which lies 16 miles SE of Ponta das Palmeirinhas, though shallow, is of considerable importance. It is about 450 miles in length, rising near a place known as Catota, about 280 miles inland. In its course to the sea it runs near Lagoa N'Golome, Lagoa Mutumba and Lagoa Cabombo. Its entrance lies N of a long sandy spit.

- 2 Calumbo (9°08'·7S, 13°25'·8E) is situated on the N bank of the river about 25 miles from its entrance. Muxima, is on the opposite bank and about 41 miles farther upstream. About 27 miles above Muxima, and 1 mile above the confluence of a river known as Rio Lucala, with Rio Cuanza, is Massangano. About 16 miles further, and on the N bank of Rio Cuanza, is the town of Dondo, which is situated at the limit of sea-borne navigation, as a little farther up are some large cataracts and rapids.

- 3 **Controlling depths.** Small vessels with a draught of between 2·4 and 2·7 m, in a smooth sea, can cross the bar at HW and ascend the river for many miles. It has been reported that during the wet season the river can be navigated to the limit of sea-borne navigation by vessels drawing up to 1·4 m. Frequently in the dry season, the depths of the channels are, in some places no more than 0·5 m.

- 4 **Pilotage** is compulsory.

Local knowledge is required.

Landmarks:

Ponta das Palmeirinhas Lighthouse (9°04'·2S, 12°59'·3E) (7.126).

Monument (9°18'·0S, 13°08'·2E).

Major lights:

Ponta das Palmeirinhas Light (7.126) – as above.

Cabo Ledo Light (9°41'·2S, 13°12'·1E) (7.137).

- 5 **Directions.** A bar, the position of which is continually changing and with the sea frequently breaking right across it, lies at the entrance; this bar is extremely dangerous for small craft, which should never attempt to cross it.

Anchorage

7.149

Anchorage may be obtained off the mouth of Rio Cuanza in depths from 22 to 27 m (12 to 15 fm) 9 miles offshore. There is said to be good anchorage in 11 m (36 ft), mud, about 2 miles from the coast.

PONTA DO MORRO TO PORTO DO LOBITO

General information

Chart 627

Route

7.150

- 1 From a position W of Ponta do Morro (10°45'·9S, 13°43'·2E), the route leads S for about 93 miles to a position NNW of Lobito Light (12°19'·2S, 13°35'·7E).

Topography

7.151

- 1 The mouth (10°52'·0S, 13°48'·5E) of a river known as Rio Cuvo, lies 8 miles SE of Ponta do Morro, and thence the coast takes a SSE direction for 10½ miles to Ponta da Balela, and thence 9½ miles S to Sumbe (Gunza-Kabolo). The clifly nature of the coast disappears in the vicinity of Rio Cuvo which flows through a low wooded plain; but S of Rio Cuvo, the cliffs reappear, and continue almost without interruption for about 90 miles to Porto do Lobito. In these cliffs the yellow patches, the results of landslips, will be seen. During clear weather, and particularly in December, January, and February, the summits of some high mountains, apparently running parallel with the coast, are to be seen inland.

Depths

7.152

- 1 Between Ponta do Morro and Porto do Lobito, depths close inshore are relatively deep. Except between Ponta do Quicombo (11°19'·5S, 13°47'·5E) and Cabeça da Baleia, 15 miles S, where depths shoal more gradually, the 40 m (22 fm) depth contour lies between 3 and 5 miles from the coast.

The offshore waters are free of charted dangers except as described in 7.155.

Principal marks

7.153

- 1 **Major lights:**

Quicombo Light (white square tower, 14 m in height) (11°21'·5S, 13°47'·8E).

Ponta do Egito Light (white round tower, red stripes, 9 m in height) (11°59'·9S, 13°43'·5E).

Lobito Light (white round tower and dwelling, 15 m in height) (12°19'·2S, 13°35'·7E).

Directions

(continued from 7.141)

7.154

- 1 From a position W of Ponta do Morro (10°45'·9S, 13°43'·2E), the track leads S, passing (with positions relative to Ponta do Morro):

- W of Ponta da Balela (18 miles SSE). Landing is very difficult along this part of the coast. Thence:
- 2 W of Sumbe (Gunza-Kabolo) (27 miles S) (7.157), from which Gunza-Kabolo Light (black column white dwelling, 7 m in height) is exhibited, and anchorage may be obtained. Baixo de Iconcon (Chart 1215) lies about 2 cables offshore. Part of the town is obscured by high ground close to the beach. A white fort is prominent. The mouth of Rio N'Gunza is situated close N of the town. For 5 or 6 months of the year the river is absorbed by the porous sandy ground through which it flows. Thence:
- 3 W of Ponta do Quicombo (36 miles S) from which Quicombo Light (7.153) is exhibited. Enseada do Quicombo (7.158), into which Rio Cubal (Rio Quicombo) discharges lies close N of Ponta do Quicombo. Anchorage may be obtained in the bay. The S entrance point of the bay, is a bluff red point. Baixo de Salvador Correia (not named on chart), a rocky shoal, with a depth of 3.8 m (12 ft) over it, on which the sea frequently breaks, lies 7 cables NW of the S entrance point. A town known as Quicombo, may be recognised from N and W by a remarkable zig-zag road, which ascends from the back of the town and leads over the mountains behind it; this road is the best and most prominent mark from the offing. A village known as Quissanga Pequena is situated about 6 miles S of Ponta Quicombo; landing there can only be attempted in surf-boats.

7.155

- 1 The track continues:
E of an isolated shoal patch (36 miles SSW), with a depth of 51.2 m (28 fm) over it, thence:
E of a shoal patch (41 miles SSW) reported in 1974, with a depth of 18.3 m (10 fm) over it, thence:
W of Ponta do Dengue (44½ miles S), thence:
- 2 W of Cabeça da Baleia (49 miles S), dark coloured projecting 1 mile from the coast. It may be identified by a tableland near the beach 2 miles N of it. Enseada da Baleia lies close N of Cabeça da Baleia. Landing can be effected about 1 mile N of Cabeça da Baleia when the sea is smooth. The coast between Cabeça da Baleia and Rio Balombo, 23 miles S, is formed throughout of high, perpendicular chalky cliffs, which may be seen from seaward in the rays of the afternoon sun at a great distance. A bay known as Enseada das Pombas, having a slight indentation, the entrance to which is about 5 miles in width, is situated immediately S of Cabeça da Baleia. It has a fine sandy beach and terminates S in a rocky point. The sea breaks with considerable violence on the shore.

7.156

- 1 The track continues:
W of the mouth of Rio Tapado (61 miles S), which may be recognised by some vegetation in the middle of a somewhat steep ravine, where there is also a village. Anchorage (7.159) may be obtained off the village. Thence:
- 2 W of Ponta do Egitto (74 miles S). The settlement of Egitto, where anchorage (7.160) may be obtained, lies at the mouth of Rio Balombo 3½ miles NE. It may be distinguished by a large white house standing on the right of a deep gorge, half way up

the cliff. In addition, there is a remarkable cliff shaped like a wedge situated a short distance S of the entrance to the river. There are some houses close to the beach at the bottom of the gorge.

- 3 Thence the track leads to a position NNW of Lobito Light (12°19'·2S, 13°35'·7E) (7.153).

(Directions continue for the coastal route at 7.201 and for entering Lobito at 7.186)

Anchorage and harbours

Chart 1215 plan of Gunza-Kabolo

Gunza-Kabolo

7.157

- 1 **Description.** Gunza-Kabolo (11°11'·6S, 13°50'·3E), lies about 70 miles N of Porto do Lobito. Exports are coffee, palm-oil, nuts, wax, cotton and skins.

The climate is considered unhealthy in the rainy season.

Port Authority. The port is administered by Porto do Lobito.

Directions. The chart is sufficient guide, noting Baixo de Iconcon lying close offshore.

- 2 **Anchorage** may be obtained in a depth of 10 m, sand, 1½ miles offshore with the light bearing 095° but it is an open roadstead.

Berth. There is a jetty which can only be used by lighters and small craft, with a depth of 2 m at its head.

Landing is very difficult except in surf-boats.

Repairs: minor repairs can be effected.

Other facilities: hospital.

Supplies are available provided notice is given, but water should be boiled before drinking.

Chart 627

Enseada do Quicombo

7.158

- 1 **Description.** Enseada do Quicombo (11°19'·5S, 13°49'·0E), lies about 62 miles N of Porto do Lobito. The bay abounds with fish.

Topography. The land S of Ponta do Quicombo is high. See 7.154.

Directions. The anchorage should be approached from N in order to avoid Baixo de Salvador Correia (7.154).

- 2 **Anchorage** may be obtained in the bay off the town of Quicombo, in a depth of 9 m (30 ft), sand and mud, with the town jetty bearing 147°, distance 1 mile. Anchorage is generally safe except when there are heavy rollers (1.201) giving rise to breakers which are sufficiently heavy to prevent communication with the shore. Vessels intending to remain over these periods should not anchor within 2½ miles of the coast. The period of heaviest rollers occurs between July and September and particularly when in conjunction with spring tides.

Rio Tapado

7.159

- 1 Anchorage may be obtained off a village near the entrance to Rio Tapado (11°47'·0S, 13°48'·0E) in a depth of 15 m (50 ft), 1 mile offshore with the village bearing 095°. Local knowledge is required.

Egitto

7.160

- 1 Anchorage may be obtained off the settlement of Egitto (11°57'·5S, 13°45'·5E) at the mouth of Rio Balombo (7.156) in depths of 12 m (39 ft), about 1½ miles offshore. Local knowledge is required. Provisions are obtainable.

Enseada do Binge**7.161**

- 1 **Description.** Enseada do Binge (not named on chart), about 5 miles in width, lies about 10 miles SSW of Ponta do Egito (11°59'9S, 13°43'5E), and is entered N of Ponta do Binge (not named on chart) the S entrance point. In the centre of the shore of this bay is a village fronted by a large sandy beach.

Landing may be effected in the bay by small craft, however the sea breaks on the beach with considerable force.

Rio Cubal da Hanha**7.162**

- 1 **Description.** A village known as Hanha lies at the entrance to Rio Cubal da Hanha (12°14'0S, 13°39'0E). A heavy surf runs all the time.

Local knowledge is required.

Anchorage may be obtained in a depth of 12·8 m (42 ft) with the mouth of the river bearing 128° distant 2 miles.

Landing is impossible in ship's boats.

PORTO DO LOBITO**General information**

Chart 1215 Porto do Lobito

Position**7.163**

- 1 The port of Lobito (12°20'8S, 13°32'9E) is situated on the W coast of Angola about 210 miles S of Luanda (7.83).

Function**7.164**

- 1 An excellent and secure harbour, it is one of the best on the W coast of Africa south of the equator. It bears resemblance with Porto de Luanda. The bay is sheltered on its W side by a lengthy sand spit lying parallel to the shore.

The city of Lobito lies at the SW end of the harbour, fronting the coast and extending NE along the sand spit. The population is about 300 000.

The port is being developed in the aftermath of civil war and with the reconstruction of the Benguela railway linking it to Zambia and Zaire.

Topography**7.165**

- 1 Baía do Lobito is a long and narrow bay about 3 miles long and 1 mile wide at its widest part.

The shore on both sides of the sand spit is steep-to and its seaward side is protected by groynes. In 1982 it was reported that the end of the spit was extending NE at the rate of about 30 m every year.

Approach and entry**7.166**

- 1 The port is approached from NNW and entered via a short buoyed channel between Ponta da Restinga (12°18'9S, 13°35'0E), and a point on the shore 7 cables E.

Traffic**7.167**

- 1 In 2003, the port was used by 369 ships with a total of 4·6 million dwt.

Port Authority**7.168**

- 1 Empresa Portuária do Lobito, CP 16, Avenida da Independência, Lobito, Angola.

Limiting conditions**Controlling depths****7.169**

- 1 There is a charted depth of 14·5 m, 2 cables NNE of the entrance to the buoyed channel. Depths of less than 10 m encroach the SE side of the buoyed channel between No 2 and No 4 Light-buoys (porthand).

Deepest and longest berth**7.170**

- 1 **Deepest.** Quay No 2 (7.191).
Longest Quay No 1 (7.191).

Tidal levels**7.171**

- 1 Mean spring range about 1·2 m; mean neap range about 0·6 m. See information *Admiralty Tide Tables Volume 2*.

Density of water**7.172**

- 1 The density of the water is 1·025 g/cm³.

Maximum size of vessel handled**7.173**

- 1 Length 275 m, draught 10·4 m.

Local weather and sea state**7.174**

- 1 During the dry season, June to August, thick mist is fairly common in the mornings.

Tropical storms (Tornadoes) can occur during the rainy season from September to May but they are rare. See 1.218.

Arrival information**Port operations****7.175**

- 1 Berthing is normally permitted during daylight hours only. Unberthing is not permitted after midnight.

Vessels may only enter the harbour between 0730 and 2000, unless special permission has been obtained from the Port Authority.

Port radio**7.176**

- 1 There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required**7.177**

- 1 ETA should be sent 24 hours prior to arrival, or, 48 hours prior to arrival if it coincides with the weekend or a holiday.

Outer anchorage**7.178**

- 1 Waiting anchorage with good holding may be obtained in the harbour, in depths of between 13·9 and 27 m, mud. Limits of the anchorage are as shown on the chart. It is recommended that large vessels avoid the SW part of this anchorage because it tends to be occupied by numerous small craft.

Prohibited anchorage. Anchorage is prohibited in the fairway between the waiting anchorage and the inshore side of the sand spit.

Pilotage**7.179**

- 1 Pilotage is compulsory for berthing and unberthing and is generally available during daylight hours only. However, permission may be granted to depart at night.

The pilot boards inside the harbour between Nos 4 and 6 Light-buoys. If the pilot is required to board outside the harbour entrance, 12 hours notice should be given. The pilot boards from a grey launch with white superstructure.

Tugs**7.180**

- 1 Tugs are available.

Regulations concerning entry**7.181**

- 1 Maximum speed in the harbour is 8 kn.
Bye-laws, copies of which are obtainable from Agents, are in force for the regulation of vessels using the port of Lobito.

Harbour**General layout****7.182**

- 1 The harbour extends along the entire length of the enclosed water between the sand spit and the shore. It provides an anchorage area on the E side bordering the shore and alongside commercial berths in the extreme SW corner. There is a petroleum storage facility and a shipyard on the SE side of the bay.

Measured distance**7.183**

- 1 There is a measured distance, indicated on the plan, on the NW side of Ponta da Restinga (12°18'9S, 13°35'0E) as follows:
- NE limit marks. Beacons (triangles) in line bearing 142°.
 - SW limit marks. Beacons (triangles) in line bearing 142°.
 - Distance. 1 mile.
 - Running track 052°/232°.

Climatic table**7.184**

- 1 See 1.226 and 1.241.

Principal marks**7.185**

- 1 **Major lights:**
Ponta do Egito Light (11°59'9S, 13°43'5E) (7.153).
Lobito Light (12°19'2S, 13°35'7E) (7.153).

Directions for entering harbour

(continued from 7.156)

Landfall**7.186**

- 1 In the approach to Lobito the coast has a uniform aspect and there are few landmarks visible at a great distance. The yellowish-brown smoke issuing from the chimney of the cement factory (7.188) may be helpful when making a landfall; it is usually seen at more than 10 miles.
When approaching Lobito from S, vessels should keep well off the coast until NNW of Lobito Light.

Seaward to pilot**7.187**

- 1 **Caution.** The buoys in Porto do Lobito are not to be depended upon.

From a position offshore, NNW of Lobito Light (12°19'2S, 13°35'7E), the track leads SSE to a position about 5 cables NNW of Lobito Light, passing (with positions relative to Lobito Light):

- 2 ENE of Ponta da Restinga (8 cables WNW), from which a light (red metal framework tower, white bands, 11 m in height) is exhibited. See 7.165.

Thence course is adjusted SW to enter the bay through a short buoyed channel about 2 cables wide and marked by light-buoys (lateral), passing:

NW of Lobito Light (7.185), thence:

SE of Ponta da Restinga (8 cables WNW). In 1988 shoaling was reported extending about 1 cable SE of the point. Thence:

- 3 NW of No 4 Light-buoy (6 cables W).

Thence the track leads to the vicinity of the pilot boarding position (1 mile SW) as indicated on the plan between No 4 and 6 Light-buoys.

7.188

- 1 **Useful marks** (with positions relative to Lobito Light (12°19'2S, 13°35'7E):

Radio mast (1½ miles WSW).

Chimney of cement factory (1½ miles SSW).

Radio mast (2 miles SSW).

Silos (3¼ miles SW).

Directions for berths**7.189**

- 1 The chart is sufficient guide, noting a dangerous wreck, with masts visible, marked by No 8 Light-buoy and a further wreck with a depth of 0.6 m over it marked by Sorefame Light-buoy, both buoys moored about 5 cables NNW of Sorefame Shipyard (12°21'1S, 13°34'0E).

The SE side of the bay between the anchorage and the shore is fairly shallow with depths of less than 5 m extending up to 5 cables offshore. The head of the harbour is occupied by an extensive bank which dries. No 10 Light-buoy, moored 1½ cables off the SE end of No 2 Quay, marks the NW extremity of the bank.

Berths**7.190**

- 1 Alongside depths are charted depths. The port authorities should be contacted for the latest information.

Quay 1 and 2**7.191**

- 1 An L-shaped quay (12°20'7S, 13°32'8E) in the SW angle of the harbour provides 6 berths. Quay No 1, the section lying NE, is 570 m in length with a depth of 10.4 m alongside.

Quay No 2 is 552 m in length with a depth alongside of 10.6 m. It includes facilities for the handling of petroleum products and minerals in bulk.

Other berths**7.192**

- 1 There are several other berths as follows:
Small quay 150 m NE of the end of Quay No 1 for coasters.
Small jetty abreast the harbourmaster's office for pilot vessel and tugs.
A pier extends ¾ cable NNW from Sorefame Shipyard (12°21'1S, 13°34'0E).

The petroleum storage facility has an extensive quay with depths alongside of about 3 m.

Port services

Repairs

7.193

- 1 All types of repairs; four slipways for vessels up to 1200 tonnes.

Floating dock (12°21'0S, 13°33'9E) capacity of 2000 tonnes.

Other facilities

7.194

- 1 Floating crane with 150 tonne lifting capacity.
Deratting can be carried out, Deratting and Deratting Exemption Certificates issued. No oily waste reception facilities. Hospital.

Supplies

7.195

- 1 Fuel oil can be taken at Quay No 2 and at a facility near the SE side of the anchorage. Fresh water and stores available.

Communications

7.196

- 1 Airport.

PORTO DO LOBITO TO PONTA DAS SALINAS

General information

Chart 627

Route

7.197

- 1 From a position NNW of Lobito Light (12°19'2S, 13°35'7E), the route leads SW for about 51 miles to a position NW of Ponta das Salinas (12°51'0S, 12°56'3E).

Topography

7.198

- 1 Between Ponta da Restinga (12°18'9S, 13°35'0E) and Ponta do Sombreiro, 22 miles SW, the coast forms a bay, the shores of which are low and wooded. From the head of the bay, cliffs recede several miles inland and thence, taking a SW direction, circumscribe the plain at Benguela and rejoin the coast at Ponta do Sombreiro, on the W side of Enseada da Benguela. The whole of this part of the coast lacks prominent landmarks, and the few houses on the hills behind, closely resemble each other.
- 2 The mouth of Rio Catumbela is situated 10 miles SW of Ponta da Restinga. Rio Catumbela is said to attain considerable dimensions inland and is about 150 miles in length, rising near the important town of Caconda. In the rainy season the river overflows its banks, and inundates a large tract of country, but in the dry season it is no more than a big stream. It is accessible to small craft, but the water in it is said to contain injurious vegetable matter which frequently produces dysentery. The district in the vicinity of the river is thickly populated.
- 3 Catumbela (12°27'0S, 13°33'0E), is a town where there are two old forts each situated on the summit of a hill, about 150 m high, both on the S bank of the river, 2½ cables E of the town and about 3½ miles inland. Each fort consists of a wall, about 6 m high of grey coloured

stone, surrounding a long single-storied building with a red roof and yellow walls. They are visible from seaward when approaching the river, but would be mistaken from a distance for ordinary dwelling houses.

Current

7.199

- 1 The current along the coast NE of Ponta das Salinas (12°51'0S, 12°56'3E), sets offshore.

Principal marks

7.200

Landmark:

Salinas Lighthouse (white square tower and dwellings, 38 m in height) (12°50'5S, 12°56'8E).

Major lights:

Lobito Light (12°19'2S, 13°35'7E) (7.153).

Salinas Light — as above.

Directions

(continued from 7.156)

7.201

- 1 From a position NNW of Lobito Light (12°19'2S, 13°35'7E), the track leads SW, passing (with positions relative to Lobito Light):
NW of Ponta da Restinga (8 cables WNW) (Chart 1215), from which Restinga Light is exhibited (7.187), thence:
2 NW of the mouth of Rio Catumbela (10½ miles SW) (7.198). Its position is rendered prominent, when bearing 094°, by a remarkable niche in the hills, about 4 miles inland, through which the river flows. Close W of this niche is the town of Catumbela (7.198). Thence:
NW of Benguela (19½ miles SW) (7.202). Numerous fishing nets may be encountered in Baía de Benguela. Thence:
3 NW of Ponta do Sombreiro (22½ miles SW). Morro do Sombreiro, a remarkable square topped hill, 124 m high, is situated just within Ponta do Sombreiro, which obtains its name from its hat-like appearance, and may be identified from seaward at a distance of about 25 miles. Sombreiro Light (red column and white hut, 7 m in height) is exhibited from Morro do Sombreiro. Pedra do Sombreiro with a depth of 2.1 m (7 ft) over it, and another shoal patch with a depth of 4.5 m (15 ft) over it, lie about 2 cables NE of the point. From Ponta Sombreiro, the coast is cliffy for a distance of about 6 miles to Ponta das Vacas, and forms several snug coves where small craft can shelter. Thence:
4 NW of Ponta de São José (28½ miles SW), a rounded sandy tongue. Baía Farta, (7.203), where anchorage may be obtained, lies close S of the point. Between this point and Ponta das Salinas 21 miles farther SW the coast is steep-to, there being depths of 18.3 m (60 ft) within 1 cable of the coast in places. The coast consists of white sandy beaches, and, as it projects far from the hills inland, is difficult to see until very close.
5 Thence the track leads to a position NW of Ponta das Salinas (50 miles SW), a low, rounded, sandy point. Salinas Light (7.200) is exhibited from the point. Rio Coporôlo enters the sea 5½ miles SSE of the point.
(Directions continue at 7.208)

Anchorages and harbours

Chart 1197 plan of Porto de Benguela

Porto de Benguela

7.202

- 1 **Description.** Porto de Benguela (12°34'·6S, 13°23'·7E), the shore of which is composed of a sandy beach is entered E of Ponta do Sombreiro. The bay is exposed to the predominantly W swell.

- 2 The city of São Felipe de Benguela, the capital of the province, with a population of 155 000 in 1988, is situated in the NE part of the bay. The country inland of São Felipe de Benguela is high, attaining an elevation of about 460 m at about 7 miles from the city; but the city itself is built on a marshy plain, which, during the rainy season, March and April, is almost inundated. The W side of the bay is of moderate height and very broken. Rio Cavaco enters the bay close N of the city.

It is known as an unhealthy place to live.

- 3 **Directions.** Numerous fishing nets may be encountered in the bay up to about 1½ miles offshore. To avoid this danger, the outer approach should be made with the front leading light bearing between 090° and 145,° within the white sector of the light.

- 4 **Leading lights.** The alignment (118°) of the following lights leads towards the anchorage, in the bay, clear of any known danger:

Front light (square tower, 7 m in height) (12°34'·4S, 13°23'·9E).

Rear light (tower of church, 12 m in height) (490 m from front light).

Useful mark:

Sombreiro Light (red column and white hut, 7 m in height) (12°35'·0S, 13°17'·8E).

- 5 **Anchorage** may be obtained about 1 mile offshore in a depth of about 13 m (43 ft), mud and sand, on the alignment of the above leading lights.

Berths. Two small jetties (12°34'·6S, 13°23'·7E) used mainly by fishing fishing vessels. A jetty (12°35'·1S, 13°23'·2E), 170 m in length, from which lights (column, 3 m in height) are exhibited, used by small coasting vessels.

Other facilities: hospital.

Supplies: fuel oil; fresh water; provisions.

Communications: airfield.

Chart 1215 plan of Baía Farta

Baía Farta

7.203

- 1 **Description.** Baía Farta is entered between Ponta de São José (12°35'·7S, 13°12'·5E), and Ponta das Vacas 1¾ miles SE. Between these two points the coast recedes to Praia da Baía Farta. The village of Baía Farta in the SW corner of the bay is principally centred round the mouth of a small stream, Rio Pima. A church stands in the middle of the village.

Useful mark:

Water tower (12°37'·6S, 13°13'·1E).

- 2 **Anchorage** may be obtained as indicated on the plan about 6 cables S of Ponta de São José and 3 cables offshore in depths of about 25 m, fine sand. Also, as indicated on the plan, 5 cables W of Ponta das Vacas.

Another anchorage, indicated on the plan, lies 5 cables ESE of Ponta das Vacas in Baía Azul (12°37'·0S, 13°14'·2E).

Berths. There are a number of small piers.

Chart 627

Baía Tenda Granda

7.204

- 1 **Description.** Baía Tenda Granda, a slight indentation is entered close ENE of Ponta das Salinas (12°51'·0S, 12°56'·3E). At the head of the bay is the settlement of Salinas, where landing may be effected.

Anchorage may be obtained in the bay in a depth of 9 m (30 ft), 5 cables from the shore with a water tower bearing 192°. The bay is exposed to SW and W swells and vessels should consider this anchorage as temporary only.

PONTA DAS SALINAS TO CABO DE SANTA MARIA

General information

Chart 627

Route

7.205

- 1 From a position NW of Ponta das Salinas (12°51'·0S, 12°56'·3E), the route leads SW for about 47 miles to a position W of Cabo de Santa Maria (13°26'·0S, 12°31'·2E).

Current

7.206

- 1 Between Ponta das Salinas, (12°51'·0S, 12°56'·3E), and Baía da Equimina (7.212), 22 miles SSW, the current sets in towards the land and should be guarded against especially at night.

- 2 Off Baía dos Elefantes the current generally sets NNW; but occasionally it changes direction and sets E, and has been known to attain a rate of 1½ kn. It does not appear to set S into the bay.

For general circulation see 1.193.

Principal marks

7.207

- 1 **Landmark:**

Salinas Lighthouse (12°50'·5S, 12°56'·8E) (7.200).

Major lights:

Salinas Light — as above.

Ponta dos Frades Light (white round tower and dwellings, 9 m in height) (13°13'·0S, 12°42'·8E).

Cabo de Santa Maria Light (white square masonry tower and dwellings, 12 m in height) (13°25'·8S, 12°31'·8E).

Directions

(continued from 7.201)

7.208

- 1 From a position NW of Ponta das Salinas (12°51'·0S, 12°56'·3E), the track leads SW, passing (with positions relative to Ponta das Salinas):

- 2 NW of Ponta Bongue (9 miles S), fringed with rocks, and shoals, with depths of less than 5 m (16 ft) extending 3½ cables N and NW from it. A beacon (white stone, 1·8 m in height), visible for a considerable distance, stands on the point. Ponta Norte and Ponta Sul (Chart 1215), each surmounted by a beacon, stand 1 and 2 cables, respectively, E of Ponta Bongue. Between Ponta Bongue and a point known as Ponta dos Papeis, the N point of Baía da Equimina, 15 miles SW, the intervening coast is steep-to, and the land is high and steep, but broken at intervals by ravines that run down to the sea and form Praia da Chituca, Praia do Noto, Praia do Nhime, and Praia da Lua,

small bays situated, respectively, 2½, 5, 9 and 12 miles SW of Ponta Bongue. Streams flow through the ravines, and the bays afford temporary shelter but only in fine weather. Local knowledge is required. Thence:

- 3 NW of Ponta do Leste (13°12'·1S, 12°45'·2E) (Chart 1197), the E entrance point of Baía dos Elefantes (7.213). Pedra de Fora, a small rock lies off the point.

7.209

- 1 The track continues:
NW of Ponta dos Frades (26½ miles SW), from which Ponta dos Frades Light (7.207) is exhibited. Roca dos Frades (Chart 1197) (4 m in height, 3 in number), and steep-to, lie on a rocky shelf extending 2 cables NW from the point. Immediately S of Roca dos Frades is an indentation 3 miles across which extends as far as Ponta Choca (13°16'·0S, 12°40'·0E). All round this bay steep cliffs rise from the shore, which is rocky and barren with a few isolated patches of sand. Landing there would be difficult. The mountains backing the coast between Ponta dos Frades and Cabo de Santa Maria (13°26'·0S, 12°31'·2E), situated 16 miles SW, are of granite interspersed with alabaster, mica, and quartz, which reflect the rays of the sun to a considerable distance, like a vast mirror. Thence:
- 2 NW of Ponta Juliana (37 miles SW). High cliffs rise from sea-level and are broken at intervals by the mouths of ravines, in which are short sandy beaches on most of which latter, landing could be effected.

7.210

- 1 Thence the track leads to a position W of Cabo de Santa Maria (42½ miles SW) (Chart 1215), of moderate elevation. On it is a small pillar, only visible from a vessel when close inshore, which replaces the original, erected by Diego Cão in 1486. Cabo de Santa Maria Light (7.207) is exhibited from the cape. About 2½ miles E of Cabo de Santa Maria is a high, apparently isolated, hill, with a rounded base and flat top, known as Saint Mary's Bonnet. When coming from S this hill is seen prominently above the cape.

(Directions continue at 7.220)

Anchorage and harbours

Chart 1215 plan of Enseada do Cúio

Enseada do Cúio

7.211

- 1 **Description.** Enseada do Cúio (12°58'·7S, 12°58'·6E) lies close E of Ponta Bongue. The town of Cúio lies at the head of the bay, where there is a small pier.

Directions. For dangers in the approach to Enseada do Cúio see 7.208.

Leading marks. The alignment (143°) of the following beacons, leads SE into the bay, towards the anchorage:

Front beacon (white triangle) (standing on a shed near the root of the pier).

Rear beacon (1½ cables from front beacon).

The front beacon is not easy to distinguish.

Anchorage may be obtained in the bay, as indicated on the plan, in a depth of 10 m, mud and sand, on the leading line, with the front beacon distant 1 mile.

Smaller vessels may obtain anchorage, as indicated on the plan, in a depth of 6 m, sand and mud, 3 cables from the pier on the intersection of the leading line (143°) with the transit (240°) of the beacons on Ponta Bongue and Ponta Sul.

Chart 627

Baía da Equimina

7.212

- 1 **Description.** Baía da Equimina (13°12'·0S, 12°47'·0E), is contained between Ponta dos Papeis, a prominent white cliff, 90 m in elevation, which extends 2 miles NE, and Ponta da Equimina, 2½ miles farther SW.

- 2 **Topography.** On the shore about the centre of the bay are the ruins of an abandoned sugar estate; the partially ruined buildings are still standing and form a good mark by which to identify the bay, and the remains of a large white single-storied house on the foreshore in the centre of the bay is prominent. There is a fish factory, with 2 chimneys in the SW corner of the bay.

Occasionally, when rains are falling inland, Rio Equimina which flows into the bay is a rushing stream up to 1·3 m deep, but the surf is always heaviest at its mouth.

- 3 **Anchorage.** The anchorage is very restricted with depths shoaling quickly inside 37 m (20 fm). Great care is necessary to avoid having too much way on the vessel when anchoring. Anchorage may be obtained in depths of about 26 m (14 fm), at a distance of 2½ cables NE of Ponta Equimina. The anchorage is exposed to sea breeze and swell. It is not recommended.

- 4 **Landing** in ships' boats can usually be effected on the beach at HW, or in the morning before the sea breeze sets in; also at any state of the tide in the SW corner of the beach.

Chart 1197 plan of Baía dos Elefantes

Baía dos Elefantes

7.213

- 1 **Description.** Baía dos Elefantes is entered between Ponta do Leste (13°12'·1S, 12°45'·2E), and Ponta dos Frades, 2½ miles WSW. The climate is said to be very healthy, as, indeed, it is on the whole coast S of Ponta das Salinas. Sharks are often seen in the bay.

The bay affords one of the best anchorages on this coast, being perfectly secure and sheltered not only from the commonly occurring winds, namely those from S to WNW, but also the rollers (1.201) which occasionally set in along the whole coast of Angola.

- 2 **Topography.** In the SW corner of the bay are the abandoned buildings of a whaling station, huts and an observatory.

The position of the bay may also be identified by a tableland, 233 m (764 ft) in elevation, situated near the SW corner of the bay, which may be seen from afar. Near the summit on its E side, the names of many of HM ships have been outlined in stones and whitewashed. These can be discerned from seaward. Close inland the land rises to 350 m (1146 ft).

- 3 **Depths.** Though the depths in the bay are considerable, it shoals gradually towards the beach.

Current. For information on current off the bay see 7.206.

Directions. From a position about 2 miles NW of Ponta do Leste, the track leads S, passing W of Ponta do Leste and E of Ponta dos Frades. If approaching from W, Roca dos Frades (7.209) are not seen clearly until a vessel has passed them.

- 4 **Anchorage** may be obtained in a depth of about 29 m (16 fm), sand and mud, 7 cables NNE of the abandoned whaling station; good anchorage may also be obtained as indicated on the plan, about 3 cables NE from the same station in a depth of 18 m (9½ fm), sand and mud.

Chart 627

Baía do Limagem

7.214

- 1 Baía do Limagem, situated between Ponta Choca (13°16'·0S, 12°40'·0E), and Ponta Limagem, 2½ miles SSW, is a sandy bay at the mouth of a ravine. The bay affords sheltered anchorage to small vessels. Local knowledge is required. Landing can be effected without difficulty at its S end.

Chart 1215 plan of Baía de Santa Maria

Baía das Tainhas

7.215

- 1 **Description.** Baía das Tainhas which lies 5 miles SW of Ponta Juliana (13°22'·0S, 12°37'·2E), is 7½ cables in width at its entrance, and its shores recede about the same distance S; it is surrounded by steep cliffs, except for a ravine at its S end, which gives good access to the interior.

Good anchorage for large vessels, sheltered from the predominant wind and swell, may be obtained in the bay.

Local knowledge is required.

- 2 **Anchorage** may be obtained in a depth of 31 m, about 3 cables from the sandy beach at its head. In the SE corner of the bay is an inner bay, about 1½ cables in width, in which small vessels could anchor in a depth of 7·3 m.

Baía de Santa Maria

7.216

- 1 **Description.** Baía de Santa Maria (13°24'·8S, 12°32'·6E), with an entrance about 1 mile in width, is entered SW of Ponta Arranca Ferro (13°24'·0S, 12°33'·5E). Ilhéu Liesse (Ilhéu dos Passaros) lies at the centre of the bay. Between this island and the shore, there is a shoal with a least depth of 3·6 m but elsewhere the bay is deep.

The only inhabitants of the bay are some fishermen.

- 2 **Anchorage**, though sheltered is only suitable for small vessels, and may be obtained midway between Ilhéu Liesse and the W shore of the bay, in a depth of about 24 m, sand and decayed coral. Also, as indicated on the plan, in the S part of the bay about 1¼ cables N of a jetty in a depth of about 12 m, fine sand.

Berth. There are two jetties in the bay which are used by fisherman.

CABO DE SANTA MARIA TO CABO DE SANTA MARTA

General information

Chart 627

Route

7.217

- 1 From a position W of Cabo de Santa Maria (13°26'·0S, 12°31'·2E), the route leads SSW for about 28 miles to a position W of Cabo de Santa Marta (13°53'·4S, 12°25'·0E).

Topography

7.218

- 1 From Cabo de Santa Maria the coast which is unusually steep-to, lies in a S direction for about 27 miles to the head

of Baía de Santa Marta. The coast is composed of granite cliffs, which in most places rise steeply from the sea, but, in others, are intersected by valleys terminating in broad sandy beaches. The summits of these cliffs possess no characteristic forms, being mostly rounded off and covered with sparse vegetation. The valleys become more frequent S of the first 12 miles and the sandy beaches are broader.

From the head of Baía de Santa Marta the coast trends W for about 5 miles to Cabo do Santa Marta.

Principal mark

7.219

- 1 **Major light:**

Cabo de Santa Maria Light (13°25'·8S, 12°31'·8E) (7.207).

Directions

(continued from 7.210)

7.220

- 1 From a position W of Cabo de Santa Maria (13°26'·0S, 12°31'·2E), the track leads SSW, passing (with positions relative to Cabo de Santa Maria):

- 2 WNW of Ilheus do Pina (2½ miles SSW), a group of rocks, the largest of which is big and black 35 m (115 ft high) lying 1 mile from the coast. The passage between the islets and the coast has not been examined. Another islet lies 3 miles SSE of Ilheus do Pina. Thence:

- 3 WNW of Rio Catara (8 miles S), where anchorage (7.221) may be obtained off the entrance, thence: WNW of Rio Cangala (18 miles S).

Thence the track leads to a position W of Cabo de Santa Marta (28 miles SSW), of moderate elevation. The high cliff nature of the coast terminates at the cape, and S of it there is a succession of small sandy beaches, separated by low cliffy points. Cabo de Santa Marta Light (white 6-sided tower and dwellings, 14 m in height) is exhibited from the cape.

(Directions continue at 7.229)

Anchorage

Off Rio Catara

7.221

- 1 **Description.** Rio Catara flows into the head of a small bay about 8 miles S of Cabo de Santa Maria (13°26'·0S, 12°31'·2E).

Anchorage may be obtained off the entrance to Rio Catara in a depth of 18·3 m (60 ft), at a distance of 2¼ cables from some ruined stone huts on the beach, but the change from considerable depths to those suitable for anchorage is very sudden.

Landing can be effected in surf-boats at the S end of this bay.

Chart 1215 plan of Baía de Santa Marta

Enseada do Bonfim

7.222

- 1 **Description.** Enseada do Bonfim (13°48'·8S, 12°31'·4E) affords anchorage, as indicated on the plan, in depths of 29 m 1½ cables offshore.

Baía de Santa Marta

7.223

- 1 **Description.** Baía de Santa Marta is a large indentation in the coast contained between Ponta da Bissonga (13°50'·6S, 12°31'·1E) and Cabo de Santa Marta 6 miles WSW.

Anchorage may be obtained as follows:

Praia da Lucira (13°52'0S, 12°31'1E) in a depth of 18.3 m about 1½ cables offshore, as indicated on the plan, but the depths shoal rapidly and great caution must be observed when anchoring. Lucira,

a village is situated on the shore.

Praia do César (13°52'8S, 12°30'6E), close E of Ponta do César, in a depth of about 13.7 m in the middle of the bay as indicated on the plan. There is a small settlement on the shore of the bay.

CABO DE SANTA MARTA TO RIO KUNENE

GENERAL INFORMATION

Chart 627, 1806

Area covered

7.224

- 1 This section describes the coastal routes, anchorages and harbours from Cabo de Santa Marta (13°53'4S, 12°25'0E), to Rio Kunene (17°14'8S, 11°45'6E).

It is arranged as follows:

Cabo de Santa Marta to Baía de Namibe (7.227).

Baía de Namibe (7.235).

Baía de Namibe to Ponta Albina (7.253).

Ponta Albina to Rio Kunene (7.260).

International boundary

7.225

- 1 The international boundary between Angola and Namibia is generally considered to be the median line of Rio Kunene. This is ill-defined due to the unstable nature of the S shore. It was proposed in 1961, to erect a beacon on an island of apparently stable formation close inside the mouth of the river. The boundary defining the territorial waters is accepted as a line running W from this site out to the 12 miles fishing limit. See chart 4132.

Navigation

7.226

- 1 **Caution.** From Cabo de Santa Marta (13°53'4S, 12°25'0E), to Ponta do Porto (15°47'0S, 11°51'0E), similar conditions exist as described at 7.131.

CABO DE SANTA MARTA TO BAÍA DE NAMIBE

General information

Chart 627

Route

7.227

- 1 From a position W of Cabo de Santa Marta (13°53'4S, 12°25'0E), the route leads SSW, for about 77 miles to a position SW of Ponta do Giraul (15°08'2S, 12°06'7E) (Chart 1197).

Principal marks

7.228

- 1 **Major lights:**

Ponta Grossa Light (white square tower, 14 m in height) (14°13'0S, 12°20'0E).

Ponta Piambo Light (black square tower, white bands, 18 m in height) (14°42'5S, 12°17'7E).

Directions

(continued from 7.220)

7.229

- 1 From a position W of Cabo de Santa Marta (13°53'4S, 12°25'0E), the track leads SSW, passing (with positions relative to Cabo de Santa Marta):

WNW of the entrance to Rio Carunjabamba (4 miles S), thence:

WNW of Ponta do Inamagando (10½ miles SSW), Rio Inamagando enters the sea close N of the point, thence:

- 2 WNW of Ponta das Salinas (19 miles SSW). Baía das Salinas, where anchorage (7.231) may be obtained, lies close E. Thence:

WNW of Ponta Grossa, yellow and red cliffs. Ponta Grossa Light (7.228) is exhibited from the point. Thence:

- 3 WNW of Ponta das Mocuandos (25 miles S), the SW entrance point of a bay known as Baía Velho into which Rio Bentiaba (Rio de São Nicolau) discharges. A reef with a depth of 3 m (10 ft) over it extends seaward for about 1½ miles from the mouth of the river. Temporary anchorage (7.232) may be obtained in the bay.

7.230

- 1 The course continues:

WNW of Lageas (31 miles S), two rocks, the higher of which is 2.7 m (9 ft) high, situated 9 cables offshore. The 20 m (11 fm) depth contour lies about 5 cables W of these rocks. Enseada do Chapéu Armado lies 3 miles S of the rocks. Between this bay and Ponta do Piambo, 17 miles SSW, the coast is devoid of distinctive features. Thence:

- 2 WNW of Ponta Piambo Light (50 miles S) (7.228), thence:

WNW of Ponta de Santa Gertrudes (58 miles S), on which stands Pirâmide Grande, a beacon. Baía do Baba lies close E of the point, where anchorage (7.233) may be obtained. Thence:

- 3 WNW of Ponta do Gigante (66 miles S). Baía do Mocuió lies 4½ miles NNE of Ponta do Gigante. Vertical cliffs separate this bay from Baía das Pipas, situated close E of Ponta do Gigante. Anchorage (7.234) may be obtained in the latter bay. Thence:

- 4 WNW of Enseada do Cherungo (70 miles S), which has depths of 13 m (43 ft) 5 cables offshore. Ponta de Euspa, which is low and dark in colour, situated 9 miles SSW of Ponta do Gigante, is the S point of Porto do Giraul, situated at the mouth of Rio Giraul (15°05'0S, 12°08'2E).

- 5 Thence the track leads to a position SW of Ponta do Giraul (77 miles SSW), a rounded point, rocky and steep-to

and of moderate elevation. Ponta do Giraul Light (7.228) is exhibited from the point.

(Directions continue for the coastal route at 7.256 and for entry into Baía de Namibe at 7.243)

Anchorage

Baía das Salinas

7.231

- 1 **Description.** Baía das Salinas (14°10′.0S, 12°22′.0E), has depths of less than 5.5 m (18 ft) within 5 cables of the shore off the village of Salinas at the head of the bay.

Anchorage may be obtained in the bay in depths of 18 m (54 ft), fine sand, about 1 mile offshore. The anchorage is exposed to the prevailing SW wind and swell.

Baía Velho

7.232

- 1 **Description.** Temporary anchorage may be obtained in Baía Velho, situated close N of Ponta das Mocuandos (14°18′.0S, 12°21′.8E).

- 2 **Topography.** Monte Velho, 229 m (751 ft) high, is situated to the S of Baía Velho, about 6 miles from the mouth of Rio Bentiaba, and owing to its singular truncated form is an admirable mark for making the bay from S; it is of a darker colour than the coast in its vicinity, and when seen on certain bearings appears as if detached. A range of table hills extends N and SSE and farther inland of Monte Velho.

- 3 **Local knowledge** is required.

Anchorage can be obtained in depths of about 9 m (30 ft), but it is exposed and the bay affords no shelter.

Baía do Baba

7.233

- 1 Anchorage, for a small vessel, may be obtained in Baía do Baba (14°50′.0S, 12°14′.5E) in a depth of 27 m (15 fm), fine sand, about 1½ cables from the shore in front of a village on the S side of the bay. The anchorage is fairly sheltered from the SW swell but when the swell is heavy, the entire shore is battered by a powerful surf.

Baía das Pipas

7.234

- 1 Anchorage, may be obtained in Baía das Pipas, situated close E of Ponta do Gigante (14°57′.8S, 12°10′.5E), in a depths from 18 to 24 m (10 to 13 fm) at distance of less than 5 cables from the shore. The anchorage is exposed. Local knowledge is required.

BAÍA DE NAMIBE

General information

Chart 1197 plan Baía de Mossamedes

Description

7.235

- 1 Baía de Namibe, formerly known as Baía de Mocamedes, lies between Ponta do Giraul (15°08′.2S, 12°06′.7E) (7.230) and Shoal Point (Ponta das Barreiras) (7.256), 4 miles SSW. The ports of Porto Saco (formerly known as Porto Salazar) and Porto de Namibe (formerly known as Mocamedes) are situated in the NE and SE corners of the bay respectively.

Topography

7.236

- 1 From Ponta do Giraul (15°08′.2S, 12°06′.7E) cliffs between 15 and 30 m (50 to 100 ft) high curve E and NE for 1¾ miles to the head of a beach known as Saco de Giraul, which forms Porto Saco (7.244).
- 2 From the head of Saco de Giraul a sandy beach forming the head of the inner bay, curves S, for about 4½ miles, to a bluff rocky promontory in the S part of the inner bay, on which stands Fortaleza de São Fernando (15°11′.8S, 12°08′.7E). Near the middle of this beach is the mouth of Rio Béro, which after flowing 30 miles, becomes almost absorbed in the ground before reaching the coast. Near the mouth of the river are some gardens and a chalybeate spring. A sandy shoal known as Baixo do Diabo fronts the river mouth.
- 3 The bay is backed by some ranges of hills which appear white when seen from the offing with the sun shining upon them; they are excellent marks by which to recognise the locality.

Depths

7.237

- 1 There is deep water in the entrance to the bay but noting Baixo Amelia (7.243) in the S part of the entrance, 2¾ miles SSW of Ponta do Giraul (15°08′.2S, 12°06′.7E).

Pilotage

7.238

- 1 Pilotage is compulsory for the ports of Saco and Namibe and is available from 0600 to 2000 for berthing. Unberthing can take place at any time subject to the agreement of the pilot. The pilot boards in the entrance to the bay. See *Admiralty List of Radio Signals Volume 6(3)*.

Caution. In 1987 it was reported that vessels were not permitted to enter the bay during the hours of darkness.

Fishing

7.239

- 1 **Caution.** A fishing fleet is often encountered off Baixo Amelia (7.243) at night, each boat being well lighted.

Fish traps

7.240

- 1 Numerous fish traps exist within the area. Mariners are advised to exercise particular caution.

Natural conditions

7.241

- 1 **Local weather.** The predominant winds are land and sea breezes from between S and W, generally less than 20 kn. Between June and August, during the dry season, a dry and sand-charged E wind, known locally as a Lestada, occurs at times.
- 2 Early morning fog is most frequent from May to October and may persist throughout the day.
The rainy season occurs between February and April but the precipitation is not large. Tropical storms may occur at this period but they are rare.
- 3 **Sea state.** The predominant swell is from SW and can be heavy at any time of the year. Within the bay, the effect is greater at Porto de Namibe than at Porto Saco.
Current. Currents in the bay are weak.
Climatic table. See 1.226 and 1.242.

Principal mark

7.242

- 1 **Major light:**
Ponta do Giraul Light (15°08′.2S, 12°06′.7E) (7.228).

Directions*(continued from 7.230)***Entrance to pilot****7.243**

- 1 **Caution.** It has been reported that most of the navigational lights in Baía de Namibe are temporarily extinguished.

From a position SW of Ponta do Giraul (15°08'2S, 12°06'7E), the track leads E for about 3 miles to a position SSE of Ponta do Giraul, in the vicinity of the pilot boarding position, passing (with positions relative to Ponta do Giraul):

- 2 N of Baixo Amelia (2¾ miles SSW), an unmarked and steep-to, rocky shoal extending 1½ miles N of Shoal Point (7.256). The shoal is very dangerous and the sea breaks heavily over it at times. Praia Amelia, a sandy cove, is located 4 cables SE of Shoal Point. It is the site of a former whaling station, the chimneys of which are conspicuous. Thence:
- 3 S of Ponta do Giraul (7.230), and:
N of Ponta Negra (3½ miles S), 12 m in elevation. Between Ponta Negra and Ponta do Noronha, 1½ miles NE, the shore of the bay is composed of yellow sandstone cliffs. Thence:
- 4 NNW of Ponta do Noronha (3 miles SSE), a perpendicular sandstone cliff, 38 m in elevation, from which a light (see below) is exhibited. The intersection (115°) of the white and green sectors of this light, clears the N extremity of Baixo Amelia. Similarly, Fortaleza de São Fernando Light (see below) open ESE of Ponta do Noronha also clears the N extremity of Baixo Amelia.

Thence the track leads to a position SSE of Ponta do Giraul.

Useful marks:

Ponta do Noronha Light (white tower, black band) (15°11'3S, 12°07'5E)

Fortaleza de São Fernando Light (white structure, 4 m in height) (15°11'8S, 12°08'7E).

Mast (white metal framework tower, red bands: red obstruction lights) (15°12'2S, 12°07'9E) (not charted).

(Directions continue for entering Porto Saco at 7.244 and Porto de Namibe at 7.249)

Porto Saco**General information****7.244**

- 1 **Position.** Porto Saco (15°07'7S, 12°08'1E), formerly known as Porto Salazar, lies in the NE corner of the bay. It is a subsidiary of Porto de Namibe.

Function. It is a small port used for the export of iron ore and the import of oil. It was reported (1994) that the ore handling equipment was to be upgraded and that the berth would be deepened to a projected depth of 19.8 m.

Topography. At Saco there are some warehouses, a fishery establishment, a lime kiln with a chimney and a tank farm. Stockpiles of iron ore are normally to be seen near the N end of the quay, which is equipped with a conveyor belt and gantry.

Maximum size of vessel handled. Bulk carriers up to 250 000 dwt, 300 m in length and 50 m breadth with a loaded draught of 15 m.

Pilotage. See 7.238.

Tugs are available.

- 2 **Directions.** From a position SSE of Ponta do Giraul (15°08'2S, 12°06'7E), in the vicinity of the pilot boarding position, the alignment (037½°) of the following lights leads NE into the bay, thence the track leads towards the berth:

Front light (white column on tower, 10 m in elevation) (15°07'8S, 12°08'5E).

Rear light (similar structure, 48 m in elevation) (1½ miles from front light).

- 3 **Useful marks.** The alignment (326°) of the following marks may be of assistance when berthing:

Front beacon (15°07'6S, 12°08'1E).

Rear water tower (½ cable from beacon).

Berth. A quay (15°07'7S, 12°08'1E) 535 m in length with alongside depths in excess of 16 m at the outer end reducing to 11 m at the inner end. The outer end is used by bulk carriers and large tankers, the inner end by tankers up to 150 m LOA.

Supplies: fresh water, fuel oil in limited quantities and provisions available in Porto de Namibe.

Porto de Namibe**General information****7.245**

- 1 **Position.** Porto de Namibe (15°11'7S, 12°09'0E), formerly known as Mocamedes, lies in the SE corner of Baía de Namibe.

Function. It is a small port handling general cargo and the principal fishing port of Angola. The town of Namibe is the regional capital of the province of Namibe.

Topography. See 7.236.

Approach and entry. The port is approached from W and entered through Baía de Namibe, between Ponta do Giraul (15°08'2S, 12°06'7E) and Shoal Point, 4 miles SSW.

Traffic. In 2003, the port was used by 23 ships with a total of 257 229 dwt.

Port Authority. Empresa Portuaria do Namibe, PO Box 16, Namibe, Angola.

Limiting conditions**7.246**

- 1 **Controlling depths.** There are charted depths of more than 9 m (30 ft) in the approach to the anchorage off Namibe.

Deepest and longest berth. Cais Commercial (7.251).

Tidal levels. Mean spring range about 1.2 m; mean neap range about 0.6 m. See information in the relevant edition of *Admiralty Tide Tables Volume 2*.

Density of water is 1.025 g/cm³.

Maximum size of vessel handled. Maximum draught 8 m.

Local weather and sea state. A heavy swell can be experienced in the harbour at any time of the year. At Cais Commercial it oscillates parallel to the quay.

Arrival information**7.247**

- 1 **Port operations.** See 7.238.

Port radio. There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

- 2 **Outer anchorage.** Good anchorage, sheltered from all except N to NNW winds, may be obtained as indicated on the chart, about 4½ cables NW of Fortaleza de São Fernando (15°11'8S, 12°08'7E) in a depth of about 9 m (30ft), mud.

Pilotage. See 7.238.

Tugs are available.

Harbour

7.248

- 1 **General layout.** The harbour is situated in the S of the bay and fronts the town of Namibe. The main quay, Cais Commercial, is located W of the town.

Directions for entering harbour

Continued from 7.243

7.249

- 1 From a position SSE of Ponta do Giraul (15°08'·2S, 12°06'·7E), in the vicinity of the pilot boarding position, the track leads SE for about 2¼ miles to the anchorage and berth, passing (with positions relative to Fortaleza de São Fernando (15°11'·8S, 12°08'·7E)):

SW of Baixo do Diabo (1¾ miles NNE) (7.236), and:

NE of Ponta do Noronha (1½ miles NW) (7.243).

7.250

- 1 **Useful marks:**

Radio masts (15°11'·4S, 12°09'·2E), N of two.

Cais Commercial, light at N end, (column, 3 m in height) (15°11'·5S, 12°07'·8E).

Fortaleza de São Fernando Light (white structure, 4 m in height) (15°11'·8S, 12°08'·6E).

Mast (white metal framework tower, red bands: red obstruction light) (15°12'·2S, 12°07'·9E) (not charted).

Governor's Palace (15°11'·9S, 12°08'·6E), a large, two-storied, pink building.

Church (15°11'·9S, 12°08'·5E), with two domes.

Berths

7.251

- 1 **Cais Commercial** (15°11'·7S, 12°07'·9E), is a stone quay 875 m in length, with a minimum depth of 8 m alongside. It is in poor condition, but adequately fendered.

Pier. A small pier projects from the shore near the centre of town; it provides a landing place for boats at steps, with a depth of 3 m alongside. The pier should be approached with caution if waves are breaking on the beach and occasionally it is unusable due to swell. It has been reported that the steps are in disrepair and obstructed by underwater projections.

Port services

7.252

- 1 **Repairs:** two slipways for small vessels up to 50 m length.

Other facilities: hospital; Deratting Exemption Certificates issued.

Supplies: fresh water, fuel oil in limited quantities and provisions.

Communications: airfield 5 km from Namibe.

BAÍA DE NAMIBE TO PONTA ALBINA

General information

Chart 627

Route

7.253

- 1 From a position SW of Ponta do Giraul (15°08'·2S, 12°06'·7E), the coastal route leads SSW, for about 50 miles to a position W of Ponta Albina (15°52'·5S, 11°44'·5E).

Current

7.254

- 1 The current sets past Ponta Albina (15°52'·5S, 11°44'·5E) in a violent and irregular manner in a generally N or NW direction.

Principal marks

7.255

- 1 **Landmark:**

Ponta Albina Lighthouse (white square tower, 38 m in height) (15°52'·5S, 11°44'·5E).

Major lights:

Rio dos Flamingos Light (white round tower, yellow stripes, white dwellings, 11 m in height) (15°33'·8S, 12°01'·9).

Ponta Albina Light — as above.

Directions

(continued from 7.230)

7.256

- 1 From a position SW of Ponta do Giraul (15°08'·2S, 12°06'·7E), the track leads SSW passing (with positions relative to Shoal Point (15°12'·1S, 12°05'·7E)):

WNW of Baixo Amelia (7.243) (1½ miles N), thence:

- 2 WNW of Shoal Point (Ponta das Barreiras), which is low and sandy with several sandhills in the vicinity, thence:

WNW of Ponta da Annuniação (3½ miles SW), low and indistinctive. A spit, on which the sea breaks heavily at times, extends 3 cables N from the point; the coast then becomes cliffy and is backed by hills. Thence:

- 3 WNW of Rio dos Flamingos (22 miles S), which enters the sea from a gorge close S of a hill known as Morro Columbi, 117 m in elevation. Its mouth is completely blocked by sand during the dry season. Rio dos Flamingos Light (7.255) is exhibited from a position about 1 mile S of the river mouth.

7.257

- 1 The course continues:

WNW of Cabo Negro (29½ miles SSW), a remarkable headland, formed by a precipitous mass, upwards of 62 m in elevation, rising at the extremity of a low point, and resembling an island. It has a round, rugged, black face, from which it obtains its name, and is encrusted by different coloured earths and sands, abounding in fossilised shells. On the summit of the cape stands a pillar, or the remains of a marble cross, erected by Diego Cão, in 1486. Thence:

- 2 WNW of the mouth of Rio Coroca (32 miles SSW). A bridge spans the river 1 mile from its mouth. The rocks on this portion of the coast appear to be of two or three different kinds, but principally sandstone in horizontal strata, in which fossils are embedded; others being of primitive or volcanic formation are of harder and less regular structure. Thence:

WNW of Ponta do Enfião (39 miles SSW) (Chart 1215). Banco Grande with a least depth of 11·3 m over it extends 3½ miles N from the point and Baixo da Ponta Brava, a sandy bank with a depth of 8·4 m about 1 mile offshore, lies 1½ miles ENE.

- 3 Thence the track leads to a position W of Ponta Albina (45 miles SSW) from which Ponta Albina Light (7.255) is exhibited. The point is low and dangerous and is said to be

extending W. Great caution is necessary when approaching it at night and in heavy or thick weather. This part of the coast is a low, sandy beach on which there are heavy breakers; the sea is always disturbed on account of the currents (7.254) off Ponta Albina.

7.258

1 Useful mark:

Stranded wreck (15°25'·0S, 12°01'·2E).
(*Directions continue at 7.262*)

Porto Tombua

Chart 1215 plan of Porto Alexandre

General information

7.259

- 1 **Position.** Porto Tombua (Porto Alexandre) (15°48'·2S, 11°50'·2E) lies about 41 miles SSW of Namibe.

Function. It is the centre for the fishing industry.

Approach and entry. The port is approached and entered between Ponta do Pinda (15°45'·4S, 11°53'·8E), and Ponta do Porto 3 miles SW.

Anchorage may be obtained within the harbour in a depth of about 30 m, sand and mud, as convenient.

- 2 **Directions.** When making Porto Tombua from N it may easily be recognised by Ponta do Pinda, but the approach from S or W, is attended with some uncertainty, as the sandy peninsula does not show up as distinct from the mainland, and mists are of frequent occurrence. Care must be taken to avoid Banco Grande and Baixo da Ponta Brava (7.257), the latter 1 mile WNW of Ponta Brava (15°46'·8S, 11°49'·9E).

Both the port, and the town on the sand dunes on the S side can, however, be seen over the peninsula from the masthead.

- 3 From a position about 8 cables NW of Ponta do Pinda (15°45'·4S, 11°53'·8E), 37 m in elevation and projecting from the interior like an immense wall, the track leads SSW, passing (with positions relative to Ponta do Pinda): ESE of Banco do Pinda (2 miles W). The bank is covered by the green sector (185°–215°) of Ponta do Porto Light (see below). Thence:

- 4 ESE of Ponta do Porto (2¾ miles SW), the E extremity of a low, narrow sandy peninsula which forms the N and W sides of the harbour. In September 1962, this spit was breached by the sea for a distance of about 2 cables. Ponta do Porto light (tripod on white hut, orange diagonal stripes, 8 m in height) is exhibited from a position close W of Ponta do Porto.

Thence the track leads in mid channel, into the harbour.

- 5 **Berths.** A small jetty on the S side of the harbour.

Repairs: two slipways for small vessels.

Other facilities: hospital; Deratting Exemption Certificates issued.

Communications: airfield.

PONTA ALBINA TO RIO KUNENE

General information

Charts 627, 1806

Route

7.260

- 1 From a position W of Ponta Albina (15°52'·5S, 11°44'·5E) the route leads S for about 82 miles to a position W of Rio Kunene (17°14'·8S, 11°45'·6E).

Principal marks

7.261

Landmarks:

Ponta Albina Lighthouse (15°52'·5S, 11°44'·5E) (7.255).

Water tower (elevation 92 m (302 ft)) (17°11'·0S, 11°47'·2E)

Major lights:

Ponta Albina Light — as above.

Ponta da Marca Light (white conical tower on columns, 13 m in height) (16°30'·9S, 11°42'·8E)

Directions

(*continued from 7.258*)

7.262

- 1 From a position W of Ponta Albina (15°52'·5S, 11°44'·5E) the route leads S, passing (with positions relative to Ponta Albina):

W of the mouth of Rio Chimbala (32 miles S), thence:

W of Ponta da Marca (38 miles S) from which Ponta da Marca Light (7.261) is exhibited. Near the lighthouse is a small group of buildings. Thence:

- 2 W of Ilha dos Tigres (45 miles S), formerly known as Peninsula dos Tigres. In 1963, the sea broke through the sandy tongue of the peninsula thus transforming it into an island. Great caution is necessary in approaching the coast in the vicinity of Ilha dos Tigres, on account of the mist which is frequent, and which makes it difficult to judge distances, the first thing then seen being the breakers off the coast. Thence:

- 3 W of Praía dos Esponjas (17°02'·0S, 11°46'·0E). The coast for 12 miles S to Rio Kunene consists entirely of sand crowned with dark tinted dunes which are visible from seaward for 15 or 16 miles.

Thence the track leads to a position W of Rio Kunene (17°14'·8S, 11°45'·6E), which marks the international boundary between Angola and Namibia (7.225). A beacon, with an elevation of 8 m, stands at the mouth of the river, which is encumbered by sandbanks. A village known as Foz do Cunene, where there is a meteorological station and an airstrip is situated on the N bank of the river, 2 miles within the mouth.

(*Directions continue at 8.11*)

Baía dos Tigres

Chart 1216

General information

7.263

- 1 **Position.** Baía dos Tigres (16°36'·0S, 11°46'·0E) lies about 90 miles SSW of Namibe.

- 2 **Function.** It is the most spacious bay in Angola, bounded on the W by Ilha dos Tigres, an extensive tongue of sand, the N extremity of which is Ponta da Marca (16°30'·9S, 11°42'·8E).

The bay is formed of a long inlet extending S for about 18 miles and its width varies progressively from 6 miles at the entrance to 2 miles at Saco dos Tigres at the S end.

The main activity of the island is fishing, and the small port of Leão (16°35'·8S, 11°43'·4E), on the E side of the island, is used by coastal and fishing vessels.

- 3 **Topography.** The land on the E side of the bay consists of a succession of high sandhills, which rise abruptly from the coastline, and extend in broken and irregular ridges far inland, without a vestige of vegetation.

Some chimneys and a water tower about 6 and 9½ miles respectively S of Ponta da Marca may be seen from seaward.

- 4 **Approach and entry.** The bay is approached and entered from N, between Ponta da Marca (16°30'·9S, 11°42'·8E) and the mainland 6 miles E.

Port Authority. The port is administered by the Captain of the Port of Namibe (7.245).

Local magnetic anomaly. Local deflection of the compass is reported to occur on the E side of the bay.

Limiting conditions

7.264

- 1 **Local weather.** The predominant wind is SW, it is less strong between June and September.

Strong W winds, Garroas, sometimes occur but are usually of short duration.

Winds from E, Lestadas, sometimes occur between May and July.

There is practically no annual rainfall, but fog is frequent between May and July.

Arrival information

7.265

- 1 **Outer anchorage** may be obtained in a convenient depth, with good holding ground, in any part of the bay and also as indicated on the chart, as follows:

Enseada das Barracas (16°31'·6S, 11°43'·4E), in depths of 29 m (16 fm).

At the S end (16°36'·0S, 11°43'·6E) of Enseada das Pedras in an anchorage known as Fundeadouro do Leão in a depth of 20 m (11 fm).

Enseada do Pau (16°39'·7S, 11°44'·0E) in depths of 20 m (11 fm).

Enseada dos Morrinhos (16°43'·2S, 11°44'·6E) in depths of 16 m (9 fm).

- 2 The direction of the wind, when it blows strongly, and the sea which it raises in the bay, are factors to be considered when seeking a sheltered anchorage.

- 3 **Prohibited anchorage.** A prohibited anchorage, the limits of which are indicated on the chart, where fishing is also prohibited lies in the S part of the bay.

Directions

7.266

- 1 From a position NE of Ponta da Marca (16°30'·9S, 11°42'·8E), the track leads S, for about 8 miles into the bay clear of known dangers. The chart is sufficient guide.

Useful mark:

Leão Light (grey square metal tower, 10 m in height) (16°35'·9S, 11°43'·4E).

Berths

7.267

- 1 Small piers at Leão (16°35'·8S, 11°43'·4E). Also, landing may be effected at a fishing village known as Armação, 2 miles N.

Port services

7.268

- 1 **Other facilities:** nurse but no hospital; customs office; post office.

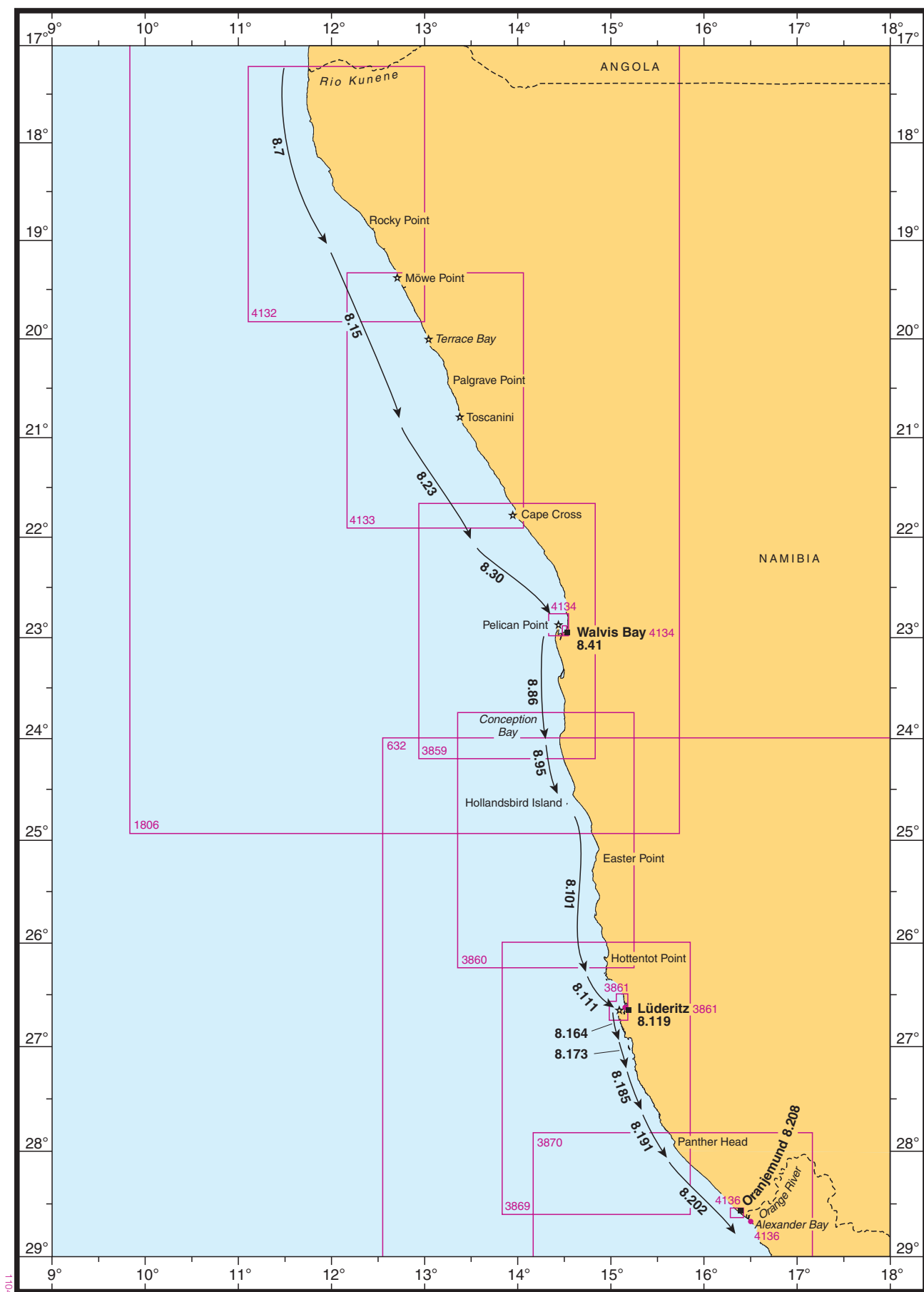
Supplies: fresh water by lighter but subject to the needs of the local population; small quantities of fish.

Communications: airfield 1 mile S of Leão.

NOTES



Chapter 8 - Rio Kunene to Orange River



CHAPTER 8

RIO KUNENE TO ORANGE RIVER

GENERAL INFORMATION

Charts 1806, 632

Scope of the chapter**8.1**

- 1 This chapter comprises a coastal route, anchorages and harbours along the coast of Namibia from Rio Kunene (17°14'·8S, 11°45'·6E) to Orange River (28°38'·0S, 16°27'·2E).

The chapter is divided into the following sections:

- Rio Kunene to Walvis Bay (8.4).
- Walvis Bay to Lüderitz Bay (8.82).
- Lüderitz Bay to Orange River (8.158).

Current**8.2**

- 1 The whole of the coast covered by this chapter is affected by the Benguela Current (1.193) which sets predominantly towards the N throughout the year at rates of up to 1 kn, although strong onshore sets may be encountered at any time.

Seamounts**8.3**

- 1 Seamounts W of the coast of Namibia are described in chapter 2.

RIO KUNENE TO WALVIS BAY

GENERAL INFORMATION

Chart 1806

Area covered**8.4**

- 1 This section describes the coastal route, anchorages and harbours from Rio Kunene (17°14'·8S, 11°45'·6E) to Walvis Bay (22°52'·5S, 14°30'·0E). Also described is the port of Walvis Bay.

It is arranged as follows:

- Rio Kunene to Rocky Point (8.7).
- Rocky Point to Palgrave Point (8.15).
- Palgrave Point to Cape Cross (8.23).
- Cape Cross to Walvis Bay (8.30).
- Walvis Bay (8.41).

Navigation**8.5**

- 1 **Cautions.** The coast between Rio Kunene and Walvis Bay (22°52'·5S, 14°30'·0E) is known as the Skeleton Coast, having been the scene of innumerable wrecks, not only the result of imperfect surveys but also because onshore sets by the Benguela Current (8.2) are frequently experienced. A further cause is the prevalence of fog, especially during the winter.
- 2 The coastline between Dune Point (20°02'·0S, 13°02'·7E), and Cape Cross (21°46'·3S 13°57'·0E), lies up to 2 miles farther SSW than charted.
- A coastal bank with numerous shoal patches extends along the length of this coast. See 8.9.
- 3 Vessels are therefore advised not to approach within 10 miles of the coast and in fog or thick weather to keep outside the 200 m (109 fm) depth contour as far S as Cape Cross (21°46'·3S 13°57'·0E). Thereafter, if making for Walvis Bay, they should remain outside depths of 50 m (27 fm) until Pelican Point Light is raised. If by-passing Walvis Bay, ships should keep well out to seaward.

Swell**8.6**

- 1 The normal moderate SW swell may become heavy after the passage of a deep depression in the South Atlantic.

RIO KUNENE TO ROCKY POINT

General information

Chart 4132, 4133

Route**8.7**

- 1 From a position W of Rio Kunene (17°14'·8S, 11°45'·6E), the route leads initially S thence SSE for about 122 miles to a position WSW of Rocky Point (18°58'·9S, 12°28'·6E).

Topography**8.8**

- 1 From the mouth of Rio Kunene the coast trends in a S direction for about 45 miles, and thence in a SSE direction for about 30 miles to Cape Frio (18°26'·0S, 12°00'·3E). The N part of this coast is backed by high shifting sand dunes, whilst from about 18 miles N of Cape Frio, it is backed by high land.
- 2 From False Cape Frio (18°28'·3S, 12°01'·3E), the coast trends SSE for about 41 miles to Rocky Point and presents an unbroken line of surf, the flat sand shore rising to the Hartmann Mountains, 35 miles inland which form prominent landmarks in clear weather.

Depths**8.9**

- 1 Along this stretch of coast, the 50 m depth contour extends from 2 to 7 miles offshore and encloses numerous shoals.

Principal marks**8.10**

- 1 **Landmarks:**

Water tower (17°11'·0S, 11°47'·2E) (Chart 1806).
The Sentinel (155 m in height) (19°02'·5S, 12°34'·2E).

Directions

(continued from 7.262)

8.11

- 1 **Cautions.** See 8.5.

From a position W of Rio Kunene (17°14'·8S, 11°45'·6E), the track leads initially S thence SSE, passing (with positions relative to Rio Kunene):

W of Bosluisbaai (7 miles S), thence:

- 2 W of Cape Frio (72 miles S), low and sandy, fringed with rocks. There are some prominent black hills inland of it. Fria Cove is situated 10 miles NNW of Cape Frio. A derelict observation shelter lies about 4 miles NE of the cove. Anchorage (8.13) may be obtained off Cape Frio.
- 3 The track then leads SSE, passing:
WSW of False Cape Frio (74 miles S), a slight projection.
- 4 Thence the track leads to a position WSW of Rocky Point (113 miles SSE), a rocky spit, projecting about 3 miles seaward. A large rounded boulder, whitened by guano is situated at the end of the spit. Anchorage (8.14) may be obtained off Rocky Point.

8.12

- 1 **Useful mark:**
Stranded wreck (18°08'5S, 11°51'1E).
(*Directions continue at 8.20*)

Anchorage**Off Cape Frio
8.13**

- 1 Anchorage may be obtained in fair weather, midway between Cape Frio (18°26'0S, 12°00'3E) and False Cape Frio, 2½ miles SSE, in a depth of 14 m (46 ft) sand and mud, but vessels should proceed to sea if the weather shows signs of deteriorating.

**Off Rocky Point
8.14**

- 1 Anchorage, temporary, may be obtained 1 mile NW of Rocky Point in a depth of 14 m (46 ft). There is no landing. Local knowledge is required.

ROCKY POINT TO PALGRAVE POINT**General information**

Chart 4132, 4133

Route**8.15**

- 1 From a position WSW of Rocky Point (18°58'9S, 12°28'6E) (8.11), the route leads SSE for about 97½ miles to a position WSW of Palgrave Point (20°26'6S, 13°15'0E).

Topography**8.16**

- 1 The coast in this vicinity is flat, generally rocky and surf beaten and is backed by gradually rising sandhills with occasional scrub vegetation.

Depths**8.17**

- 1 Along this stretch of coast, the depths are regular with the 50 m depth contour being located between 2½ and 5½ miles offshore. Rushby Reef (19°14'5S, 12°36'2E), a rocky shoal with depths of 7-6 m over it and which breaks occasionally, lies 2½ miles offshore.

Climatic table**8.18**

- 1 For climatic table see 1.226 and 1.243.

Principal marks**8.19****1 Landmarks:**

- The Sentinel (19°02'5S, 12°34'2E).
Black Sand Castle (19°07'4S, 12°36'0E).
Mine dump (19°55'5S, 13°02'5E).

Directions

(*continued from 8.12*)

8.20**1 Cautions** see 8.5.

From a position WSW of Rocky Point (18°58'9S, 12°28'6E), the track leads SSE, passing (with positions relative to Rocky Point):

- WSW of the mouth of Hoarusib River (5½ miles SSE). It is reported to be invisible during the dry season; the probability is that it is then closed. Thence:
- 2 WSW of Rushby Reef (15 miles SSE) (8.17), thence: WSW of Möwe Point (25 miles SSE). A lattice tower 26 m in height stands on the point and there are a few buildings 5 to 7½ cables inland. Thence:
- WSW of Dune Point (70 miles SSE) (8.5), a slight promontory. Terrace Bay lies at the head of a small bay of the same name about 3 miles NNW and can be identified by a mine dump (8.19). The settlement is a fishing resort and its lights can sometimes be seen from seaward. Thence:
- 3 WSW of Swallow Rocks (74 miles SSE), extending about 7½ cables seaward but breakers occur up to 1 mile offshore, and vessels should keep well offshore as soundings outside the 10 m (5 fm) line give little indication of danger. The coast between Swallow Rocks and Palgrave Point is radar conspicuous. Thence:
- 4 WSW of Uniab River mouth (81 miles SSE). It is recognised by moderately high sand cliffs on each side.

Thence the track leads to a position WSW of Palgrave Point (99 miles SSE), a slight projection from which a line of breakers extends in a NW direction for 6 or 7 cables. Koigab River, not easily distinguished, being nearly always closed, enters the sea close S of Palgrave Point. Anchorage (8.22) may be obtained N of Palgrave Point.

8.21**1 Useful marks:**

- Sand Table Hill (19°43'7S, 12°54'0E), a low tabular cone.
Great Table Mountain, 738 m in height, (20°14'5S, 13°30'4E).
Sugar Loaf Hill, 355 m in height, (20°24'1S, 13°26'7E).
Stranded wreck (20°34'2S, 13°19'0E).
(*Directions continue at 8.26*)

Anchorage**North of Palgrave Point****8.22**

- 1 Anchorage may be obtained in a depth of 18 m (60 ft), sand and mud, immediately N of Palgrave Point (20°26'6S, 13°15'0E). This anchorage is protected from the breakers to a certain extent and with a S wind is considered safe. However, a vessel should always be ready to put to sea on the approach of a SW gale. There is no landing place. Local knowledge is required.

PALGRAVE POINT TO CAPE CROSS

General information

Charts 4133, 3859

Route

8.23

- 1 From a position WSW of Palgrave Point (20°26'·6S, 13°15'·0E) (8.20), the route leads SSE for about 88 miles to a position WSW of Cape Cross (21°46'·3S 13°57'·0E).

Depths

8.24

- 1 Along this stretch of coast depths are regular with the 50 m depth contour generally between 2½ and 5 miles offshore.

Principal marks

8.25

- 1 **Landmarks:**

Brandberg, 2607 m (8554 ft) in height, (Chart 1806) (21°09'·0S, 14°33'·0E).

Mine (21°29'·2S, 13°51'·6E).

Factory with 2 chimneys (21°45'·2S, 13°59'·2E).

Directions

(continued from 8.21)

8.26

- 1 From a position WSW of Palgrave Point (20°26'·6S, 13°15'·0E), the track leads SSE, passing (with positions relative to Palgrave Point):
- 2 WSW of Toscanini (23½ miles SSE), an abandoned mining settlement, which can be identified readily on the radar. The mouth of Huab River, 9 miles SSE is usually dry, the foreshore in the vicinity being marked by dunes which are sickle-shaped and convex to the prevailing winds. Thence:
- 3 WSW of Ambrose Bay (38½ miles SSE) (8.28), where anchorage may be obtained. thence:
WSW of Ogden Rocks (39½ miles SSE), which extend up to 1½ miles W from the point marking the S side of Ambrose Bay, and should be given a wide berth. thence:
- 4 WSW of Ugab River (48 miles SSE) which is usually closed, but pools of fresh water can normally be found in its bed near its mouth. In February 1971, the mouth was open and the river was flowing strongly. Thence:
- 5 WSW of Hoist Point (55 miles SSE), low and sandy. Rocks with depths of less than 1·8 m (6 ft) over them, over which the sea breaks heavily, lie 1¾ miles SSW of the Point. An extensive salt pan lies close to the shoreline. Durissa Bay close NNW of the point provides no safe anchorage or landing. Heavy surf is prevalent on this coast. Bandom Bay lies about 5 miles SSE, and another bay known as Mile 105 lies a farther 7½ miles SSE, near the closed mouth of Messum River, which can be recognised by a solitary building close N of the river mouth. Between these two bays is the Ugab Salt Works. Thence:
- 6 WSW of Bocock's Bay (71 miles SSE), a fishing and recreation centre. A group of white rondawels stand at the head of the bay. A bay known as Horing Bay lies 3 miles SSE of this bay, which is also a small fishing centre.
- 7 Thence the track leads to a position WSW of Cape Cross (88 miles SSE), a barren spit extending 3 miles SW

from the general direction of the coast with low black cliffs at its seaward end, and off which a reef extends ½ cable. It is the S entrance point of Cape Cross Bay (8.29) where anchorage may be obtained. Inland from Cape Cross, flat, sandy, and rocky plains continue for some miles, rising to barren hills and mountains. A special light-buoy is moored about 4¾ miles WSW of the cape. In 1485, Diogo Cão, the Portuguese explorer, landed on Cape Cross and set up a stone monument. A modern replica now stands on the site. Permission to visit the site must be obtained from the magistrate at Swakopmund. A black tower (21 m high and surmounted by a black diamond), which housed the old light, is still visible.

8.27

- 1 **Useful marks:**

Great Table Mountain, 738 m in height, (20°14'·5S, 13°30'·4E).

Sugar Loaf Hill, 355 m in height, (20°24'·1S, 13°26'·7E).

Stranded wreck (20°34'·2S, 13°18'·8E).

Stranded wreck (21°16'·5S, 13°41'·3E).

Saman bis Berg, 714 m (2344 ft) in height, (Chart 1806) (21°29'·5S, 14°10'·4E).

(Directions continue at 8.36)

Anchorage

Ambrose Bay

8.28

- 1 **Anchorage** may be obtained in Ambrose Bay (21°02'·9S, 13°32'·5E) in depths of 6·5 m, 5 cables offshore, with a prominent cone shaped hillock bearing 056°. This anchorage is exposed and should only be used in good weather.

Local knowledge is required.

Landing is difficult except in the calmest weather.

Supplies: no fresh water.

Cape Cross Bay

8.29

- 1 **Description.** Cape Cross Bay is entered N of Cape Cross (21°46'·3S 13°57'·0E).

Topography. There is a village on the shore at Cape Cross Bay. A sealing factory (8.25) with two chimneys stands 1½ miles NE of the cape, and there are several other buildings nearby.

Anchorage may be obtained, with sandy bottom, about 1 mile offshore.

Landing. The boilers of two wrecks, one immediately to seaward of the factory and one, which covers and uncovers, a little farther E, indicate the area of rock-free beach on which it is possible to land in calm weather.

CAPE CROSS TO WALVIS BAY

General information

Chart 3859, 4134

Route

8.30

- 1 From a position WSW of Cape Cross (21°46'·3S 13°57'·0E) (8.26), the route leads SSE for about 73 miles, to a position about 2 miles NE of Pelican Point (22°52'·4S, 14°26'·8E).

Topography

8.31

- 1 The Erongo Mountains, of which the highest peak is 2349 m in elevation, lie about 75 miles inland.

A number of beacons (uncharted) stand on and near the coast between Hentiesbaai (22°07'0S, 14°16'7E) and Swakopmund, 36½ miles SSE.

The country between Swakop River (22°41'0S, 14°31'5E) and Walvis Bay town, 15 miles S, consists of sand hills 90 to 115 m in elevation behind coastal sand dunes which are 3 to 25 m high and covered with sparse vegetation.

Depths

8.32

- 1 The coastal waters between Cape Cross and Walvis Bay are clear of charted off-lying dangers except 3½ miles SW of Sierra Point (21°52'6S, 14°04'0E) where there is a shoal patch with a depth of 13 m over it which breaks occasionally. Depths are generally regular and slope gently towards the shore, the 50 m depth contour being located between about 5 and 9 miles offshore.

Rescue

8.33

- 1 A lifeboat is maintained at Swakopmund (8.40). See 1.53.

Principal marks

8.34

1 Landmarks:

- Factory with 2 chimneys (21°45'2S, 13°58'5E).
- Water tower (22°06'9S, 14°17'0E).
- Pump house (22°34'3S, 14°31'0E).
- Swakopmund Lighthouse (red tower, white band, 28 m in height) (22°40'5S, 14°31'5E).
- Pelican Point Lighthouse (black round tower, red bands, 34 m in height) (22°53'5S, 14°26'1E).

2 Major lights:

- Swakopmund Light — as above.
- Pelican Point Light — as above.

Other aid to navigation

8.35

1 Racon:

- Pelican Point Light (22°53'5S, 14°26'1E).
- See *Admiralty List of Radio Signals Volume 2*.

Directions

(continued from 8.27)

8.36

- 1 From a position WSW of Cape Cross (21°46'3S 13°57'0E), the track leads SSE, passing (with positions relative to Cape Cross):
 - Clear of a light-buoy (special) (4¾ miles WSW), thence:
 - Clear of a shoal patch (8.32) (8½ miles SSE), with a depth of 13 m over it, and:
- 2 WSW of Sierra Point (9 miles SSE), low and sandy and difficult to distinguish. Fishing craft sometimes anchor off the straight stretch of beach between Cape Cross and Sierra Point but it cannot be recommended, being exposed to W and SW winds, as well as the almost constant swell. Thence:
- 3 WSW of Farilhao Point, (29½ miles SSE), low and sandy, projecting 1 mile seaward. The mouth of Omaruru River, is situated about 4 miles NNW of the point. Hentiesbaai, a large settlement with a water tower (8.34), lies 2½ miles N of the point.

8.37

- 1 The track continues SSE, (with positions relative to Farilhao Point (22°09'4S, 14°17'2E):
 - WSW of Wlotzkasbaken (18 miles SSE), radar conspicuous. Wlotzkasbaken is a village of small scattered houses. A fishery beacon on a tripod, 4.6 m in height, stands in the village. Thence:
 - WSW of Rock Bay, (19¼ miles SSE), encumbered with rocks, and affording no shelter. The wreck of a trawler 1 mile S of this bay was prominent in 1970. Thence:
- 2 WSW of Swakopmund (34 miles SSE) (8.40), a town. The mouth of Swakop River is situated close S of the town. The river is dry except during one or two months in summer, and its entrance, about 2 cables across, is blocked by a sand bar. The entrance is indicated by thick green foliage and by a road bridge, and has rocks on its S side. There is a beacon on the S side of the river entrance, about 1½ miles S of Swakopmund Lighthouse. Swakop Reef, over which there are depths of less than 6 m, extends 5 cables from the coast S of the metal jetty (8.40) that projects from the town. Thence:
- 3 WSW of Caution Reef (38 miles SSE), extending 3 cables offshore. There is a tripod beacon near the extremity of the point from which the reef extends. Rand Rifles Railway Station is situated on the coast 5 miles S of the tripod beacon. Thence:
 - ENE of Spit Light-buoy (N cardinal) (43 miles SSE).

8.38

- 1 Thence the track leads to a position about 2 miles NE of Pelican Point (44 miles SSE). The extremity of Pelican Point is reported to be extending NE and vessels should not pass between Spit Light-buoy and the point.
- 2 **Caution.** Pelican Point Light (8.34) is exhibited from a position 1 mile SSW of the point. The lighthouse can readily be identified on the radar display in the form of a star pattern. However, care should be taken not to confuse the echoes from the cranes in Walvis Bay with those of Pelican Point Lighthouse.

8.39

1 Useful marks:

- Lagunenburg Beacon (21°49'5S, 14°05'1E), reported as being readily identified on the radar display.
 - Great Spitzkopje (21°49'8S, 15°10'2E) (Chart 1806) and Little Spitzkop about 6½ miles WSW can be identified on clear days.
 - Rössingberge (22°31'8S, 14°49'5E), 699 m in height, has several sharp peaks. North of this mountain is a remarkable thumb-shaped mountain.
 - Two radio masts (32 and 70 m in height, the taller marked by obstruction lights) stand near Swakopmund Lighthouse (8.34).
- (Directions continue for the coastal route at 8.91 and for entering Walvis Bay at 8.68)

Anchorage

Swakopmund

8.40

- 1 **Position and function.** Swakopmund (22°40'5S, 14°31'5E) a summer capital and holiday resort, ceased to be a seaport in 1915. It derives its fresh water from the same well sunk in the bed of Kuiseb River, that supplies Walvis Bay. The population is about 18 000. Swakopmund Road fronts the town.

Tidal levels. Mean spring range about 1.2 m; mean neap range about 0.6 m. See information *Admiralty Tide Tables Volume 2*.

2 **Landmark:**

Swakopmund Lighthouse (22°40′.5S, 14°31′.5E) (8.34).

Major light:

Swakopmund Light — as above.

Directions. When approaching Swakopmund Road care should be taken to avoid Swakop Reef (8.37).

Anchorage may be obtained with the lighthouse bearing 075°, distant 8 cables, in a depth of 12 m, sand and mud. This anchorage is not recommended in S winds, when vessels are advised to keep in depths of more than 15 m.

3 **Berth.** A metal jetty, projecting from the town, is reported (1993), to have been renovated as an historic monument and is not now used except for sightseeing.

Communications. Aerodrome about 4 km ENE of the town.

Rescue. There is an inshore lifeboat. See 1.53.

WALVIS BAY

General information

Chart 4134 and plan of Walvis Bay Harbour

Position

8.41

- 1 The port of Walvis Bay (22°57′.0S, 14°30′.0E), is situated on the W coast of Namibia, on the SE side of Walvis Bay.

Function

8.42

- 1 It is the major port of Namibia and the centre of a large fishing industry. Pilchards and snoek are the principal catches but a large white fishing industry is being developed.

Exports include fish meal and fish products, salt, copper, lead and vanadium ores, marble, granite and guano.

Imports include general cargo, plant and machinery, phosphates, bitumen and other petroleum products.

The town of Walvis Bay with a population of about 50 000, stands on the SE side of the bay.

Topography

8.43

- 1 For the topography between Swakop River (22°41′.0S, 14°31′.5E) and Walvis Bay see 8.31.

Walvis Peninsula, extending S of Pelican Point (22°52′.4S, 14°26′.8E) for 11½ miles, is composed entirely of sand and forms the W side of Walvis Bay. It has a general height of only from 0.6 to 1.2 m, though here and there are a few dunes which are constantly changing in shape, height and position by strong SW winds. During exceptionally high spring tides extensive areas on the E side of the peninsula are awash. The head of the bay consists of a shallow lagoon and a mud flat which is also awash at exceptionally high tides.

Port limits

8.44

- 1 The limits of the port, as indicated on the chart, are enclosed by an area bounded by a line drawn 270° from Die Punt (22°57′.5S, 14°28′.9E), to Walvis Peninsula, thence N to a distance of 12 cables N of Pelican Point, thence 090° to the coast.

Approach and entry

8.45

- 1 The port is approached and entered between Pelican Point (22°52′.4S, 14°26′.8E), and Bird Rock, 5 miles E.

Traffic

8.46

- 1 In 2002, the port was used by 1195 ships and handled 2.4 million tonnes of cargo.

Port Authority

8.47

- 1 Namibian Ports Authority, PO Box 361, Walvis Bay, Republic of Namibia.



Walvis Bay – Tanker Berth and Fishing Harbour (8.41)

(Original dated 2002)

(Photograph mv Doulos)

Limiting conditions

Controlling depths

8.48

- 1 The buoyed entrance channel is dredged to 12.8 m.

Draught

8.49

- 1 Vessels are required to have an under-keel clearance of 0.6 m at all times whilst alongside, and 1.2 m in the dredged channel.

Deepest and longest berth

8.50

- 1 Deepest: Container terminal (8.74).
Longest: Main quay (8.75).

Tidal levels

8.51

- 1 Mean spring range about 1.4 m; mean neap range about 0.6 m. See information in *Admiralty Tide Tables Volume 2*.

Density of water

8.52

- 1 The density of the water is 1.025 g/cm³.

Maximum size of vessel handled

8.53

- 1 Length 243 m, draught 12.8 m.

Local weather

8.54

- 1 **Swell.** The swell off the coast in the vicinity of Walvis Bay is normally moderate SW, becoming heavy from that direction after the passage of a deep depression at the Cape of Good Hope. A NW swell of any magnitude is rare and there is seldom enough in the bay to interfere with bunkering or watering vessels at anchor. With the strong E winds of winter there may be a considerable sea running out in the bay and strong afternoon sea breezes may also cause a lively sea, especially after consecutive days in summer, making boatwork unpleasant though not impossible.

8.55

- 1 **Fog.** Sea fogs are frequent off this coast at all seasons, but are more so, near the shore, in autumn and winter (April to September). They may appear at any time of the day with a SW wind, even of force 5, and in winter with a NW wind. The low sandy nature of the coastline renders it very dangerous to approach during fog, so that great caution is needed. The fogs may persist over the sea for several days, but normally they cover only the bay and the buoyed approach channel to the wharf during the night and early morning, receding seawards before noon until after dark when they may again approach the land, so that it is possible to enter the port on most afternoons even in foggy spells. An exception to this is the fog brought by NW winds which may approach and cover the bay at any time of the day, remaining, normally until the following morning. During the winter, land fogs frequently form after a clear dawn and drift over the bay, but these are usually of short duration and usually disperse by noon.

- 2 The incidence of fog in the harbour area and buoyed channel has, however, decreased appreciably in recent years.

8.56

- 1 **Volcanic disturbances.** On the 1st June, 1990, an island of mud or clay, 46 m in length, 9 m in width and 4.6 m in

height, was formed by volcanic action off the NE extremity of Pelican Point, at a distance of 90 m from the shore where depths of 14.6 m previously existed. Depths of from 12.8 to 18.3 m were obtained all round this island and between it and Pelican Point, and steam was observed rising from the N side of the island. A very strong odour of sulphuretted hydrogen prevailed. On the 7th June the entire island disappeared, and soundings indicated that the original depth of 14.6 m was restored.

- 2 In January 1949 numerous bubbles were observed coming to the surface inside Walvis Bay, followed by clouds of mud, 0.3 m in diameter. These disintegrated, and a smell of sulphuretted hydrogen was noted.

- 3 On 6th March, 1951, three small islands appeared above the surface of the sea W of Pelican Point. The first island appeared shortly before sunset, and arose from a bubbling sea. It remained for about an hour and then subsided beneath the surface. It was 91 m in length, brown in colour, and about 91 m offshore. The other two islands were farther out to seaward and appeared about the same time. They remained until daylight faded and by morning had disappeared.

- 4 The concentration of sulphuretted hydrogen, in the vicinity of Pelican Point, is at times such that pale coloured paints and brasswork on ships are affected. SAS *Protea* after surveying for a fortnight in the area, had all her white paint turned a dingy brown.

Arrival information

Port operations

8.57

- 1 To avoid delay in entering due to fog, it is advantageous, when fog conditions prevail, to arrange the time of arrival off the entrance to the bay to be after midday.

Port radio

8.58

- 1 There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required

8.59

- 1 ETA should be sent at least 72 hours prior to arrival, or, 96 hours prior if the period includes a Sunday or public holiday. VHF contact should be established when within 20 miles of the port and upon passing the reporting points indicated on the chart See *Admiralty List of Radio Signals Volume 6(3)*.

Outer anchorage

8.60

- 1 Vessels may anchor in designated anchorages Nos 1 and 2, limits of which are shown on the chart, as advised and directed by Port Control. The holding is generally good on a mud bottom.

Prohibited anchorage. Anchoring is prohibited within a radius of 6 cables of the Fairway Light-buoy. See also 8.63.

Pilotage

8.61

- 1 Pilotage is compulsory within port limits and is available 0600 to 2000. The pilot boards 5 cables NW of the Fairway Light-buoy (55°52'8S, 14°30'0E). See *Admiralty List of Radio Signals Volume 6(3)*.

The pilot ladder is to be equipped with manropes.

Tugs**8.62**

- 1 Tugs are available.

Prohibited area**8.63**

- 1 A large marine farm, in which navigation is prohibited, occupies the W part of the bay. The farm is centred on 22°55'·3S, 14°27'·0E and its limits are shown on the chart.

Harbour**General layout****8.64**

- 1 The harbour is entered through a dredged, buoyed channel, leading S through the bay, with all berthing facilities fronting the town of Walvis Bay.

Natural conditions**8.65**

- 1 **Current.** During periods when strong SSW winds are blowing, a counter-current sets into the bay in a clockwise direction. At times, when vessels are berthing or unberthing, this current is so considerable as to require tugs to use their engines to counteract it. Observations have shown that the stronger the wind from this direction, the stronger will be the current experienced. With winds from any other direction, or during periods of calm, there is no perceptible current.
- 2 **Scend.** During fresh N winds, a scend may be experienced along the cargo berths. The swell is seldom more than 0·6 m high but the ranging can be troublesome causing ships to part their moorings. The main quay is more affected than the container terminal; the tanker berth can also be affected.
- 3 **Tidal streams.** On the in-going tide a stream of ½ to 1 kn sets SW, across the dredged approach channel, and past the tanker berth and the container terminal. The out-going tide sets NE, out of the lagoon (8.43), and when this is flooded the stream may attain a rate of 4 kn at springs.

Climatic table. See 1.226 and 1.244.

Principal marks**8.66****Landmarks:**

- Pelican Point Lighthouse (22°53'·5S, 14°26'·1E) (8.34).
Radio Mast (22°56'·6S, 14°30'·5E).
Radio mast (22°57'·1S, 14°30'·5E).
Tower of Roman Catholic Church (22°57'·3S, 14°30'·3E). The Cross is illuminated at night.
Water tower (22°57'·7S, 14°30'·9E).

Major lights:

- Pelican Point Light — as above.
Front Channel Leading Light (22°57'·1S, 14°29'·8E) (8.70).

Other aid to navigation**8.67****Racon:**

- Pelican Point Light (22°53'·5S, 14°26'·1E).
See *Admiralty List of Radio Signals Volume 2*.

Directions for entering harbour

(continued from 8.39)

Approaches**8.68**

- 1 **Caution.** Owing to the low nature of the coast, the greatest caution must be exercised when approaching Walvis Bay in thick or foggy weather, or at night. See 8.38 for remarks on radar echoes.
- 2 The entrance to Walvis bay is difficult to make out from seaward, even when approaching from S. Approaching from N or NW it is recommended to sight Swakopmund (8.40) first, which town is prominent, especially when the sun is shining on the roof of its buildings, making them visible in misty weather long before the land is sighted.
- 3 Approaching from S, the buildings in the town of Walvis Bay will be seen first over the peninsula and will give a strong radar echo. If the weather is clear no difficulty will be experienced in entering the bay.

Seaward to pilot**8.69**

- 1 **Caution.** Course should not be altered towards the fairway buoy until the Roman Catholic Church tower (8.66) bears more than 160°, because the extremity of Pelican Point is reported to be extending NE. For the same reason, vessels should not pass between Spit Light-buoy and the point.
- 2 From a position about 2 miles NE of Pelican Point (22°52'·4S, 14°26'·8E), the track leads SE for about 2 miles to the vicinity of the Fairway Buoy (safe water) (22°52'·8S, 14°30'·0E) and the pilot boarding position as indicated on the chart.

Useful mark:

Bird Rock (22°52'·7S, 14°32'·2E), a low flat islet, which resembles a pier from seaward. A wooden platform stands on the islet from which about 1000 tonnes of guano are collected annually. The islet is connected to the mainland by a cableway supported by five 15 m high pylons.

Pilot to berths**8.70**

- 1 **Channel Leading Lights.** From the vicinity of the Fairway Buoy (safe water) (22°52'·8S, 14°30'·0E) and the pilot boarding position, as indicated on the chart, the alignment (183°) of the following lights leads S, for about 4 miles through the dredged Main Channel, marked by light-buoys (lateral), to the end of the leading line where there is a turning basin. Thence the track leads to the required berth.

Front light (warehouse) (22°57'·1S, 14°29'·8E).

Rear light (framework tower) (675 m from front light).

8.71**Useful marks:**

Radar tower (22°56'·8S, 14°30'·0E).

Radar tower (22°57'·0S, 14°30'·0E).

The alignment (246°) of the following lights may be of assistance when berthing:

Front light (platform) (22°57'·3S, 14°29'·1E).

Rear light (similar structure) (450 m from front light).

Fisheries Channel**8.72**

- 1 Fisheries Channel, dredged to 6·5 m and marked by light-buoys (lateral), is entered about 2¼ miles S of the Fairway Light-buoy (22°52'·8S, 14°30'·0E), and leads S for about 1 mile to a channel leading NE and SW giving



Walvis Bay – General cargo berths (8.75)

(Original dated 2002)

(Photograph – mv Doulos)

access to fishing and other berths. The NE end of the fishing harbour wharf is protected by a breakwater.

Berths

Tanker berth

8.73

- 1 A T-shaped jetty (22°56'·7S, 14°29'·9E) for tankers has a maintained depth of 10 m alongside. The berth can accept tankers up to 192 m LOA.

Container terminal

8.74

- 1 The container terminal (22°57'·0S, 14°29'·9E), provides three berths with a maintained depth of 12·8 m alongside. Ro-Ro vessels can be accommodated at Berth No 3.

Main quay

8.75

- 1 The main quay (22°57'·2S, 14°29'·5E) provides 5 berths with a maintained depth of 10·6 m alongside. Ro-Ro vessels can be accommodated at Berths Nos 4 to 6.

Port services

Repairs

8.76

- 1 Minor repairs can be effected.
There is a synchrolift at the SW end of the fishing quay which can accommodate vessels up to 2000 dwt, 80 m in length, 12 m in breadth, and 10 m draught.

Other facilities

8.77

- 1 Deratting can be carried out and Deratting Exemption Certificates issued; oily waste reception facilities; garbage disposal facilities; hospital.

Supplies

8.78

- 1 Fuel oil; fresh water, provisions; stores.

Communications

8.79

- 1 Airport at Rooikop about 15 km distant. Road and rail links to Republic of South Africa, Zimbabwe, Zambia, Botswana and Angola.

Rescue

8.80

- 1 An inshore rescue boat is maintained at Walvis Bay. See 1.53.

Small craft

8.81

- 1 A small basin with a maintained depth of 6 m is situated at the NE end of the container terminal (22°57'·0S, 14°29'·9E) and is used for tugs and other harbour craft.
A yacht club is situated at the SW end of Die Punt (22°57'·6S, 14°28'·9E).

WALVIS BAY TO LÜDERITZ

GENERAL INFORMATION

Charts 3859, 3860, 3869

Area covered

8.82

- 1 This section describes the coastal route, anchorages and harbours from Walvis Bay (22°52'·5S, 14°30'·0E) to Lüderitz Bay (26°36'·5S, 15°08'·5E).

It is arranged as follows:

Walvis Bay to Conception Bay (8.86).

Conception Bay to Hollandsbird Island (8.95).
Hollandsbird Island to Hottentot Point (8.101).
Hottentot Point to Lüderitz (8.111).
Lüderitz (8.119).

Topography

8.83

- 1 Nothing can be more uninviting than the appearance of the coast between Walvis Bay and the mouth of Orange River, situated about 375 miles S. It is composed of a long

range of sandhills, excepting that portion which lies between Spencer Bay (25°44'S, 14°50'E) (8.109) and Hottentot Bay (26°08'S, 14°57'E) (8.110), where there is a range of barren, desolate sand dunes, from 150 to 180 m in height, more forbidding in aspect, if possible, than the rest of the coast. Most of this coast is designated a restricted area, being in the diamond working area.

Marine Mining Vessels

8.84

- 1 Marine Mining Vessels (MMVs), which process gravel for diamonds, may be encountered in large numbers fairly close inshore between Hottentot Point (26°08'S, 14°56'E) and Orange River (28°38'S, 16°27'E). The barges are normally moored with a spread of four anchors, which may be marked by unlit buoys, and they display the lights and shapes prescribed in Rule 27 of *The International Regulations for Preventing Collisions at Sea* (1972).

Mariners are advised to keep at least 1500 m clear of MMVs.

Proclaimed Diamond Area

8.85

- 1 Landing or entry without a permit is prohibited in the following:
 - Diamond Area No 2.** A coastal strip about 110 km wide extending from a point on the coast about 20 km S of Sandwich Harbour (23°22'·8S, 14°27'·2E) to the parallel of 26°S.
- 2 **Diamond Area No 1.** A coastal strip about 90 km wide between the parallel of 26°S and the Orange River (28°38'·0S, 16°27'·2E). The town of Lüderitz and the coastal area between Agate Beach (8.157)

and Grosse Bucht (8.171), which includes Dias Point, is unrestricted.

WALVIS BAY TO CONCEPTION BAY

General information

Charts 4134, 3859, 3860

Route

8.86

- 1 From a position about 2 miles NE of Pelican Point (22°52'·4S, 14°26'·8E) (8.38), the route leads initially W, thence SSW, thence S for a total of 70 miles, to a position W of Conception Bay (23°55'·0S, 14°30'·0E).

Topography

8.87

- 1 The desolate coast between a position about 10 miles S of D'Ilhéu Point (23°22'·8S, 14°27'·2E) and Conception Bay, 33 miles farther S, is lined by a sand escarpment some 100 to 150 m in height. In German colonial days it was known as Die Lange Wand (The Long Wall).

Depths

8.88

- 1 **Caution.** The coastal waters S of 23°10'S are inadequately surveyed. Due to the possible existence of uncharted rocks and shoals, vessels should exercise extreme caution when navigating in depths of less than 100 m.

Principal marks

8.89

- 1 **Landmarks:**
 - Pelican Point Lighthouse (22°53'·5S, 14°26'·1E) (8.34).



Die Lange Wand (The Long Wall) (8.87)

(Original dated 1995)

(Photograph – Benedict Allen)

Radio mast (22°57'·1S, 14°30'·5E).
 Tower of Roman Catholic church (22°57'·3S, 14°30'·3E.) The Cross is illuminated at night.
 Water tower (22°57'·7S, 14°30'·9E).

2 Major lights:

Pelican Point Light — as above.
 Front Channel Leading Light (22°57'·1S, 14°29'·8E) (8.70).

Other aid to navigation

8.90

1 Racon:

Pelican Point Light (22°53'·5S, 14°26'·1E).
 See *Admiralty List of Radio Signals Volume 2*.

Directions

(continued from 8.39)

8.91

1 From a position about 2 miles NE of Pelican Point (22°52'·4S, 14°26'·8E), the track leads initially W to a position NW of Pelican Point, passing:

N of Spit Light-buoy (N cardinal), moored 1 mile N of Pelican Point (8.38).

The track continues SSW and thence S, passing (with positions relative to D'Ilhéu Point (23°22'·8S, 14°27'·2E)):

2 WNW of the S end of Walvis Peninsula (19 miles N) (8.43). A sandy spit has been reported to be developing N from the peninsula about 3 miles SSW of Pelican Point Light. Mariners are strongly advised to remain in a depth of more than 30 m as shoaling is possible. Moreover, the W side of the peninsula is steep-to. Thence:

3 W of D'Ilhéu Point, the S entrance point of Sandwich Bay, where anchorage (8.93) may be obtained. Discoloured water, very light in colour, has been observed in the vicinity of Sandwich Bay and for a few miles S of it. This discolouration extended from 2 to 3 miles offshore, and the line of demarcation between it and the blue water seaward was clear and distinct. The depths about 2½ cables inside this line were found to be about 25 m, sand.

4 Thence the track leads to a position W of Conception Bay (33 miles S) (8.94), a slight indentation in the coast, which provides no shelter. It is fringed by a bank which is fairly steep-to, there being depths of 11 m about 1 mile offshore. A beacon stands at the head of the bay. The coast in this vicinity would appear to be extending seaward.

8.92

1 Useful marks:

Stranded wreck (22°58'·2S, 14°24'·5E).
 Beacon (23°00'·5S, 14°24'·7E).
 White salt pile (23°01'·6S, 14°27'·8E).
 Black cliff (23°48'·5S, 14°30'·3E).

(Directions continue at 8.99)

Anchorage and harbours

Sandwich Harbour

8.93

1 **Description.** Sandwich Harbour, entered through Sandwich Bay, N of D'Ilhéu Point (23°22'·8S, 14°27'·2E), is no longer a harbour but a lagoon intermittently closed to the sea. When the lagoon is open to the sea across the shallow sandbar at D'Ilhéu Point, the harbour is full of fish but when it closes the water becomes stagnant and fish die in large quantities. Sandwich Harbour is a proclaimed bird

sanctuary being the haunt of flamingo and pelican. Some guano is obtained from the islands in the lagoon.

2 **Local knowledge** is required.

Anchorage, in fine weather, may be obtained 7 cables WSW of D'Ilhéu Point.

Landing is possible at the point.

Conception Bay

8.94

1 **Description.** Conception Bay (23°55'·0S, 14°30'·0E) (8.91), is visited only by small vessels for the provisioning of the settlement of the diamond mining company, situated about 9 miles inland.

2 **Anchorage.** Formerly, two beacons were situated on the coast near the head of the bay, which in line, bearing 102°, led to the best anchorage. Only the front beacon is now in existence. Vessels anchor outside the surf in about 15 to 20 m, fine grey sand. The anchorage affords no shelter.

CONCEPTION BAY TO HOLLANDBIRD ISLAND

General information

Chart 3860

Route

8.95

1 From a position W of Conception Bay (23°55'·0S, 14°30'·0E) (8.91), the route leads S, for about 43 miles to a position W of Hollandsbird Island (24°38'·4S, 14°32'·0E).

Topography

8.96

1 Similar features as described at 8.87 exist on this part of the coast.

Depths

8.97

1 See 8.88.

Principal mark

8.98

1 Landmark:

Sheer legs at Hollandsbird Island (24°38'·4S, 14°32'·0E).

Directions

(continued from 8.92)

8.99

1 From a position W of Conception Bay (23°55'·0S, 14°30'·0E) the track leads S, passing (with positions relative to North Rocks (24°29'·4S, 14°36'·7E)):

2 W of the wreck of *Eduard Bohlen* (30½ miles NNW), some distance inland, which can be readily identified on the radar display. Wrecked in 1909, while bringing in supplies for diamond prospectors, she had for many years the appearance of a ship steaming through the desert. In 1974, her rusting hulk remained upright. From this wreck, the coast stretches in an almost unbroken line for 31 miles to North Rocks. Thence:

3 W of a shoal patch (21 miles NNW) with a depth of 23·5 m over it, thence:

W of North Rocks, lying off a sandy point. Swartkop, a hill which has a dark appearance, lies 5 miles N of the rocks. Thence:

4 W of South Rocks (Black Reef), (2¾ miles SSW) close offshore. Two beacons stand on and near South Rocks. Meob Bay (Mutzel Bay), a small

indentation is contained between North and South Rocks. There is a small settlement and a meteorological station close S of the bay. Thence:

- 5 W of a shoal patch (12½ miles SW) with a reported depth of 27 m over it (1961).
- 6 Thence the track leads to a position W of Hollandsbird Island (10 miles SSW), 6 miles offshore; a rock of singular appearance, 12 m in height, which is surrounded by reefs on which the sea breaks heavily. Anchorage (8.100) may be obtained off the island.

(Directions continue at 8.105)

Anchorage

Off Hollandsbird Island

8.100

- 1 **Description.** The reef surrounding Hollandsbird Island (24°38'4S, 14°32'0E), is frequented by a vast number of Right Whales during the months of July and August, and the place is the resort of seal, and cormorants. The sea in the vicinity abounds in many kinds of excellent fish, which may be caught with hook and line in great quantities. A few turtle also may also be found on a small sandy beach on the E side of the island.

- 2 **Anchorage,** of a temporary nature, may be obtained, except in strong N winds, in a depth of 18 m, from 5 cables to 1 mile N of the island. It is inadvisable to anchor farther E lest the anchor becomes fouled on the bottom.

Landing is difficult, and often impracticable, as the surf breaks all round the island. The best season for landing is March and April, and the best time is in the early morning. Landing is comparatively easy by means of sheer legs on the N side, once a party has been placed on the island to work them. The sheer legs have been erected to assist in the recovery of guano.

HOLLANDBIRD ISLAND TO HOTTENTOT POINT

General information

Chart 3860

Route

8.101

- 1 From a position W of Hollandsbird Island (24°38'4S, 14°32'0E) (8.100), the route leads SSE for about 93 miles to a position W of Hottentot Point (26°08'3S, 14°55'9E).

Topography

8.102

- 1 Similar features as described at 8.87 exist on this part of the coast. The sand escarpment approaches the coast in the vicinity of Black Rock (24°57'5S, 14°49'1E).

Depths

8.103

- 1 See 8.88.

Principal marks

8.104

Landmarks:

- 1 Sheer legs at Hollandsbird Island (24°38'4S, 14°32'0E).
- White sand patches (24°53'1S, 14°49'0E).
- Black Rock (24°57'5S, 14°49'1E).
- Rock (25°51'5S, 14°54'5E) (8.107).
- Saddle Hill (25°53'5S, 14°54'7E), two sharp peaks close together.
- Black Rock (26°05'5S, 14°58'7E).

Directions

(continued from 8.99)

Hollandsbird Point to Easter Point

8.105

- 1 From a position W of Hollandsbird Island (24°38'4S, 14°32'0E) the track leads SSE, passing with positions relative to (Hollandsbird Island (24°38'4S, 14°32'0E)):
- 2 WSW of a shoal patch (3 miles SSW) with a depth of 14.6 m over it. From a position on the coast NE of Hollandsbird Island the coast stretches SSE for 25 miles, forming an indentation with a low sandy beach marked by patches of black rocks, and terminating in some conspicuous white sand patches (24°53'1S, 14°49'0E) on the coast. This part of the coast is lower than that S of it, and is difficult to distinguish on account of the heavy surf and spray which envelop it. These white patches of sand are accentuated in the afternoon when the sun shines on them. It is difficult to say of what these patches consist, for the whole country in the vicinity is sand, but whereas it is generally of a yellowish appearance, these patches are quite white and fan-shaped. Thence:
- 3 WSW of a shoal patch (5½ miles SSW) with a depth of 15.5 m over it. Breakers, the existence of which are doubtful, were reported in 1939, about 2¾ miles W. Thence:
- 4 WSW of Black Rock (24¾ miles SSE), flat topped. Saint Francis Bay is situated about 8½ miles SSE. There are a number of wells on the foreshore between South Rocks (8.99) and Sylvia Hill. Thence:
- 5 WSW of Sylvia Hill (35½ miles SSE), sharp and double-peaked, standing closely over a rounded point. Being higher than the surrounding countryside it is prominent when seen from SW. Between Sylvia Hill and a point on the coast about 5 miles farther S, the coast is foul, when in depths of less than 11 m. The coast between Sylvia Hill and Easter Point 8½ miles SSW, is sandy, and behind are the Uri-Hauchab Mountains, a range about 12 miles inland.
- 6 Thence the track leads to a position W of Easter Point (41¾ miles SSE).

Easter Point to North Point

8.106

- 1 From a position W of Easter Point (25°17'0S, 14°48'2E), the track continues SSE, passing (with positions relative to Easter Point):
- WSW of Oyster Cliffs (3 miles S), high and rugged sand cliffs, which have a sheen reminiscent of

mother-of-pearl, and which extend 3 miles farther S to Black Cliffs. East Hill, is a rocky summit 3 miles NE. Breakers extend for some distance off the coast immediately N of Oyster Cliffs. The coast in this vicinity should not be approached within 2½ miles, at which distance the depths are from 18 to 36 m, uneven bottom. Thence:

WSW of Black Cliffs (6 miles S), thence:

- 2 WSW of Knoll Point (11 miles S), rocky but inconspicuous and separated from Black Cliffs by a bay with a low and sandy foreshore. Between Knoll Point and some high cliffs 8 miles farther S, there is another open bay having a stranded wreck close offshore. This bay has a sandy shore, with occasional small sand cliffs backed by a range of shifting sand dunes 80 m in height. The high cliffs, with a rugged coastal range of hills behind them, extend a further 5 miles SSW to North Point. North Head, at an elevation of 281 m, lies 5 cables NW of North Point.
- 3 Thence the track leads to a position W of North Point (24 miles S).

North Point to Hottentot Point

8.107

- 1 From a position W of North Point (25°41'·0S, 14°50'·2E), the track continues SSE, passing (with positions relative to Dolphin Head (25°43'·8S 14°50'·0E)):
- 2 WSW of Spencer Bay (8.109) entered between North Point and Dolphin Head and where anchorage may be obtained. Mercury Island (8.109), bleak and covered with guano, lies about 7 cables N of Dolphin Head. The waves at times beat against the shores of the island with indescribable fury. Close off Dolphin Head, the wreck of SS *Otavi* can be seen; though wrecked in 1945, she was in 1974 in a remarkable state of preservation, with masts and upper works still standing. Thence:
- 3 WSW of Dolphin Head, the N extremity of South Head. These two heads are the most remarkable feature on this coast. South Head rises steeply from the sea, and when seen from a few miles to the N, has the appearance of an island. The coast continues SSE, with two bays, the shores of which are of sand and cliff. The S bay is backed by sandhills 150 to 200 m in height. Thence:
- 4 WSW of Saddle Hill (10½ miles SSE), standing immediately over the coast, and which may be observed in clear weather from Ichaboe Island, about 24 miles S. Saddle Hill has two peaks, North Peak and South Peak; a conspicuous rock lies 2 miles N. The coast between Saddle Hill and Hottentot Bay consists of a sandy beach, rising at a short distance inland, to a range of sandhills, 150 to 200 m in height. This beach is interrupted by Gibraltar, a rocky bluff, 8 miles S of Saddle Hill and by Black Rock (8.104) 4 miles farther SE.
- 5 Thence the track leads to a position W of Hottentot Point (25 miles S), the W extremity of a peninsula protecting Hottentot Bay (8.110), on its NE side, which appears as a succession of sandhills of about equal height. It is partly rocky and cliffy but is joined to the mainland by a low sandy neck. From S this peninsula appears as two low, bare, grey, isolated rocks, of which the N one is slightly higher; from W it shows up well, and is visible at a distance of from 10 to 12 miles. A beacon stands on the point. Anchorage (8.110) may be obtained in Hottentot Bay.

8.108

Useful marks:

- Harus Mountain (25°22'·1S, 15°11'·7E), 840 m in height.
 - Clara Hill (25°47'·0S, 14°52'·2E).
 - Blue Mountain (26°07'·8S, 14°58'·5E).
- (Directions continue at 8.115)

Minor bays

Spencer Bay

8.109

- 1 **Description.** Spencer Bay, a small sandy bay, is entered close N of Dolphin Head (25°43'·8S, 14°50'·0E) (8.107). During bad weather the sea breaks over the beach for a considerable distance and forms several lagoons in the little hollows behind it, which are frequented by numbers of flamingoes and other birds. The country inland abounds with game. Whales visit the bay during the months of July and August.
- 2 Mercury Island, lies about 7 cables N of Dolphin Head. There is a settlement on the island consisting of a few wooden houses built on concrete pillars. The rocky N part of the island, North Islet, is almost separated from the main part by a chasm through which the surf surges, and which is bridged by a plank bridge.
- 3 **Depths.** A shoal extends from the NE side of the island, with a depth of 6·7 m, rock, being found about 2 cables offshore. The other sides of the island are fairly steep-to. A bank, on which the depths are less than 9 m, extends 5 cables from the mainland E of Mercury Island, leaving only a narrow channel, about 1½ cables in width and with depths of 10·5 m, between it and the shoal extending from the island.
- 4 **Directions.** Vessels can enter Spencer Bay on both sides of Mercury Island.
- 5 **Local knowledge** is required.
- 5 **Anchorage** may be obtained in a depth of 11 m, 3 cables E of the N extremity of the island but care must be taken to avoid the shoal mentioned above. Close N of this anchorage, water deeper than 15 m is found but it is inadvisable to anchor here because in bad weather a very heavy swell sets in and breakers have been observed. It is inadvisable also for vessels to anchor on the S side of the bay when there is a heavy W swell. The bay is sheltered from the SSW winds by Dolphin Head, though they sometimes blow over it during violent gales.
- 6 **Landing** can be effected at a jetty, situated S of the gully on the NE side of the island.

Hottentot Bay

8.110

- 1 **Description.** Hottentot Bay is entered NE of Hottentot Point (26°08'·3S, 14°55'·9E) (8.107). There is an abundance of fish to be caught.
- 1 **Depths.** There are depths of less than 5·5 m within 5 cables of the shore in the SW part of the bay.
- 1 **Prohibited area.** The shores of the bay are a prohibited area because of the diamond deposits.
- 2 **Directions.** From a position about 2 miles N of Hottentot Point, the track leads SE into the bay, passing: NE of a shoal with a least known depth of 8·2 m, located 1 mile N of Hottentot Point. Tide rips occur between this shoal and the peninsula but, although there is apparently deeper water there, no useful purpose would be served by risking a short cut. A dangerous wreck lies close N of Hottentot Point.

Thence the track leads to the anchorage as indicated on the chart.

Useful mark:

Beacon (26°08'·4S, 14°56'·0E).

Anchorage may be obtained as indicated on the chart, in a depth of about 7·3 m, good holding ground of sand and mud, about 11 cables ENE of the beacon.

Landing on the E side of the peninsula.

HOTTENTOT POINT TO LÜDERITZ

General information

Chart 3869

Route

8.111

- 1 From a position W of Hottentot Point (26°08'·3S, 14°55'·9E) (8.107), the route leads SSE, and SE for about 34 miles to a position about 2 miles SW of North East Point (26°34'·9S, 15°09'·2E) at the entrance to Lüderitz Bay.

Topography

8.112

- 1 Between Hottentot Point and Lüderitz the coast is more indented. Rocky headlands and hills enclose several bays. Inshore of the coastal hills sand dunes still predominate.

Depths

8.113

- 1 **Caution.** Along this stretch of coast, there are numerous off-lying rocks and submerged reefs. Breakers occur at a considerable distance offshore. Combined with the prevalence of fog, coastal navigation can be precarious and ships on passage should exercise extreme caution when approaching the coast.

Principal marks

8.114

Major light:

Dias Point Light (white round tower, red band; 28 m in height) (26°38'·2S, 15°05'·6E).

Directions

(continued from 8.108)

Hottentot Point to Marshall Rocks

8.115

- 1 From a position W of Hottentot Point (26°08'·3S, 14°55'·9E) (8.107), the track leads SSE, passing (with positions relative to Hottentot Point):
- 2 WSW of Gallovidia Reef (2 miles S), several parts of which are awash and others above water. At its S extremity is a rocky islet, where during the laying and incubation season, numerous birds resort. This reef lies nearly in the direct track from Hottentot Bay to Douglas Bay, and care should be taken to keep in depths of not less than 30 m, as the sea has been observed to break heavily in depths of 15 m. A shoal, over which the least depth is 10 m

lies 1½ miles SSW of the islet at the S end of Gallovidia Reef; with a heavy swell, the sea breaks upon this shoal. Thence:

- 3 WSW of Danger Point, (8 miles S), where a broken and cliffy coast extends about 1½ miles S to Douglas Bay (8.117). The sea breaks heavily all along this part of the coast. A beacon known as Jakal Beacon stands near the coast, 4 cables S of Wreck Point. A shoal, with depths of less than 5·5 m over it, extends seaward for 1¼ cables from Wreck Point; and a detached shoal with a depth of 4·6 m over it, lies 2½ cables NW of the point; there is a rock with a depth of 6·4 m over it, about ¾ cables WSW of the point. Thence:
- 4 WSW of Ichaboe Island (8.117) (9 miles S), flat and mainly composed of granite, the highest point is at its SW end, upon which stands a pole beacon which is difficult to distinguish at any distance. Thence:
- 5 WSW of Douglas Point, (10½ miles S). An isolated shoal, with a depth of 12·8 m over it lies 7 cables WSW of the point. Breakers extend 3 cables N from Douglas Point and 1 cable NW from Rocky Point NE of Douglas Point.
- 6 Thence the track leads to a position W of Marshall Rocks (13 miles S), a dangerous and extensive reef lying up to 1½ miles offshore. Many of these rocks, being submerged, are not seen when the sea is smooth, but breakers extend in a SSE direction for about 3½ miles from the SE extremity of the reef along a shoal bank with depths of less than 20 m over it. Marshall Rocks should be passed at a distance of least 2 miles to seaward.
- 7 There is reported to be a deep-water channel inside Marshall Rocks through which vessels have passed when making for Douglas Bay but it is highly dangerous and should never be attempted except from urgent necessity. Staple Rocks, lie about midway between the SE end of Marshall Rocks and the coast to which it is probable that they are joined.

Marshall Rocks to North East Point

8.116

- 1 From a position SW of Marshall Rocks (26°21'·0S, 14°57'·3E) (8.115), the track leads SE, passing (with positions relative to Marshall Rocks):
SW of Marshall Rocks, thence:
SW of Anichab Rocks (5 miles ESE), low and which break, thence:
- 2 SW of Boat Bay Rocks (8¼ miles SE), the largest of which is known as Eighty Four, a ledge upon which seals are hunted in season. Breakers fringe nearly the whole of the coast. Boat Bay (8.118), where anchorage may be obtained, lies 2½ miles SE. Kegelberg, a prominent hill, comprised of white quartz, lies inshore of Boat Bay Rocks at the S end of a low chain of hills. Thence:
- 3 SW of a special buoy (8 miles SSE), thence:
SW of Dumfudgeon Rocks (12 miles SE), two rocks visited for seal hunting, thence:
SW of Dagger Rocks (14½ miles SE). A shoal patch with a depth of 18 m lies 1½ miles W of the rocks.
- 4 Thence the track leads to a position, about 2 miles SW of North East Point (26°34'·9S, 15°09'·2E), which is bold and rocky. North Reef extends 3½ cables SW from the

point. An islet lies on the reef 2 cables SW of the point with a rock which dries 1 cable farther SW. There is a shoal patch with a depth of 4.5 m, 1½ cables S of the islet.

(Directions continue for the coastal route at 8.167 and for entering Lüderitz Bay at 8.141)

Anchages and harbours

Douglas Bay and Ichaboe Island

8.117

- 1 **Description.** Douglas Bay lies between Wreck Point (26°17'·0S, 14°56'·9E) and Douglas Point, 1½ miles farther S. The S part of the bay is divided into two smaller bays by Rocky Point, lying 4 cables NE of Douglas Point. The S of these is known as Kartoffel Bucht and affords no shelter but a bay known as Post Office Bay, on the NE side of Rocky Point, is sheltered. Fish may be caught in great quantities in the bay.

- 2 Ichaboe Island (26°17'·3S, 14°56'·1E), is a valuable source of guano and is the home of a colony of cormorants. The guano collecting season is in April and May, when all the birds have departed. After an absence of two months, the birds suddenly reappear in one immense flight, which is said to last only one hour.

- 3 There is a settlement with a jetty on the NE side of the island. A flagstaff stands in the settlement.

Depths. Foul ground and reefs, upon which the sea usually breaks extend W and N from the island for 2½ cables, and S for 1 cable. A rocky outcrop known as Little Ichaboe lies 2½ cables off the W side of the island. Off the E side, there are depths of 5.5 m, ½ cable offshore, with a sandy bottom.

- 4 There is a depth of 6.4 m, 1¾ cables NE of the settlement, between which depth and the rock off Wreck Point (8.115) there is a channel 1½ cables in width in which there are depths of 10 m.

Current. The tidal stream is imperceptible, but usually a N current sets through the anchorage at the rate of about 1 kn.

- 5 **Directions.** The anchorage may be approached from either N or S of Ichaboe Island (8.117), giving it a berth of at least 4 cables. The latter approach is preferable, as the N passage is narrower, and the sea breaks in bad weather for several miles N of the island.

- 6 **Anchorage,** may be obtained either in a depth of 10 m, 2 cables E of the settlement on Ichaboe Island (26°17'·3S,

14°56'·1E), or, in about 13 m, 3 cables ENE of the S extremity of Ichaboe Island. These anchorages can hardly be considered more than fairly good, the holding ground being composed of sandy patches among rocks. In the first anchorage, vessels are well-sheltered from the heavy swell which sets in but NE of the island the rollers are dangerously heavy. Rollers come in without giving any previous warning and it is no unusual occurrence for the approaches on each side of the island to break right across, leaving comparatively smooth water at the anchorages. See 1.201.

- 7 **Landing** may be effected at Post Office Bay. Landing on Ichaboe Island is difficult, the best landing place being at the jetty on the NE side of the island.

Boat Bay

8.118

- 1 **Description.** Boat Bay is entered NW of the S entrance point (26°27'·3S, 15°06'·9E), a rocky headland 67 m high. A few derelict huts and a mast stand upon the headland.

Anchorage, sheltered from the S, may be obtained in depths from 7 to 11 m, noting a dangerous wreck in the S part of the bay. Vessels should proceed to sea at once should W or N winds threaten.

LÜDERITZ

General information

Chart 3861 and plan of Lüderitz

Position

8.119

- 1 The Port of Lüderitz (26°38'·5S, 15°09'·4E) lies in the SE part of Lüderitz Bay.

Function

8.120

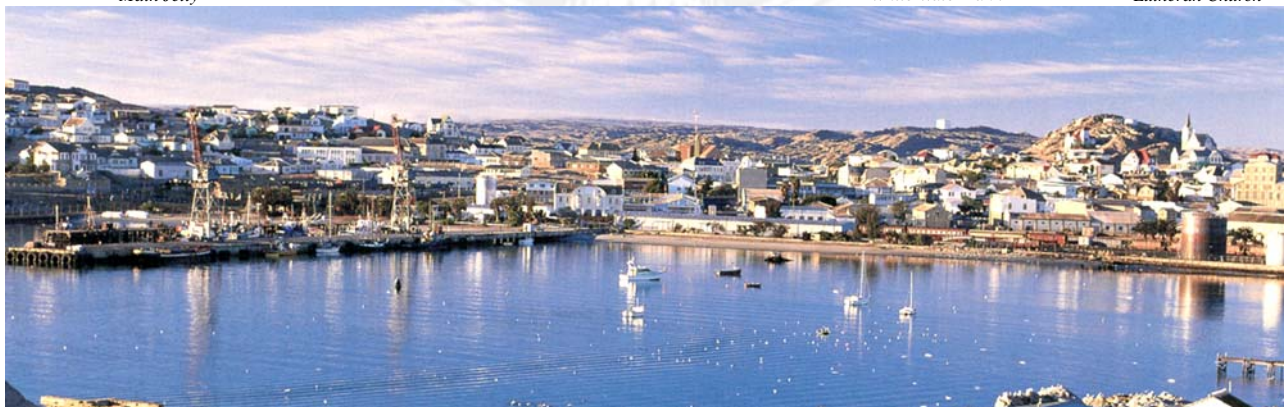
- 1 Lüderitz Bay was first named Angra dos Ilhéus by Bartholemeu Dias in 1486, which name was later changed to Angra Pequena. A merchant from Bremen, Adolf Lüderitz arrived in 1883, and in the following year South West Africa was annexed by Germany. The town owes its prosperity to the discovery of diamonds in 1908, in the districts of Kolmanskop and Pomona.

- 2 Within the bay are several fairly good anchorages which are easy of access, but they are exposed to the swell, which, being deflected by the contour of the land, enters the bay from NW.

Main Jetty

White Water Tank

Lutheran Church



Menai Creek – Lüderitz from Shark Island (8.119)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

- 3 Lüderitz is the second port of Namibia, all types of cargo are handled. Main exports are canned rock lobster tails, and other fish products, as well as seal oils and skins. The port also serves the offshore diamond and petroleum industries.

The town of Lüderitz with a population of about 14 000, stands on the shore in the SE corner of Lüderitz Bay. The buildings are mainly constructed in a colonial style. The town is a popular tourist resort.

Seal and Penguin Islands in the E part of Lüderitz Bay and are valuable sources of guano.

The climate though hot and windy, is healthy.

Port limits

8.121

- 1 East of a line from Angra Point (26°37'·6S, 15°07'·7E), to a point 1 097 m due N thereof, then by a line from the latter point to the S shore extremity of North East Point (26°34'·9S, 15°09'·2E).

Approach and entry

8.122

- 1 The port is approached through Lüderitz Bay and entered NE of Angra Point, situated between North East Point (26°34'·9S, 15°09'·2E) (8.116), and Dias Point (8.167) 4½ miles SW.

Traffic

8.123

- 1 In 2002, the port was used by 2364 ships and a total of 302 938 tonnes of cargo was handled.

Port Authority

8.124

- 1 Namibia Ports Authority, PO Box 836, Lüderitz, Republic of Namibia.

Limiting conditions

Controlling depths

8.125

- 1 There are charted depths in excess of 10 m in the outer bay.
The channel into Menai Creek (8.138) is dredged to a depth of 8·05 m.

Deepest and longest berth

8.126

- 1 Quay (8.147).

Tidal levels

8.127

- 1 Mean spring range about 1·4 m; mean neap range about 0·6 m. See information in *Admiralty Tide Tables Volume 2*.

Density of water

8.128

- 1 The density of the water is 1·026 g/cm³.

Maximum size of vessel handled

8.129

- 1 **Alongside.** Length 150 m, draught 8·0 m.
Anchorage. Inner anchorage 7·5 m, outer anchorage 18 m.

Local weather

8.130

- 1 Strong SSW to SW winds blow almost continuously for about ten months of the year in the form of a sea breeze, being at their most intense in summer when gales can occur. It is, however, usually calm in the early morning.
2 Easterly berg winds reaching force 7 occur occasionally for short periods during July and August.
Morning fog often occurs outside the harbour area and is most frequent between January and April.

Arrival information

Port operations

8.131

- 1 Berthing generally takes place between 0600 and 2200, and at any other time in an emergency or on request if tide restricted.

Port radio

8.132

- 1 There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required

8.133

- 1 ETA should be sent 72 hours prior to arrival with Sundays and public holidays discounted. VHF contact should be established when within 20 miles of the port. See *Admiralty List of Radio Signals Volume 6(3)*.

Outer anchorage

8.134

- 1 Anchorage may be obtained as indicated on the chart, as follows:
Robert Harbour, fairly good and sheltered, but the holding ground can be poor in places and vessels have been known to drag. Anchorage may be obtained about 2½ cables ESE, of the SE end (26°37'·3S, 15°09'·4E) of Penguin Island (8.157), in a depth of about 7 m. Also, on the line of the leading lights about 3 cables from the front light, in a depth of about 8 m, clay but this berth is more exposed to the NW swell.
Lüderitz Harbour, but only in the outer part according to draught and within the green sector (039°–136°) of Shark Island Light. The holding is good but a heavy NW swell may set in at any time.
Anchorage may also be obtained outside the harbour limits in Shearwater Bay (8.169).

Pilotage

8.135

- 1 Pilotage is compulsory for all vessels within the harbour limits. The pilot boards 1 mile N of Angra Point in good weather or 7 cables NE of this point in bad weather. See *Admiralty List of Radio Signals Volume 6(3)*.
The pilot ladder is to be equipped with manropes.

Tugs

8.136

- 1 Tugs are available.

Restricted area

8.137

- 1 **Marine farm.** An area designated for mussel culture, the limits of which are indicated on the chart, extends 3 cables E from the E side of Seal Island. Vessels should

keep well clear of the area which contains unlit floating platforms and booms.

Harbour

General layout

8.138

- 1 The harbour and berths are situated in Menai Creek, E of Shark Island and fronting the town of Lüderitz. Menai Creek is approached through a dredged channel marked by light-buoys.

Natural conditions

8.139

- 1 **Currents** are negligible in Menai Creek, but a tidal stream sometimes occurs during the in-going tide and sets down the E side of Shark Island and may cause difficulty to vessels berthing.

Climatic table. See 1.226 and 1.245.

Principal marks

8.140

- 1 **Landmarks:**

Nautilus Hill (26°37'·3S, 15°10'·2E).

Water tower, white (26°40'·5S, 15°09'·4E).

Major light:

Dias Point Light (26°38'·2S, 15°05'·6E) (8.114).

Directions for entering harbour

(continued from 8.116)

Approaches

8.141

- 1 No difficulty should be experienced in entering the harbour during daylight. Morning fog may occur but it is usually clear by noon. In hazy weather or low-lying fog, the white water tower (8.140) often provides the first recognisable landmark.
- 2 At night, when approaching from N, course should be shaped to pass at least 1½ miles off North East Point, thence altering course to bring Shark Island Light ahead when within the white sector (136°–161°) of the light. Thereafter course is shaped for entering Robert Harbour or Lüderitz Harbour as appropriate.
- 3 At night, when approaching from S, an offing of at least 2 miles should be preserved until NE of Dias Point Light, thence course is altered E to pass N of Angra Rock Light-buoy (26°36'·9S, 15°07'·5E) keeping in the fixed white sector (200°–230°) of the light. The fixed red sector (230°–290°) covers the reef and the SE shore of Shearwater Bay. After passing the light-buoy, the white

sector of Shark Island Light is entered and course can be shaped for entering Robert Harbour or Lüderitz Harbour.

Pilot to Menai Creek

8.142

- 1 From the vicinity of the pilot boarding position about 2 miles SW of North East Point (26°34'·9S, 15°09'·2E) the track leads SE for about 1 mile to the alignment of leading lights, passing:

NE of a Angra Rock Light-buoy (N cardinal) moored 6¾ cables N of Angra Point (26°37'·6S, 15°07'·7E), marking the the N extremity of a reef. Angra Rock lies on the reef, with the sea breaking between the rock and the point. Vessels should not pass between the point and the light-buoy.

8.143

Robert Harbour Leading Lights:

Front light (white triangular daymark) (26°37'·9S, 15°09'·9E).

Rear light (white triangular daymark) (210 m from front light).

From a position at the beginning of the leading line, NE of Angra Point (26°37'·6S, 15°07'·7E), the alignment (120°) of these lights leads SE for about 1 mile to the entrance to Menai Creek, passing (with positions relative to the N end (26°37'·9S, 15°09'·2E) of Shark Island):

SW of a light-buoy (S cardinal) (5 cables N), marking a reef extending about 1 cable SW of Penguin Island, thence:

NE of a light-buoy (N cardinal) (2½ cables N), thence:

NE of the N end of Shark Island, from which Shark Island Light (metal framework tower, 3 m in height) is exhibited. A reef extends 1 cable N of the point.

8.144

- 1 **Leading line.** The alignment (195.5°) of Main Jetty Light (8.145) in transit with the Lutheran Church (8.145) leads through a short dredged channel, 60 m wide, marked by light-buoys (lateral), into Menai Creek and to the berths.

8.145

Useful marks (with positions relative to Angra Point (26°37'·6S, 15°07'·7E)):

Dias Cross (2¼ miles WSW) (8.167).

Chimney (2¼ miles ENE).

Beacon (2½ cables SSE), W of three.

Water tower (2 miles SE).

Radio mast (2¼ miles SE)

Lutheran church (2 miles SE).

Leading lights
in line 120°

Pescanova Jetty



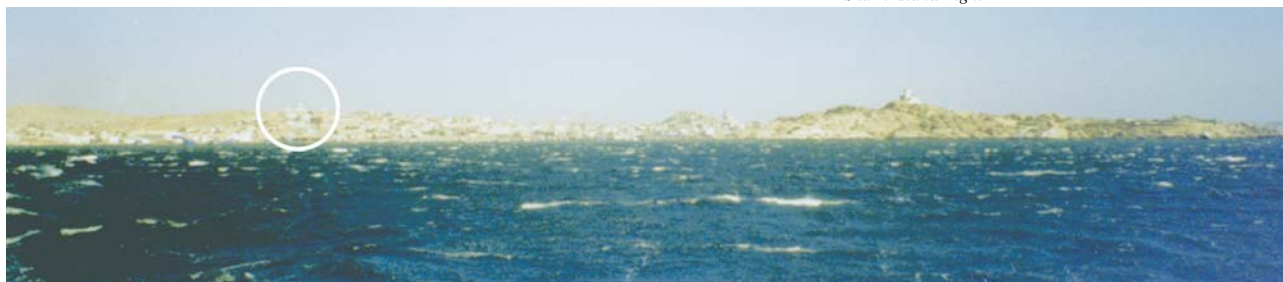
Robert Harbour leading lights (8.143)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

Radio Mast

Shark Island Light



Menai Creek entrance (8.143)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

Main Jetty Light (1¼ miles SE).
Timber Jetty Light (1¼ miles SE).

Berths

8.146

- 1 Alongside depths are charted depths. The port authorities should be contacted for the latest information.

Quay

8.147

- 1 The new quay (26°38'4S, 15°09'3E) is 500 m in length, provides three berths and can accommodate vessels up to 150 m LOA. The outer 300 m has an alongside depth of 8.65 m and the inner part depths of 6.0 m reducing to 4.6 m.

Other berths

8.148

- 1 There are two jetties at the head of Menai Creek. Main Jetty, the longer, is of concrete construction with a depth of 6.0 m at its outer end shoaling to 4.8 m at its inner end. It can accommodate vessels up to 105 m LOA. The other jetty, Timber Jetty, is used only by fishing and small craft and has a depth of 2.9 m alongside.

Pescanova Jetty (26°38'0S, 15°09'7E) is located at the NE end of Menai Creek and serves a fish factory. The jetty is reported to be untenable in N winds.

Minor berths in Robert Harbour

8.149

- 1 LBC (Lüderitz Bay Canning) and Lalandii jetties are situated on the NE shore of Robert Harbour and serve fish factories.

Anchorage

8.150

- 1 In the past, vessels worked cargo at the anchorages but with the development of the new quay this practice occurs less often. See 8.134.

Port services

Repairs

8.151

- 1 Minor repairs can be carried out. There are two slipways which are used by fishing vessels and lighters. The largest has a capacity of 400 tonnes.

Other facilities

8.152

- 1 Oily waste reception facilities; garbage disposal facilities; hospital.

Supplies

8.153

- 1 Fuel oil and fresh water; provisions and stores.

Communications

8.154

- 1 Lüderitz Airport about 12 km distant.

Rescue

8.155

- 1 Line throwing apparatus.

Minor bays

North Harbour

8.156

- 1 **Description.** North Harbour is entered between Flamingo Island (26°35'0S, 15°09'8E) and Seal Island 5½ cables SSW.

Directions. From the vicinity of the pilot boarding position about 2 miles SW of North East Point (26°34'9S,

Radio Mast

Lutheran Church

Shark Island



Menai Creek buoyed channel (8.143)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

15°09'·2E) the track leads NE for about 1½ miles, to a position about 6 cables SW of North East Point. Thence the track leads E for about 8 cables, passing (with positions relative to North East Point):

- 2 S of North Reef (3 cables SW) (8.116), thence:
N of Seal Island (6 cables S), round topped, of a dark colour, and its N end slopes more gradually than does the S end.

Thence the track leads to a position S of Flamingo Island (4 cables ESE), which is connected to the mainland by a sandy neck which dries at low water.

- 3 **Anchorage.** Confined anchorage may be obtained, as indicated on the chart, S of Flamingo Island in depths of 6 to 8 m, fine sand, but it is exposed to the predominant NW swell.

Landing. There is a jetty, in ruins, on the NE side of Flamingo Island.

There is a landing place on the NE side of Seal Island.

Smithfield Bay

8.157

- 1 **Description.** A bay known locally as Smithfield Bay is

entered between Seal Island (26°35'·8S, 15°09'·4E) and Penguin Island, 5 cables S. The channel, with a least depth of 8·4 m, is narrowed to a width of 1 cable by reefs extending from the islands.

- 2 **Directions.** From the vicinity of the pilot boarding position about 2 miles SW of North East Point (26°34'·9S, 15°09'·2E) the track leads E, passing:

S of Seal Island (8.156). A reef, which breaks heavily, extends about 2½ cables S from the S extremity of the island. And:

N of Penguin Island, which is composed of large white boulders. A reef extends about 1 cable N from the N extremity of the island.

- 3 Thence the track continues into Smithfield Bay, in the S part of which is Tiger Reef (26°36'·8S, 15°09'·6E) marked by a light-buoy (isolated danger).

Anchorage. Confined anchorage may be obtained in the middle of the bay in a depth of about 7 m but the bottom of soft, grey mud provides poor holding.

Landing. Agate Beach on the E shore of the bay is a popular picnic spot for the inhabitants of Lüderitz.

LÜDERITZ BAY TO ORANGE RIVER

GENERAL INFORMATION

Charts 3861, 3869, 3870

Area covered

8.158

- 1 This section describes the coastal route, anchorages and harbours from Lüderitz Bay (26°36'·5S, 15°08'·5E) to Orange River (28°38'·0S, 16°27'·2E).

It is arranged as follows:

- Lüderitz Bay to North Long Island (8.164).
- North Long Island to Albatross Rocks (8.173).
- Albatross Rocks to Black Point (8.185).
- Black Point to Panther Head (8.191).
- Panther Head Orange River (8.202)

International boundary

8.159

- 1 The international boundary between Namibia and the Republic of South Africa, as far E as the meridian of 20°E, is marked by Orange River.

Depths

8.160

- 1 Much of the area covered by Chart 3869 has not been systematically surveyed. Many depths are from miscellaneous lines of passage soundings or old leadline surveys. Uncharted shoals may exist. For further details, see the Source Diagram and *The Mariner's Handbook* which contains guidance on the interpretation of Source Data.

Crayfish trap fishing

8.161

- 1 **Crayfish trap fishing.** Mariners should navigate with caution when within 3 miles of the coast, S from Lüderitz, on account of the presence of anchored or drifting small fishing vessels and their unlit bottom gear, marker buoys and recovery lines.

Marine Mining Vessels

8.162

- 1 See 8.84.

Proclaimed Diamond Area

8.163

- 1 See 8.85.

LÜDERITZ BAY TO NORTH LONG ISLAND

General information

Charts 3861, 3869

Route

8.164

- 1 From a position about 2 miles SW of North East Point (26°34'·9S, 15°09'·2E) (8.116), the route leads initially W, thence SW and S, for about 17 miles to a position W of North Long Island (26°49'·1S, 15°07'·8E).

Topography

8.165

- 1 The coast between Lüderitz Bay and North Long Island, continues, as that N of Lüderitz Bay described at 8.83, to be indented with many small bays enclosed by rocky headlands. The interior is desert, comprising sandy valleys with sparse scrub vegetation lying between ranges of sandstone and quartz hills.

Principal marks

8.166

- 1 **Landmarks:**

Nautilus Hill (26°37'·3S, 15°10'·2E).

Water tank (26°40'·5S, 15°09'·4E).

Albatross Peak (26°45'·3S, 15°09'·3E), double headed, reddish in colour.

- 2 **Major light:**

Dias Point Light (26°38'·2S, 15°05'·6E) (8.114).

Directions

(continued from 8.116)

Lüderitz Bay to Halifax Island

8.167

- 1 From a position about 2 miles SW of North East Point (26°34'·9S, 15°09'·2E) (8.116), the track leads initially W,

passing (with positions relative to Halifax Island (26°39'·1S, 15°04'·8E)):

- 2 N of Dias Point (1¼ miles NE), the N extremity of a rocky peninsula. Foul ground extends up to 3¼ cables NW of the point. Dias Point Light (8.114) is exhibited from a position 2½ cables S of the point. Dias Cross, marking the site of similar cross erected by Bartholemeu Dias in 1486, is difficult to distinguish and stands on a rocky outcrop separated from the point by a ravine over which there is a wooden causeway.
- 3 Thence the track leads SW to a position W of Halifax Island, close off the W entrance to Guano Bay (8.170), where anchorage may be obtained. On the island there are some huts, and on the NE extremity stands a flagpole. Seen from S it appears as a range of black hummocks, and has been mistaken in the past for Dias Point. The island is separated from the mainland by a narrow channel. Halifax Reef, portions of which are above water, extends in a NNW direction, for about 5 cables, from the island. From Halifax Island the rocky coast stretches 5½ miles S to the N point of Grosse Bucht (8.171).

Halifax Island to North Long Island 8.168

- 1 From a position W of Halifax Island (26°39'·1S, 15°04'·8E), the track leads S, passing:
W of Grosse Bucht (26°44'·5S, 15°06'·0E) (8.171).
From this bay the rocky coast stretches SSE for about 3½ miles to Wolf Bay.
- 2 Thence the track leads to a position W of North Long Island (26°49'·1S, 15°07'·8E), low lying, and almost divided into two parts. It lies about 5 cables offshore, close S of the entrance to Wolf Bay, a bay 5 cables in width, the shores of which are sandy with a landing place on the small beach at its head. South Long Island, situated 5 cables S of North Long Island, lies 1½ cables off a small point on the mainland. Both the Long Islands are occupied by colonies of seals.
(*Directions continue at 8.176*)

Anchorage and harbours

Shearwater Bay 8.169

- 1 **Description.** Shearwater Bay is entered between Dias Point (26°38'·0S, 15°05'·6E) (8.167) and Angra Point 2 miles ENE. Landing can be effected at three places. On the SE shore of the bay at Stormvogel Bucht (Rhennin's Cove), there is a disused whaling station with many large buildings and several tall chimneys. The two other landings are on the SW shore of the bay, as indicated on the chart.
- 2 **Anchorage** may be obtained, with good shelter except from N and NW winds in depths from 7 to 14 m. However, vessels anchoring should be prepared to weigh anchor at short notice as the anchorage is subject to sudden squalls.

Guano Bay 8.170

- 1 **Description.** Guano Bay, is situated between Dias Point and Halifax Island (26°39'·1S, 15°04'·8E), about 1 mile SW.
Anchorage may be obtained as indicated on the chart, in a depth of 10 m, about 3 cables NE of the flagpole on Halifax Island. Inshore of the 5 m depth contour, the depths decrease rapidly and the bottom becomes rocky and foul.

Grosse Bucht

8.171

- 1 **Description.** Grosse Bucht (26°44'·S, 15°06'·E) also known as Big Bay, is about 9 cables in width and has a sandy coastline alternating with rocks.
- 2 **Anchorage.** Small vessels may seek shelter from N winds at the head of the bay under the lee of coastal hills but the anchorage is not recommended because the bottom is said to be foul.
- 3 **Landing** is possible in good weather in the NW part of the bay. The sandy beach at the head of the bay is a favourite picnic place for the inhabitants of Lüderitz.

Small craft

East of North Long Island

8.172

- 1 **Anchorage** affording good shelter to small craft, can be obtained between North Long Island (26°49'·1S, 15°07'·8E), and the mainland but local knowledge is required.
- 2 **Landing** is dangerous in strong S winds.

NORTH LONG ISLAND TO ALBATROSS ROCKS

General information

Chart 3869

Route

8.173

- 1 From a position W of North Long Island (26°49'·1S, 15°07'·8E), the route leads SSE for about 20 miles to a position WSW of Albatross Rocks (27°07'·2S, 15°14'·5E).

Topography

8.174

- 1 The coast between North Long Island and Albatross Rocks is similar to that described at 8.165.

Principal marks

8.175

- 1 **Landmarks:**
Zweikuppenberg (Saddle Mount) (26°56'·0S, 15°20'·0E) with Dreizackberg, 6¼ miles SE. Beyond these hills are two remarkable peaks, 1522 m and 1615 m in height, known as The Paps (Chart 632).

Directions

(*continued from 8.168*)

8.176

- 1 From a position W of North Long Island (26°49'·1S, 15°07'·8E), the track leads SSE, passing (with positions relative to North Long Island):
WSW of Zwei Spitz (2½ miles SSE), a prominent table-topped hill forming the N entrance point to Abenteuer Bay, which is said to be deep. The cliffs in this vicinity are of cream-coloured rock, in contrast to the prevailing grey granite. Thence:
- 2 WSW of a reef (3¾ miles SSE), which breaks, thence:
WSW of foul ground (6¼ miles SSE), extending S from the coast, thence:
WSW of Elizabeth Point (7 miles SSE), low and rocky, the N entrance point of Elizabeth Bay (8.179). A dangerous reef and heavy breakers extend some distance S of it. The old mining town N of the point is derelict.
- 3 WSW of North Reef (10½ miles SSE), and Kreuz Shoals, which extend N from Possession Island.

8.177

- 1 The track continues SSE, passing:
- 2 WSW of Possession Island (11½ miles SSE) (8.181), about 2 miles offshore, where anchorage may be obtained. The coasts of the island are rocky and nearly perpendicular. When seen from a short distance S, it appears as a group of islets, for it has three or four summits joined by low land. A beacon stands on the S summit. The island is easily identified when approached from either N or S. Thence:
- 3 WSW of South Reef (13¾ miles SSE) extending up to 1½ mile S of the island. The reef should be given a wide berth of at least 2 miles. The wrecks of SS *British Prince* (1915) and *Nautilus* (1919) lie on the reef and there is a rock awash 3½ cables SW of the S point of Possession Island. Thence:
- 4 WSW of a small cove (15½ miles SSW), about 2½ cables across. A number of rocks awash lie about 5 cables S of the entrance. Thence:
- 5 WSW of Prince of Wales Bay (8.180) (18 miles SSW), where anchorage may be obtained.
- 6 Thence the track leads to a position WSW of Albatross Rocks (19 miles SSE), a ridge of volcanic islets and above water rocks, 6 cables in length in a N/S direction, situated 7½ cables off the coast. The S and largest island is prominent against the lighter coloured mainland when viewed from seaward. Foul ground extends 3½ cables N and 1½ miles S of the rocks.

(Directions continue at 8.188)

Side channel**8.178**

- 1 A channel known as Albatross Channel, between Albatross Rocks (27°07'2S, 15°14'5E) and the mainland would appear to be clear, but vessels entering or leaving it should navigate with great caution.

Anchorage and harbours**Elizabeth Bay****8.179**

- 1 **Description.** Elizabeth Bay is entered S of Elizabeth Point (26°55'5S, 15°11'5E). The shore E of Elizabeth Point is sandy, but on the E side of the bay, rocks alternate with sandy beaches. The bay is backed by a low plain with shifting sandhills, behind which the country is hilly.

Landing The bay is exposed to S winds. In fine weather, landing may be effected in the S part of the bay: small craft may anchor close to the ruined jetty near the head of the bay.

Prince of Wales Bay**8.180**

- 1 **Description.** Prince of Wales Bay, is a small indentation in the coast, the S point of which lies 4¾ miles SSE of the S end (27°01'8S, 15°12'0E) of Possession Island.
- 2 **Directions.** From a position about 2 miles NW of the S entrance point (27°06'4S, 15°14'9E), the track leads SE to the anchorage passing NE of foul ground, on which lie several small islets and rocks awash, extending 5 cables N from the point.
- 3 **Anchorage** for small craft may be obtained in depths from 8 to 12 m, 3 cables NE of the foul ground.

Landing may be effected on a shelving beach at the head of the bay.

Possession Island**General information****8.181**

- 1 **Position.** Possession Island (27°01'0S, 15°11'9E).
- Description.** There is a small settlement, on the E side of the island, 5 cables from its N extremity, where there is a flagstaff, a small pier and a cemetery. Fish of excellent quality may be caught in great quantities near the shore.

Directions**8.182**

- 1 The channel S of the island is the better by which to approach the anchorage in Possession Road. Should it be necessary to use the channel N of the island, it is advisable on the approach, to keep well over towards the mainland thereby avoiding Kreuz shoals.
- Channel N of Possession Island.** From a position about 2 miles NW of the N point (27°00'0S, 15°11'5E) of Possession Island, the track leads initially E, thence SE and S around Kreuz shoals, passing (with positions relative to the N end of the island):
- 2 N of North Reef (1 mile N), which breaks. Two rocky islets lie close off the N point. And:
- S of Elizabeth Point (4½ miles N) (8.176), thence:
- N of Kreuz Shoals, comprising two shoal patches of 3.1 m and 5.1 m lying 7 cables NE and 1½ miles NE respectively of the N point., thence:
- NE and E of Kreuz Shoals.
- Thence, having rounded Kreuz Shoals, the track leads WSW to the anchorage passing NNW of Possession Rock (not named on chart) (7½ cables SSE). The rock is awash.
- 3 **Channel S of Possession Island.** From a position about 3 miles S of the S point (27°01'8S, 15°12'0E) of Possession Island, the track leads initially NNE, passing (with positions relative to the S point of the island):
- SSE of South Reef (1½ mile S) (8.177).
- Thence the track leads N to Possession Road, passing:
- E of South Reef, thence:
- E of the S point of Possession Island, thence:
- E of Possession Rock (not named on chart) (1¼ miles N).
- Thence the track leads to the anchorage.

Anchorage**8.183**

- 1 **Anchorage.** Protected anchorage, in smooth water, may be obtained E of Possession Island, in depths of about 8 m, 5 cables NNE of the flagstaff at the settlement. However, it is reported that the seabed is covered with kelp and does not provide good holding ground.
- 2 **Landing.** Small craft can land at the settlement jetty in all weathers; in other parts of the island landing is difficult.
- On the mainland the best position at which to effect a landing is at the S end of the long sandy beach opposite the settlement. Local knowledge is required before an attempt is made.

Services**8.184**

- 1 **Supplies:** fresh water may be available in small quantities.

ALBATROSS ROCKS TO BLACK POINT

General information

Chart 3869

Route

8.185

- 1 From a position WSW of Albatross Rocks (27°07'·2S, 15°14'·5E) (8.177), the route leads SSE, for about 13 miles to a position WSW of Black Point (27°19'·5S, 15°18'·0E).

Topography

8.186

- 1 The coast between Albatross Rocks and Black Point is similar to that described at 8.165.
- 2 The hills forming the coastal range between Prince of Wales Bay (27°06'·0S, 15°15'·0E) and a prominent point abreast Pomona Island, 5½ miles SSE, are 46 m to 127 m high.

Principal marks

8.187

- 1 **Landmarks:**
Zweikuppenberg (Saddle Mount) (26°56'·0S, 15°20'·0E) (8.175).
Mine building (derelict) (27°10'·6S, 15°16'·2E).
Granietberg (27°19'·6S, 15°23'·0E).

Directions

(continued from 8.177)

8.188

- 1 From a position WSW of Albatross Rocks (27°07'·2S, 15°14'·5E) (8.177), the track leads SSE, passing (with positions relative to Albatross Rocks):
- 2 WSW of Pomona Island (4½ miles SSE), where anchorage may be obtained (8.190). On the E side of the island there is a flagstaff, a beacon surmounted by a cross and some buildings, but none are prominent from seaward. When seen from W the island appears as two low-lying hummocks. A submerged rock lies in the narrow channel between Pomona Island and the mainland. Jammer Bucht (Bay), with a rocky shore except for a sandy beach at its N end, lies about 1½ miles NNE of Pomona Island.
- 3 Thence the track leads to a position WSW of Black Point (12¾ miles SSE).

8.189

- 1 **Useful mark:**
Tafelberg (27°16'·0S, 15°22'·9E) but not to be confused with a mountain known as Table Mountain, 1½ miles SE of Pomona Island.
(Directions continue at 8.195)

Anchorage

North of Pomona Island

8.190

- 1 Anchorage for small craft may be obtained off the N end of Pomona Island (27°11'·5S, 15°15'·5E), in depths of about 10 m, good holding ground.

BLACK POINT TO PANTHER HEAD

General information

Chart 3869, 3870

Route

8.191

- 1 From a position WSW of Black Point (27°19'·5S, 15°18'·0E), the route leads SSE, for about 42 miles to a position WSW of Panther Head (27°56'·0S, 15°40'·4E).

Topography

8.192

- 1 The coast between Black Point and Bogenfels, 10 miles SSE, is similar to that described at 8.165. Between Bogenfels and Panther Head, the coast is generally lower. Although the foreshore is rocky in places, there are long stretches of sandy beach backed by coastal sandhills.

Depths

8.193

- 1 Between Dreimaster Point (27°34'·0S, 15°27'·6E) and Panther Head, off-lying reefs and shoals make it dangerous to approach the coast too closely and vessels on passage are advised to keep outside the 50 m depth contour.

Principal marks

8.194

- 1 **Landmarks:**
Granietberg (27°19'·6S, 15°23'·0E).
Bogenfels (Arch Rock) (50 m high) (27°27'·6S, 15°23'·5E).
Buildings (27°55'·6S, 15°41'·1E), a mining settlement.

Directions

(continued from 8.189)

Black Point to Sinclair Island

8.195

- 1 From a position WSW of Black Point (27°19'·5S, 15°18'·0E), the track leads SSE, passing (with positions relative to Black Point):
- 2 WSW of Black Rock (5 miles SSE), which is occasionally frequented by fur seals, lies close S of Square Point, the N entrance point of Van Reenen Bay. Anchorage (8.199) may be obtained off Black Rock. Van Reenen Bay, entered between Square Point and a point 1 mile SE, dominated by Black Knoll (44 m in height), is a slight indentation in the coast, and affords no shelter. Thence:
- 3 WSW of Bogenfels (Arch Rock) (9½ miles SSE) (8.194), a large rock projecting from the coast formed in the shape of an archway. From NW or W this arch is not all that distinct, but it shows up well against the light-coloured coast when bearing about 010°, and is one of the most remarkable features on the South West African coast. Thence:
- 4 WSW of Dreimaster Point (17 miles SSE), the S entrance point of Dreimaster Bay (8.200) the shore of which is foul and breakers extend 2½ cables offshore. Anchorage may be obtained in the bay. Thence:
- 5 WSW of False Plum Pudding (20 miles SSE), a rocky projection. A reef with extensive foul ground extends 1 mile W and NW. Thence:
- 6 WSW of Plum Pudding Island (22½ miles SSE), lying 3 cables offshore. Black Sophie Rock lies about 4 cables S of Plum Pudding Island. Foul ground and breakers surrounds both these islets and extends to the coast.

- 7 Thence the track leads to a position WSW of Sinclair Island (23½ miles SSE). It is almost joined to the mainland near a headland known as Lions Head, the S entrance point of Baker's Bay (8.201) close NE. Anchorage may be obtained in the bay. Sparrow Hawk Islet (33 m high) (27°40'·0S, 15°31'·0E), not charted, is situated close offshore in the centre of a small bay between Lions Head and Needle Point 5 cables S.

8.196

- 1 **Useful marks:**
Dreimaster Ridge (27°32'·5S, 15°28'·2E).
Vohsenberg (27°41'·2S, 15°31'·5E).

Sinclair Island to Panther Head

8.197

- 1 From a position WSW of Sinclair Island (27°40'·0S, 15°31'·2E) (8.195), the track leads SSE, passing (with positions relative to Sinclair Island):
WSW of Cape Durnberg (2¾ miles SSE). Durnberg Bay lies N of Cape Durnberg. The bay appears to be full of breakers, and there are several rocks or islets in it, including Little Roastbeef Islets. Thence:
- 2 WSW of a shoal patch (5 miles S) depending on draught, with a depth of 30 m over it, thence:
WSW of Dunkel Wand Point (5½ miles SSE), fringed with breakers. The coast on either side appears to be sandy and an islet lies in the indentation close N. A precipice, composed of a greenish rock formation, lies about 2 miles SE. Thence:
- 3 WSW of North Rock (8¾ miles SSE), one of a group lying about 2½ cables offshore, thence:
WSW of a shoal patch (10½ miles SSE), with a depth of 5·5 m over it, thence:
- 4 WSW of South Rock (11¼ miles SSE), one of another group lying close offshore. During November and December, 1913, two unsuccessful attempts were made to land at South Rock. The current was found to be particularly strong inshore and the wind boisterous. It is considered that landing could not be effected even in good weather. Thence:
- 5 WSW of a shoal patch (12 miles SSE), depending on draught, with a depth of 18·2 m over it, thence:
WSW of Chamais Head (14 miles SSE) from where Chamais Bay extends 4 miles SSE terminating at Panther Head. A stranded wreck lies close NNW of Chamais Head and a shoal patch with a depth of 18 m lies about 1 mile W. Thence:
- 6 WSW of North Reef (14½ miles SSE) with a depth of 7·9 m over it and over which the sea breaks, thence:
WSW of South Reef (16½ miles SSE) with a depth of 14 m over it and over which the sea seldom breaks. Chamais Reefs is a general name for the shoal water to seaward of Chamais Bay of which North and South Reefs are the principal components. Panther Reef, which dries to 0·5 m and is steep-to, lies 1½ miles E of South Reef.
- 7 Thence the track leads to a position WSW of Panther Head (18 miles SSE). The stranded wreck of the Greek freighter *Nafsiporos* lies at the SE end of Chamais Bay. She ran aground with a full cargo of phosphates in 1969. Normally, a heavy swell sets into the bay and hidden rocks make it dangerous to approach the coast anywhere within the bay.

8.198

- 1 **Useful marks:**
Vohsenberg (27°41'·2S, 15°31'·5E).
Copper Mount (27°42'·6S, 15°33'·1E).
Boegoeberg (27°54'·1S, 15°56'·2E) surmounted by a radio mast. (Buchuberg on chart 632).
Schlangen Mount (27°56'·1S, 15°41'·8E).
(*Directions continue at 8.206*)

Anchorage

Off Black Rock

8.199

- 1 Anchorage may be obtained off Black Rock (27°23'·7S, 15°20'·9E) in good weather. Local knowledge is required.
Landing may be effected on the S side of Van Reenen bay (8.195) in good weather.

Dreimaster Bay

8.200

- 1 Anchorage may be obtained in a depth of about 11 m in the S part of Dreimaster Bay (27°33'·8S, 15°27'·8E) with Dreimaster Point bearing SSE and noting a rock close N of Dreimaster Point. The shore of the bay is surf-bound and foul except at the SE end where there is a landing under the lee of the point.

Baker's Bay

8.201

- 1 Baker's Bay is entered between Black Sophie Rock (27°39'·0S, 15°31'·0E) and Sinclair Island, 1 mile SSE. The depths in the bay decrease from 15 to 7 m, the latter depth being found outside the breakers, at about 3 cables offshore. Mining buildings and a derelict jetty can be seen at the S end of the bay.
With S winds, reasonably sheltered anchorage can be found in the centre of the bay in a depth of 12 m, sand.

PANTHER HEAD TO ORANGE RIVER

General information

Charts 3870

Route

8.202

- 1 From a position WSW of Panther Head (27°56'·0S, 15°40'·5E) (8.197), the route leads SE for about 62 miles to a position SW of Orange River (28°38'·0S, 16°27'·2E).

Topography

8.203

- 1 The coast between Panther Head and Orange River in contrast to that farther N, is an almost unbroken, straight stretch of sand. With few exceptions the coastal hills are low and inconspicuous. Intense diamond mining activity takes place along the whole area, mine dumps, mine headgear and pump houses providing prominent marks.

Depths

8.204

- 1 Rocky outcrops occur close to the shoreline along the NW part of this stretch but these do not extend any great distance to seaward.

Principal marks

8.205

- 1 **Landmarks:**
Buildings, mining settlement, (27°55'·6S, 15°41'·1E).

Directions*(continued from 8.198)***8.206**

- 1 From a position WSW of Panther Head (27°56'·0S, 15°40'·5E) (8.197), the track leads SE, passing (with positions relative to Panther Head):
SW of South Island (8 cables S), and:
Clear of a shoal patch (13½ miles SW), with a depth of 57 m over it reported in 1956 by HMS *Pelican*, thence:
- 2 SW of a stranded wreck (24½ miles SE), thence:
SW of a tower (30¼ miles SE). A submerged pipeline extends about 8 cables SSW from the shore at this place. Thence:
Clear of a light-buoy (special) (34½ miles SE), thence:
SW of a light-buoy (special) (46½ miles SE), thence:
SW of Oranjemund oil terminal (53 miles SE) (8.208).
- 3 Thence the track leads to a position SW of the entrance to Orange River (59 miles SE). Discoloured water of a light green hue occurs frequently off the mouth of Orange River for distances up to 50 miles.

8.207

- 1 **Useful marks:**
Boegoeberg (27°54'·1S, 15°56'·2E), surmounted by a radio mast. (Buchuberg on chart 632).
Schlangen Mount (27°56'·1S, 15°41'·8E).
North Tafelberg (27°59'·5S, 15°43'·2E).
Grosse Tafelberg (28°00'·9S, 15°44'·4E).
South Tafelberg (28°02'·1S, 15°46'·2E).
Schakalberge, 624 m in height, (28°09'·0S, 16°35'·0E) (Chart 632).

*(Directions continue at 9.18)***Orangemund oil terminal***Chart 4136 plan of Oranjemund***General information****8.208**

- 1 **Position and function.** Orangemund oil berth (28°35'·9S, 16°20'·7E), is located 1¾ miles offshore and serves the town of Oranjemund, a diamond mining town with excellent facilities, about 2½ miles inland.
Maximum size of vessel handled. Length 183 m, draught 10·7 m.
Port operations. Berthing during daylight hours only. Unberthing at any time.
Port radio. There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.
- 2 **Notice of ETA required.** Vessels should send ETA 1 hour prior to arrival.

Pilotage. The Berthing Master boards 2 miles SW of the berth.

Tug. A tug is available.

Regulations concerning entry. Engines are to be kept on immediate notice whilst on the berth.

- 3 **Submarine pipeline.** A submarine oil pipe line extends about 2½ miles SW from a position on the coast 5¼ miles NW of the entrance to Orange River (28°38'·0S, 16°27'·2E). The seaward end of the pipe line is marked by two buoys (red and green conical).

Current. The prevailing current sets NW and the swell is generally from SW.

- 4 **Directions.** Leading lights: The alignment (043½°) of the following lights leads NE towards the berth:

Front light (red and white diamond on metal framework tower) (28°34'·5S, 16°22'·2E).

Rear light (similar structure) (11 cables from front light).

- 5 **Useful mark:**

Radio mast (red lights) (28°33'·2S, 16°25'·4E).

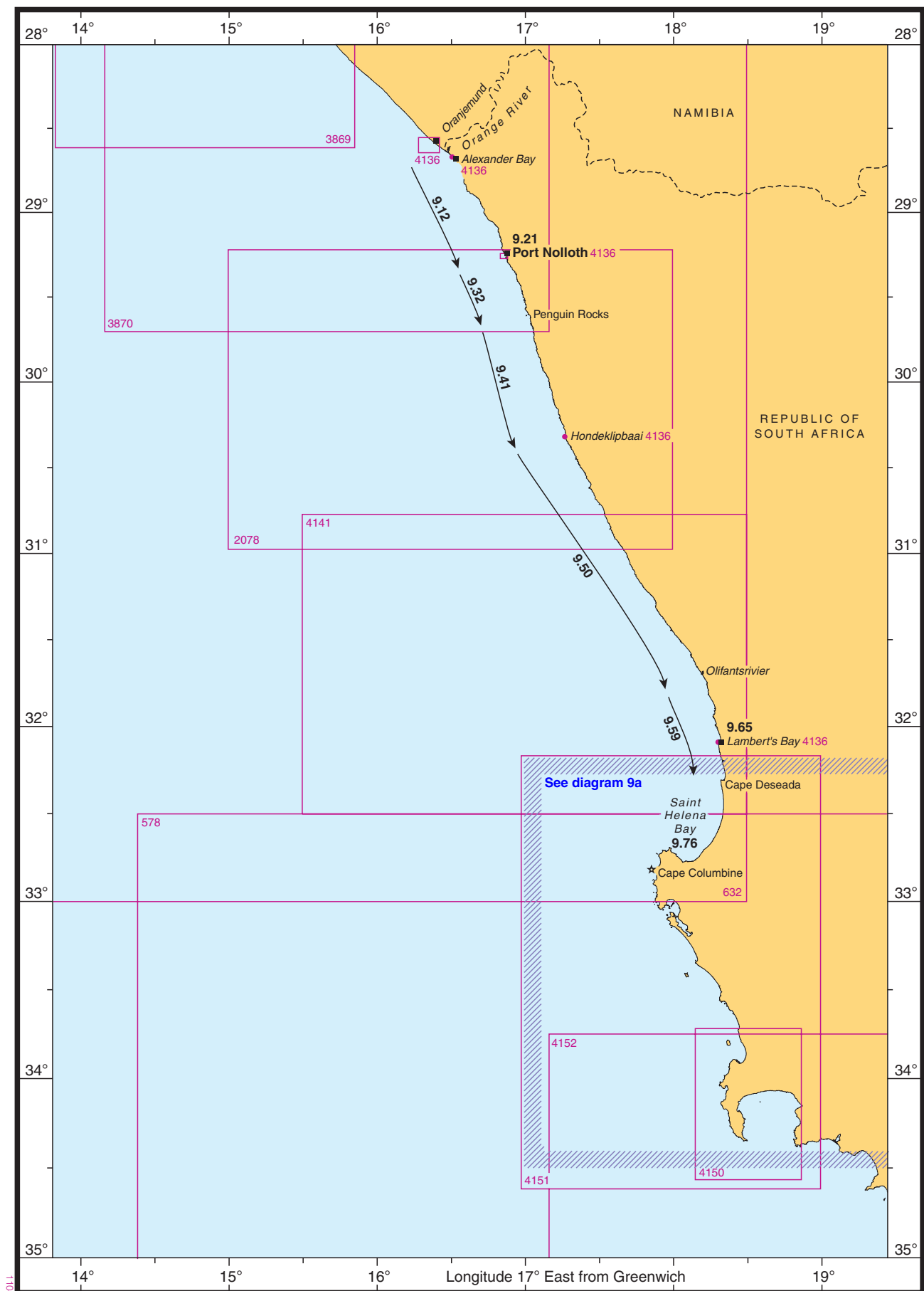
Berth. Four mooring buoys are provided at the seaward end of the submarine pipeline. Vessels are moored as shown on the inset diagram on the chart with bow facing S.

Communications. Airfield close SE of the town.

Orange River*Chart 3870***General information****8.209**

- 1 **Description.** Orange River rises in the mountains of NE Lesotho and flows W for about 1000 miles, thereby traversing nearly the whole of the S part of the continent of Africa. The volume of water in the upper reaches of the river varies considerably. During dry seasons that portion of the river which forms the boundary between the Orange Free State and Northern Cape Province degenerates into almost a trickle. After heavy rains in Lesotho, however, this part of the river can become a raging torrent. The construction of the Hendrik Verwoerd Dam, completed in 1972, has done much to modify the extreme effects of flood and drought.
- 2 The mouth (28°38'·0S, 16°27'·2E) of Orange River, is closed during dry periods by a sandbank 7 cables in length which is breached at varying points when the river is in flood. The banks on both sides of the river are fertile, and market gardens exist to supply to the local mining communities.
- 3 Ernest Oppenheimer Bridge spans Orange River 5 miles within its entrance.

Chapter 9 - Orange River to Table Bay



CHAPTER 9

ORANGE RIVER TO TABLE BAY

GENERAL INFORMATION

Charts 632, 4151

Scope of the chapter**9.1**

- 1 This chapter comprises the coastal routes, anchorages and harbours along the west coast of South Africa from Orange River (28°38'·0S, 16°27'·2E) to Table Bay (33°51'·9S, 18°25'·4E).
- 2 The chapter is divided into the following sections:
Orange River to Cape Columbine (9.5).
Cape Columbine to Table Bay (9.101).

Wellheads**9.2**

- 1 For information concerning abandoned and suspended wellheads and other underwater obstructions see 1.16.

Exercise areas**9.3**

- 1 Submarines frequently exercise W of Cape Columbine, S of latitude 32°S and E of longitude 16°E, as indicated on

the chart. A good look-out should be kept for them when passing through these waters. See 1.13.

For details of military practice and exercise areas see Appendix III.

Current**9.4**

- 1 The coastal waters described in this chapter are influenced by the Benguela Current which sets in a NW direction at a rate of between ½ and 1 knot. The rate and direction of flow can be affected by the wind and the shape of the coastline. As a general rule the current is stronger nearer the coast and onshore sets may be experienced. See 1.193.

Summer upwelling off Cape Columbine (32°50'S, 17°51'E) gives rise to a N setting current of up to 2 kn within 15 miles of the coast. However, a S flowing current is occasionally found closer inshore, particularly in winter. A more permanent N current has been found offshore of the 200 m depth contour which turns to flow more NW northward of Cape Columbine.

ORANGE RIVER TO CAPE COLUMBINE

GENERAL INFORMATION

Chart 632

Area covered**9.5**

- 1 This section describes the coastal passages, anchorages and harbours from Orange River (28°38'·0S, 16°27'·2E) to Cape Columbine (32°49'·6S, 17°50'·8E) about 264 miles SSE.
- 2 It is arranged as follows:
Orange River to Port Nolloth (9.12).
Port Nolloth to Penguin Rocks (9.32).
Penguin Rocks to Hondeklipbaai (Hondeklip Bay) (9.41).
Hondeklipbaai to Olifantsrivier (9.50).
Olifantsrivier to Cape Deseada (9.59).
Saint Helena Bay (9.76).
Stompneuspunt to Cape Columbine (9.93).

Topography**9.6**

- 1 For 120 miles SSE of Port Nolloth (29°14'·8S, 16°52'·0E) (9.21) as far as Brakrivier (31°06'·0S, 17°44'·0E) (9.55), the Namaqualand coast presents an undulating aspect with gently rising hills extending from a rock-bound and cliffy shore to mountain ranges about 25 miles inland, which rise to over 1700 m in places. Numerous prospecting trenches have been dug at right-angles to the coast. There are also many fairly high mine dumps and well-lit mine structures particularly in the vicinity of Kleinsee (29°40'·8S, 17°04'·0E) (9.42) and for 10 miles N of Hondeklipbaai (30°18'·8S, 17°16'·5E) (9.49). The coastal hills, being covered with sparse semi-desert vegetation, usually appear dun-coloured from seaward. However, they may assume purple, orange and yellow hues

from massed spring flowers during the months of September and October.

- 2 Between Brakrivier and Olifantsrivier (31°42'·0S, 18°10'·4E) (9.58), a further 42 miles SSE, the coastal area becomes lower and greener, being backed by a series of rounded hills 100–145 m high. The Bokkeveld Range of mountains, forming part of the Great South African Escarpment, is about 40 miles inland from the mouth of Olifantsrivier.
- 3 Rocky headlands enclosing several small bays are found along the 38 miles stretch between Olifantsrivier and Cape Deseada.
Saint Helena Bay (32°44'·0S, 18°06'·0E) (9.76) lies between Cape Deseada and Stompneuspunt, 29 miles to the SW. Its shores are mainly sandy and low-lying. The Vredenburg Peninsula of which Cape Columbine is a part, lies to W of a line joining Saint Helena Bay and Saldanha Bay (33°02'·7S, 17°58'·1E) (9.116).

Depths**9.7**

- 1 The general nature of the bottom in depths greater than 55 m on this stretch of coast is soft black mud. Off the mouth of the Orange River, silt from the river has covered the rock bottom and formed an even gradient out to depths of 100 m.
- 2 **Caution.** Depths in the proximity of the coast cannot always be relied upon to indicate distance offshore and it is advisable to keep in depths of more than 100 m in conditions of restricted visibility. See 9.11.

Routing**9.8**

- 1 In accordance with IMO Regulations, laden tankers proceeding NW should maintain a minimum distance of

20 miles offshore of Cape Columbine and laden tankers proceeding SE should maintain a minimum distance of 25 miles offshore of Cape Columbine (32°49'·6S, 17°50'·8E).

For further details see Appendix I.

Crayfish trap fishing

9.9

- 1 Mariners should navigate with caution when within 3 miles of the coast, on account of the presence of anchored or drifting small fishing vessels and their unlit bottom gear, marker buoys and recovery lines.

Marine Mining Vessels

9.10

- 1 Marine Mining Vessels (MMVs), which process gravel for diamonds, may be encountered in large numbers fairly close inshore between Orange River and Cape Columbine. The barges are normally moored with a spread of four anchors, which may be marked by unlit buoys, and they display the lights and shapes prescribed in Rule 27 of *The International Regulations for Preventing Collisions at Sea* (1972).
- 2 Mariners are advised to keep at least 1500 m clear of MMVs.

Natural conditions

9.11

- 1 **Weather.** Along the coast between the mouth of Orange River (28°38'·0S, 16°27'·2E) and Cape Columbine (32°49'·6S, 17°50'·8E) fogs of great density are frequently experienced throughout the year but most often in autumn. Strong offshore Berg winds are most common in late winter and early spring, reaching gale force at times. The resulting sandstorms cause reduced visibility on the coast and offshore.
- 2 **Mirage.** At times a rapid decrease in the density of air above cold sea can cause light refraction, effectively bending rays of light and making visible objects which normally would be below the horizon. These mirages can be distorted and may occasionally produce inverted images.
- 3 **Local magnetic anomaly.** A local magnetic anomaly which causes deviations up to 5° was reported to exist between 70 and 130 miles NW of Cape Columbine.

ORANGE RIVER TO PORT NOLLOTH

General information

Chart 3870

Route

9.12

- 1 From a position SW of the entrance (28°38'·0S, 16°27'·2E) to Orange River (8.209), the route leads SSE for about 41 miles to a position WSW of Port Nolloth (29°14'·8S, 16°52'·0E).

Topography

9.13

- 1 Diamond prospecting trenches are prominent on this stretch of coast. There are also many fairly high mine dumps and well-lit mine structures.

Depths

9.14

- 1 In marked contrast to the coast N of the river, the coast from Orange River to Port Nolloth is generally rocky and much indented. It is fringed by many reefs and dangerous

shoals, which extend seaward for distances of up to 3 miles in places. Vessels on passage are advised to keep in soundings of more than 50 m.

Current

9.15

- 1 There is occasionally a strong S set off Alexander Bay (9.29) but it is easily detected due to the presence of discoloured water from Orange River.

Principal marks

9.16

Landmarks:

Boegoeberg Twins (28°46'·5S, 16°35'·0E).

Major light:

Carl von Schlick Beacon (triangle, apex down on black metal framework tower, white bands, 11 m in height) (29°15'·0S, 16°52'·1E).

Other aid to navigation

9.17

Racon:

Carl von Schlick Beacon – as above.

See *Admiralty List of Radio Signals Volume 2*.

Directions

(continued from 8.207)

Orange River to Wreck Point

9.18

- 1 From a position SW of the entrance (28°38'·0S, 16°27'·2E) to Orange River (8.209), the track leads SSE, passing (with positions relative to the entrance to Orange River):
 - WSW of Tripp Shoal (3 miles SE), over which the sea usually breaks, thence:
 - 2 WSW of Alexander Bay (3½ miles SE) (9.29). The coast between Orange River and this bay is low and sandy. Between Alexander Bay and Cape Voltas a further 2¼ miles SE, the coast is low, sandy, and desolate, with several rocks lying up to 5 cables offshore. Thence:
 - 3 WSW of Cape Voltas (5¾ miles SE), a low rocky promontory. The coast S of the cape forms a bay, about 3½ miles in width, in which lies Peacock Roadstead (9.28), where anchorage may be obtained. The shore of this bay is backed by hills, the sides of which are covered with low scrub, though their summits indicate their volcanic origin. Thence:
 - 4 WSW of Peacock Bank (6½ miles SSE), with a depth of 16·7 m over it, thence:
 - WSW of Harrison Cove (not charted), (9 miles SE) (9.28), a small indentation ½ cable in extent, in the SE part of Peacock Roadstead. From seaward this cove has the appearance of a quarry, but it is not prominent. Thence:
 - 5 WSW of Collins Reef (10 miles SE). Homewood Harbour (9.30), is situated close N. Thence:
 - WSW of a shoal patch (12½ miles SSE), with a depth of 16·4 m over it.
- Thence the track leads to a position WSW of Wreck Point (16¼ miles SSE).

Wreck Point to Port Nolloth

9.19

- 1 From a position WSW of Wreck Point (28°52'·2S, 16°36'·2E), the track leads SSE, passing (with positions relative to Wreck Point):

WSW of Soco Reef (2 miles SSE), which breaks heavily. A stranded wreck lies on the beach 2 miles E of the reef. Thence:

WSW of Holgatpunt (10 miles SSE). Except for Soco Reef, there are apparently no obstructions outside the 10 metre contour in the bay between Wreck Point and Holgat Point but there is no good anchorage. The mouth of Holgatrivier, which is generally dry, lies $1\frac{3}{4}$ miles N of Holgat Point. The mouth is closed by a sandbar. Thence:

WSW of a rock ($13\frac{3}{4}$ miles SSE), about 2 miles offshore, with a swept depth of 7.1 m over it and on which the swell often breaks, thence:

WSW of Cliff Point (18 miles SSE), situated at the SE end of a shallow indentation which is enclosed by cliffs about 18 to 21 metres high. The inshore waters between Cliff Point and another rocky point, 6 miles farther S, are rocky and uneven and should not be approached.

WSW of a rocky shoal ($19\frac{1}{2}$ miles SSE), about 2 miles offshore, which breaks in heavy swell and which has a least depth of 3.4 m over it. Another shoal patch with a depth of 13.5 m over it lies 1 mile SSE. Thence:

WSW of North Point, ($25\frac{1}{2}$ miles SSE), with prominent buildings close to its extremity. A reef extends 7 cables SSE from the point. North Ledge, which covers and uncovers, and upon which there is an isolated rock 2 m high, stands in the middle of the reef. (See chart 4136).

Thence the track leads to a position WSW of Port Nolloth ($26\frac{1}{2}$ miles SSE) (9.21).

9.20

Useful mark:

Alexander Bay Peak ($28^{\circ}40'1S$, $16^{\circ}31'8E$), 121 m in height, with a sharp summit composed of dark rock.

(Directions continue for the coastal route at 9.37, and for entering Port Nolloth at 9.25)

Port Nolloth

Chart 4136 plan of Port Nolloth

General information

9.21

Position. Port Nolloth ($29^{\circ}14'8S$, $16^{\circ}52'0E$) lies about 41 miles SSE of Orange River.

Function. Originally known as Robbe Bay, it is a small port suitable only for light-draught coasters. The port is used mainly by vessels engaged in the recovery of diamonds from the sea bed. In 1998 severe silting occurred and regular visits by a small tanker were suspended.

The town is built on low-lying land on the E side of the harbour and is fairly prominent. There is a canning factory for the processing of rock lobster.

Port limits. The limits of the port are enclosed by an area bounded by the shores of the bay and lines drawn 245° for a distance of 3 miles from North Point ($29^{\circ}14'4S$, $16^{\circ}51'3E$), thence 155° for $4\frac{1}{4}$ miles, thence 065° to Gooap Point ($29^{\circ}18'0S$, $16^{\circ}53'0E$).

Approach and entry. The port is entered between North Point ($29^{\circ}14'4S$, $16^{\circ}51'3E$) (9.19) and South Point, about $1\frac{1}{2}$ miles S, and approached on the alignment of leading lights (9.25).

Port Authority. Trans Hex Operations (Pty) Ltd, PO Box 189, Port Nolloth 8280, South Africa.

Limiting conditions

9.22

Controlling depths. Port Nolloth is generally shallow and shoaling is liable to occur. The least charted depth in the channel over the bar leading to the buoyed fairway is 3.0 m. The buoyed fairway is reported (1990) to be dredged to a depth of 3.3 m.

For the latest controlling depths the port authorities should be consulted.

Deepest and longest berth. An L-shaped quay (9.26).

Tidal levels. Mean spring range about 1.6 m; mean neap range about 0.6 m. See information in *Admiralty Tide Tables Volume 2*.

Density of water is 1.025 g/cm^3 .

Arrival information

9.23

Port radio. The Harbour Master is normally on duty from 0800 to 1600 Monday to Friday but a VHF watch can be maintained outside these hours if advance notice has been given. For further details see *Admiralty List of Radio Signals Volume 6(3)*.

Outer anchorage may be obtained as indicated on the plan, about 1 mile SSW of North Point ($29^{\circ}14'4S$, $16^{\circ}51'3E$) in a depth of about 40 m, sand. To the E of this the bottom is rocky. This position is favourable for communicating with the shore but vessels tend to roll heavily. Landing should not be attempted in ship's boats without local knowledge.

Pilotage is not available.

Tugs are not available.

Local knowledge is required. Vessels without local knowledge should not attempt to enter until VHF contact has been made with the Harbour Master, who will give advice.

Customs and Immigration. Port Nolloth is not a port of entry. Vessels arriving from abroad must obtain clearance from Cape Town or another South African port.

Harbour

9.24

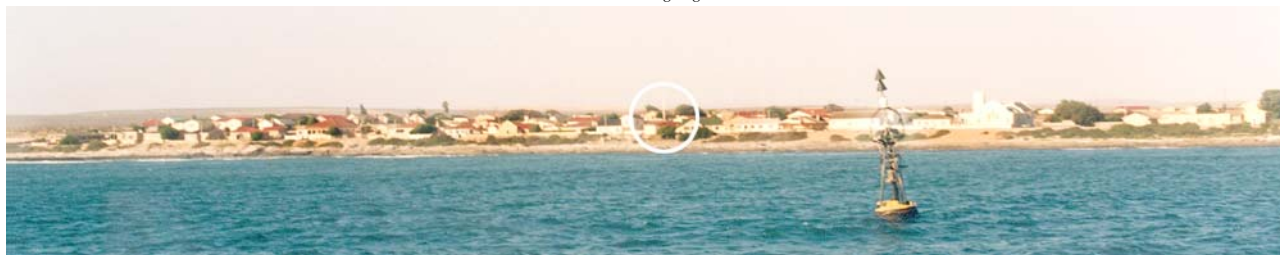
General layout. The harbour is formed by a reef, which dries in places and extends 9 cables NNW from Owen Island ($29^{\circ}16'1S$, $16^{\circ}52'1E$) (9.37). A channel marked by light-buoys leads S from the vicinity of the Fairway Light-buoy into the harbour.

Current. Outside the reefs the current sets N at a rate of usually $\frac{1}{2}$ to 1 kn.

Winds from the N, if fresh and sustained, check the current and if the winds persist for several days will reverse the current. The reversed current normally attains a rate no greater than $\frac{1}{2}$ kn, but on one occasion a rate as strong as 3 kn was reported. The S current ceases as soon as the N wind drops.

The current in the port, which attains a velocity of from $\frac{1}{2}$ to 3 kn, according to the strength of the SW winds, enters through the reef close NW of South Point, and after passing through the inner anchorage sets out across The Bar and the S part of the N reef, in a NW direction, losing some of its strength as it crosses them.

In 1959, it was reported that the strength of the current depended on the size of the swell, and that during a heavy swell the current set strongly N through the harbour, meeting a weaker S-going current setting from the N part of the harbour; both currents then united and flowed seaward over The Bar.



Port Nolloth leading lights from Fairway Buoy (9.25)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

- 5 **Traffic signals.** The following signals are exhibited from Carl von Schlick Beacon (29°15'·0S, 16°52'·1E).

Signal	Meaning
A black and yellow basket, hoisted at half mast.	Bar is dangerous.
A black and yellow basket, hoisted close up.	Bar is impassable.

The Bar Light (front leading light) exhibits a fixed white light when the bar is passable, and a fixed red light when the bar is closed.

Climatic table. See 1.226 and 1.247.

- 6 **Landmarks,** with positions relative to North Point (29°14'·4S, 16°51'·3E):

Sand Dunes (5¼ miles E), reddish in colour forming a background to the leading line.
Radio tower (1¼ miles SE), red obstruction lights.
Tank, yellow (1¼ miles SSE).
Crane (1¼ miles SSE).
Three tanks, black (1¾ miles SSE).

- 7 **Major light:**

Carl von Schlick Beacon (29°15'·0S, 16°52'·1E) (9.16).

Racon:

Carl von Schlick Beacon – as above.
See *Admiralty List of Radio Signals Volume 2*.

Directions for entering harbour

(continued from 9.20)

9.25

- 1 **Leading lights and beacon:**

Front light (29°15'·0S, 16°52'·1E).
Carl Von Schlick Beacon (50 m from front light) (9.16).

- F Beacon (red and white triangle apex up, on black structure) (3 cables from front light).

- 2 From a position about 1 mile WSW of Carl Von Schlick Beacon, the alignment (066°) of these lights and beacon, leads ENE through a passage about 1¾ cables in width over the bar to the Fairway Light-buoy, passing (with positions relative to North Point):

NNW of South Blinder (9 cables SSE). Black Jacob Rock, lies 2¾ cables S and Robbe Island 3 cables SSE respectively of South Blinder. And:

- 3 SSE of North Blinder (6½ cables SSE). North Ledge (9.19) lies 2½ cables NNW, thence:

Close NNW of the Fairway Light-buoy (N cardinal) (7¾ miles SSE).

- 4 From the Fairway Light-buoy, course is adjusted SE and S to enter an approach channel, marked by light-buoys (lateral), which leads to the berths.

- 5 **Caution.** When crossing the bar, the leading line must be followed closely because the sea frequently breaks for a distance of 1 cable S of North Blinder. The bar is rocky and shoal and there is usually a swell over it. When the swell is heavy, the whole area is covered with breakers and can prevent entry or departure for about three days at a time.

Useful marks (with positions relative to North Point (29°14'·4S, 16°51'·3E)):

Square tower of Roman Catholic Church, (9¼ cables SE).

Stranded wreck (1¼ miles SSE).

Berths

9.26

- 1 Alongside depths are charted depths. The port authorities should be contacted for the latest information.

Anchorage may be obtained between Robbe Island and the town, in depths from 2·1 to 3·3 m. Vessels lie there in



Port Nolloth – buoyed approach channel to Quay (9.25)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

safety, for, although the sea may break heavily on the reefs and across the entrance, no heavy seas come far within them. The best anchorage is W of the quay (below), in a depth of about 3 m.

The N part of the harbour is unsuitable as an anchorage because even in moderate W swells, the sea breaks right over North Ledge (9.19) and onto the beach

- 2 **Alongside.** There is an L-shaped quay (29°15'4S, 16°52'0E), 67 m in length. It was reported (1999) that 25 m at the N end of the quay was unusable except by very shallow draught vessels; the remainder had a depth of about 3.9 m. Two buoys (special) mark the limit of the turning basin off the berth.

There are two piers about 2 cables NE of South Point, each about 100 m in length with depths of less than 2m alongside. It was reported (1995) that they were rarely used.

Port services

9.27

- 1 **Repairs:** minor repairs; boat-lift with a capacity of 25 tonnes.

Other facilities: hospital; garbage reception facilities; no oily waste reception facilities.

Supplies: fuel oil; limited fresh water; provisions.

Communications: Road connections to Oranjemund, Cape Town and Windhoek.

Anchorage and harbours

Chart 3870

Peacock Roadstead

9.28

- 1 **Description.** Peacock Roadstead is entered between Cape Voltas (28°42'2S, 16°32'0E), and a point of land 3¾ miles SE.

- 2 **Topography.** It is easily identified by Boegoeberg Twins (28°46'5S, 16°35'0E). Both these hills rise abruptly from level ground close within the S entrance point of the bay enclosing Peacock Roadstead. They appear as two long ridges running nearly at right angles to one another, the N lying in a N and S direction. Boegoeberg South has a number of unlit radio masts on its summit; Boegoeberg North has a prominent mining survey beacon on its summit.

- 3 The shore in the S part of the bay is a sloping rocky cliff which affords a certain amount of shelter from the prevailing S wind and swell. There is a long sandy beach N of the cliffs.

- 4 **Depths.** The depths in the roadstead are regular, deepening from 7.3 m close under the cliffs to 26 m at a convenient distance for larger vessels to anchor.

It has been stated that rollers (1.201) sometimes break as far out as a line joining Alexander Bay (28°40'2S, 16°30'4E) and Harrison Cove, 5½ miles SE, but the phenomenon was not observed during a survey in 1997.

Local weather. During a survey of the coast in 1955 to 1956, it was often found that with the S wind blowing normally at about force 4 to 5 a few miles off the coast, inside Peacock Roadstead it would be blowing force 6 to 7 due to katabatic winds.

- 5 **Anchorage** providing a certain amount of shelter from the prevailing S wind and swell may be obtained, as indicated on the chart, about 5 cables off the cliffs in a depth of about 20 m, dark grey sand bottom, but see the preceding paragraph.

- 6 **Landing.** Harrison Cove (28°44'8S, 16°34'3E), is open NW, and has no protecting reef but it is considerably

sheltered from SW winds and swell. However, the bottom is rocky and it is not a safe anchorage even for a small vessel. Landing might be effected here but with difficulty owing to a ledge of rocks near the beach.

- 7 There are several narrow chasms in the cliffs S of Harrison Cove (28°44'8S, 16°34'3E) into which small craft could enter but an anchor should be let go before entering for the purpose of hauling out again.

Small craft

Chart 4136 plan of Alexander Bay

Alexander Bay

9.29

- 1 **Description.** Alexander Bay harbour, situated 3½ miles SE of the entrance (28°38'0S, 16°27'2E) to Orange River, is less than 1 cable in width at its entrance between North Head (28°40'3S, 16°30'4E) and a breakwater extending 1 cable NW from South Head, 2¾ cables SSE. The bay recedes 3 cables NE to a sandy beach, shoaling gradually towards its head. At the sides of the bay the bottom is uneven and rocky.

The port is used exclusively by vessels engaged in diamond dredging and their service craft. The town of Alexander Bay is situated about 5 miles N.

Climatic table. See 1.226 and 1.246.

- 2 **Directions.** From a position about 1 mile W of North Head, the track leads E, for about 1 mile, passing (with positions relative to North Head):

N of Tripp Shoal (8¼ cables WSW), thence:

S of North Head.

Thence the track leads ENE for about 2 cables passing, SSE of North Head, thence:

NNW of a reef (1¼ cables SE), which dries 1.2 m, thence:

NNW of the breakwater (1¼ cables ESE). A rock, with a depth of 1.8 m over it, lies about 20 m N of the end of the breakwater.

Caution. In bad weather, the swell between the heads makes entry dangerous, if not impossible.

- 3 **Anchorage.** Fairly secure refuge for small craft may be obtained within the harbour lying to permanently laid moorings.

Berth. A concrete jetty, 65 m long, is situated on the S side of the bay. No boats moor to the jetty on account of the swell.

Landing in the SE corner of the bay is possible in nearly all weathers. Two slipways and workshops are located in this vicinity.

- 4 **Useful marks:**

Beacon, close N of North Head, (28°40'2S, 16°30'4E).

Crane (28°40'3S, 16°30'7E).

Alexander Bay Peak (28°40'1S, 16°32'0E) (9.20).

Communication. Airport at Kortdoorn, 5 km NE of the town.

Chart 3870

Homewood Harbour

9.30

- 1 **Description.** Homewood Harbour (28°46'0S, 16°33'9E) is nearly circular in shape and about 2 cables wide with receding sides rising to heights varying from 18 to 24 m. The N side of the cove is rocky and shoal and the sea breaks on it even with the slightest S wind. The beach at the head of the cove is of small shingle. Crayfish are prolific in the cove.

Local knowledge is required.

Directions. The entrance is open W and is narrow and difficult. A shoal patch on Collins Reef (9.18), which breaks and has a depth of 5.5 m over it, lies 8 cables SSW of the entrance to the cove.

- 2 **Shelter** may be obtained on the S side in a depth of about 3.7 m; the bottom is however rocky and foul.

Landing may be effected inside the cove on the S side of a rocky spur with depths of 2.7 m alongside.

Collins Harbour 9.31

- 1 **Description.** Collins Harbour (not named on chart), an indentation in the coast, lies 5 cables SSE of Homewood Cove (above). The bay is open but Collins Reef (9.18), which extends 5 cables SW from the S point of the bay, breaks the force of the SW swell.

- 2 **Landing** can be effected on the N side of the bay in moderate weather conditions.

PORT NOLLOTH TO PENGUIN ROCKS

General information

Chart 2078

Route 9.32

- 1 From a position WSW of Port Nolloth (29°14'8S, 16°52'0E), the route leads SSE for about 23 miles to a position WSW of Penguin Rocks (29°36'5S, 17°01'0E).

Topography 9.33

- 1 A range of high hills lies close inland between Port Nolloth and Penguin Rocks, the highest of which, Vyftienmyl se Berge (487 m in height), lies 12 miles E of Port Nolloth.

See also 9.6.

Depths 9.34

- 1 The coast between Port Nolloth and Penguin Rocks is steep-to and fringed with dangerous rocks up to a distance of about 1½ miles offshore.

Principal marks 9.35

- 1 **Landmarks:**
Sand Hill (29°20'0S, 16°55'5E).
Building (29°34'1S, 17°00'1E), a power station.
Tank (29°37'0S, 17°05'0E).
Buildings (29°39'4S, 17°02'6E), a diamond mine.

Major light:

Carl von Schlick Beacon (29°15'0S, 16°52'1E) (9.16).

Other aid to navigation 9.36

- 1 **Racon:**
Carl von Schlick Beacon – as above.
See *Admiralty List of Radio Signals Volume 2*.

Directions (continued from 9.20)

9.37

- 1 From a position WSW of Port Nolloth (29°14'8S, 16°52'0E), the track leads SSE, passing (with positions relative to North Point (29°14'4S, 16°51'3E));

WSW of South Point (Chart 4136) (1¾ miles SSE), low and sandy. Close S of the point is Owen Island, elevation 3 m, with rocky ledges extending therefrom. It is connected to the mainland on its N side by a sandy and rock-strewn neck which dries at LW. Owen Bay (9.39) lies E of the island. Thence:

- 2 WSW of MacDougall's Bay (2½ miles SSE) (9.40), a slight indentation in the coast. Reefs encircle the entrance to the bay. Several islets or rocks lie on these reefs, including a rock known as Mathew Rock near the N extremity of the S reef. The depths, as also the nature of the bottom, outside this small bay appear to be irregular. Thence:

- 3 WSW of Goap Point (4¼ miles SSE). Oubeep Bay, rock bound and affording no shelter, lies 2 miles SSE of Goap Point. Thence:

WSW of White Point (8 miles SSE), thence:

WSW of Wedge Point (11¼ miles SSE), thence:

WSW of Sandown Point (17¼ miles SSE).

- 4 Thence the track leads to a position WSW of Penguin Rocks (23½ miles SSE), two rocks awash at 3 cables and 1 mile offshore on an extensive reef upon which the sea breaks heavily and which extends up to 1½ miles offshore and 2 miles S of Penguin Rocks. S of this reef, the coast is rocky and foul for about 5 cables offshore as far as the mouth of Buffels River, 5 miles SSE and should be given a wide berth because it is steep-to and soundings give no warning of shoaling.

- 5 The conspicuous head-gear of a diamond mine, with associated buildings (9.35) stands 3½ miles SSE of Penguin Rocks, and a stranded wreck lies on the coast near the mine-head gear.

9.38

- 1 **Useful marks:**

Wolfberg (29°34'1S, 17°04'5E), surmounted by a cairn of stones.

Arnot se Kop (29°36'3S, 17°05'3E), surmounted by a small beacon.

(Directions continue at 9.46)

Small craft

Chart 4136 plan of Port Nolloth

Owen Bay 9.39

- 1 **Description.** Owen Bay (29°16'1S, 16°52'2E) is a small bay, which is open S, between Owen Island and the mainland. When the wind is between N and W, it provides shelter for small craft. However, with the sea and swell between SW and S, it is untenable and the surface of the bay becomes broken and confused.

Local knowledge is required.

Chart 2078

MacDougall's Bay 9.40

- 1 **Description.** MacDougall's Bay, a slight indentation of about one mile in length, is situated 1 mile S of Port Nolloth. Reefs (9.37) encircle the entrance to the bay and provide good shelter. A holiday resort is situated on the S side of the bay.

Depths. The S part of the bay is completely sheltered, even when a heavy surf is breaking outside. The depths in it are from 1 to 2.3 m and it has a sandy bottom on which boats could be hauled up.

- 2 **Directions.** The track leads into the bay through a channel about ½ cable in width, with a depth of 2.7 m

passing N of Mathew Rock (9.37). The track then leads into the S basin where small craft can lie in safety in the summer season.

Local knowledge is required.

PENGUIN ROCKS TO HONDEKLIPBAAI

General information

Chart 2078

Route

9.41

- 1 From a position WSW of Penguin Rocks (29°36'·5S, 17°01'·0E), the route leads SSE for about 45 miles to a position WSW of Hondeklipbaai (30°18'·8S, 17°16'·5E).

Topography

9.42

- 1 The mining town of Kleinsee stands on the S bank of Buffels River and is prominent from seaward on bearings between 040° and 100°. The headquarters of De Beer's Consolidated Mines is at Grootmis, on the N bank of Buffels River, a short distance farther inland.

Between Buffels River (29°40'·8S, 17°03'·2E) and Skulpontein Point, 26 miles SSE, the shoreline comprises a line of low cliffs.

See also 9.6.

Depths

9.43

- 1 The coast between Penguin Rocks and Hondeklipbaai is steep-to and fringed with dangerous rocks up to a distance of about 1½ miles offshore.

Current

9.44

- 1 The current off the coast in the vicinity of Hondeklipbaai usually sets N but after prolonged N winds it sets in the opposite direction.

Principal marks

9.45

- 1 **Landmarks:**

Tank (29°37'·0S, 17°05'·0E).

Buildings (29°39'·4S, 17°02'·6E), a diamond mine.

Major light:

Hondeklip Bay Light (white diamond, red stripes, on metal framework tower, 8 m in height) (30°18'·5S, 17°16'·2E).

Directions

(continued from 9.38)

9.46

- 1 From a position WSW of Penguin Rocks (29°36'·5S, 17°01'·0E), the track leads SSE, passing (with positions relative to Penguin Rocks):
- 2 WSW of Buffels River entrance (4¾ miles SSE), with its 7½ cable long sandy beach, at the N end of which a prominent stranded wreck lies offshore. Buffels River bed is usually dry for a considerable distance inland. Thence:
- 3 WSW of Diamond Hole (6½ miles SSE), a small bay which lies S of a low, rock fringed promontory. It is open SW, has extensive off-lying reefs, and with S winds is completely surfbound. Rooiklippies, a stretch of reddish coloured rocky ledges lie 1 mile S of Diamond Hole. A stranded wreck can be seen

here. Kelp and submerged rocks extend 1½ cables seaward. Thence:

- 4 WSW of Melkbos Point (12¾ miles SSE), low and fringed with rocks. Numerous white mining dumps lie close behind it. Jakkals Bay, close N of the point, has not been closely examined. There is a submerged rock close N of the point, over which the sea breaks heavily. A rounded hill known as Spioenkop, 3½ miles ESE of Melkbos Point may be recognised by the white sand patch on its NW side. Thence:
- 5 WSW of Naganas Point (20 miles SSE). There is a prominent rock at its extremity. Swartklip, a dark-coloured rock, 2·5 m high, lies about 1 mile N of Naganas Point and close offshore of an inconspicuous rocky point. Three stranded wrecks lie 1, 6½ and 9 miles respectively SSE of Naganas Point. A rock awash lies 3½ miles SSE of Naganas Point and about 8 cables offshore.

9.47

- 1 The track continues SSE, passing (with positions relative to Naganas Point):

WSW of Skulpfontein Point (10½ miles SSE), thence:

WSW of Somnaas Bay (14½ miles SSE), which has a sandy beach on which landing could probably be effected on a calm day, thence:

WSW of the entrance to Swartlintjies River (21 miles SSE). The river has a dry bed and a closed mouth but it sometimes flows after heavy rains, a rare occurrence in this region. Rocks extend 5 cables offshore of the mouth.

- 2 Thence the track leads to a position WSW of Hondeklipbaai (24½ miles SSE) (9.49) whose entire shore is fringed by rocky foul ground extending up to 1½ cables offshore. Spitfire Reef, an off-lying shoal with a least depth of 5·5 m, on which heavy rollers break occasionally, lies about 8 cables WSW of the head of the bay. In bad weather, the passage between Spitfire Reef and the mainland is completely surfbound. Hondeklip Bay Light (9.45) is exhibited from the headland on the N side of the bay.

9.48

- 1 **Useful marks:**

Gorab se Kop (29°45'·5S, 17°05'·8E), surmounted by a beacon.

Swartkop (29°58'·0S, 17°13'·5E), surmounted by a beacon.

Wolfskop (30°13'·1S, 17°15'·8E), a mine dump surmounted by a small white beacon.

(Directions continue at 9.54)

Anchorage

Chart 4136 plan of Hondeklipbaai

Hondeklipbaai

9.49

- 1 **Description.** Hondeklipbaai (Hondeklip Bay) (30°18'·8S, 17°16'·5E), receives its name from an isolated block of granite named Hondeklip or Dogstone, which serves to indicate the position of this otherwise indistinguishable cove. This 5 m high block stands by the police post on the S side of the bay at an elevation of 21 m and has a beacon built on it.
- 2 Before the development of Port Nolloth (9.21), Hondeklipbaai was the principal port for the export of copper ore from the O'Okiep mines from where it was transported by ox-wagon and loaded into sailing ships. The

cemetery near the police station contains the graves of many seamen from these ships.

- 3 The canning factory and its offices are the most conspicuous buildings in the bay but it was reported (2002) that only a very small amount of rock lobster was being processed and its future was unsure.

The bay is about $3\frac{3}{4}$ cables in width but rocks and foul ground extending from both entrance points, narrow the entrance to about $\frac{1}{2}$ cable. It is easy of access for small vessels and is sheltered from all but W winds, which seldom blow. When strong W winds do occur, a heavy swell is set up within the bay.

4 Major light:

Hondeklip Bay Light (30°18'5S, 17°16'2E) (9.45).

Directions. From a position N of Spitfire Reef (30°19'3S, 17°15'7E), the track leads E, between the reefs on both sides of the entrance, for about 6 cables, within the white sector (093° to 099°) of a light (metal column on cream-coloured square concrete building, 3 m in height) (30°18'4S, 17°16'5E). It is reported (2002) that the edges of the sector are blurred and that vessels entering or leaving should endeavour to keep the light at its brightest.

5 Useful marks:

Hondeklip or Dogstone (30°19'3S, 17°16'5E) See above.

Radio mast with red obstruction lights ($\frac{3}{4}$ cable WSW of Hondeklip).

Stranded wreck (30°18'8S, 17°16'3E).

Anchorage may be obtained as indicated on the plan in a depth of between 10 and 15 m with the sector light bearing 095°. Although the bottom is rock, the holding is reported to be good.

- 6 In the event of strong W winds, it is sometimes necessary for vessels to remain at anchor in this vicinity, for, in addition to the big swell which occurs within the harbour itself, a strong backwash is experienced between the reefs making entry difficult and dangerous.

Inside the bay there are private laid moorings for fishing vessels and diamond dredging craft. Good anchorage is available clear of these moorings.

Landing. There is a good sandy beach in the S part of the bay.

HONDEKLIPBAAI TO OLIFANTSRIVIER

General information

Charts 2078, 4141

Route

9.50

- 1 From a position WSW of Hondeklipbaai (30°18'8S, 17°16'5E) the route leads SSE, for about $9\frac{1}{2}$ miles to a position WSW of the entrance to Olifantsrivier (31°42'0S, 18°10'4E).

Topography

9.51

- 1 From Hondeklipbaai to Island Point (30°55'0S, 17°36'2E) the coast has few features that can be distinguished at any distance being undulating country with no clearly-defined summits. From Island Point to Olifantsrivier, these hills are covered with succulent bush and the coastline is composed of rocky cliffs with occasional long, sandy beaches. Towards the S, glimpses of mountain ranges in the interior break the monotony of the skyline.

See also 9.6.

Depths

9.52

- 1 From Hondeklipbaai to Olifantsrivier, the coast is steep-to with the 100 m depth contour being between about 2 and 4 miles offshore. The coast is fringed with rocky reefs that present a continuous line of breakers extending up to $1\frac{1}{2}$ miles offshore in places.

Principal marks

9.53

1 Landmarks:

Kanoepkop (30°27'0S, 17°24'3E), a rounded summit surmounted by a beacon; bare brown patches on the N side.

Boulder (30°53'8S, 17°35'9E).

Stranded wreck (30°55'0S, 17°36'2E).

Geelwal Se Kop (31°34'2S, 18°07'4E), a rounded hill surmounted by a trigonometrical beacon.

School (31°41'0S, 18°12'5E).

Doringbaai Lighthouse (31°48'9S, 18°14'0E) (9.61).

2 Major lights:

Hondeklip Bay Light (30°18'5S, 17°16'2E) (9.45).

Groenriviermond Light (yellow round concrete tower, black band; 17 m in height) (30°52'0S, 17°34'9E).

Doringbaai Light – as above.

Directions

(continued from 9.48)

Hondeklipbaai to Island Point

9.54

- 1 From a position WSW of Hondeklipbaai (30°18'8S, 17°16'5E) the track leads SSE, passing (with positions relative to Hondeklip Bay Light (30°18'5S, 17°16'2E)):
- 2 WSW of Platklip Point ($1\frac{1}{2}$ miles S), surmounted by a stone cairn. The stranded wreck of *Aristea* stands on a rocky point 8 cables SSE of the point. Thence:
- 3 WSW of Rooiwal Bay ($9\frac{3}{4}$ miles SSE). At the head of the bay is a vertical cliff of red sandstone, about 11 m in height, the almost level summit of which is surmounted by a sloping bank of white sand of about equal height. This red cliff with its white crest is easily identified from seaward when bearing about 065°. This small bay affords no shelter. Thence:
- 4 WSW of the entrance ($10\frac{1}{2}$ miles SSE), to Spoeg River, which discharges into Spoeg River Bay (9.57). Kanoepkop (9.53), $2\frac{1}{2}$ miles ENE of the entrance to the river, is the most prominent of the ill-defined coastal hills in the vicinity. Thence:
- 5 WSW of Strandfontein Point (17 miles SSE). A reef of submerged rocks extends WSW from the point, over which the sea breaks heavily. Toringkop (9.56) stands $2\frac{1}{2}$ miles ENE of Strandfontein Point. A sand bar which forms the mouth of the usually dry Bitter River lies 3 miles SE of Strandfontein Point. Thence:
- 6 WSW of The Twins (32 miles SSE), two submerged rocks lying about 7 cables offshore. Their position is normally indicated by breakers but they should be given a wide berth. Thence:
- 7 WSW of Groenriviermond Light (37 miles SSE) (9.53). Groen River, the entrance of which lies about $1\frac{1}{4}$ miles N of the light, is closed by sandbanks. It is a favourite place for campers.
- 7 Thence the track leads to a position WSW of Island Point (40 miles SSE). There is a conspicuous boulder (9.53)

on a point 1 mile NNW of Island Point. Island Point consists of a flat rock lying off a low, rocky and sandy point. A passage about 7 m wide separates the island from the mainland. The engine parts of a wreck (9.53) standing about 5 m high provide a conspicuous landmark in the centre of the island. This and the top of the island are covered with guano.

Island Point to Olifantsrivier

9.55

- 1 From a position WSW of Island Point (30°55'·0S, 17°36'·2E) (above), the track continues SSE, passing (with positions relative to Groenriviermond Light (30°52'·0S, 17°34'·9E)):
- 2 WSW of Skulpsbank (7¼ miles SSE), where rocky ledges extend up to 1 cable from the shore. Landing is possible about 1 mile farther SSE, in good weather, on a sandy beach. Thence:
- 3 WSW of rocks (16 miles SSE) which break, extending up to 1 mile SW of the entrance to Brakrivier. Ruitersvlei, a swampy area which is flooded at HWS, lies at the closed mouth of the river. Torinberg (9.56), 14 miles ENE of Ruitersvlei, when viewed from this vicinity has steep N and S sides. Thence:
- 4 WSW of the mouth of Soutrivier (26½ miles SSE). A large salt mine is situated 1½ miles inland of the mouth and mounds of salt can sometimes be seen over the dunes. Thence:
WSW of Jakkalshok, (33½ miles SSE) recognised by the derelict mining machinery lying close to the coast, thence:
- 5 WSW of Cliff Point (31°36'·0S, 18°07'·0E), a remarkable double point of rugged formation, on which stand numerous mine workings and dumps, thence:
- 6 WSW of Elephant Rock (31°38'·7S, 18°08'·8E), a good radar target. It is joined to the shore by a sandbar over which the surf breaks at low water and there is a reef of rocks extending 1 cable offshore from its W extremity. The rock is one of the Proclaimed Guano Islands (1.168), although it is now inhabited only by a large colony of seals.
- 7 Thence the track leads to a position WSW of the entrance (31°42'·0S, 18°10'·4E) to Olifantsrivier (9.58), once known as Elephants River. It is obstructed by a bar upon which the sea usually breaks.

9.56

- 1 **Useful marks:**
Policeman's Helmet (30°29'·6S, 17°22'·5E).
Toringkop (30°33'·0S, 17°27'·5E). A ruined signal tower stands on its summit.
Toringberg (31°01'·6S, 17°59'·8E).
Krakeelklip (31°19'·5S, 18°08'·8E).
Radio mast (31°40'·0S, 18°20'·6E).
(Directions continue at 9.62)

Minor bay

Spoeg River Bay

9.57

- 1 **Description.** Spoeg River Bay (30°28'·1S, 17°21'·5E), a sandy bay about 1 mile in width, is sheltered from SW by a group of submerged rocks lying about 8 cables SW of the entrance to Spoeg River. But it is quite unprotected in other directions. The bay has an even sandy bottom shoaling gradually from 24 m at a short distance N of the rocks to

2.4 m at a distance of about ½ cable from shore, just outside the surf line.

- 2 There appears to be a clear passage, about 5 cables in width and having depths of 7.3 m, between the off-lying rocks and the S point of the bay.

Landing. A landing place is reported on the rocky shore on the S side of the bay, 1½ cables S of the mouth of the river. However, at LW a boat would be unable to approach to within a few metres of the shore.

Minor river

Olifantsrivier

9.58

- 1 Olifantsrivier (31°42'·0S, 18°10'·4E) is obstructed by a bar with a depth of 0.6 m over it, upon which the sea usually breaks. The village of Papendorp is situated on the shore of the lagoon one mile within the river entrance.
As a result of modern irrigation systems, the valley of Olifantsrivier probably has the most fertile soil in South Africa. The town of Vredendel, 25 miles from Papendorp, is a flourishing agricultural centre.

OLIFANTSRIVIER TO CAPE DESEADA

General information

Chart 4141

Route

9.59

- 1 From a position WSW of the entrance to Olifantsrivier (31°42'·0S, 18°10'·4E), the route leads SSE and S for about 36½ miles to a position W of Cape Deseada (32°19'·0S, 18°19'·0E).

Topography

9.60

- 1 In contrast to the coast N of Olifantsrivier, that stretching S to Groot Bergrivier (Great Berg River) (32°46'·2S, 18°08'·7E) (9.85) has long sandy stretches interspersed with rocky headlands. In general, the coast becomes greener and more cultivated the farther S one proceeds, and coastal and inland ranges of hills, provide more distinctive natural marks.

Principal marks

9.61

- 1 **Landmarks:**
Doringbaai Lighthouse (round concrete tower, black band, white lantern; 24 m in height) (31°48'·9S, 18°14'·0E).
Rock (31°54'·3S, 18°16'·8E).
Koeivleiberg (31°52'·8S, 18°28'·5E), 395 m in height.
Water tower (32°06'·5S, 18°18'·7E).

Major light:

Doringbaai Light — as above.

Directions

(continued from 9.56)

Olifantsrivier to Lambert's Bay

9.62

- 1 From a position WSW of the entrance to Olifantsrivier (31°42'·0S, 18°10'·4E), the track leads initially SSE, passing (with positions relative to Doringbaai Light (31°48'·9S, 18°14'·0E)):
- 2 WSW of Curlew Strand (4 miles N), a sandy beach at the S end of which is a rocky promontory enclosing a small bay that provides little shelter.

Strandfontein, a holiday resort stands at the S end of the beach, the white buildings of which are prominent when bearing ESE. A white hotel is situated on high ground behind the village. The coast between Strandfontein and Doringbaai (9.73) 3¼ miles S, is generally rocky with several small inlets, the largest of which is Bamboesbaai at the head of which are alluvial diggings. Bruinpunt forms the SE side of this bay. Thence:

- 3 WSW of Vaalpunt. Doringbaai Light (9.61) is exhibited from the point. Die Hospitaal lying 2 cables farther S is a detached drying reef over which the sea breaks violently. Thence:
WSW of Kanonpunt (6 miles SSE), the S entrance to Groothoekbaai, thence:
- 4 WSW of Cape Donkin (7½ miles SSE), the S entrance point of Donkin Bay (9.74), thence:
WSW of Rooiduinpunt (11 miles SSE).

Thence the track leads to a position W of Lambert's Bay East Breakwater Light (white concrete tower) (16½ miles SSE).

Lambert's Bay to Cape Deseada

9.63

- 1 From a position W of Lambert's Bay East Breakwater Light (32°05'·2S, 18°18'·3E), the track leads S, passing (with positions relative to Lambert's Bay East Breakwater Light):
- 2 W of Steenbokfontein (5 miles S). Between Lambert's Bay and this point the coast comprises a sandy shoreline. Grootrif, a rocky point extends W of Steenbokfontein. HMS *Sybilie* stranded here in 1901 and parts of the wreck can still be found in the vicinity. Thence:
- 3 W of Kreefbaai (7¼ miles S), a small indentation. At the head of this bay is Wadrifsoutpan, a shallow lagoon, stretching 3 miles inland. It is a bird sanctuary where large flocks of flamingo congregate. At the head of the salt pans are good fresh water springs from which water is pumped to a reservoir to the N.
- 4 Thence the track leads to a position W of Cape Deseada (14 miles S), also known as Baboon Point. A rocky shoal, with a depth of 14·3 m over it and on which the sea breaks in heavy weather, lies 2 miles NNW of the cape. When seen from a distance of about 9 miles, the cape appears bold and cliffy rising steeply from the sea to Ribboksploot, a flat-topped range of sandhills. The cape terminates in a low sandy point which is not easily seen from offshore.

9.64

1 Useful marks:

- Radio mast (red lights) (31°40'·0S, 18°20'·6E).
- Radio mast (red lights) (31°46'·6S, 18°14'·0E).

Radio mast (red lights) (32°19'·0S, 18°19'·1E).
(Directions continue for the coastal route at 9.83)
(Directions for entering Lambert's Bay are given at 9.69)

Lambert's Bay

Chart 4136 plan of Lambert's Bay

General information

9.65

- 1 **Position.** Lambert's Bay (32°05'·5S, 18°18'·5E).
Function. It is an important fishing harbour and is also a seaside resort. The town of Lambert's Bay is situated in the SE corner of the bay.
The bay was named in 1820 after Admiral Robert Lambert, Royal Navy, the commander in chief of His Majesty's Ships at the Cape of Good Hope and adjacent waters.
- Topography.** The bay is backed by shrub-covered sand dunes from 6 to 20 m in height.
- Port limits.** The limits of the port, as indicated on the plan, extend from a position on the shore 5 cables NE of the direction light (32°05'·5S, 18°18'·3E) NW for 5½ cables, thence SW for 6 cables, thence S to the shore.
- 2 **Approach and entry.** The port is approached from the NW and entered from NE between East Breakwater and Random Mole.

Limiting conditions

9.66

- 1 **Controlling depths.** There are charted depths in excess of 10 m in the approach to the harbour.
Deepest and longest berth. (9.71).
Tidal levels. Mean spring range about 1·5 m; mean neap range about 0·5 m. See information in *Admiralty Tide Tables Volume 2*.

Arrival information

9.67

- 1 **Outer anchorage** may be obtained as shown on the plan, about 2 cables NNW of East Breakwater in a depth of about 10 m.
The bay is partially protected by Bird Island, but the SW swell, though slight outside, frequently enters the bay round the reefs extending N from the islet, and makes the anchorage uncomfortable. The bay is open to NW winds but is sheltered by the islet from those from SW.
- 2 Mariners should be prepared to leave this anchorage instantly because the sea can get up with little or no warning filling the whole bay with breakers. Vessels anchored in Lambert's Bay should proceed to sea immediately the wind becomes N of W.
Local knowledge is required.



Cape Deseada (9.64)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

East Breakwater Light



a Bird Island

Evartsklip Rock



Lamberts Bay approaches from NW (9.65)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

Harbour**9.68**

- 1 **General layout.** Outer Harbour is open NE and is contained between East Breakwater and Random Mole. It is about 1 cable wide. A narrow, dredged channel connects with Inner Harbour, contained between West Breakwater, Bird Island and the S shore of the bay. The main berthing area fronts the town of Lambert's Bay.

- 2 **Landmarks:**

Church spire (32°05'·5S, 18°18'·5E), floodlit at night.
 Chimney (32°05'·5S, 18°18'·2E).
 Chimney (32°05'·7S, 18°18'·1E), red brick.

Directions for entering harbour**9.69**

- 1 **Caution.** The seabed up to 4 cables NW, W and S of Bird Island is fouled by a coastal reef and outlying rocks. From a position about 1 mile NW of East Breakwater Light (32°05'·2S, 18°18'·3E), the track leads SE passing (with positions relative to East Breakwater Light):
 NE of Piet se Plek (11½ cables WNW), a pinnacle rock over which there is a depth of 16·4 m, thence:
 NE of Spence se Klip (7¾ cables WNW), a group of pinnacle rocks, the shallowest of which has a depth of 8·2 m over it, thence:
 SW of Fisherman's Ledge (6½ cables N), a detached rocky ledge with a least depth of 4·2 m, thence:
 NE of Koppies (3 cables WNW), a dangerous submerged rock over which the sea breaks heavily during swells. Evartsklip, two rocky islets lie about 1½ cables S. Thence:
 NE of Handvang (2 cables W), a shoal with a depth of 3·6 m over it.
 Thence the track leads to a position NE of East Breakwater Light (9.62), where course is adjusted SW to enter the outer harbour. Die Mond se Blinder, a rock having a least depth of 5·4 m over it, lies in the entrance about 1¼ cables ENE of the light.

9.70

- 1 **Directional light** (white tower) (32°05'·5S, 18°18'·3E):
 The line of bearing (186°) of this light leads S, for about 1½ cables into the inner harbour, passing:
 E of East Breakwater, thence:
 W of Random Mole, a light (red circular concrete tower) is exhibited from its head, thence:
 E of Bird Island one of the Proclaimed Guano Islands (1.168), thence:
 W of No 2 Quay, at the outer end of which a light (white concrete tower) is exhibited.

Berths**9.71**

- 1 Alongside depths are charted depths. It was reported (1999) that there was less water in the approach channel and alongside the berths in the inner harbour due to silting. The port authorities should be contacted for the latest information.
- 2 **East Breakwater.** One wooden berth (32°05'·2S, 18°18'·2E), 60 m long with a depth of 5 m alongside for coasters. SW of this berth are four head and stern moorings for fishing vessels.
- 3 **Inner Harbour.** Three quays, the longest of which Quay No 1 (32°05'·5S, 18°18'·2E), 150 m in length with a depth of 3 m alongside, is adjacent the fish processing factory. There are also head and stern moorings for fishing boats.

Port services**9.72**

- 1 **Repairs:** slipway in the inner harbour for vessels up to 300 tonnes.
Supplies: diesel.

Anchorage and harbours*Chart 4141***Doringbaai****9.73**

- 1 Doringbaai (31°49'·0S, 18°14'·1E), the headquarters of the North Bay Canning Company, is a small private fishing

harbour having head and stern moorings for fishing craft of up to 15 m in length.

Entry and departure from this harbour demands skilful seamanship and navigation.

Donkin Bay

9.74

- 1 **Description.** Donkin Bay (31°56'·0S, 18°16'·5E), is an open fishing harbour from which a large fleet of small boats operate only when SE winds are blowing or the weather is fair.

- 2 **Anchorage** may be obtained off the bay in depths of 10 to 20 m, sand, but the anchorage is exposed.

Berth. At the head of the bay is a small jetty, which was reported (1971) to be in poor condition.

Elandsbaai

9.75

- 1 **Description.** Elandsbaai lies immediately N of Cape Deseada (32°19'·0S, 18°19'·0E) (9.63). The fishing village and holiday resort of Elandsbaai lies at the head of the bay. Verlorevlei, a lagoon, extends inland from the head of the bay for 8 miles but its mouth is normally closed by a sand bar. It is a well known bird sanctuary, the haunt of a number of rare species.

- 2 There are four rock lobster factories on the S shore of the bay.

Anchorage may be obtained about 1 mile NNE of Cape Deseada.

SAINT HELENA BAY

General information

Charts 4151, 4146

Description

9.76

- 1 Saint Helena Bay is contained between Cape Deseada (32°19'·0S, 18°19'·0E) and Stompneuspunt 29 miles SW.

Route

9.77

- 1 From a position W of Cape Deseada (32°19'·0S, 18°19'·0E), the route leads SSW for about 22 miles to a position about 4½ miles NE of Stompneuspunt (32°42'·3S, 17°58'·8E).

Topography

9.78

- 1 About 5 or 6 miles SSE of Cape Deseada, the country rises to abrupt, craggy eminences and broken ridges of lofty hills, which extend 30 miles in that direction and terminate in the Piketberg Range (not named on chart).

- 2 For topography to N of Groot Bergrivier (32°46'·2S, 18°08'·7E) see 9.60.

The coast between Slippers Bay (32°46'·9S, 18°03'·0E) (9.87), and Stompneuspunt, 6 miles NW is rocky and indented with numerous small inlets and two comparatively large bays. The whole coast is much built over.

Depths

9.79

- 1 In the N part of Saint Helena Bay, the shore is fairly steep-to, a depth of 15 m being found within 1 mile of the beach. However in its SE part, depths of less than 15 m extend 4 to 5 miles offshore, and these depths appear to be decreasing.

The bottom is mostly sand and mud but a great part of the W side of the bay between Groot Bergrivier and Stompneuspunt is fringed with rocks, some of which lie 5 cables offshore.

Tidal levels

9.80

- 1 Mean spring range about 1·6 m; mean neap range about 0·6 m. See information in *Admiralty Tide Tables Volume 2*.

Principal marks

9.81

- 1 **Landmarks:**

Water tower at Dwarskersbos (32°41'·9S, 18°13'·8E).

Buildings at Varkvlei (32°47'·1S, 18°05'·5E). A cluster of white farm buildings, which assist in identifying the position of Doctor Reef.

Major light:

Cape Columbine Light (32°49'·7S, 17°51'·4E) (9.95).

Other aids to navigation

9.82

- 1 **Racons:**

Great Berg River Mouth, Inner Eastern Breakwater Light (32°46'·1S, 18°08'·7E).

Great Berg River (32°46'·6S, 18°09'·2E).

See *Admiralty List of Radio Signals Volume 2*.

Directions

(continued from 9.64)

9.83

- 1 From a position W of Cape Deseada (32°19'·0S, 18°19'·0E), the track leads SSW clear of known dangers to a position about 4½ miles NE of Stompneuspunt (32°42'·3S, 17°58'·8E), the NE extremity of a sandy peninsula which projects about 1½ miles from the coast and forms the W side of Saint Helena Bay. A reef extends about 2½ cables NE from the point. A dangerous wreck with a depth of 0·6 m over it, and a rock with a depth of 12·8 m over it lie 5½ cables and 1½ miles respectively, ESE of Stompneuspunt. Stompneuspunt Light (square white masonry structure, white lantern, green top, 8 m in height) is exhibited from the point.

- 2 **Useful marks:**

Radio mast (red lights) (32°19'·0S, 18°19'·1E).

Radio mast (red lights) (32°38'·4S, 18°18'·5E).

Klein Tafelberg (32°33'·4S, 18°27'·8E) appears to be much closer to the coast than it is in reality. It is a well-defined dark hill, rising steeply from low land on each side; it is table-topped, but its summit is rather uneven. There is higher land behind it where some of the mountains are also table-topped.

Radio mast (red lights) (32°46'·2S, 18°09'·1E).

Radio mast (red lights) (32°44'·6S, 17°57'·4E).

(Directions continue at 9.97. Directions for entering Groot Bergrivier are given at 9.86)

Anchorage and harbours

Anchorage

9.84

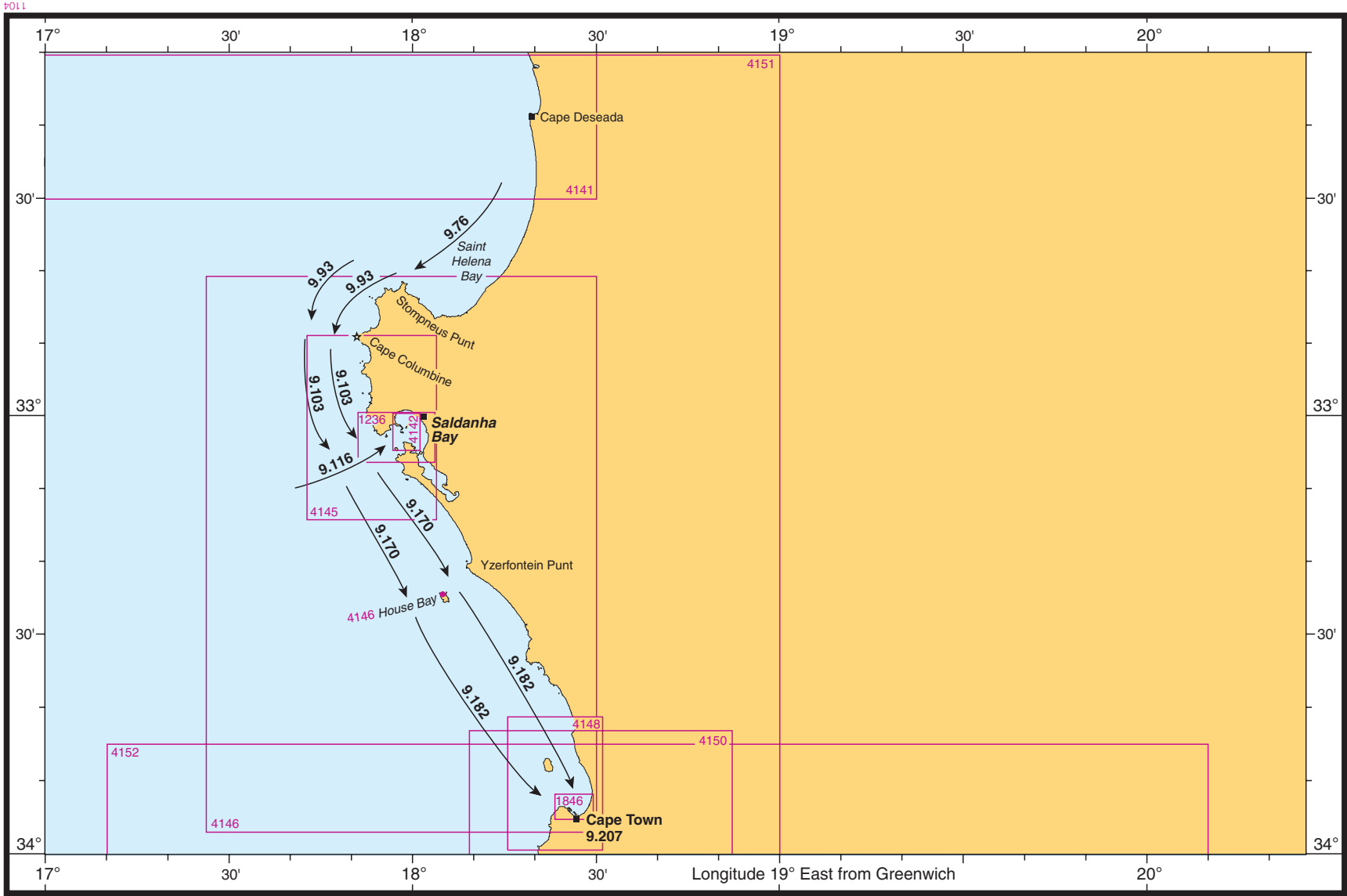
- 1 Anchorage with good holding may be obtained anywhere convenient within the bay but observing that in winter the bay is exposed to strong N winds, heavy seas and a nasty swell.

Groot Bergrivier

9.85

- 1 **Description.** The entrance to Groot Bergrivier (Great Berg River) (32°46'·2S, 18°08'·7E) lies in the S part of

9a - Cape Deseada to Table Bay



Saint Helena Bay. It consists of a cutting through the sand dunes which is protected by two breakwaters.

The fishing towns of Laaiplek and Velddrif are situated on the E bank of the river. During the latter part of the XIXth century Groot Bergrivier was a busy port for sailing ships.

- 2 The river is navigable by small craft for a considerable distance and vessels drawing up to 2 m can navigate, within 1 hour of HW, for 3 miles upstream to a road bridge at Velddrif. At night it is dangerous to navigate up river above Laaiplek as the river is not lighted.

Port limits are defined by a line drawn 320° for 1000 m from root of the ruined jetty, 135 m NE of the entrance, thence 270° for 1300 m and thence 180° to the coast.

- 3 **Controlling depths.** The harbour entrance and a channel leading to the wharves at Laaiplek have been dredged to a depth of 3 m but silting is liable to occur.

Tidal levels. For Saint Helena Bay see 9.80.

Local knowledge is required for the river passage above the harbour entrance.

- 4 **Landmarks:**

Water tower (32°41'9S, 18°13'8E).

Buildings (32°47'1S, 18°05'5E) (9.81).

- 5 **Racons:**

Great Berg River Mouth Inner Eastern Breakwater Light (32°46'1S, 18°08'7E).

Great Berg River (32°46'6S, 18°09'2E).

See *Admiralty List of Radio Signals Volume 2*.

9.86

- 1 **Directions.** From a position about 4½ miles NE of Stompneuspunt (32°42'3S, 17°58'8E), the track leads SE for about 8 miles to a position close NW of the entrance to Groot Bergrivier, passing (with positions relative to W Breakwater Light):

- 2 Clear of a shoal patch (4¼ miles N) with a depth of 4.6 m over it, thence:
WSW of Kelp Reefs (3½ miles NNE), thence:
ENE of Doctor Reef (2½ miles W), thence:
WSW of a dangerous submerged rock (2 cables NNE).

- 3 **Leading marks:**

W Breakwater Light.

Inner E Breakwater Light (racon).

Daymark (2 black diamonds), ½ cable SE of above.

Rear racon, 6 cables SE of front racon.

The alignment 142½° of the above marks leads through an approach channel to the harbour entrance. The breakwaters are marked by lights (white concrete towers). It was reported (1999) that the depth of water in the approach channel was less than charted.

Caution. When a strong N wind blows, a nasty sea builds up between the breakwaters especially on an out-going tide. In these circumstances, extreme caution is required and entry at night is inadvisable.

Useful mark:

Radio mast (red lights) (32°46'2S, 18°09'1E).

Old light tower (32°46'7S, 18°08'0E).

- 4 **Berths:**

A wharf, 330 m in length, and about 25 smaller wharves and jetties line the bank in front of Laaiplek for about 7½ cables.

A jetty, 85 m long with alongside depth of 2.1 m and several smaller jetties at Veldruff.

Repairs. Patent slipway at Laaiplek.

- 5 **Small craft.** A marina is situated at Port Owen on the bend between Laaiplek and Vridel. The marina provides

numerous berths and a 10 tonne travel-hoist and is accessible to small craft with a draught of 1.5 m at all states of the tide. A VHF watch is maintained throughout the day and night.

Between the entrance and the first bend, it is advisable to keep close to the Laaiplek jetties on the E bank due to a rock pile on the opposite side of the bend. Thereafter, a channel marked by buoys (special) leads to the marina.

West Point

9.87

- 1 West Point (not named on chart) lies 5 cables NNW of Slippers Bay (32°46'9S, 18°03'5E). The point has a fish-processing factory situated on it and there is a small craft harbour with a depth of 3.6 m having laid moorings for fishing craft.

Steenbergbaai

9.88

- 1 Steenbergbaai (not named on chart), 2 miles NW of Slippers Bay (32°46'9S, 18°03'0E), is a narrow inlet between drying reefs. It has a disused jetty and a disused factory at the head of the cove.

Sandy Point Harbour

9.89

- 1 **Description.** Sandy Point Harbour is located in Sandy Bay (32°44'7S, 18°01'2E). It is the main harbour on the W side of Saint Helena Bay and used principally by fishing vessels.

Topography. The bay is enclosed by a coastal reef on its S side and by a breakwater, 480 m long, extending ESE from Sandy Point on its N side. A fish processing factory is situated at the root of the breakwater. In addition to its chimneys, two conspicuous oil tanks painted black provide useful identification marks. Another factory is located at the head of the bay.

- 2 **Port limits** are defined by a line drawn from a position 280°, 900 m from the head of the breakwater, thence 040° for 600 m, thence 135° for 2100 m, thence 220° to the coast.

Port radio. The harbour master keeps a VHF watch during working hours.

- 3 **Directions.** From a position about 2 miles NE of Sandy Point, the track leads SW, passing (with positions relative to Sandy Point):

SE of a shoal patch (1 mile NE), with a depth of 7.5 m over it. An area of shoal depths swept to 9.4 m (1966) lie about 5 cables NW.

Thence the track leads to a position SE of the breakwater head from which a light (red concrete tower) is exhibited.

- 4 **Berths.** Permanent moorings for fishing vessels exist within the bay and there is a hard for landing catches. A berth for coasters, 74 m in length, with a depth of 6.1 m alongside, is located on the inshore side of the breakwater. A pier with a depth of about 4.5 m at its head is located at the S end of the harbour.

Repairs. There is a slipway capable of accommodating five large fishing vessels. Minor repairs can be carried out.

Middle Bay

9.90

- 1 Middle Bay (32°43'9S, 17°59'8E) (not named on chart), is a narrow inlet entered between reefs, with a jetty at its head.

Breakwater Light

Black Tanks



St. Helena Bay – Sandy Point Harbour from N (9.89)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

Vioolbaai**9.91**

- 1 Vioolbaai (32°43'·8S, 17°59'·2E) (not named on chart), is a narrow inlet entered between reefs and has a fish factory and a jetty at its head.

Stompneusbaai**9.92**

- 1 **Description.** Stompneusbaai is entered about 1¼ miles SE of Stompneuspunt (32°42'·3S, 17°58'·8E).

A monument to Vasco da Gama stands near the S end of the bay. Vasco da Gama, with a squadron of three ships spent some time in Saint Helena Bay in 1497, on his famous voyage which opened the sea route to India.

- 2 **Directions.** Leading lights:

Front light (black post at head of factory jetty) (32°43'·4S, 17°58'·8E).

Rear light (black post) (242 m from front light).

From a position about 1 mile E of the conspicuous white square tower of the fish factory at the head of the bay, the alignment (278°) of the above lights leads W for about 9 cables, passing S of Simpson's Rock which dries 0.5 m, (not named on chart), lying 1 mile S of Stompneuspunt. A cluster of above-water rocks 7 m in height lie about 1 cable N of the rock. Foul ground to the S of the channel is marked by five spar buoys running parallel to the leading line.

Useful mark:

Radio mast (red lights) (32°44'·6S, 17°57'·4E).

- 3 **Anchorage** for small vessels may be obtained in the bay clear of rocks extending 1½ cables offshore from the sandy bluff at the N end of the bay and also the rocks mentioned above.

Berths. The factory jetty lies between two small disused jetties at the head of the bay.

Offshore route. From a position NW of Britannia Reef, the route leads SSW for about 21½ miles to a position about 14 miles SW of Cape Columbine at the start of a traffic separation scheme (9.107).

Climatic table**9.94**

- 1 For climatic table at Cape Columbine Lighthouse see 1.226 and 1.248.

Principal marks**9.95**

- 1 **Landmark:**

Kasteelberg (32°48'·8S, 17°56'·9E).

Major light:

Cape Columbine Light (white square concrete tower, 15 m in height) (32°49'·7S, 17°51'·4E).



Cape Columbine Light (9.95)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

STOMPNEUSPUNT TO CAPE COLUMBINE**General information**

Chart 4146, 4151

Routes**9.93**

- 1 From a position about 4½ miles NE of Stompneuspunt (32°42'·3S, 17°58'·8E), the route leads W for about 12 miles to a position NW of Britannia Reef (32°42'·0S, 17°51'·5E).

Coastal route. From a position NW of Britannia Reef, the route continues S, for about 14½ miles to a position SW of Cape Columbine (32°49'·6S, 17°50'·8E) at the start of an inshore traffic zone (9.107).

Other aid to navigation**9.96**

- 1 **Racon:**

Seal Island Light (32°44'·3S, 17°52'·4E).

See *Admiralty List of Radio Signals Volume 2*.

Directions

(continued from 9.83)

9.97

- 1 From a position about 4½ miles NE of Stompneuspunt (32°42'·3S, 17°58'·8E) (9.83), the track leads initially W, passing (with positions relative to Stompneuspunt):

N of Stompneuspunt (9.83), and:

Clear of North Blinder (4½ miles N), a rocky ledge with a least depth of 6 m over it and over which the sea breaks heavily when a heavy swell is running, thence:

- 2 N of Shell Bay Point (8 cables WNW). A rock lies 2 cables N of the point. Shell Bay is contained between Shell Bay Point and Stompneus Point. Thence:

- 3 N of Britannia Rock (¾ miles W), lying 5 cables NW of Cape Saint Martin, a low sandy point. Cape Saint Martin Light (triangle apex downwards, on framework mast, 10 m in height) is exhibited from the point. Britannia Bay lies between Shell Bay Point and Cape Saint Martin. Thence:

- 4 N of Britannia Reef (6 miles WNW) steep-to with a least depth of 3.3 m over it. The sea breaks on it even with a moderate swell. The reef is covered by the red sector of Cape Saint Martin Light.

Thence the track leads to a position NW of Britannia Reef.

Directions for coastal route

9.98

- 1 The track then leads S, passing (with positions relative to Stompneuspunt (32°42'3S, 17°58'8E):

W of Britannia Reef (above). A dangerous wreck lies about 2 miles SE of the reef and the stranded wreck of a cargo vessel, *Sea Trader*, lies a further 1½ miles ESE. The latter has the appearance of a ship at anchor. Thence:

- 2 W of Seal Island (6 miles WSW), from which Seal Island Light (mast with crow nest, 6 m in height) is exhibited. A reef and small islets extend about 1 mile E to Groot Paternosterpunt. Seal Island is a Proclaimed Guano Island (1.168). Paternosterbaai (9.100), where anchorage may be obtained lies S of Groot Paternosterpunt. Thence:

W of a rock awash (6¼ miles WSW), thence:

- 3 W of Jim Crow Rock (8¾ miles SW), which dries 0.6 m. It lies at the NW extremity of a rocky ledge on which the sea breaks violently in heavy weather. Mariners are advised to use the passage N

of Jim Crow Rock for entering and leaving Paternosterbaai.

- 4 Thence the track leads to a position SW of Cape Columbine (10 miles SW), fringed with rocky reefs which dry and which extend up to 7½ cables NW of it. Cape Columbine is surmounted by a boulder known as Castle Rock. Cape Columbine Light (9.95) is exhibited from a position 5 cables E of the cape. A rock over which there is a least depth of 1.8 m lies ¼ miles SW of Cape Columbine.

(Directions continue for coastal route at 9.112)

Directions for offshore route

9.99

- 1 From a position NW of Britannia Reef (32°42'0S, 17°51'5E) (9.97), the track leads SSW for about 21½ miles, clear of all known dangers, to a position about 14 miles SW of Cape Columbine (32°49'6S, 17°50'8E), at the entrance to the SE bound traffic lane of a TSS (9.107).

(Directions continue for offshore route at 9.114)

Anchorage

Paternosterbaai

9.100

- 1 **Description.** Paternosterbaai lies between Groot Paternosterpunt (32°44'5S, 17°53'7E), and Cape Columbine, 5½ miles SW. The shore of the bay consists of a long, sandy beach backed by sand dunes, with several outlying rocks close offshore. The village of Paternoster with conspicuous white houses, lies on the S shore of the bay. The chimney of the fish factory is a prominent mark.

- 2 **Directions.** From a position N of Jim Crow Rock (32°47'2S, 17°50'6E), the track leads E, and SSE for about 3 miles to a suitable anchorage off the village, noting Tambourine Rock, 3 miles E of Jim Crow Rock.

Anchorage. Good sheltered anchorage may be obtained in Klein Paternosterbaai in a depth of 9 m with the factory chimney bearing SW distant 5 cables, but noting a rock awash on the same bearing distant 3 cables. This anchorage should not be used during strong NW winds or swell, which occur most often in winter.

Landing may be found at the crayfish factory.

CAPE COLUMBINE TO TABLE BAY

GENERAL INFORMATION

Chart 4146

Area covered

9.101

- 1 This section describes the coastal passages anchorages and harbours from Cape Columbine (32°49'6S, 17°50'8E) to Table Bay (33°51'9S, 18°25'4E), 70 miles SSE. Also described are the ports of Saldanha Bay and Cape Town.

- 2 It is arranged as follows:

Cape Columbine to Saldanha Bay (9.103).

Saldanha Bay (9.116).

Saldanha Bay to Yzerfonteinpunt (9.170).

Yzerfonteinpunt to Table Bay (9.182).

Cape Town (9.207).

Topography

9.102

- 1 The coast from Cape Columbine to North Head at the entrance to Saldanha Bay is generally rugged and indented.

From Saldanha Bay to Table Bay the coast consists of long sandy beaches lying between rocky headlands. With the exception of Table Bay itself, the intervening coast provides little shelter. Although this coastline is not so rugged as that N of Saldanha Bay, there are several off-lying rocks and shoals and a heavy surf generally makes landing difficult.

CAPE COLUMBINE TO SALDANHA BAY

General information

Charts 4146, 4145, 1236

Routes

9.103

- 1 **Coastal route.** From a position SW of Cape Columbine (32°49'6S, 17°50'8E), the route leads SSE for about 15 miles to the vicinity of the pilot boarding position SW of North Head (33°03'0S, 17°54'7E). This route passes through an inshore traffic zone (9.107).

Offshore route. From a position about 14 miles SW of Cape Columbine (32°49'·6S, 17°50'·8E), the route leads through the SE bound traffic lane of a TSS (9.107) for about 13 miles to the vicinity of the pilot boarding position SW of North Head.

Topography

9.104

- 1 See 9.102.

Depths

9.105

- 1 **Caution.** Between Cape Columbine and North Head, 14 miles S, there are numerous off-lying rocks many of which rise almost perpendicularly from depths of 46 m, making this coast one of the most dangerous on the entire coast of South Africa. The greatest care must therefore be exercised when navigating in this area. At night or in thick weather, mariners should not get into depths of less than 100 m, which depth will be found 3 miles outside all these dangers.

Vessel Traffic Service

9.106

- 1 A VTS is in operation for the control of shipping in the approaches to Saldanha Bay. See 9.131.

Traffic regulations

9.107

- 1 **Traffic separation scheme.** A TSS, the limits of which are indicated on the chart, is situated in the approaches to Saldanha Bay. This scheme is not IMO adopted. The South African authorities advise that the principles for the use of the scheme are as defined in Rule 10 of *The International Regulations for Preventing Collisions at Sea* (1972).

Crayfish trap fishing

9.108

- 1 See 9.9.

Climatic table

9.109

- 1 For climatic table at Cape Columbine Lighthouse see 1.226 and 1.248.

Principal marks

9.110

- 1 **Landmarks:**
 Sand patch (32°51'·6S, 17°53'·0E).
 Die Witsand (32°55'·8S, 17°53'·1E).
 Water tower (32°55'·0S, 17°59'·2E).
- 2 **Major lights:**
 Cape Columbine Light (32°49'·7S, 17°51'·4E) (9.95).
 North Head Light (33°03'·0S, 17°54'·7E) (9.141).
 South Head Light (33°06'·3S, 17°57'·3E) (9.141).

Other aids to navigation

9.111

Racons:

Marcus Island Light (33°02'·7S, 17°58'·1E).
 Saldanha Bay Rear Leading Light (33°02'·8S, 18°03'·2E).

See *Admiralty List of Radio Signals Volume 2*.

Directions for coastal route

(continued from 9.98)

9.112

- 1 From a position SW of Cape Columbine (32°49'·6S, 17°50'·8E) (9.98), the track leads SSE, passing (with positions relative to Cape Columbine):
 WSW of Noordwesbaai (2½ miles SSE) with a conspicuous sand patch at its head. The bay is exposed and not recommended for anchorage. Thence:
 WSW of two dangerous underwater rocks (3½ miles SSW) on a detached reef. Soldier's Reef, awash, lies 1¼ miles E and Voël islets lie about 6 cables NE of Soldier's Reef. Thence:
- 2 WSW of Duminypunt (5 miles S), low and sandy. A dangerous reef with rocks awash and submerged extends up to 1½ miles WSW of the point. There is a boat passage between the off-lying reef and the point but local knowledge is required. Thence:
- 3 WSW of Wesbaai (6 miles S). Die Witsand, a conspicuous patch of white sand lies at the head of bush-covered sand dunes. Anchorage (9.115) may be obtained in the N part of the bay between Duminypunt and an offshore reef with rocks awash, 2 miles S of the point. Thence:
- 4 WSW of Hospitaalpunt (8 miles SSE) at the S end of Wesbaai, low-lying, and with a reef terminating in Hospital Rock, 4 cables W of it. On Jacob's Reef, 9 cables W of Hospitaalpunt stands an islet which is a Proclaimed Guano Island (1.168). Thence:
 WSW of a shoal patch (8¾ miles S) with a depth of 12 m over it, thence:
 WSW of Jacobsbaai, a well-protected small boat harbour. A boat channel marked by pellet buoys leads to a landing place at the head of the bay. The bay is used by crayfish fishing boats. Thence:
 WSW of a shoal patch (9½ miles S) with a depth of 14-8 m over it. The Sisters a group of small rocks lie 6 cables E. Thence:
 WSW of Tooth Rock (10½ miles S), 1 m high, thence:
 WSW of Bay Rock (11¼ miles S), awash and which occasionally breaks, lying 6 cables SW of Morrison's Point. Danger Bay, whose entrance is encumbered by reefs extending more than 5 cables seaward from Morrison's Point to N and Long Point to S, is very exposed to W winds and swell. It should be entered with extreme caution. Thence:
- 6 WSW of Cap Rock (12 miles S), which dries, lying 9 cables W of Long Point (33°01'·6S, 17°53'·5E). A rock with a least depth of 2-4 m over it, lies 5 cables WNW of Long Point. Thence:
 WSW of North Head (13¾ miles SSE). Schooner Rock is the outermost and largest of a group of above-water rocks extending 2½ cables SSW from North Head. A rock with a depth of 23-5 m over it lies 7 cables SSW of Schooner Rock.

Malgaskop

Baviaansberg

North Head Light



Saldanha Bay Approaches – North Head from NW (9.112)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

- 7 Thence the track leads to the vicinity of the pilot boarding position SW of North Head.

9.113

- 1 **Useful mark:**

Kasteelberg (32°48'·8S, 17°56'·9E).
 Malgaskop (33°02'·2S, 17°55'·6E) (9.141).
 Beacon on Baviaansberg (33°02'·6S, 17°54'·8E).
(Directions continue for coastal route at 9.177 and for entering Saldanha Bay at 9.143)

Directions for offshore route

(continued from 9.99)

Traffic separation scheme**9.114**

- 1 From a position about 14 miles SW of Cape Columbine (32°49'·6S, 17°50'·8E) (9.98), the track leads through the SE bound traffic lane of the TSS, for about 13 miles to the vicinity of the pilot boarding position SW of North Head (14 miles SSE). The chart is sufficient guide
(Directions continue for offshore route at 9.179, and for entering Saldanha Bay at 9.143)

Anchorage**Wesbaai****9.115**

- 1 In fair weather temporary anchorage may be obtained, as indicated on the chart, at the N end of Wesbaai (32°55'·5S, 17°51'·8E), in a depth of 15 to 20 m, sand, 8 cables offshore.

SALDANHA BAY**General information**

Charts 4145, 1236, 4142

Position**9.116**

- 1 Saldanha Bay (33°02'·7S, 17°58'·1E), lies about 56 miles NNW of Cape Town.

Function**9.117**

- 1 Probably one of the finest natural harbours in southern Africa, it is used mainly for the export of iron ore, which is transported by railway from Sishen in the Northern Cape Province, some 800 km away. There is a crude oil storage facility served by a deep water tanker berth. Other cargoes handled are lead and zinc ore concentrates, salt and frozen fish.

Saldanha is an important centre for the fishing industry and has the largest fish processing factory in South Africa. Agriculture also flourishes.

- 2 The South African Military Academy lies on the peninsula W of the bay but the buildings are not visible from seaward.

The South African Naval Training Base stands on the cliffs at the head of Smitswinkel Bay close S of Baviaans Point (33°00'·7S, 17°57'·1E).

The town of Saldanha, situated on the NW side of the bay is a well known yachting centre and holiday resort.

Port limits**9.118**

- 1 The limits of the port, as indicated on the chart, are defined by lines drawn SW from Long Point (33°01'·6S,

North Head Light

Schooner Rock

Malgas Island



Saldanha Bay Approaches – North Head Light from SW (9.112)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

17°53'·5E), and a point 3½ miles SE of South Head, 5½ miles SE, for a distance of about 3 miles offshore.

Approach and entry

9.119

- 1 The bay is approached from SW, between North Head (33°03'·1S, 17°54'·7E), and South Head, 3¾ miles SE, and entered on the alignment of leading lights.

Traffic

9.120

- 1 In 2003, the port was used by 369 ships. Annually, more than 20 million tonnes of iron ore is exported and 2 million tonnes of crude oil imported, making the port the third largest in the Republic of South Africa.

Hazards

9.121

- 1 **Crayfish trap fishing.** See 9.9.
Shellfish beds lie in large concentrations on the E side of the harbour and on the NE side of Spending Beach (33°02'·0S, 17°58'·2E). Mariners should keep well clear of rafts, buoys, floats or lines associated with shellfish breeding.
Submarine and military exercise areas. See 9.3.

Traffic regulations

9.122

- 1 **Fishing prohibited.** Fishing is prohibited within much of the harbour area and its approaches, as indicated on the chart.

Port Authority

9.123

- 1 National Ports Authority of South Africa, Private Bag XI, 7395 Saldanha, South Africa.

Limiting conditions

Controlling depths

9.124

- 1 There is a least depth of 22·9 m in the Navigation Channel which leads to the Ore Loading Jetty.

Deepest and longest berth

9.125

- 1 Ore Loading Jetty (9.150).

Tidal levels

9.126

- 1 Mean spring range about 1·5 m; mean neap range about 0·6 m. See information in *Admiralty Tide Tables Volume 2*.

Density of water

9.127

- 1 The density of the water is 1·025 g/cm³.

Maximum size of vessel handled

9.128

- 1 There is no maximum length prescribed for the ore or tanker berth. Maximum draft on arrival is 20·5 m, and on departure 21·5 m.

Local weather

9.129

- 1 The harbour is occasionally subjected to severe swell conditions associated with weather depressions passing the Cape of Good Hope from W to E. Conditions in the harbour are influenced by both the height and the direction of the swell outside. Surging can be expected even in the

innermost parts of the harbour and on occasions vessels have to suspend cargo operations, and possibly unmoor and proceed to an anchorage or leave port. A wave monitoring buoy (special), moored alongside the entrance channel, relays data to Port Control (33°01'·7S, 17°57'·8E).

Arrival information

Port operations

9.130

- 1 Vessels berthing at the ore facility with a draught of less than 14 m are berthed and un-berthed at any time; bulk carriers of more than 14 m draught and loaded tankers are berthed during daylight only. Vessels less than 100 000 dwt berth port side to either on the W or E side of the ore loading terminal; vessels greater than 100 000 dwt are berthed bow to sea.
 Vessels berthing at the Multi Purpose Terminal are berthed between 0600 and 2200.

Vessel Traffic Service

9.131

- 1 A VTS is in operation for the control of shipping in the approaches to Saldanha Bay. Reporting points are indicated on the chart. It is mandatory for certain vessels. See *Admiralty List of Radio Signals Volume 6(3)*.

Port radio

9.132

- 1 There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required

9.133

- 1 ETA should be sent 96, 48 and 24 hours prior to arrival. VHF contact should be established when within range and berthing instructions obtained 6 hours prior to ETA.
 See *Admiralty List of Radio Signals Volume 6(3)* and 1.43.

Outer anchorages

9.134

- 1 The approaches to Saldanha Bay are unsuitable for anchoring and vessels awaiting a berth are advised to remain underway. Additionally, vessels may anchor in Saint Helena Bay (9.76) with the permission of the port control. It provides good holding but is exposed to N gales, heavy seas and a nasty swell in winter. Temporary anchorage may be obtained in the vicinity of the ore loading jetty.

Pilotage

9.135

- 1 Pilotage is compulsory within port limits and is available 24 hours per day. The pilot boards as indicated on the chart about 5 miles SW of North Head. Pilot embarkation or disembarkation may also be effected by helicopter. See *Admiralty List of Radio Signals Volume 6(3)*.

Tugs

9.136

- 1 Tugs are available and their use is compulsory.

Regulations concerning entry

9.137

- 1 **Traffic separation scheme.** A TSS, the limits of which are indicated on the chart, is situated in the approaches to Saldanha Bay. This scheme is not IMO adopted. The South African authorities advise that the principles for the use of the scheme are as defined in Rule 10 of *The International Regulations for Preventing Collisions at Sea (1972)*.

- 2 **Prohibited area.** A prohibited area, the limits of which are indicated on the chart, extending from 1 to 3 cables offshore, surrounds the N extremity of Donkerkat Peninsula (33°04'·5S, 18°59'·2E), as far S as Riet Bay (33°05'·4S, 18°00'·0E) on the E side and a position 1½ miles SE of South Head on the W side. Buoys (special) mark the limits of this area in the approaches to Salamander, Donkerkat and Riet Bays on the E side of the peninsula.

Harbour

General layout

9.138

- 1 The commercial port lies in the N part of the bay, protected by an artificial breakwater extending in a crescent shape from Marcus Island (33°02'·7S, 17°58'·1E) WNW towards the town of Saldanha. The main berthing area centres on a long causeway extending 2¼ miles SSW from the N shore of the bay. The Entrance Channel and Navigation Channel lead ENE and NNE through the bay directly to the berths.
- 2 Vessels should keep to seaward of a line joining North East Light-buoy (special) (33°02'·3S, 18°00'·1E) and East Light-buoy (special), 1 mile SSE. The two buoys mark the approximate limit of the 13 m depth contour in the E part of the bay. In 2004, a mobile drilling rig was moored about 3 cables NNW of the North East Light-buoy.

Traffic signals

9.139

- 1 Traffic signals which face seaward, are exhibited from the Port Control building (33°01'·7S, 17°57'·8E) as follows:
A green light indicates a vessel may enter port.
A red light indicates entry prohibited.

Natural conditions

9.140

- 1 **Tidal streams.** The tidal streams appear to set regularly in and out of the entrance to Saldanha Bay at the rate of ¼ to ½ kn.
- Current.** A short distance outside the bay, the current generally sets N at the rate of ½ to 1 kn.

Principal marks

9.141

- 1 **Landmarks:**
Die Witsand (32°55'·8S, 17°53'·1E).
Water tower (32°55'·0S, 17°59'·2E).
Malgaskop (33°02'·2S, 17°55'·6E). Large white building near its summit and a radar reflector on its E brow.

Port Control building (33°01'·7S, 17°57'·8E).
Ore Loading Control Tower (33°00'·4S, 17°59'·8E).
The whole Ore Loading Jetty is brilliantly lit at night.
Chimney (33°00'·0S, 17°59'·9E).

2 Major lights:

Cape Columbine Light (32°49'·7S, 17°51'·4E) (9.95).
North Head Light (yellow rectangular daymark with black bands on metal framework tower, 21 m in height) (33°03'·0S, 17°54'·7E).
South Head Light (Round yellow and white concrete tower, yellow lantern, 23 m in height) (33°06'·3S, 17°57'·3E).

Other aids to navigation

9.142

1 Racons:

Marcus Island Light (33°02'·7S, 17°58'·1E).
Saldanha Bay Rear Leading Light (33°02'·8S, 18°03'·2E).

See *Admiralty List of Radio Signals Volume 2*.

Directions for entering harbour

(continued from 9.113 and 9.114)

Approaches

9.143

- 1 Vessels approaching the port should follow the charted TSS (9.137). At night, or in restricted visibility, vessels should keep in depths of more than 100 m until a positive fix has been obtained See 9.105.

Entrance Channel

9.144

1 Leading lights:

Front light (pole) (33°02'·4S, 17°58'·4E).
Rear light (framework mast, 11 m in height) (5¾ cables from front light).

From the vicinity of the pilot boarding position SW of North Head (33°03'·5S, 17°54'·7E), the alignment (056°) of these lights leads NE for about 5½ miles to the end of the leading line SE of North Head, passing (with positions relative to North Head):

SE of North Head (9.112). A light (9.141) is exhibited from the point. And:

NW of South Head (9.177) (4 miles SE). A light (9.141) is exhibited from the point. Thence:

- 2 NW of Wasserfall Bank (1¾ miles SE), which breaks in heavy gales. Jutten Island, a Proclaimed Guano Island (1.168), which has two small hills on it whitened by guano and some buildings, lies about 1 mile SE. Rocks extend 2 cables N of the island

Elandspunt

Jutten Island



Saldanha Bay Entrance Channel – Donkerkat Peninsula from W (9.144)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)



Saldanha Bay Entrance Channel – North Bay (9.144)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

and others fringe its remaining sides to a distance of about 1 cable. Lloyd Bank lies $5\frac{1}{2}$ cables W of Jutten island. Thence:

- 3 SE of Malgas Island (8 cables ESE), low-lying and on which there is a flagstaff. It also is a Proclaimed Guano Islands (1.168). The island is surrounded by submerged and above-water rocks up to $2\frac{3}{4}$ cables offshore. Mariners are advised to pass at least 4 cables off Malgas Island. The passage between the island and the N shore is unsafe as the bottom is foul and a heavy swell always sets through it. Needle Rock surrounded by rocks and reefs lies $1\frac{3}{4}$ cables NE of Malgas Island.

9.145**1 Leading lights:**

Front light (framework tower, 12 m in height) (33°02'8S, 18°02'7E).

Rear light (similar construction, 34 m in height) (738 m from front light).

- 2 From a position SE of North Head, the alignment (080°) of the these lights leads ENE for about $1\frac{3}{4}$ miles to a position on the leading line SSW of Marcus Island Light (33°02'7S, 17°58'1E). Thence the track leads NE for about 1 mile to a position in deep water, at the entrance to the Navigation Channel, passing (with positions relative to Marcus Island Light (33°02'7S, 17°58'1E)):

NW of Elands Point ($1\frac{1}{2}$ miles S), rocky and comparatively steep-to, from which a light (metal framework tower) is exhibited, thence:

- 3 SE of Marcus Island from which a light (framework tower) is exhibited. The island is 9 m high and covered with sparse vegetation growing between scattered white boulders. Mariners are advised that the gently sloping Spending Beach connecting Marcus Island to the mainland, which was

designed to dissipate the force of the waves, provides a poor radar target from seaward. Hospital Rock, 5 m in height, lies 1 cable S of the island.

4 Useful marks:

Baviaansberg with radar reflector on its summit (33°02'6S, 17°54'8E).

Hoedjieskop, surmounted by a remarkable rock pillar and a beacon (33°00'7S, 17°56'8E).

Navigation Channel**9.146**

- 1 From a position SE of Marcus Island Light and at the entrance to the Navigation Channel, the track leads NNE for about 8 cables through a channel marked by light-buoys (lateral) to a Turning Basin, passing ESE of Marcus Island and Spending Beach on which stand numerous beacons. In conjunction with a beacon close WSW of the Port Control building, these transit beacons indicate the distance to the Turning Basin. The Turning Basin has a diameter of 580 m.

Directions for berths**9.147**

- 1 The berths are approached through the Navigation Channel (9.146), which leads NNE and has a maintained depth of 22.9 m as far as the Ore Loading Jetty (9.150). An approach channel, dredged to a maintained depth of 14.9 m, continues NNE to a second turning basin for vessels using the Multi Purpose Terminal (9.151).
- 2 An approach channel, marked by light-buoys, dredged to a maintained depth of 7.6 m over a width of 130 m leads to the Maintenance Terminal (9.152) and Rock Quay (9.152), 6 cables NNE of the Multi Purpose Terminal. Another channel dredged to a maintained depth of 6.9 m leads to Mossgas Quay (9.152), 1 mile N of the Multi Purpose Terminal. The chart is sufficient guide.

Marcus Island Light

Ore Loading Jetty



Saldanha Bay Entrance Channel (9.144)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)



Saldanha Bay Harbour – Ore Loading Jetty (9.150)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

Side channel

9.148

- 1 **Description.** A channel, about 4 cables in width, leads ENE and N into Saldanha Bay, between Jutten Island (33°05'·0S, 17°57'·4E) and Jut Point, 5 cables S.

Caution. Jutten Bay has a sandy shore apparently free of off-lying rocks. However, a heavy surf runs along the shore of this bay and it should not be approached nearer than 2·5 cables. Anchoring is not recommended. The coast of Donkergat Peninsula lies in a prohibited area (9.137).

- 2 **Directions.** From a position W of Jut Point, the track leads ENE, passing (with positions relative to Jut Point): NNW of Passage Reef (4 cables W), thence: Between the S and E ends of Jutten Island, which are steep-to, and Jut Point.

Thence course is adjusted N to enter Saldanha passing W of Elands Point (1¼ miles NNE).

Berths

9.149

- 1 Alongside depths are charted depths. The port authorities should be contacted for the latest information.

Ore Loading Jetty and Oil Jetty

9.150

- 1 The Ore Loading Jetty (33°02'·0S, 17°59'·0E), with the Oil Jetty at its S end, have a total length of 992 m. The Ore Jetty has a berth on both sides, each 500 m in length; the single Oil Jetty is 450 m in length. There is a maintained depth of 22·9 m alongside both jetties. A light (framework mast, 11 m in height) is exhibited at the seaward end of the jetty.

Multi Purpose Terminal

9.151

- 1 The Multi Purpose Terminal (33°01'·0S, 17°59'·3E), 850 m in length, is situated on the W side of the causeway.

There are three numbered berths with maintained depths of 13·9 and 14·9 m alongside. Vessels at this terminal can experience severe surging.

Other berths

9.152

- 1 There are three other berths (with positions relative to the N end (33°00'·7S, 17°59'·4E) of Multi Purpose Terminal:

Maintenance Terminal (6 cables NNE), 110 m in length. It is protected by a breakwater.

Rock Quay (7 cables NNE), 85 m in length.

Moss gas Quay (1 mile NNW), has an enclosed area with a dredged depth of 7·9 m.

Smitswinkel Bay

9.153

- 1 **Government Jetty** (33°01'·3S, 17°57'·1E), a concrete and wooden structure, 343 m in length with a dredged depth of 6·7 m alongside. A surge particularly along the S side often makes it impracticable for vessels to berth. A light is exhibited from its head.

Sea Harvest Factory Quay, extending ESE from the root of Government Jetty is 540 m in length and contains eight small berths. There are depths of less than 2 m alongside. A fish processing factory is prominent at the root of Government Jetty.

- 2 **Slipway Jetty**, close W of Government Jetty is 180 m in length. See 9.155.

President Jetty is used by SAS *Saldanha*, the South African Naval Training Base.

Baviaans Point is the site of a fish factory and its quay.

There are a number of other small berths fronting the town of Saldanha.



Saldanha Bay Harbour – Multi Purpose Terminal (9.151)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

Anchorage

9.154

- 1 **Saldanha Bay Harbour** (not named on the chart) is located in the NW part of Saldanha Bay and has an entrance $3\frac{1}{2}$ cables wide between the Spending Beach and the S end of the Ore Loading jetty. Anchorage may be obtained in depths of 13 m, fine sand and mud. North Light-buoy (special) ($33^{\circ}01'1N$, $17^{\circ}58'2E$) marks the N limit of the 10 m depth contour within the harbour.

- 2 **Smitswinkel Bay**, Good anchorage, mud and sand bottom, may be obtained in the bay, close E of the town of Saldanha and clear of a mussel culture area 4 cables NNW of Hoedjies Point ($33^{\circ}01'7S$, $17^{\circ}57'9E$).

A naval mooring area, the limits of which are indicated on the chart lies in the W part of the bay and encompasses President Jetty (9.153).

- 3 **Hoedjies Bay** lies off the town of Saldanha, close N of Baviaans Point ($33^{\circ}00'7S$, $17^{\circ}57'1E$). The bay provides good sheltered anchorage for fishing vessels and small craft. There are many submerged rocks and rocks awash in the bay, some of which are marked by beacons. Dial Rock, a round topped tapering pillar, which resembles the gnomon of a sundial, lies 7 cables NNE of Baviaans Point. A stranded wreck lies 5 cables ENE of Dial Rock.

- 4 **North Bay**. Reasonable anchorage may be obtained in the NW part of North Bay, entered between North Bay Point ($33^{\circ}02'3S$, $17^{\circ}56'3E$), fringed with rocks, and Marcus Island, $1\frac{1}{2}$ miles ESE. The greater part of the bay is exposed to the swell and heavy breakers occur for a considerable distance offshore. Barrack Rock and Blink Clip Rock lie $2\frac{1}{2}$ cables SSE and 13 cables E respectively of North Bay Point.

- 5 **Salamander Point**. Anchorage may be obtained in the SE part of Saldanha Bay about 5 cables ENE of Salamander Point ($33^{\circ}04'2S$, $17^{\circ}59'8E$), in a depth of 14 m. This anchorage is not as sheltered as the anchorage in Saldanha Bay Harbour (above) and is exposed to the frequent squalls which set in even with SW winds. During strong NW winds, the swell becomes very heavy and a nasty sea can be experienced when the out-going tidal stream from Langebaan lagoon (9.161) is strong. On these occasions vessels at anchor often lie broadside to the swell.

Port services

Repairs

9.155

- 1 Minor repairs can be effected. There are three slipways in Smitswinkel Bay, the largest of which can accommodate vessels up to 1200 tonnes, length 70 m, breadth 11 m and a draught of 5 m.

Major repairs can be effected at Cape Town (9.247).

Other facilities

9.156

- 1 No oily waste or dirty ballast reception facilities; garbage collection available.
Hospital at Vredenburg about 12 km.

Supplies

9.157

- 1 Fresh water; diesel; no fuel oil; stores.

Communications

9.158

- 1 Road and rail connections to Capetown about 60 miles distant where there is an international airport. Military airport only at Saldanha Bay.

Rescue

9.159

- 1 There is an offshore lifeboat based in Smitswinkel Bay and an inshore lifeboat at Club Mykonos Marina. See 1.54.

Small craft

9.160

- 1 **Club Mykonos Marina** is situated close SE of Lynch Point ($33^{\circ}02'6S$, $18^{\circ}02'2E$), a rocky promontory, surmounted by a sandhill. The marina comprises a yacht basin formed by two breakwaters from which lights are exhibited. There is a depth of 2.8 m in the entrance but this can vary during the season. The marina has about 130 berths, a boat hoist of 20 tonnes capacity, and a spacious hardstanding. The marina is approached on the alignment of leading lights (9.145).

- 2 **Small craft quay, Smitswinkel Bay**. Recreational craft may use the small craft quay on the S side of the bay. The jetty is 225 m long and there is a charted depth of 6 m alongside.

Saldanha Bay Yacht Club ($33^{\circ}01'0S$, $17^{\circ}56'9E$).

Langebaan Lagoon

Charts 1236, 4145

General information

9.161

- 1 **Description**. Langebaan Lagoon is entered between Salamander Point ($33^{\circ}04'2S$, $17^{\circ}59'8E$) and Leentjiesklip No 2, $2\frac{1}{4}$ miles ENE. It is a part of the West Coast National Park.

The lagoon is that part of Saldanha Bay which lies S of Skaap Island ($33^{\circ}05'5S$, $18^{\circ}01'3E$), and stretches SE for about 8 miles. It is encumbered by sandbanks near the entrance and has drying sandbanks and saltings toward its head.



Saldanha Bay – Club Mykonos (9.160)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

The village of Langebaan (9.168) is situated on the E side of the entrance to the lagoon.

- 2 **Topography.** The shores of the lagoon are low-lying and swampy except off Perlemoen Point (33°05'8S, 18°00'8E), where they are rocky. They are backed by higher ground, which near the NW end of Langebaan Peninsula, rises to two conspicuous hills, Constable Hill (33°07'8S, 18°01'4E) and Vlaeberg, 1½ miles NNW. On the N face of Constable Hill there is a disused aluminium phosphate works, the factory building of which is conspicuous.

- 3 Geelbeck Farm (not charted), a large cluster of buildings at the head of the lagoon is prominent. It has a small jetty which can be used only by dinghies. On the SW shore of the lagoon, there are several fishing settlements. Churchhaven, (not charted) stands 2½ miles NW of the head of the lagoon.

- 4 Oupos which lies at the head of an indentation between Constable Hill and Vlaeberg, was the site of the original Dutch East India Company's Oude Post. The original company storehouse is prominent among other buildings.
- 9.162**

- 1 **Depths.** Navigation within the lagoon is feasible only for small craft. Two channels lead to Langebaan at the N end of the lagoon. The E channel (9.164) has a least depth of 3 m and the W channel (9.165) a depth of about 2 m, but depths are liable to change. Farther S, depths become shallower and more indeterminate.

Local knowledge is required.

- 2 **Prohibited anchorage.** Anchorage and fishing is prohibited in an area containing submarine cables laid across the entrance to the lagoon as indicated on the chart.

Rescue. Inshore rescue craft are maintained at Langebaan.

9.163

- 1 **Flow.** During fresh S winds, a strong N-going current appears to set between Skaap Island (33°05'5S, 18°01'3E) and Pofadder Point 3½ cables SE. To avoid this current, small craft proceeding from Saldanha Bay to the village of Langebaan sometimes keep W of the island.

Strong tidal streams set in and out of Langebaan Lagoon and the out-going stream attains a rate of 3 kn at springs.

- 2 Inside Langebaan Lagoon, when the tidal stream and wind are against each other, a nasty sea gets up but there is excellent shelter for boats and small craft in the small bays around its shores.

- 3 **Landmarks:**

Water tower (33°05'9S, 18°02'2E).

Radio masts (33°04'9S, 18°00'1E).

Building (33°05'9S, 18°01'8E) (9.168).

Directions

9.164

- 1 From the vicinity of a buoy (safe water) (33°04'5S, 18°01'2E), the recommended track leads SSE for about 1½ miles through a channel marked by buoys (safe water), passing (with positions relative to Langebaan Point (33°05'0S, 17°01'7E)):

ENE of Meeu Island (9 cables W) a Proclaimed Guano Island (1.168), and:

- 2 ENE of Middle Ground (4 cables W), a shoal which lies parallel to the channel, thence:

WSW of Langebaan Point, low and sandy, thence:

ENE of Skaap Island a Proclaimed Guano Island (1.168).

Thence the track leads to a position W of Pofadder Point (8 cables S).

Side channel

9.165

- 1 Another channel leads S to Langebaan between Meeu Island and Skaap Island (9.164). The passage is marked by buoys. A rock awash, marked by a buoy (red can) and whose presence is usually indicated by kelp, lies in the channel about 2½ cables W of Skaap Island.

Salamander Bay

9.166

- 1 Salamander Bay is entered between Salamander Point (33°04'2S, 17°59'8E), and Camp Point, 7 cables SE. In the N part of the bay are the conspicuous buildings of a former whaling station which have been renovated for use by the military and the hulk of a sailing ship. Entry to the bay is prohibited, see 9.137.

Donkergat Bay

9.167

- 1 Donkergat Bay lies between Camp Point (33°04'7S, 18°00'3E), and Meeu Island 3¾ miles SSE. A disused whaling station lies at the head of the bay and has been renovated for use by the military. The complex includes two jetties. The S jetty is 76 m long with an alongside depth of 4-8 m and has been formed by a scuttled dredger decked over with concrete. Entry to the bay is prohibited, see 9.137.

Langebaan

9.168

- 1 **Description.** Langebaan village is situated close N of Pofadder Point (33°05'9S, 18°01'8E). It is a holiday resort. The conspicuous, white West Coast National Park Lodge is located near the water's edge.

Berth. A jetty and slipway close N of Pofadder Point are reserved for military use. A floating pontoon jetty at the point is for public use.

Small craft. Langebaan Yacht Club.

Kraal Bay

9.169

- 1 Kraal Bay, the entrance to which lies S of Constable Hill (33°07'8S, 18°01'4E), is partially obstructed by a sand bank which dries. The bay is probably the most sheltered locality in the region and provides anchorage for yachts and other small craft.

SALDANHA BAY TO YZERFONTEINPUNT

General information

Charts 4145, 4146

Routes

9.170

- 1 **Coastal route.** From the vicinity of the pilot boarding position SW of North Head (33°03'0S, 17°54'7E), the route leads SSE, for about 19 miles to a position W of Yzerfonteinpunt (33°21'0S, 18°08'7E).

Offshore route. From the vicinity of the pilot boarding position SW of North Head (33°03'0S, 17°54'7E), the route leads through the SSE bound traffic lane of the TSS for about 17 miles to a position about 14 miles W of Yzerfonteinpunt (33°21'0S, 18°08'7E).

Topography

9.171

- 1 For general coastal topography see 9.102.

Vessel Traffic Service

9.172

- 1 A VTS (9.131) is in operation for the control of shipping in the approaches to Saldanha Bay.

Traffic regulations

9.173

- 1 **Traffic separation scheme.** A TSS (9.137) is established in the approaches to Saldanha Bay.

Currents

9.174

- 1 Between Saldanha Bay and Table Bay, an eddy current sets S at a distance of from 4 to 5 miles offshore during the winter months of June, July, and August. This current sometimes has a tendency to set a vessel towards the coast, especially during or after strong onshore winds and should therefore be carefully guarded against. At a short distance outside this eddy, the current is almost constant throughout the year, its general direction being between N and NW, or parallel to the coast, and it attains a rate of from ½ to 1 kn, though between Table Bay and Dasseneiland it sometimes sets at over 2 kn.
- 2 See also 9.4 and 9.234.

Principal marks

9.175

- 1 **Landmark:**
Building (33°21'·2S, 18°09'·0E), a disused radar station.
- 2 **Major lights:**
Cape Columbine Light (32°49'·7S, 17°51'·4E) (9.95).
North Head Light (33°03'·0S, 17°54'·7E) (9.141).
South Head Light (33°06'·3S, 17°57'·3E) (9.141).
Dasseneiland Light (33°25'·9S, 18°05'·5E) (9.190).

Other aids to navigation

9.176

- 1 **Racons:**
Marcus Island Light (33°02'·7S, 17°58'·1E).
Saldanha Bay Rear Leading Light (33°02'·8S, 18°03'·2E).
See *Admiralty List of Radio Signals Volume 2*.

Directions for coastal route

(continued from 9.113)

9.177

- 1 From the vicinity of the pilot boarding position SW of North Head (33°03'·0S, 17°54'·7E), the track leads SE, passing (with positions relative to North Head):
- 2 SW of South Head (4 miles SSE), low and rocky, rising to a steep cliff summit close behind it which is conspicuous. South Head Light (9.110) is

exhibited from the low headland. Plankiesbaai, the entrance to which is 1 mile in width, lies between South Head and Stony Head 2 miles SSE. It affords no shelter. Thence:

- 3 SW of Stony Head (6 miles SSE), high and conspicuous. A reef of rocks on which the sea usually breaks, extends 4 cables seaward from Stony Head. Thence:
- 4 SW of Vondelingeiland (7 miles SSE), fringed with rocks for 2½ cables. A shoal patch with a depth of 10·9 m over it lies 4 cables NW of its W extremity. A stranded wreck lies on the S side of Black Rock, 2 miles ESE of Vondelingeiland. Kleineiland (Klein Island), upon which stone age relics have been found lies closer inshore, 3½ cables NE of Vondelingeiland. Kreef Bay (9.180) lies between Vondelingeiland and the shore. From abreast Vondelingeiland, the coast recedes slightly, and thence extends SSE for 14 miles, consisting of Sixteen Mile Beach, a sandy beach, backed by sand dunes, rising to an elevation of 60 m in places. The sand dunes extend inland to a distance of over 1 mile and are prominent. These dunes are formed by drifting sand, and they are rapidly extending E over the land. Vondelingeiland is a Proclaimed Guano Island (1.168). Thence:
- 5 SW of a dangerous unmarked wreck (9 miles SSE). Thence the track leads to a position W of Yzerfonteinpunt (33°21'·0S, 18°08'·7E). The point extends W for about one mile at the end of Sixteen Mile Beach, and has three distinct rocky ledges or points, the most N of which has a breakwater 100 m in length built out from it to provide shelter for fishing vessels. A disused radar station (9.175) stands on the point. Meeurots, a rock 10 m high and whitened by guano, lies 3 cables N of the point.

9.178

- 1 **Useful marks:**
Ratelberg (33°15'·2S, 18°15'·0E), surmounted with a radio mast (red obstruction lights).
Slangkop (33°18'·7S, 18°15'·9E).
Yzerfontein Hill surmounted by a radio mast (red obstruction lights) lies about 1 mile E of Yzerfonteinpunt.
(Directions continue at 9.192)

Directions for offshore route

(continued from 9.114)

Traffic separation scheme

9.179

- 1 From the vicinity of the pilot boarding position SW of North Head (33°03'·0S, 17°54'·7E), the track leads through

Posberg

South Head Light

Stony Head



Saldanha Bay Approaches – South Head from NW (9.177)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

the SSE bound traffic lane of the TSS to a position about 14 miles WSW of Yzerfonteinpunt (33°21'0S, 18°08'7E). The chart is sufficient guide

(Directions continue for the offshore route at 9.196)

Small craft

Kreef Bay

9.180

- 1 Kreef Bay entered between Vondelingeland (33°09'2S, 17°59'0E) and the shore provides anchorage for crayfish boats. It is sheltered from moderate S winds but is untenable during strong W or SE winds. Because of the prevalence it is unsuitable for larger craft.

Yzerfontein Bay

9.181

- 1 **Description.** Yzerfontein Bay entered close N of Yzerfonteinpunt (33°21'0S, 18°08'7E), provides shelter for small craft during moderate SE or S gales but the holding ground is poor. The bay is notorious for the rough sea and swell that can arise suddenly with little warning. A group of rocks known as Rooipan se Klippe, lie on the sandy E shore of the bay.

Yzerfontein, a village and seaside resort of growing popularity, is situated on the S shore of the bay.

Small craft. There is a yacht marina.

YZERFONTEINPUNT TO TABLE BAY

General information

Charts 4146, 4150, 4148

Routes

9.182

- 1 **Coastal route.** From a position W of Yzerfonteinpunt (33°21'0S, 18°08'7E), the route leads SSE, for about 34½ miles to a position about 1 mile E of the Fairway Light-buoy (33°51'9S, 18°25'4E) in Table Bay.

The passage E of Robbeneiland, being within an inshore traffic zone, should not be used by vessels more than 20 m LOA.

- 2 **Offshore route.** From a position about 14 miles W of Yzerfonteinpunt (33°21'0S, 18°08'7E), the route leads SSE to the Table Bay TSS and the pilot boarding position 1¼ miles WSW of the Fairway Light-buoy (33°51'9S, 18°25'4E), a distance of about 43½ miles.

Topography

9.183

- 1 The coastline between Yzerfonteinpunt and Table Bay is low and sandy with occasional rocky outcrops and is backed by a series of distinctive hill summits.

A range of mountains, roughly parallel to the coast and between 6 and 10 miles inland, stretches from Slangkop, 6½ miles ENE of Yzerfonteinpunt, to Kanonkop (9.195) 20 miles SE.

Current

9.184

- 1 See 9.174 and 9.234.

The currents in the vicinity of Whale Rock (33°50'1S, 18°22'9E) (9.242) are sometimes strong and uncertain in direction.

Vessel Traffic Service

9.185

- 1 A VTS is in operation for the control of shipping in the approaches to Table Bay. See 9.224.

Traffic regulations

9.186

- 1 **Traffic separation scheme.** A TSS the limits of which are indicated on the chart is situated in the approaches to Table Bay. This scheme is not IMO adopted. The South African authorities advise that the principles for the use of the scheme defined in Rule 10 of *The International Regulations for Preventing Collisions at Sea (1972)* apply.

- 2 **Prohibited area.** A prohibited area surrounding Koeberg nuclear power station, the limits of which are indicated on the chart, extends 2½ miles SSE from 33°39'5S, 18°25'0E and up to 1 mile offshore.

Submarine cables

9.187

- 1 Three submarine cables extend offshore from positions 5 cables and 1½ miles NNE of Melkbospunt (33°44'0S, 18°26'1E). Anchoring and trawling is prohibited 1 mile either side of the cables.

A disused submarine cable is landed 5 cables NNE of Melkbospunt. A further disused cable extends between Bloubergstrand (33°48'0S, 18°27'5E) and Robbeneiland (33°48'S, 18°22'E).

Dumping ground

9.188

- 1 A disused ammunition dumping ground exists within a radius of 4 miles of a position 5½ miles SW of Robbeneiland (33°48'4S, 18°22'0E). Ships are cautioned against anchoring or fishing in the area in which hulks and explosives have been dumped.

Principal marks

9.189

- 1 **Landmarks:**

Building (33°21'2S, 18°09'0E).

Tierberg (33°51'8S, 18°35'5E), surmounted by radio masts (red obstruction lights).

For landmarks at Table Bay see 9.235.

9.190

- 1 **Major lights:**

South Head Light (33°06'3S, 17°57'3E) (9.110).

Dasseneiland Light (white round metal tower, red bands, white dome, 28 m in height) (33°25'9S, 18°05'5E).

Robben Island Light (white round tower, 18 m in height) (33°48'8S, 18°22'5E).

Milnerton Light (33°52'9S, 18°29'2E) (9.236).

Green Point Light (33°54'1S, 18°24'0E) (9.236).

Table Bay Docks Rear Leading Light (grey building) (33°55'3S, 18°25'8E) (Chart 1846).

Other aid to navigation

9.191

- 1 **Racon:**

Fairway Light-buoy (33°51'9S, 18°25'5E).

See *Admiralty List of Radio Signals Volume 2*.

Directions for coastal route

(continued from 9.178)

Yzerfonteinpunt to Matroospunt

9.192

- 1 From a position W of Yzerfonteinpunt (33°21'0S, 18°08'7E), the track leads SSE, passing (with positions relative to Yzerfonteinpunt):

ENE of Dasseneiland (4½ miles SW) (9.199). A stranded wreck lies close off the NE point of the island. Thence:

Clear of Rondeberg Breaker (8½ miles SSE), an isolated shoal with a least depth of 8.2 m over it and over which the sea breaks, thence:

- 2 WSW of Black Rocks (11½ miles SSE), lying 1½ cables offshore and close SSW of the mouth of Modder River. The Grotto Bay, Jacobsbaai and Lêerbaai are the largest of several indentations between Black Rocks and Bokpunt 5½ miles S. Thence:

WSW of a rock (15 miles SSE), which usually breaks. Bokpunt, a low lying rocky projection lies 4 cables ESE.

- 3 Thence the track leads to a position WSW of Matroospunt (19½ miles SSE), fringed with rocks, backed by a ridge 43 m high. Between Bokpunt and Matroospunt are two bays, Buffelsbaai and Matroosbaai, separated by Springfontein se Punt, a low rocky tongue of land off which a reef extends for 3 cables. A shoal patch with a depth of 6.5 m over it lies about 9 cables SW of Springfontein se Punt. Buffelsbaai (9.206), the N of the two bays, is the larger and can be distinguished by an extensive sand patch at its head. Between Matroospunt and Melkbospunt, 7½ miles SSE, the coast is low and sandy, and is backed by prominent sand dunes in its central part.

Matroospunt to Table Bay

9.193

- 1 From a position WSW of Matroospunt (33°36'7S, 18°22'5E), the track continues SSE, passing (with positions relative to Matroospunt):

WSW of Robbesteen (2½ miles SSE), a small seal rookery, composed of several rocky ledges 2½ m high. Submerged rocks, extend NNW and SSE from Robbesteen and there is a clear passage for boats between all these rocks and the shore. Thence:

- 2 WSW of two breakwaters (5 miles SSE), from which lights are exhibited, extending seaward from the site of Koeberg nuclear power station, enclosing a cooling water basin. There is no harbour for vessels, see 9.186. A foul patch, the site of a demolished wave observation tower, lies 5 cables W of the breakwaters. Thence:

Clear of a buoy (special) (6 miles SSE), thence:

WSW of a reef with rocks awash lying 3 cables offshore (7 miles SSE), thence:

- 3 WSW of Melkbospunt (elevation 22 m) (8 miles SSE), which is fringed with rocks close inshore. A radio tower stands 5 cables NE of the point. The

buildings of the growing holiday resort of Melkbosstrand are prominent when viewed from NW. A few fishing craft operate from Melkbosstrand but landing is dangerous. A surf-bound, exposed sandy beach stretches between Melkbospunt and Bloubergstrand 4½ miles SSE.

9.194

- 1 The track continues SSE, passing (with positions relative to Melkbospunt (33°44'0S, 18°26'1E)):

ENE of Robbeneiland (5 miles SSW) (9.203), low and flat and fringed with reefs. Robben Island Light (9.190), on the summit of Minto Hill, is exhibited from the S part of the island. Thence:

- 2 WSW of Voëlsteen (3¾ miles S), the seaward of three rock clusters which encircle Grootbai and Kleinbaai. A submerged reef lies 3 cables NW of Voëlsteen. Thence:

- 3 WSW of Bloubergstrand, (4 miles SSE) a resort and residential area. A heavy surf fronts Bloubergstrand, except in the calmest weather. A few fishing craft operate from Bloubergstrand but landing is dangerous and should not be attempted without local knowledge.

- 4 Thence the track leads to a position E of the Fairway Light-buoy (33°51'9S, 18°25'4E), keeping clear of vessels at anchor.

9.195

- 1 **Useful marks:**

Swartberg (33°13'0S, 18°13'5E).

Ratelberg (33°15'2S, 18°15'0E) (9.178).

Slangkop (33°18'7S, 18°15'9E).

Radio mast (33°23'0S, 18°20'0E).

Kapokberg (33°25'0S, 18°23'9E).

Radio mast (33°25'2S, 18°17'9E).

Rondeberg (33°25'5S, 18°18'3E), a conical hill.

Contreberg (33°27'0S, 18°28'0E).

- 2 Dassenberg (33°29'9S, 18°31'0E) (Chart 4151).

Kanonkop (33°33'0S, 18°32'5E), a well defined, isolated conical hill (Chart 4151).

Radio mast (33°41'0S, 18°26'5E).

Koeberg (33°42'8S, 18°33'7E) (Chart 4151).

Grootberg (33°45'2S, 18°28'0E).

(Directions continue for the coastal route at 10.19)

Directions for offshore route

(continued from 9.179)

Yzerfonteinpunt to traffic separation scheme

9.196

- 1 From a position about 14 miles W of Yzerfonteinpunt (33°21'0S, 18°08'7E), the track leads SSE, passing (with positions relative to Yzerfonteinpunt):



Blouberg Strand to Milnerton (9.194)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)



Dasseneiland from W (9.199)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

- 2 WSW of Dasseneiland (4½ miles SW) (9.199). It is fringed on its N, W and S sides by dangerous reefs extending up to 1½ miles offshore, which include The Triangles, West Ledge, Roaring Sister and South Rock. A stranded wreck lies off the NE point of the island. Dasseneiland Light (9.190) is exhibited from the S end of the island. It is necessary to exercise great caution when in the vicinity of Dasseneiland, especially at night, as the reefs are steep-to and the positions of the rocks are not always marked by breakers. Anchorage may be obtained off the island. Thence:

- 3 WSW of South West Breakers (9 miles SW), two rocks, over which the sea breaks heavily during and after bad weather. NE of these two breakers, the bottom is very irregular for nearly 1 mile in the direction of Dasseneiland and causes a confused and dangerous sea in bad weather. Thence:

WSW of Protea Rock (10½ miles SW) with a charted depth of 10.9 m over it, thence:

- 4 WSW of a shoal patch (12 miles SW), with a depth of 18.2 m over it, thence:

WSW of a target buoy (special) (14 miles S).

Thence the track leads to the beginning (20½ miles S) of the SE bound lane of a TSS.

Traffic separation scheme

9.197

From a position SW of Bokpunt (33°34'0S, 18°18'5E) (9.192) and at the beginning of the SE bound lane of the TSS (9.186), the track continues SE clear of known danger

to a position about 5 miles SW of Robben Island Light (33°48'9S, 18°22'5E) (9.190).

- 1 The track then leads E within the TSS to the pilot boarding position about ¼ miles WSW of the Fairway Light-buoy (33°51'9S, 18°25'4E), passing N of Green Point Light (33°54'1S, 18°24'0E) (9.244).

Caution. Mariners should avoid confusing the characteristics of Green Point Light with Milnerton Light (33°52'9S, 18°29'3E) (9.236).

9.198

- 1 **Useful marks:**

Light-buoy (S cardinal) (33°50'4S, 18°23'1E) marking a wreck.

(Directions continue for entering Cape Town at 9.238)

Dasseneiland

Chart 4146

General information

9.199

- 1 **Description.** Dasseneiland (33°25'5S, 18°05'4E) is a Proclaimed Guano Island (1.168). It is fringed on its N, W and S sides by dangerous reefs extending up to 1½ miles offshore. A large colony of penguins inhabit the island and many other species of land and sea birds are also to be seen there.

Topography. Dasseneiland is a granite outcrop overlaid with sand, which, in winter, supports luxuriant vegetation.

House Bay

9.200

- 1 **Description.** House Bay lies between Boom Point (33°24'8S, 18°04'5E), the NW extremity of Dasseneiland



Dasseneiland Light from House Bay (9.199)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

Robben Island Light



Robben Island from W (9.203)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

and the NE point $7\frac{1}{2}$ cables E. Breakers and foul ground extend N for over 2 cables from both points, that off the NE point being known as Die Blaasbalk. There is a jetty at the guano management settlement situated at the head of the bay.

Depths of less than 5 m and patches of foul ground extend N into the bay as far as a rocky patch with a depth of 2.1 m over it, which lies $2\frac{1}{4}$ cables from the head of the jetty.

2 Useful mark:

Flagstaff at the head of House Bay.

Anchorage for small craft may be obtained in depths of about 18 m with the flagstaff bearing 173° and a conspicuous rock, $2\frac{1}{4}$ cables SSE of Boom Point bearing 247° . The anchorage is not safe during NW winds. When these prevail, vessels should proceed to Waterloo Bay on the E side of the island.

Waterloo Bay

9.201

- 1 **Anchorage** may be obtained in Waterloo Bay ($33^\circ 25' 0S$, $18^\circ 06' 0E$) in depths from 18 to 25 m, sand and mud bottom, 4 to 5 cables from the S shore.

Wesbaai

9.202

- 1 Wesbaai ($33^\circ 25' 8S$, $18^\circ 04' 8E$) may be used for boat landings during calm weather, and when there is no swell running. It should be approached from the NW between The Triangles (9.196) and the shore.

Local knowledge is required.

Robbeneiland

Chart 4148

General information

9.203

- 1 **Description.** From earliest colonial times in about 1615, Robbeneiland (Robben Island) ($33^\circ 48' 4S$, $18^\circ 22' 2E$) had been used as a prison and as a leper colony. It is now a museum and a national monument. Permits to land are required.

Topography. The island is low and flat and fringed by reefs. It is fairly densely wooded in parts, particularly on its E shore. In winter the more barren W part is covered in vegetation and with wild flowers in spring.

- 2 **Prohibited area.** A prohibited area, 1 mile in width circumscribes Robbeneiland, as indicated on the chart. The

SE semi-circle is covered by the fixed red sector of Milnerton Light (9.236).

Anchorage

9.204

- 1 The best anchorage for a vessel of moderate draught is in depths from 11 to 12.8 m, sand, with the SE extremity of the island bearing 293° . Smaller vessels will find excellent shelter nearer the island in depths of 9 m but any closer in the bottom is rocky. Additionally, fair anchorage may be obtained off the NE side of the island.

The above anchorages are all within the prohibited area (9.203).

Murray's Bay Harbour

9.205

- 1 **Description.** Murray's Bay Harbour is a ferry harbour for boats plying between the island and Cape Town. In 2004, work was in progress at the entrance to the harbour.

Directions. From a position SE of the breakwaters at Murray's Harbour, from which lights are exhibited, the alignment ($297\frac{1}{2}^\circ$) of the following lights leads NW into the harbour.

Front light (metal column) ($33^\circ 47' 8S$, $18^\circ 22' 6E$).

Rear light (yellow triangle apex down, on concrete building) (470 m from front light).

- 2 **Berth.** Quay 244 m in length on the W side of the harbour, with depths of 0.9 to 1.5 m alongside.



Robben Island Light (9.203)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

Small craft

Chart 4146

Bokbaai

9.206

- 1 Bokbaai, the N part of Buffelsbaai (33°35'·0S, 18°21'·1E) (9.192), affords shelter for small craft and good landing during moderate NW winds.

CAPE TOWN

General information

Charts 4150, 4148, 1846

Position

9.207

- 1 Cape Town (33°55'·5S, 18°25'·7E) is situated in Table Bay.

Function

9.208

- 1 Cape Town is one of the largest ports in the Southern Hemisphere. The principal exports are fruit, wine, juice concentrates, meat, fish, granite blocks, copper ingots, textiles and industrial goods. Imports include industrial machinery and raw materials.
- 2 Cape Town, South Africa's largest city, with a population of over 3 500 000 is situated around the S part

of the bay. The city is dominated by Table Mountain, a national monument and World Heritage site. Cape Town is not only the parliamentary capital of the Republic of South Africa but also the capital of Western Cape Province.

- 3 The Marine Safety Campus of the Cape Technikon is situated at Mouille Point (33°54'·0S, 18°24'·8E). SAS *Unitie*, a South African Navy training establishment, is situated in the SE corner of Duncan Dock.

The Castle of Good Hope, which was built by the original Dutch settlers in 1666 in the form of a five-pointed star, exists to this day but is no longer visible from seaward.

Topography

9.209

- 1 A gently curving sandy coast, backed by low sand dunes and built-over by the residential suburbs of Table View and Milnerton, forms the shore of the bay between Bloubergstrand (33°48'·0S, 18°27'·5E) and the industrial area of Paardeneiland. At night or in hazy weather this part of the coast is very deceptive owing to the close resemblance which the sandy shore bears to the sea. Cape Town docks lie along the SW shore of the bay.

The well known silhouettes of Devil's Peak, Table Mountain, Lions Head and Signal Hill provide an unmistakable background to the docks and the high-rise buildings of the city of Cape Town itself. See 9.235.

Devil's Peak

Table Mountain



Cape Town from NE (9.207)

(Original dated 1997)

(Photograph – HMS Endurance)

- 2 The silhouette of Table Mountain as viewed from the N is probably the best known panorama in South Africa. The N face, which is almost perpendicular and extends for 1½ miles, is interrupted by a steep stony ravine known as Platteklip Gorge, separating the W part of Table Mountain from the E part. An aerial cableway stretches from a station at an elevation of about 500 m up to the conspicuous Upper Station (9.235) on the NW edge.

- 3 Diep River which enters Table Bay about 6 cables SSW of Milnerton Light (33°52'9S, 18°29'2E), flows through Milnerton Lagoon.

Depths

9.210

- 1 The coast between Milnerton Lighthouse and Ben Schoeman Dock is fronted in places by foul ground upon which the sea breaks heavily after NW and W gales. The SE corner of the bay off Paardeneiland is comparatively shallow having depths of less than 10 m up to 8 cables offshore.

- 2 A 12.4 m patch, with a 13.1 m patch about 2 cables SE of it, lies about 2 miles WNW of Milnerton Light.

A rocky shoal with a least depth of 11.2 m over it lies 6 cables ENE of the head of the breakwater. It is marked by No 8 Light-buoy (isolated danger) and should be avoided by vessels in bad weather or heavy swells.

Port limits

9.211

- 1 An area as shown on the chart and bounded by the following limits is under the control of the National Port Authority:

On the W by a line joining Green Point Light and Robben Island Light.

On the N by a line drawn 090° from Robben Island Light to the shore of Table Bay, thence:

- 2 S along the HW mark so as to include the foreshore to the castle (33°55'5S, 18°25'7E), thence:

Back to Green Point Light, together with the wharves, jetties, piers, harbour walls and all harbour and dock lands vested in the Government of the Republic of South Africa.

- 3 The Victoria and Alfred Basins and New Basin are privately owned and operated but the National Ports Authority retains control over the water areas contained within these basins.

Approach and entry

9.212

- 1 The bay is approached from N, through W, to SSW, either through the traffic lanes of the TSS, or the inshore traffic zones. The final approach is from W, between Robbeneiland (33°48'4S, 18°22'0E), and Green Point 5 miles S, or from N between Robbeneiland and the mainland E. The docks are entered via a short fairway, 2 miles ENE of Green Point.

Dumping ground

9.213

- 1 A disused ammunition dumping ground (9.188) exists in the approaches to Table Bay as indicated on the chart.

Replenishment Area

9.214

- 1 Ships replenishing stores at sea off Table Bay should remain W of the SE and SW bound traffic lanes of the TSS. The nearest point of the Replenishment Area to land lies 6 miles WNW of Green Point (33°54'0S, 18°24'0E).

Vessels using the Replenishment Area should report to the VTS when 15 miles from it. For laden tankers approaching this area see Appendix I.

- 2 A 24 hour launch service is available to serve vessels outside the port limits. The service is restricted to vessels with a draught of less than 12.2 m which do not intend to stop for a period exceeding 1 hour. Vessels requiring to stop for more than 1 hour must anchor within the port limits and will then be subject to port and light dues.

- 3 A helicopter service is available for tankers and other vessels not wishing to enter harbour, or which are unable to do so. This may be used for serious medical cases, mail and small items of stores. However, normally only vessels which are able to comply with the special requirements for the operation of helicopters are permitted use this service.

Traffic

9.215

- 1 In 2003, the port was used by 2323 ships. About 13 million tonnes of cargo are handled annually.

Port Authority

9.216

- 1 National Ports Authority of South Africa, PO Box 4245, Cape Town 8000, Republic of South Africa.

Limiting conditions

Controlling depths

9.217

- 1 Least depth in the approach to the port is 15.7 m in the entrance channel. Continuous dredging takes place to maintain the charted depths.

Deepest and longest berth

9.218

- 1 Main Quay in Ben Schoeman Dock (9.244).

Tidal levels

9.219

- 1 Mean spring range about 1.5 m; mean neap range about 0.6 m. See information in *Admiralty Tide Tables Volume 2*.

Density of water

9.220

- 1 The density of the water is 1.025 g/cm³.

Maximum size of vessel handled

9.221

- 1 Maximum length 370 m, breadth 87 m, draught 12.8 m.

Local weather

9.222

- 1 From mid-April to mid-September, N or NW winds generally prevail. They seldom blow strongly from these directions but they often back to W and SW and increase to gale force. The worst weather and heaviest swells are normally experienced after the wind has backed and the swell usually continues for some time after the gale has blown itself out. The heaviest swell comes from WSW or SW giving rise to the notorious "cape rollers" which coming in on the beam make it uncomfortable for ships entering or leaving on either SE or NW courses. Ships at anchor should at all times keep their engines at short notice and be prepared to put to sea on the approach of winter gales. For the rest of the year, particularly during the months of December, January and February, SE winds, which may reach gale force, are to be expected and ships are advised to anchor as far E as their draughts will allow.

- 2 Wind strength and direction may vary considerably at different locations in the approaches to Table Bay and

inside the breakwaters. The Port Control can provide wind information on request.

Fog and poor visibility can be expected in the vicinity of Table Bay, the worst months being April to July. The fog is often low lying; at such times Green Point Light (9.236) becomes obscured while the elevated ground of Signal Hill and Lion's Head remain clear. A lookout positioned high up may be able to see the masts of other vessels.

Arrival information

Port operations

9.223

- 1 Oil tankers and vessels carrying hazardous cargo or explosives are prohibited from berthing at night.

Vessel Traffic Service

9.224

- 1 A VTS scheme is in operation for the control of shipping in the approaches to Table Bay. Reporting points are indicated on the chart. It is mandatory for certain vessels. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required

9.225

- 1 ETA should be sent 96, 72 and 1 hour prior to arrival. See *Admiralty List of Radio Signals Volume 6(3)* and 1.43.

Outer anchorage

9.226

- 1 Vessels anchoring in Table Bay must do so in one of the designated anchorages which are numbered and indicated on the chart as follows (with positions relative to the castle (33°55'·5S, 18°25'·7E):

No 1, general, summer only — 3½ miles NW.

No 2, general — 4 miles NNE. See 9.210.

No 3, small vessels — 2¾ miles NE.

No 4, hazardous — 6 miles N.

- 2 The holding in the anchorages in bad weather is unreliable and vessels at anchor should at all times have their main engines at short notice and be prepared to put to sea. For remarks on local weather see 9.222.

Submarine cable

9.227

- 1 A disused submarine cable from Saint Helena is landed 6 cables N of Milnerton Light (33°52'·9S, 18°29'·2E) and passes through the W bound lane of the TSS and No 2 Anchorage.

Pilotage

9.228

- 1 Pilotage is compulsory for vessels entering, leaving or shifting berth within the docks and is available 24 hours. The pilot boards as indicated on the chart, about 1½ miles N of Green Point (33°54'·0S, 18°24'·0E). See *Admiralty List of Radio Signals Volume 6(3)*.

Table Mountain

Lion's Head

Signal Hill



Cape Town – Harbour approach from NE (9.231)

(Original dated 1997)

(Photograph – HMS Endurance)

- 2 **Pilot ladders.** The ladder should include two clean $3\frac{1}{2}$ inch (9 cm) circumference manropes, free of knots, not nylon or other synthetic fibre, which are independently secured on either side above the top of the ladder.

Tugs

9.229

- 1 Tugs are available.

Regulations concerning entry

9.230

- 1 **Traffic separation scheme.** A TSS the limits of which are indicated on the chart is situated in the approaches to Table Bay. This scheme is not IMO adopted. The South African authorities advise that the principles for the use of the scheme defined in Rule 10 of *The International Regulations for Preventing Collisions at Sea (1972)* apply.

- 2 **Prohibited area.** A prohibited area, as indicated on the chart, circumscribes Robbeneiland. See 9.203.

Harbour

General layout

9.231

- 1 The harbour area fronts the city of Cape Town. Ben Schoeman Dock and Duncan Dock, together with Victoria Basin, are entered through a short channel, $2\frac{1}{2}$ cables wide, leading SSE from the TSS. The docks and basin are protected by breakwaters from which lights are exhibited.

Recreational craft

9.232

- 1 A large number of recreational craft may be encountered especially over the weekend. At night they are difficult to see against the background light. These craft should not navigate in the TSS but if they do so they should be warned by the appropriate sound signal and the vessel should navigate with caution until the danger is past.

Traffic signals

9.233

- 1 Traffic signals are exhibited above the Port Control tower ($33^{\circ}54'2S$, $18^{\circ}25'8E$). They consist of three strips of coloured lights, which encircle the top of the tower, and are visible by day and night as follows:

Red strip controls Ben Schoeman Dock.

Green strip controls Duncan Dock.

Amber strip controls Victoria Dock.

- 2 When a ship is given permission to enter any dock the signal will be a series of flashes along the appropriate strip. To leave, the signal will be a fixed steady light in the appropriate colour. Signals may be exhibited one at a time only or in combinations.

When these signals are exhibited, no other vessel will be permitted to enter the approach channel between the Fairway Buoy and the dock entrances without the permission of the Port Control.

Natural conditions

9.234

- 1 **Tidal stream.** There is no perceptible tidal stream in Table Bay or off the adjacent coast.

- 2 **Current.** A current, which has been known to reach as much as 3 kn but which is usually $\frac{1}{2}$ kn or less, sets N past Table Bay and Robbeneiland. However, during the winter months, when NW winds occur, a current sets into Table Bay from NW and impinges on the SE shore of the bay about the mouth of the Salt River Canal ($33^{\circ}54'5S$, $18^{\circ}28'4E$). It divides into two streams, one sets N along

the coast and out between Robbeneiland and the coast W of Bloubergstrand and the other sets W along the Main Quay of Ben Schoeman Dock and the SW shore of the bay. A SW current with a rate of up to 2 kn may be encountered off Green Point at this time.

- 3 During the summer season it has been observed, particularly during strong SE winds, that a weak current sets round Mouille Point (9.197), SE into the bay and out abreast the coast W of Bloubergstrand.

See also 9.174.

Climatic table. See 1.226 and 1.249.

Principal marks

9.235

- 1 **Landmarks:**

Building ($33^{\circ}48'1S$, $18^{\circ}27'8E$).

Kanonkop ($33^{\circ}49'6S$, $18^{\circ}36'4E$) 442 m in height and surmounted by a radio tower (red obstruction light).

Tierberg ($33^{\circ}51'8S$, $18^{\circ}35'5E$) surmounted by radio masts (red obstruction lights).

Port Control building ($33^{\circ}54'2S$, $18^{\circ}25'8E$).



Cape Town Port Control building (9.235)

(Original dated 2002)

(Photograph – mv Doulos)

Signal Hill also known as Lions Rump, ($33^{\circ}55'0S$, $18^{\circ}24'3E$).

Lions Head ($33^{\circ}56'1S$, $18^{\circ}23'4E$), steep and conical.

Tower at Groote Schuur Hospital ($33^{\circ}56'5S$, $18^{\circ}27'7E$).

Buildings (33°56'·5S, 18°25'·7E), three circular blocks of flats.

Devil's Peak (33°57'·3S, 18°26'·5E), is connected to the main range of mountains by a saddle.

2 Upper Station (33°57'·4S, 18°24'·2E).

Table Mountain. Maclear's Beacon (33°58'·0S, 18°25'·6E) situated on the E part is the highest point. The mountain is frequently illuminated at night.

Twelve Apostles. Grootkop (33°59'·5S, 18°22'·6E) is the highest point. The Twelve Apostles is a high serrated mountainous ridge presenting a precipitous face to seaward, which extends SW for 4 miles from Upper Station (33°57'·4S, 18°24'·2E), and forms the NW face of Table Mountain complex.

9.236

1 Major lights:

Robben Island Light (33°48'·8S, 18°22'·5E) (9.190).

Milnerton Light (white round concrete tower; 24 m in height) (33°52'·9S, 18°29'·2E).

Green Point Light (white square tower, red diagonal stripes, white cupola, 16 m in height) (33°54'·1S, 18°24'·0E).

Table Bay Docks Leading Light (rear) (33°55'·3S, 18°25'·8E) (9.190).

Tierberg N Mast



Milnerton Light (9.236)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

Other aid to navigation

9.237

1 Racon:

Fairway Light-buoy (33°51'·9S, 18°25'·5E).

See *Admiralty List of Radio Signals Volume 2*.

Directions for entering harbour

(continued from 9.198)

General information

9.238

1 Vessels under way in Table Bay should proceed with caution and avoid impeding the passage of other vessels embarking or disembarking pilots and entering or leaving the docks. At night the background scatter of shore lights makes it difficult to distinguish the navigation lights of other vessels.

Cable Station



Green Point Light bearing 177°, 1 mile (9.236)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

2 Ships approaching the port at night or in restricted visibility should always keep their echo sounder and radar running. For lack of these precautions ships have in the past run ashore between Green Point and Mouille Point.

Pilot to breakwater

9.239

1 From the pilot boarding position about 1¼ miles WSW of the Fairway Light-buoy (33°51'·9S, 18°25'·4E), the track leads E, and SSE for about 3 miles, passing (with positions relative to the head of the breakwater (33°53'·9S, 18°26'·1E)):

S of the Fairway Light-buoy (safe water) (2¼ miles NW).

2 Thence the track leads SSE, passing:

Between No 1 and 2 Light-buoys (lateral) (8 cables N), thence:

WSW of No 8 Light-buoy (isolated danger) (6 cables ENE) marking a rocky shoal with a least depth of 11.2 m over it. See 9.210.

Thence the track leads to a position between the end of the breakwater and No 4 Light-buoy (port hand) 3 cables E.

9.240

1 Useful marks:

Stranded wreck (33°52'·2S, 18°29'·3E).

Directions for berths

9.241

1 **Table Bay Docks Leading Lights.** From a position between the end of the breakwater (33°53'·9S, 18°26'·1E) and No 4 Light-buoy (port hand), 3 cables E, the alignment (198½°) of the following lights leads into the approaches to the docks, and also directly into Duncan Dock:

Front light (grey mast) (33°54'·9S, 18°25'·9E).

Rear light (grey building) (720 m from front light).

- 2 **Ben Schoeman Dock Leading Lights** Two pairs of leading lights (131½°) assist when berthing in Ben Schoeman Dock:

Front (pole) (33°55'·1S, 18°27'·3E).
 Rear (pole) (280 m from front light).
 Front (pole) (33°55'·1S, 18°27'·3E).
 Rear (pole) (315 m from front light).

Directions for leaving harbour

Berths to traffic separation scheme

9.242

- 1 From a position in the harbour entrance between the end of the breakwater and No 4 Light-buoy (port hand), the track leads NNW, passing (with positions relative to the head of the breakwater (33°53'·9S, 18°26'·1E)):

Between No 1 and 2 Light-buoys (lateral) (8 cables N).

Thence the track leads to a position NE of the Fairway Light-buoy (2¼ miles NW) where course is adjusted to follow the W-bound lane of the TSS to its termination and thereafter either the NE-bound or SW-bound lane as appropriate. The track passes:

- 2 S of Whale Rock (2½ miles NNW), which has a depth of less than 2 m over it and a dangerous submerged wreck marked by a light-buoy (S cardinal), 3 cables SE of the rock. Both dangers are covered by the narrow red sector of Robben Island Light (9.190).

(Directions continue at 10.23)

(Directions for the coastal passage are given at 10.19)

Basins and berths

General information

9.243

- 1 **Depths.** Alongside depths are charted depths. The port authorities should be contacted for the latest information.

Scend. Following NW gales, which occur more frequently during winter months, considerable scend can be experienced in Cape Town docks. Mariners should make full use of the heavy coir springs with which some berths are equipped and ensure that their vessels are well secured.

Ben Schoeman Dock

9.244

- 1 Ben Schoeman Dock (33°54'·6S, 18°26'·E), provides twelve numbered berths, including Ro-Ro berths at Nos 500 and 501. There is a dredged depth of 13·8 m alongside the main berths and 9·8 m alongside the sea wall. Vessels up to 370 m LOA and draught 12·8 m can be berthed in this dock. Main Quay is the container berth.

- 2 **Caution.** A buoyed wreck with a depth of 1 m over it lies off the sea wall between berths Nos 702 and 703.

Duncan Dock

9.245

- 1 Duncan Dock (33°54'·8S, 18°26'·2E), provides twenty-four alphabetical and numbered berths. The entrance is dredged to 12·8 m and the deepest dry cargo berth is

dredged to 12·6 m. Tanker Basin, in the NE corner, is dredged to 14·8 m and can accommodate vessels up to 250 m in length and draught 13·2 m, provided the tidal level is 1 m or more above chart datum.

- 2 **Caution.** A buoyed wreck with a depth of 1·5 m over it lies in the tanker basin close SE of berth No 4.

Victoria and Alfred Basins

9.246

- 1 Victoria Basin (33°54'·3S, 18°25'·5E) is largely a fishing harbour. The NW sides of both Victoria and Alfred Basins have been developed into a waterfront leisure area containing shops, entertainment facilities and hotels. The South African Maritime Museum occupies North Quay in Alfred Basin.

Port services

Repairs

9.247

- 1 All types of major repair can be carried out. There are two drydocks and five slipways.

Sturrock Dock, situated at the ESE end of Duncan Dock is the largest drydock and has a length of 369 m, width 45·1 m and a depth over the sill of 12·0 m. A Repair Pier, 458 m long, with berths on both sides and which can accommodate vessels up to 150 000 tonnes displacement is located nearby.

- 2 The smaller drydock is located in Alfred Dock and has a length of 153·6 m. The basin also contains a synchrolift which can handle vessels up to 64 m length, 15 m beam, draught 5 m and displacement 1750 tonnes.

The largest slipway has a capacity of 305 tonnes.

Other facilities

9.248

- 1 Deratting can be carried out and Deratting and Deratting Exemption Certificates issued; oily waste reception facilities; garbage disposal facilities; helicopter and launch services for tankers and other vessels in the Replenishment Area (9.214); floating crane with lifting capacity of 200 tonnes; hospitals.

- 2 A time signal, consisting of a gun fired from a battery on Signal Hill and controlled electronically from Cape Town Observatory, is sounded daily at 1200.

Supplies

9.249

- 1 Fuel oil; fresh water; provisions; stores.

Communications

9.250

- 1 International airport 20 km distant. Road and rail connections with all other parts of the country and other nations in southern Africa.

Rescue

9.251

- 1 See 1.54.

Small craft**Granger Bay****9.252**

- 1 A marina (33°54′.0S, 18°24′.9E) protected by breakwaters from which lights are exhibited, is situated on the W side of Granger Bay. The bay itself provides good sheltered anchorage for small craft except during strong N and W winds.

Elliot Basin**9.253**

- 1 Elliot Basin is a marina adjoining the SE end of Ben Schoeman Dock.

Royal Cape Town Yacht Club**9.254**

- 1 Royal Cape Town Yacht Club is situated in a small craft basin at the SE end of Duncan Dock. There is a slipway in the basin.

New Basin**9.255**

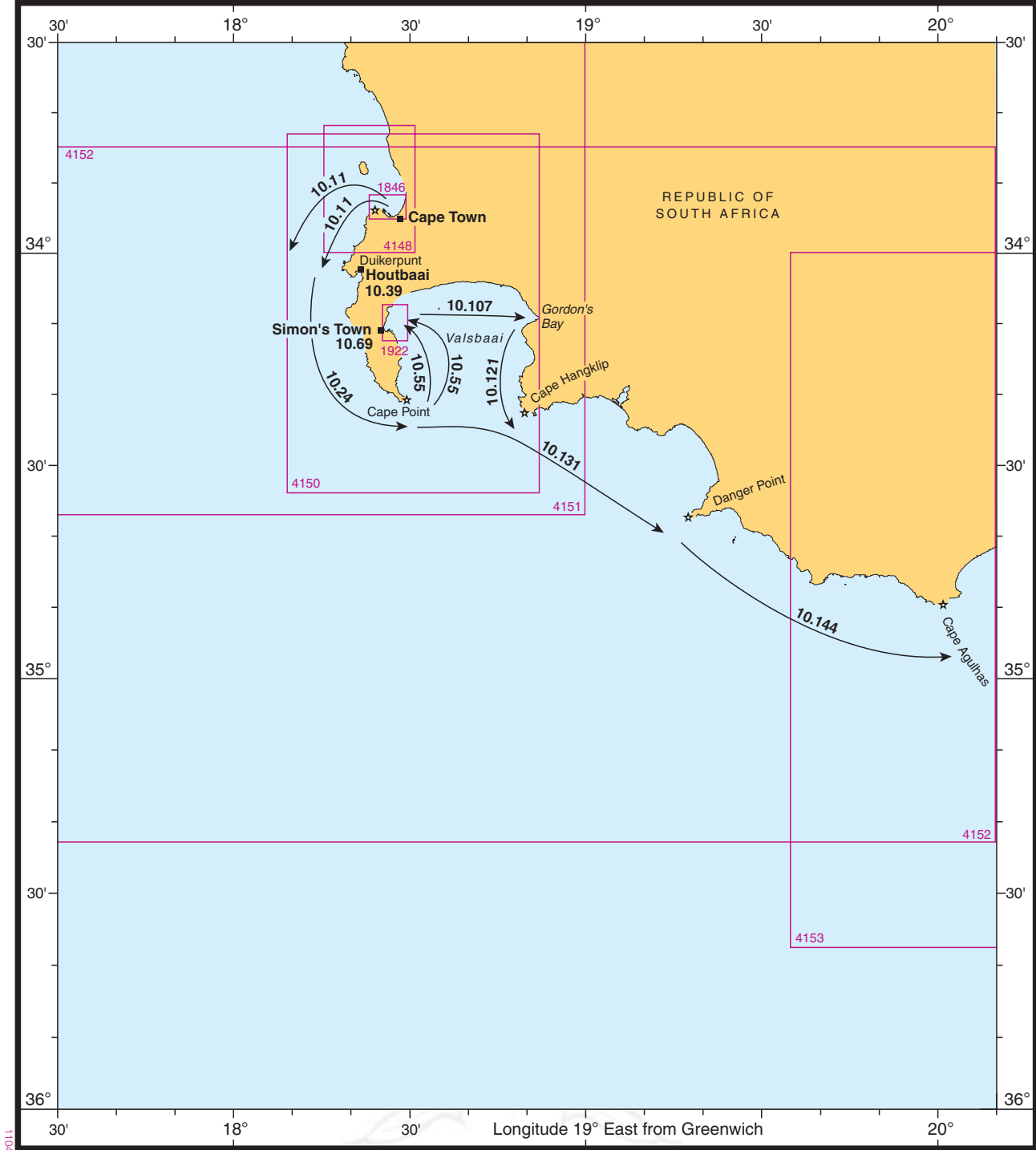
- 1 New Basin (33°54′.5S, 18°25′.2E) adjoining the SW end of Alfred Basin contains The Waterfront Marina. A further non-tidal basin is under construction (2002) SW of New Basin which will provide further pleasure craft moorings and which will be connected to the city centre by a canal.



NOTES



Chapter 10 - Table Bay to Cape Agulhas



CHAPTER 10

TABLE BAY TO CAPE AGULHAS

GENERAL INFORMATION

*Chart 4152***Scope of the chapter****10.1**

- 1 The area covered by this chapter comprises coastal routes, anchorages and harbours along the SW coast of South Africa from Table Bay (33°51'9S, 18°25'4E) to Cape Agulhas (34°50'0S, 20°00'7E).

The chapter is divided into the following sections:
Table Bay to Cape Point (10.7).

Valsbaai (10.47).

Cape Point to Cape Agulhas (10.129).

Routeing**10.2**

- 1 For IMO Rules for Navigation of Laden Tankers off the South African Coast see Appendix I.

Exercise areas**10.3**

- 1 Submarines frequently exercise off the SW coast of South Africa, N of latitude 36°S between longitude 16°E and 20°E, and also in the approaches to Valsbaai. A good look-out should be kept for them when passing through these waters. See 1.13.
- 2 For details of military practice and exercise areas off Cape Point and in Valsbaai see Appendix III.

Fishing**10.4**

- 1 **Crayfish trap fishing.** Mariners should navigate with caution when within about 3 miles of the coast on account of the presence of anchored or drifting small fishing vessels and their unlit bottom gear, marker buoys and recovery lines. See 10.28.

- 2 **Fishing.** Mariners are warned that extensive fishing is carried out on the continental shelf of South Africa. Lighted or un-lighted buoys demarcating trawler fishing areas may be encountered.

Current**10.5**

- 1 Off the Cape Peninsula, in depths of about 200 m or more, the current sets consistently NW at speeds of up to 2 kn, being strongest in summer. Closer inshore, the surface current is more variable, the local winds being much influenced by funneling and lee effects of the rugged terrain.

Between Cape Agulhas and the Cape Peninsula, the current is predominantly NW in summer. In winter the current is more variable and the nett movement is SE.

Abnormal waves**10.6**

- 1 See 1.202.

TABLE BAY TO CAPE POINT

GENERAL INFORMATION

*Chart 4150***Area covered****10.7**

- 1 This section describes the coastal passages, anchorages and harbours from Table Bay (33°51'9S, 18°25'4E) to Cape Point (34°21'4S, 18°29'8E) about 28 miles S.

It is arranged as follows:

Table Bay to Duikerpunt (10.11).

Duikerpunt to Cape Point (10.24).

Topography**10.8**

- 1 Cape Peninsula is a remarkable promontory extending S for 28 miles from Green Point (33°54'0S, 18°24'0E) (9.197) at N end to Cape of Good Hope (34°21'5S, 18°28'6E) its S extremity. It is joined to the mainland on its NE side by a neck of low-lying land, about 11 miles in width, between the heads of Table Bay and Valsbaai. In height, the peninsula varies from 1085 m at Table Mountain (9.209), 927 m at Constantiaberg (10.32), both in its N portion and 677 m at Swartkop, in its S part, to but a few metres near its centre where a valley, which is only visible on certain bearings, extends from Chapman's Bay, on its W side, to Vishoekbaai (Fish Hoek Bay) (10.116) on its E side.

- 2 The peninsula is rocky and barren, with a growth of stunted trees here and there. Large areas, however have been planted with pine and other trees, which together with the fertile valleys in the vicinities of Constantia and Wynberg on its E side, are pleasing exceptions. From W, the peninsula appears high and rugged from Table Mountain to within 4 miles of the Cape of Good Hope, where the mountain chain terminates in Paulsberg close to the W shore of Valsbaai. From Paulsberg to Cape Point, the SE extremity of the Cape of Good Hope, the land is elevated, and except for two peaks at its S end, is even. When seen from a considerable distance, these two peaks appear as a saddle-shaped island.

Landfall**10.9**

- 1 Mariners approaching the Cape of Good Hope, especially in thick weather or in any doubt of their position, should never omit the precaution of obtaining soundings in good time.
- 2 In clear weather, if approaching the Cape of Good Hope from W at night, they should make Cape Point Light at about 23 miles, except when it bears more than 106°, in which case it will be hidden by the land, and Slangkop Point Light should be sighted at about 17 miles. If the land or lights are not seen, mariners should not approach the coast but should keep SW in depths of more than 100 m

until such time as the position of the vessel has been ascertained.

Climatic Table

10.10

- 1 For climatic table see 1.226 and 1.250.

TABLE BAY TO DUIKERPUNT

General information

Charts 4148, 4150

Routes

10.11

- 1 **Coastal route.** From a position E of the Fairway Light-buoy (33°51'9S, 18°25'4E), the coastal route leads S, W, and SW through the inshore traffic zone for about 16 miles to a position NW of Duikerpunt (34°02'4S, 18°18'5E).
- 2 **Traffic separation scheme.** From a position NE of Fairway Light-buoy (33°51'9S, 18°25'4E), the track leads through the W and SW bound traffic lanes of the TSS to a position NW of Duikerpunt (34°02'4S, 18°18'5E).

Topography

10.12

- 1 From Green Point (33°54'0S, 18°24'0E) to Bakeovenbaai, 3½ miles SSW, the coast is intensely built over. Farther SSW, the ground immediately behind the coastline rises comparatively steeply towards the Twelve Apostles range (9.235), and is covered with indigenous vegetation. The vicinity is prone to mountain forest fires in summer, and in April 1973, one of the worst fires experienced for many years destroyed the vegetation over vast areas.

Exercise areas

10.13

- 1 See 10.3.

Vessel Traffic Service

10.14

- 1 A VTS scheme (9.224) is in operation for the control of shipping in the approaches to Table Bay.

Traffic regulations

10.15

- 1 **Traffic separation scheme.** A TSS (9.230) is established in the approaches to Table Bay.

Principal marks

10.16

- 1 **Landmarks:**

Tierberg (33°51'2S, 18°35'3E) (9.189).
Signal Hill (33°55'0S, 18°24'2E) (9.235).
Lions Head (33°56'1S, 18°23'4E) (9.235).
Tower (33°56'4S, 18°27'7E).
Buildings (33°56'5S, 18°25'8E).
Devil's Peak (33°57'2S, 18°26'5E) (9.235).
Upper Station (33°57'4S, 18°24'2E).
Table Mountain and Maclear's Beacon (33°58'0S, 18°25'6E) (9.235).
Twelve Apostles (33°59'5S, 18°22'6E) (9.235).

10.17

- 1 **Major lights:**

Table Bay Docks Rear Leading Light (33°55'3S, 18°25'8E) (9.236).
Aero light (33°51'2S, 18°35'3E) (9.190).
Aero light (33°52'5S, 18°35'7E) (9.190).

Milnerton Light (33°52'9S, 18°29'2E) (9.236).

Robben Island Light (33°48'8S, 18°22'5E) (9.190).

Green Point Light (33°54'1S, 18°24'0E) (9.236).

Other aid to navigation

10.18

- 1 **Racon:**

Fairway Light-buoy (33°51'9S, 18°25'4E).

See *Admiralty List of Radio Signals Volume 2*.

Directions

Coastal route

(continued from 9.195)

10.19

- 1 From a position E of the Fairway Light-buoy (33°51'9S, 18°25'4E), the track leads initially S and W across Cape Town entrance channel. The track continues W through the inshore traffic zone to a position NW of Green Point, passing (with positions relative to the castle (33°55'5S, 18°25'7E):

N of Mouille Point (1¼ miles NNW). The shore between Mouille Point and Green Point, on which there is a stranded wreck, is rocky and foul up to 2 cables offshore. Thence:

- 2 N of Green Point (2 miles NW) from where a light (9.190) is exhibited. Foul ground extends up to 3 cables NW of the point and a sewer outfall extends 8 cables NNW of the point. The coast between Green Point and Sea Point is encumbered with thick kelp and rock-bound. Three Anchor Bay lies about 3½ cables S, and Rocklands Bay a further 3 cables SW.

10.20

The track adjusts SW passing:

- 1 NW of Sea Point (2½ miles W), low and rocky. A detached rocky patch lies 1 mile WNW of the point, with a depth of 16.1 m over it. A circular pavilion with a cupola stands 4 cables ENE of Sea Point. Bantry Bay is entered between Sea Point and a higher unnamed point, 4 cables SSW. Rocks awash, known as Saunders Rocks, extend seaward for 2 cables close S of Sea Point and afford protection to Bantry Bay in N winds. Thence:
- 2 NW of North Lion's Paw (¾ miles WSW), which dries, thence:
NW of South Lion's Paw (¾ miles WSW), which dries and has a dangerous submerged rock 2½ cables W of it. There are several other rocks close off the coast, both N and S of Lions Paw. Clifton Bay is contained between two unnamed points close W of Lions Head peak.

10.21

- 1 The track continues SW passing:

NW of Whale Rock (¾ miles SW). Camps Bay lies close NE and Bakeovenbaai close SE of Whale Rock. A dangerous rock lies about 4 cables W of the head of Bakeovenbaai. Other rocks lie off the S entrance point of the same bay. Foul ground extends up to 2½ cables offshore on most parts of this coastline. Thence:

NW of a rock (4 miles SW) which dries, thence:

NW of Koeëlbaai (4 miles SW), which contains many rocks, awash and submerged. Between this bay and Groot-Pannekoek, 1½ miles SW, there are several small indentations and rocky islets. Hottenstotshuisie Bay, lies 1¼ miles SW of Koeëlbaai. Thence:

Signal Hill

Lion's Head

Table Mountain



Green Point to Sea Point (10.19)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

NW of a rock (5¼ miles SW) which dries.
Groot-Pannekoek, lies 2 cables E of the rock.
Thence:

- 2 NW of a rock (6½ miles SW), known as Logies Rock, on which the sea breaks in all but the calmest weather, thence:

NW of a dangerous wreck (7 miles SW). Sandy Bay in which there is a prominent sand patch, lies 8 cables S. A stranded wreck lies at the W end of Sandy Bay. Thence:

- 3 NW of a dangerous rock (8¾ miles SW). Oude Schip, a cluster of large boulders almost completely surrounded by water and on which stands a trigonometrical beacon at an elevation of 16 m, lies about 7½ cables ESE. In the bay S of Oude Schip there is a dangerous wreck.

Thence the track leads to a position NW of Duikerpunt (9 miles SW), bold and rocky and having rocks and breakers extending 4 cables seaward from it. A stranded wreck lies close N of this point.

10.22

- 1 **Useful mark:**

Karbonkelberg (34°02'·4S, 18°19'·6E).

Klein Leeukop (34°01'·0S, 18°20'·6E).

(Directions continue at 10.34)

Traffic separation scheme

(continued from 9.242)

10.23

- 1 From a position at the termination of the W-bound lane of the TSS, the track is adjusted to follow the SW-bound

lane to a position NW of Duikerpunt (34°02'·4S, 18°18'·5E). The chart is sufficient guide.

(Directions continue at 10.34)

DUIKERPUNT TO CAPE POINT**General information**

Chart 4150

Route**10.24**

- 1 From a position NW of Duikerpunt (34°02'·4S, 18°18'·5E), the route follows the trend of the coastline for about 30 miles to a position SE of Cape Point (34°21'·4S, 18°29'·8E).

For information about landfall off Cape of Good Hope see 10.9.

Topography**10.25**

- 1 Between Slangkoppunt (34°08'·9S, 18°19'·2E) and Cape Point about 16 miles SSE, the coast is generally rocky and interspersed with numerous small indentations and sandy stretches, backed at first by high mountain ranges then by a series of smooth rounded hills and finally by the steeper peaks at the Cape of Good Hope.
- 2 Inshore of Hoek van Bobbejaan (34°18'·5S, 18°24'·2E), the bush covered range of Klein Blouberg, runs parallel to the coast attaining elevations up to 50 m. Farther SE, Groot Blouberg range of hills runs parallel to the coast attaining an elevation of 116 m.

Table Mountain

Twelve Apostles

Karbonkelberg



Clifton to Duiker Point (10.22)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

Depths**10.26**

- 1 Within the 50 m depth contour, which in places extends up to 4 miles offshore, the bottom is generally uneven and with a series of rocky shoals.

Exercise areas**10.27**

- 1 See 10.3.

Crayfish fishing**10.28**

- 1 Between 1st November and 30th June annually, intensive crayfish trap fishing takes place up to 4 miles offshore between Slangkoppunt and Cape Point (34°21'·4S, 18°29'·8E) and also over Rocky Bank, 6 miles SE of Cape Point. Mariners are advised to pass well clear of the two areas. See 10.4.

Buoys marking the fish traps may be brightly coloured and the area in which the traps are laid may be marked by dan buoys exhibiting white flashing lights.

Nature reserve**10.29**

- 1 Cape of Good Hope Nature Reserve lies S of Schuster's River valley between Scarborough (34°12'·0S, 18°22'·5E) and Smitswinkelbaai, about 6 miles SE, on the E coast of the peninsula. Eland, bonebok, black wildebeest, vaal rhebok, grysbok, springbok, zebra, baboons, porcupines and ostriches are found in the reserve, as well as a large variety of small mammals, birds and reptiles.

Dumping ground**10.30**

- 1 An explosives dumping ground, 2 miles in diameter is centred 6 miles SSW of Cape Point (34°21'·4S, 18°29'·8E).

Climatic table**10.31**

- 1 See 1.226 and 1.250.

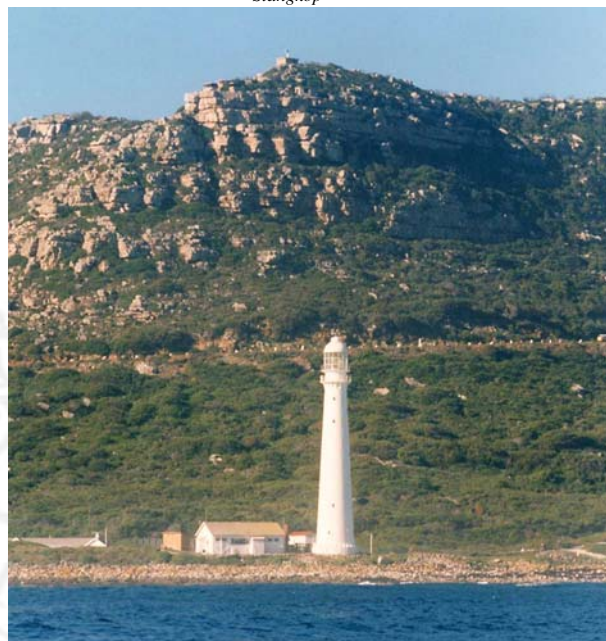
Principal marks**10.32**

- 1 **Landmarks:**
 Table Mountain (33°58'·0S, 18°25'·6E) (9.235).
 Twelve Apostles (33°59'·5S, 18°22'·6E) (9.235).
 Radio mast (red and white bands) (34°03'·2S, 18°23'·2E), standing near the summit of Constantiaberg.
 Slangkop Point Lighthouse (white round tower 33 m in height) (34°08'·9S, 18°19'·2E).
 Radio mast (34°10'·8S, 18°20'·6E).
- 2 **Major lights:**
 Slangkop Point Light — as above.
 Cape Point Light (square masonry tower, white lantern, 9 m in height) (34°21'·4S, 18°29'·8E).

Other aid to navigation**10.33**

- 1 **Racon:**
 Whittle Rock Light-buoy (34°14'·7S, 18°34'·2E).
 See *Admiralty List of Radio Signals Volume 2*.

Slangkop



Slangkop Point Light (10.32)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

Directions

(continued from 10.22 and 10.23)

Duikerpunt to Slangkoppunt**10.34**

- 1 From a position NW of Duikerpunt (34°02'·4S, 18°18'·5E) (10.21), the track leads S, passing (with positions relative to Duikerpunt):
 W of Duikerpunt (10.21), thence:
 2 W of Vulcan Rock (1½ miles S), always marked by breakers. Tafelberg, a rocky patch, lies 5 cables SE of Vulcan Rock. It is possible that there are shoaler depths than charted over Tafelberg. Duiker Island, a flat rock, lies 1 mile ENE of Vulcan Rock. A line of breakers extends 3 cables SW from the island. A beacon stands on the shore ENE of Duiker Island. Though it appears to be deep between Duiker Island and Vulcan Rock, mariners are advised to pass outside the latter. Duiker Island is a Proclaimed Guano Island (1.167). Thence:
 3 W of Chapman's Point (3¾ miles SE), from which a reef on which the sea always breaks, extends W for about 3 cables. Chapman's Peak, a bold steep eminence of dark appearance, rises immediately over the point; when seen from W it presents two summits of almost equal height. Chapman's Bay in which temporary anchorage (10.40) may be obtained, lies between Chapman's Point and Klien-Slangkoppunt, 2¼ miles S. The shore of the bay is a sandy beach. Thence:
 4 W of Slangkoppunt (6½ miles S), low and sandy, but immediately within it, the land rises steeply to the summit of of Slangkop, a flat-topped hill. Close NE, lies the village of Kommetjie. Slangkop Point Light (10.32) is exhibited from Slangkoppunt. Rocks and patches of kelp fringe the point, and foul ground extends nearly 1½ miles N of it. A

wreck with a depth of 12.8 m over it lies 1 mile W of the point. A long conspicuous strip of sand, low down on the hillside, extends S for 1 mile from the point. Under certain conditions Slangkoppunt appears as a long flat plateau.

Thence the track leads to a position SW of Slangkoppunt.

10.35

1 Useful mark:

Hangberg (34°03'6S, 18°20'4E).

(Directions for Houtbaai are given at 10.43)

Slangkoppunt to Cape Point

10.36

- 1 From a position SW of Slangkoppunt (34°08'9S, 18°19'2E), the track leads initially SSE, passing (with positions relative to Slangkoppunt):

WSW of Die Eiland (2 miles SE), a rocky, boulder strewn point, upon which there are the buildings of a rock lobster factory. Witsand Bay lies close E. Thence:

- 2 Clear of a light-buoy (special) (3¾ miles SSW), marking a wave-measuring device. A restricted area encompasses the buoy. Thence:

WSW of Schuster's Bay (4 miles SE). The village of Scarborough stands close E. Behind, the land rises steeply to a range of hills including Platberg, running parallel to the coast. Thence:

- 3 WSW of Albatross Rocks (8 miles S), comparatively steep-to on their seaward side. Olifantsbospunt lies 5 cables ENE. The stranded wreck of *Thomas T Tucker* lies on the point. Thence:

- 4 WSW of Hoek van Bobbejaan (10½ miles SSE), a rocky headland, on which the stranded wreck of *Phyllisia* lies. Brightwater, a farm with low white buildings, is situated 7½ cables N of the point. An extensive rocky bank, over which the depths are less than 40 m extends 3½ miles NW and W of Hoek van Bobbejaan and continues in a SE direction towards Cape Point. Shoals with a least depth of 13.4 m lie on this bank, with the shoalest situated nearly 3 miles W of Hoek van Bobbejaan.

Cape of Good Hope



Cape Point (10.37)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

In bad weather the sea breaks over these shoals and, in heavy S gales, a continuous line of breakers has been observed to extend from them to the coast. Mariners are advised to keep in depths of at least 50 m in this vicinity. The shoreline between Hoek van Bobbejaan and Cape Maclear, 5 miles SE, is generally rocky with off-lying rocks.

10.37

- 1 Thence the track leads SE, passing:

SW of The Island (13 miles SSE), thence:

SW of Cape of Good Hope (15 miles SSE), Cape Maclear lies close E. Between Cape Maclear and Cape Point, 1 mile E, there is a small sandy beach known as Diasstrand, providing landing for boats in calm weather.

The track then leads E, passing:

- 2 At least 5 cables S of Bellows Rock (17 miles SSE), which dries 1 m. Cape Point, from which Cape Point Light (10.32) is exhibited lies 2 miles N. An extensive rocky bank lies within the 30 m contour off the Cape of Good Hope from a position 2 miles SW of Cape Maclear to 2 miles S and 1 mile E of Cape Point. Except during the calmest weather the sea breaks over the whole area, and especially heavily over the rocks named below. Mariners should give this area a wide berth. South West Reefs project SW for 1 mile from Cape Maclear. Anvil Rock lies 1¼ miles SE of Cape Point. Dias Rock is connected to Cape Point by a submerged reef. The Portuguese liner, *Lusitania*, foundered on Bellows Rock in April 1911.

- 3 Thence the track leads to a position SE of Cape Point (15 miles SSE). Rocky Bank, an extensive shoal area lies between 4½ and 6½ miles SE of Cape Point. Fishing takes place in the vicinity of this bank, see 10.28.

10.38

1 Useful marks:

Kommetjieberg (34°18'8S, 18°24'9E).

Vasco da Gama Peak (34°20'8S, 18°28'6E).

(Directions continue at 10.136 and for Vaalsbai at 10.61)

Houtbaai

General information

10.39

- 1 **Position.** Houtbaai (34°03'·5S, 18°21'·5E) is situated about 10 miles SSW of Table Bay.

Function. It is the largest fishing harbour in the Republic of South Africa. The town of Houtbaai is situated on the N and W sides of the bay.

- 2 **Topography.** The coast on each side of the entrance to Houtbaai is high and rugged, particularly on the E side, where precipitous mountains are separated by a succession of ravines.

At the head of the bay, the mouth of Houtbaai River, which is generally dry in summer months, enters the sea. Flora Bay, with a group of holiday bungalows at An-de-Waterkant lies 3½ cables SE of the river mouth.

- 3 **Port limits.** Inside a line drawn between Die Josie (34°04'·6S, 18°21'·3E) and a beacon 1½ miles NW.

Approach and entry. Houtbaai is approached from SW and entered between Badtamboer (34°03'·7S, 18°20'·6E) at the base of Hangberg (10.42) and Die Josie, 11½ cables SE.

Constantiabeirg Mast



Approaches to Houtbaai – Vulcan Rock (10.39)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

Limiting conditions

10.40

- 1 **Local weather.** With SE winds, squalls come down very heavily off the land; they are variable in direction and are strongest on the E side of the bay. After some hours, as the SE winds freshen, the squalls reach over to the W side of the bay and at times are so violent that if a vessel is at anchor it is better for her to put to sea rather than risk the danger of parting her cable. A vessel putting to sea in such circumstances will find in Chapman's Bay the wind will abate in violence and become more S in direction. A line of foam, giving the false impression of danger, may frequently be seen across the entrance to Houtbaai.

- 2 SE winds occur most frequently during the summer. See 1.219.

Arrival information

10.41

- 1 **Outer anchorage.** Except during SE squalls, good, sheltered anchorage may be obtained in Houtbaai, the holding ground of soft sand being excellent. Ships should avoid anchoring in the vicinity of the harbour entrance. The bay is open SW, but strong winds from this quarter, apart from occasional short lived squalls, rarely occur.

In SE squalls, a very unpleasant short, choppy sea occurs. Ships at anchor should, if possible, weigh anchor and enter harbour where the sea is always slight, or alternatively, proceed to Chapman's Bay where temporary anchorage may be obtained. The holding ground in Chapman's Bay is poor and a good anchor watch should be maintained.

- 2 **Prohibited anchorage.** A prohibited anchorage, protects a sewer that extends into the bay from a position S of the root of the S breakwater.

Harbour

10.42

- 1 **General layout.** The harbour is formed around an indentation on the W shore of Houtbaai and is protected by two moles, each 370 m in length, extending from the N and S shores into the bay.

- 2 **Landmarks:**

Hangberg (The Sentinel) (34°03'·6S, 18°20'·4E).

Chapman's Peak (34°05'·3S, 18°21'·6E) (10.34).

Slangkop Point Lighthouse (34°08'·9S, 18°19'·2E) (10.32).

- 3 **Major light:**

Slangkop Point Light — as above.

Directions for entering harbour

10.43

- 1 From a position W of Chapman's Point (34°05'·5S, 18°21'·0E), the track leads NE, then N, for about 3 miles, passing (with positions relative to Badtamboer (34°03'·7S, 18°20'·6E)):

SW of Tafelberg (1½ miles SW) (10.34), thence:

NW of Chapman's Point (1¼ miles S) (10.34), thence:

- 2 NW of Die Josie (1 mile SE), a rocky salient. A white beacon stands 1 cable SE of the point. Thence:

Clear of two wrecks (4 cables SE), thence:

SE of York Point (5½ cables NE) (not charted), low, composed of boulders, on which are the ruins of a gun battery. The root of the harbour's S mole is

Hangberg



Entrance to Houtbaai Harbour (10.43)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

located in the vicinity of York Point. Foul ground extends SE for 1 cable from a point close SSW of York Point. Ships should give this area a wide berth.

- 3 Thence the track leads N, to a position E of the moles (8 cables NE) from which lights (yellow huts) are exhibited. The entrance to the harbour between the moles is about 80 m in width.

Berths

10.44

- 1 There are numerous berths in the harbour but it was reported (2004) that berthing alongside the N mole was dangerous and prohibited. The longest berth, situated on the S side of the harbour, is 190 m in length with depths from 2.5 to 3.5 m alongside.

Port services

10.45

- 1 **Repairs:** two slipways for vessels up to 21 m in length and 75 tonnes.

Supplies: fresh provisions.

Rescue: Inshore lifeboat.

Small craft

10.46

- 1 Hout Bay Yacht Club's marina is accessed through a controlled gate at the end of No 4 Jetty.

The Atlantic Boat Club has pontoons for powered pleasure craft in front of the clubhouse at the SW end of No 2 Quay.

VALSBAAI

GENERAL INFORMATION

Chart 4150

Area covered

10.47

- 1 This section describes Valsbaai (34°20'·0S, 18°40'·0E), including the main routes along the W, N, and E sides. The port of Simon's Town is also described, together with other anchorages and harbours.
- 2 It is arranged as follows:
- Cape Point to Simon's Town (10.55).
 - Simon's Town (10.69).
 - Simon's Bay to Gordon's Bay (10.107).
 - Gordon's Bay to Cape Hangklip (10.121).

Description

10.48

- 1 Valsbaai is a large bay, entered between Cape Point (34°21'·4S, 18°29'·8E), and Cape Hangklip about 16½ miles E. There are several outlying dangers in the bay but it provides good safe anchorage except where the bottom is rocky or steep-to. The W and E shores are generally rocky with occasional small sandy bays but the N shore is a fine sandy crescent. Breakers line the strand in depths of less than 9 m, about 5 cables offshore.
- 2 Valsbaai (False Bay) was not so called because it presented any particular danger but rather because it was

the bay to the W of Kaap Vals. This was the name originally given to Cape Hangklip, which because of its similarity to the Cape of Good Hope, caused confusion to the early navigators.

Topography

10.49

- 1 For general topography see 10.8.

Hazards

10.50

- 1 **Exercise areas.** See 10.3.

Trek net fishing may be conducted from the beaches between Smitswinkelbaai (34°16'·0S, 18°28'·2E) and Strand 19 miles NE. The nets, which are hauled towards the beach, can extend up to 3½ cables seaward and are only occasionally marked.

- 2 **Poisonous fish.** A poisonous fish about 150 mm in length, its back dark with deep black stripes, and belly white with faint yellow patches, is known as a toad fish, or locally, as a blaasop. It swims near the surface, is easily taken with a hook and line and when taken from the water puffs out considerably. Should any portion of this fish be eaten, death will ensue within minutes.

10.51

- 1 **Abnormal waves** can be expected from time to time in Valsbaai and usually follow the passage of a deep

depression in the Southern Ocean that gives rise to powerful wave trains. They can occur suddenly and can cause damage or loss of life. Examples are that commemorated in a memorial cross on Boskloof Point (34°13'0S, 18°49'9E) on the E side of Valsbaai, in which fishermen were swept off the rocks, and another which occurred on 17 December 1965, when a South African Naval cutter in Kalk Bay was swamped and seven out of a crew of eleven were drowned.

- 2 These conditions may also be experienced on the shoals W of the breakwaters at Simon's Town.

Traffic regulations

10.52

- 1 Foreign vessels may not enter Valsbaai, unless in an emergency, without prior permission of the South African Maritime Safety Authority (SAMSA) obtained via Cape Town Radio. Vessels which have been authorised to anchor in the bay must send their ETA by VHF to Simon's Town Naval Base and request an anchor berth.

Prohibited fishing zone

10.53

- 1 The use of purse seine fishing nets is prohibited inshore of a line between Cape Point (34°21'4S, 18°29'8E) and Cape Hangklip, 16½ miles E, annually from 1st May to 14th February.

Natural conditions

10.54

- 1 **Tidal streams** are weak in Valsbaai, but in general the out-going stream sets S and the in-going stream sets N.
- 2 **Currents.** The direction and circulation of the surface water in the bay is somewhat unpredictable, being largely wind-induced and a rate of ½ kn is seldom exceeded. Broadly speaking, it may be said that in summer, a clockwise circulation occurs. In winter, under the influence of the predominantly NW wind, the surface waters of the bay tend to flow S but the currents are weaker than in summer.

Climatic table. See 1.226 and 1.250.

CAPE POINT TO SIMON'S TOWN

General information

Charts 4150, 1922

Routes

10.55

- 1 **Offshore passage outside Whittle Rock and Roman Rocks.** From a position SE of Cape Point (34°21'4S, 18°29'8E), the route leads NE, and NW for about 17½ miles, to the vicinity of the pilot boarding position, 1 mile N of Roman Rocks (34°10'8S, 18°27'6E).
- 2 **Inshore passage inside Whittle Rock and Roman Rocks.** From a position SE of Cape Point (34°21'4S, 18°29'8E), the route leads N and NW for about 15 miles to the harbour entrance.

Topography

10.56

- 1 This part of the E coast of Cape Peninsula is generally mountainous, and the shores are precipitous in places. Rocky ledges, boulders and submerged rocks fringe the shore over most of its length. In a few places this foul ground extends up to 5 cables offshore, but elsewhere it forms a narrow band which is steep-to on its seaward side.

- 2 Swartkopberge is a prominent range, the summits of which are about 7½ cables from the coast between Smitswinkelbaai (34°16'0S, 18°28'2E) and Simon's Bay. Swartkop is the highest point, with Simonsberg lying about 1 mile NNW.

Fish haven

10.57

- 1 A fish haven consisting of three sunken vessels with a least depth of 11 m over it lies 4½ cables N of Batsata Rock (34°16'6S, 18°28'8E).

Dumping ground

10.58

- 1 A disused dumping ground, the limits of which are indicated on the chart, lies 9 cables SE of Partridge Point (34°15'4S, 18°28'6E). Anchoring and trawling in the area is prohibited.

Principal marks

10.59

- 1 **Landmarks:**
 - Buildings (34°11'8S, 18°26'5E), E of two.
 - Crane (34°11'5S, 18°26'5E).
 - Radar tower (34°11'5S, 18°26'3E).
 - Pylons (34°11'6S, 18°25'7E), N of four.
 - Klein Vishoek (white house) (34°10'4S, 18°25'7E).
 - Quarry (34°09'2S, 18°26'2E).
- 2 **Major lights:**
 - Cape Point Light (34°21'4S, 18°29'8E) (10.32).
 - Roman Rocks Light (white round tower, white lantern, 14 m in height) (34°10'8S, 18°27'6E).
 - Cape Hangklip Light (34°23'2S, 18°49'7E) (10.134).



Roman Rocks Light from S (10.59)

(Original dated 2003)

(Photograph – Diana Gratton-Cooper)

Other aid to navigation

10.60

- 1 **Racon:**
 - Roman Rocks Light – as above.
 - Whittle Rock Light-buoy (34°14'7S, 18°34'2E).
- See *Admiralty List of Radio Signals Volume 2*.

Directions*(continued from 10.38)***General information****10.61**

- 1 **Caution.** Mariners rounding the Cape of Good Hope from W, if bound into Valsbaai, should pass not less than 5 cables S of Bellows Rock (10.37) and thence steer NE between Rocky Bank and Anvil Rock, until clear of the latter.
- 2 In thick weather, it is advisable to steer for the middle of Valsbaai, keeping well E of Whittle Rock. If so fitted, a vessel should never neglect full use of all navigational aids. When approaching soundings of 35 m, a vessel unfamiliar with the locality should anchor and wait for the weather to clear.

Offshore passage east of Whittle Rock and Roman Rocks**10.62**

- 1 From a position SE of Cape Point (34°21'4S, 18°29'8E) (10.37), clear of Rocky Bank, the track leads initially NE, passing (with positions relative to Cape Point):
E of Whittle Rock (7½ miles NNE), which breaks occasionally and which is marked by a light-buoy (E cardinal). Several isolated rocky pinnacles surround Whittle Rock up to a distance of about 1 mile, the depths over which vary from 15 to 29 m. See also 10.64.
- 2 Thence the track leads NW, passing:
SW of York Shoal (13 miles NNE) (10.114), thence:
SW of Seal Island (14 miles NNE) (10.114), thence:
- 3 NE of Roman Rocks (10¾ miles NNW), a group of rocks on the S side of a rocky bank which is roughly circular and about 4 cables in diameter. A buoy (N cardinal) marks the N side of the bank. Castor Rock and Rambler Rock lie 2 cables N and 3 cables ESE respectively of Roman Rocks. Roman Rocks Light (10.59) is exhibited from the rocks.
- 4 Thence the track leads to the vicinity of the pilot boarding position N of Roman Rocks.
(Directions for entering Simon's Town continue at 10.94)

Inshore passage west of Whittle Rock and Roman Rocks**10.63**

- 1 From a position SE of Cape Point (34°21'4S, 18°29'8E) (10.37), clear of Rocky Bank, the track leads N, passing (with positions relative to Cape Point):
E of Anvil Rock (1¼ miles SE), thence:
E of Cape Point. A coastal hill known as Matrooskop (107 m high) lies 2½ miles NW of Cape Point. Thence:
- 2 E of Buffelsbaai (3 miles NW) (10.67), also known as Mackellar's Bay. Beacons (see below) stand on the ridge of hills behind the bay. Thence:
E of Batsata Rock (5 miles N). Smitswinkelbaai (10.68) lies close NNW. Thence:
- 3 E of rocks (6 miles N) extending 4 cables off Partridge Point, close W, thence:
W of Whittle Rock (7¼ miles NNE) (10.62), thence:
E of Bakovenrots, an above water rock, (7½ miles N). Castle Rock lies close S of Bakovenrots.

10.64

- 1 The position of Whittle Rock (10.62) is indicated approximately by two pairs of transit beacons situated on Cape Peninsula as follows.

2 South pair of beacons:

Front (white concrete obelisk, surmounted by a cross facing E, commemorating Vasco da Gama, 15 m in height) (34°18'8S, 18°27'6E).

Rear (similar construction, seaward face painted black, commemorating Bartolomeu Dias) (7¾ cables from front beacon); transit bearing 231¾°.

3 North pair of beacons:

Front (red base, white apex, 11 m in height) (34°12'5S, 18°27'7E).

Rear (white diamond shape, 9 m in height) (8½ cables from front beacon).

- 4 These beacons, which are difficult to distinguish from the general background of rock, especially in adverse light conditions, are in transit bearing (294¾°). The front beacon has a cluster of white houses close behind it, and the rear beacon has a background of light coloured rocks.

- 5 As the pairs of beacons indicating Whittle Rock are placed a considerable distance away from the rock the resultant bearing change experienced will not be critical. Mariners are therefore warned to keep these transits open when passing Whittle Rock.

10.65

- 1 From a position E of Bakovenrots (10.63), the track is adjusted NW, passing:
- 2 NE of Millers Point (7½ miles N). Rocks and foul ground extend up to 7 cables off the coast between this point and Noah's Ark, 2½ miles NNW. Millers Point is the most prominent point on the coast between Cape Point and Simon's Town. The wreck of the *SAS Pietermaritzburg*, marked by an orange buoy, lies 6 cables N of Millers Point. It is used for recreational diving purposes. Thence:
- 3 NE of Oatland Point (9 miles N), with a few rocks off it, on one of which stands a beacon (see above), thence:
NE of Photographers Reef (Rocky Patch) (1 mile S), thence:
NE of Maidstone Rock (7 cables SSW), a sharp pinnacle, 3½ cables offshore, thence:
- 4 NE of Noah's Ark (7 cables SSW), a flat topped rock, resembling a barn, and:
SW of Roman Rocks (10.65), and:
NE of Nimrod Rock (8 cables SW), thence:
NE of a buoy (N cardinal) (7 cables SW), marking the NE extremity of Phoenix Shoal. Hen and Chickens, lie close inshore on this bank.
- 5 Thence the track is adjusted W to the harbour entrance.

Useful marks**10.66**

- 1 Beacon (34°12'1S, 18°27'4E).
Naval Base Wardroom (34°12'1S, 18°27'1E).
Martello tower (34°11'6S, 18°26'6E).
Chimney (34°11'5S, 18°26'4E).
Lower North Battery (34°10'5S, 18°25'6E).
Radio tower on Else Peak (34°09'0S, 18°26'1E).
(Directions continue for coastal route at 10.114)

Small craft**Buffelsbaai****10.67**

- 1 **Description.** Buffelsbaai (34°19'0S, 18°27'6E), also known as Mackellar's Bay, is an indentation 5 cables wide that can be identified by a white sandy patch, some whitewashed buildings and a windmill close to the head of

the bay. In calm weather, there is good anchorage for small craft in 8 m, sand, close to the shore of the bay.

- 2 **Prohibited anchorage.** Close NE of Buffels Bay there is an area, as shown on the chart, where anchorage is prohibited because of the presence of submarine cables.

Smitswinkelbaai

10.68

- 1 Smitswinkelbaai (34°16'0S, 18°28'0E) is situated about 3 miles N of Buffelsbaai. It may be distinguished from seaward by a cluster of holiday bungalows and also by the steep-sided valley running NW from the head of the bay. An area, indicated on the chart, where explosives were formerly dumped, is located 1 mile E of the head of the bay. Three wrecks scuttled to create a fish haven and having a least depth of 11 m over them, lie about 5 cables N of Batsata Rock off the S entrance of the bay. Vessels are warned against anchoring or trawling in the vicinity of these foregoing obstructions but small craft may with advantage anchor closer to the head of the bay in calm weather.

SIMON'S TOWN

General information

Chart 1922

Position

10.69

- 1 Simon's Town (34°11'8S, 18°26'0E) is situated in Simon's Bay in the NW corner of Valsbaai.

Function

10.70

- 1 Simon's Town is the primary base for the South African Navy and is currently closed to commercial operations.

Topography

10.71

- 1 Between Oatland Point (34°12'5S, 18°27'7E) and Simon's Town, the coast is much indented and there are several small, sandy bays sheltered by off-lying boulders. W of Simon's Town the coast is formed by Long Beach as far as Klein Vishoek, 1 mile N. The coastline between Klein Vishoek (34°10'4S, 18°25'7E) and Elsebaai, 9 cables NNE, is generally rocky, except for Mackerel Bay and Shelly Beach.

Port limits

10.72

- 1 Port limits are inside a line drawn from Oatland Point (34°12'5S, 18°27'7), N through Roman Rocks, thence NW to the N point of Elsebaai (34°09'6S, 18°26'0E).

Approach and entry

10.73

- 1 The port is approached through Valsbaai and entered between breakwaters.

Marine reserves

10.74

- 1 Certain restrictions apply within the limits depicted on Chart 1922. For further information contact the Department of Sea Fisheries.

Port Authority

10.75

- 1 Simon's Town Naval Base, Simon's Town 7995, Republic of South Africa.

Limiting conditions

Deepest and longest berth

10.76

- 1 Outer Basin (10.96).

Tidal levels

10.77

- 1 Mean spring range about 1.6 m; mean neap range about 0.6 m. See information in *Admiralty Tide Tables Volume 2*.



Simon's Bay from NW (10.69)

(Original dated 2003)

(Photograph – Diana Gratton-Cooper)

Density of water**10.78**

- 1 The density of the water is 1.025 g/cm³.

Maximum size of vessel handled**10.79**

- 1 *Alcantara* 22 209 dwt, length 195 m, draught 9 m.

Local weather**10.80**

- 1 **Winds in Simon's Bay.** The prevailing winds are SE from November to March (summer) and NW from April to October (winter).
- 2 The SE winds may blow continuously for five to eight days, but more frequently they die down towards evening, remaining light or moderate during the night, and increase again during the forenoon. A steeply rising barometer is usually the precursor of strong SE winds. Shortly after such a wind has started, the hills above Muizenberg (34°06'0S, 18°28'0E), become capped with white cloud, and should the Hottentots Holland Range of mountains on the E side of Valsbaai become capped, a violent blow may be expected. When Simonsberg (34°12'3S, 18°26'4E) has a misty cloud at its summit, rain may be expected for a short while.
- 3 During the season of SE winds they frequently blow strongly from SSE; on these occasions a heavy surf builds up off those beaches that are out of the immediate lee of the dockyard and Simon's Town.
- 4 During the season of NW winds, frequent gales, accompanied by rain, may be expected from that quarter. A falling barometer usually presages such NW gales, which may occasionally be experienced at any time of the year and which, though often violent, seldom last longer than three days. As the depression passes to the S of the Cape of Good Hope, the wind normally backs to SW, the temperature falls and violent local squalls sweep down into the bay from off the hills of Cape Peninsula, making it uncomfortable for ships at anchor.
- 5 The hot dry N wind, the Berg Wind occurs frequently in the winter and the spring but may be experienced at any time of the year.

Arrival information**Port radio****10.81**

- 1 There is a port radio station. See *Admiralty List of Radio Signals Volume 6(3)*.

Notice of ETA required**10.82**

- 1 ETA should be sent at least 1 hour prior to arrival. See *Admiralty List of Radio Signals Volume 6(3)*.

Outer anchorage**10.83**

- 1 Vessels may only anchor in berths designated by the Naval Port Authority. In general these berths will be

situated about 3½ miles SE of Roman Rocks, clear of all firing danger areas and where the holding is good.

- 2 **Prohibited anchorages.** Anchorage is prohibited in an area, as shown on the chart, between the harbour entrance and Oakland Point and extending offshore to Roman Rocks. The area contains submarine cables.

Another prohibited anchorage (10.88) lies N of Roman Rocks.

Pilotage**10.84**

- 1 Pilotage is compulsory for commercial vessels. The Naval Harbour Master acts as the pilot and boards about 1 mile N of Roman Rocks, as indicated on the chart. See *Admiralty List of Radio Signals Volume 6(3)*.

Tugs**10.85**

- 1 Tugs are available.

Regulations concerning entry**10.86**

- 1 **Traffic regulations.** See 10.52

Harbour**General layout****10.87**

- 1 East Dockyard is enclosed by breakwaters and extends NNW into the bay. It comprises Outer Basin, East Basin and East Dockyard Basin.
- The smaller West Dockyard is situated about 3 cables W of East Dockyard.

Exercise area**10.88**

- 1 A military practice area about 1 mile square, where anchorage is prohibited, lies with its centre about 1¼ miles N of Roman Rocks (34°10'8S, 18°27'6E), as indicated on the chart.

Submarine cables**10.89**

- 1 A submarine power cable is laid 1 mile ENE from the E side of the breakwater to Roman Rocks. A second submarine cable is laid ENE from the same position.

Traffic signals**10.90**

- 1 Traffic signals are displayed from the flagstaff on the roof of the Harbour Master's office, which is a prominent two storied white building situated on the NW side of East Dockyard Basin.
- A red flag is displayed when the entrance to the dockyard is closed and a green flag when it is clear.

Climatic table**10.91**

- 1 See 1.226 and 1.250.

Principal marks**10.92****1 Landmarks:**

Buildings (34°11'·8S, 18°26'·5E), E of two.
 Crane (34°11'·5S, 18°26'·5E).
 Radar tower (34°11'·5S, 18°26'·3E).
 Pylons (34°11'·6S, 18°25'·7E), N of four.
 Klein Vishoek (34°10'·4S, 18°25'·7E) (10.59).
 Quarry (34°09'·2S, 18°26'·2E).

2 Major lights:

Cape Point Light (34°21'·4S, 18°29'·8E) (10.32).
 Roman Rocks Light (34°10'·8S, 18°27'·6E) (10.59).
 Northern Spur Light (white column, red lantern, 11 m in height) (34°11'·1S, 18°26'·3E).
 Cape Hangklip Light (34°23'·2S, 18°49'·7E) (10.134).

Other aid to navigation**10.93****1 Racon:**

Whittle Rock Light-buoy (34°14'·7S, 18°34'·2E).
 See *Admiralty List of Radio Signals Volume 2*.

Directions for entering harbour

(continued from 10.62)

10.94

- 1** From the vicinity of the pilot boarding position N of Roman Rocks (34°10'·8S, 18°27'·6E), the track leads SW, for about 1¾ miles to the entrance to Outer Basin, passing NW of an obstruction marked by a buoy (N cardinal), lying 4 cables NW of Roman Rocks. A mooring buoy 2 cables W of the entrance is often used by submarines.

2 Useful marks:

Beacon (34°12'·1S, 18°27'·4E).
 Naval Base Wardroom (34°12'·1S, 18°27'·1E).
 Martello tower (34°11'·6S, 18°26'·6E).
 Chimney (34°11'·5S, 18°26'·4E).
 Lower North Battery (34°10'·5S, 18°25'·6E).
 Radio tower on Else Peak (34°09'·0S, 18°26'·1E).

Berths**General information****10.95**

- 1** Alongside depths are charted depths. The port authorities should be contacted for the latest information.

Outer Basin**10.96**

- 1** Outer Basin (34°11'·2S, 18°26'·2E), with an entrance 90 m in width, provides 7 berths, with depths from 16.3 to 8.5 m alongside.

East Dockyard Basin**10.97**

- 1** East Dockyard Basin, with an entrance 88 m in width, provides 7 berths, with depths from about 10 to 4 m alongside.

Inner Basin**10.98**

- 1** Inner Basin, with an entrance 30 m in width, provides 3 berths, with depths of about 8 m alongside.

Port services**Repairs****10.99**

- 1** All types of repair can be carried out by arrangement with the South African Naval Authorities.

Drydock. Selborne Drydock, (34°11'·5S, 18°26'·5E) in East Dockyard Basin, is 237.7 m in length, 29 m in width, and has a depth of 9.3 m over the sill.

A ship-lift in the Inner Basin can handle vessels up to 2000 tonnes displacement. Slipways are available also.

Other facilities**10.100**

- 1** Naval medical centre; hospital at Vishoek; compass adjustment.

Supplies**10.101**

- 1** Fuel oil; fresh water, stores.

Communications**10.102**

- 1** Road and rail links to Cape Town. International airport at Cape Town.

Rescue**10.103**

- 1** There is a lifeboat. See 1.54.

Small craft**Anchorage****10.104**

- 1** Two small craft anchorage areas, limits of which are marked by buoys (special), are situated W of Outer Basin, noting Wharf Rock 4½ cables SW of Northern Spur Light (34°11'·1S, 18°26'·3E). Small craft wishing to use the anchorage should contact False Bay Yacht Club before anchoring.

Yacht club and marina**10.105**

- 1** False Bay Yacht Club and its marina are situated on the S shore of Simon's Bay. Yachts up to 20 tonnes displacement can be hauled out of the water.

Other berths**10.106**

- 1** Positions relative to Northern Spur Light (above):
 Town Pier (5¾ cables SW) with a small boat basin on its E side.

Admiralty Jetty (5¾ cables SW). Rocks lie 3 cables SE and E of the jetty.

SIMON'S TOWN TO GORDON'S BAY

General information

Charts 1922, 4150

Route

10.107

- 1 From the vicinity of the pilot boarding position N of Roman Rocks (34°10'·8S, 18°27'·6E), the route leads E, for about 16½ miles to the vicinity of 34°10'·0S, 18°47'·5E, W of Gordon's Bay.

Topography

10.108

- 1 The N side, or head of Valsbaai, inland of which are the Cape Flats, is a low sandy beach with a continuous line of surf fronting it, so that it affords no landing and should in all circumstances be avoided. Sunrise Beach forms a large part of this beach.

Muizenberg Range of mountains rise to Kalkbaai (34°06'·8S, 18°26'·4E), in the NW part of the bay.

Exercise area

10.109

- 1 See 10.88.

Prohibited area

10.110

- 1 A prohibited area extends WNW for about 2½ miles, and 1 mile offshore, from a position on the shore 1 mile NW of Strand (34°06'·5S, 18°50'·0E).

Climatic table

10.111

- 1 For climatic table for Cape Point see 1.226 and 1.250.

Principal marks

10.112

Landmarks:

Buildings (34°11'·8S, 18°26'·5E) (10.92).
Crane (34°11'·5S, 18°26'·5E).
Radar tower (34°11'·5S, 18°26'·3E).
Pylons (34°11'·6S, 18°25'·7E) (10.92).
Klein Vishoek (34°10'·4S, 18°25'·7E) (10.59).
Quarry (34°09'·2S, 18°26'·2E).
Tower (34°06'·1S, 18°58'·0E) (Chart 4152).

Major lights:

Cape Point Light (34°21'·4S, 18°29'·8E) (10.32).
Roman Rocks Light (34°10'·8S, 18°27'·6E) (10.59).
Northern Spur Light (34°11'·1S, 18°26'·3E) (10.92).
Cape Hangklip Light (34°23'·2S, 18°49'·7E) (10.134).

Other aid to navigation

10.113

Racon:

Whittle Rock Light-buoy (34°14'·7S, 18°34'·2E).
See *Admiralty List of Radio Signals Volume 2*.

Directions

(continued from 10.66)

10.114

- 1 From the vicinity of the pilot boarding position N of Roman Rocks (34°10'·8S, 18°27'·6E), the track leads E, passing (with positions relative to Roman Rocks):

S of a military practice area (1¼ miles N) (10.88), thence:

S of wrecks (5 miles NE) forming a fish haven, over which there is a depth of 9·6 m, thence:

- 2 S of York Shoal (6¾ miles ENE), a rocky patch. Seal Island, low and rocky lies 1¼ miles N. It is surrounded by submerged rocks on which the sea usually breaks. A detached shoal, with a depth of 15·5 m over it, and a shoal with a depth of 16·5 m over it lie respectively, 5 cables NW and 4 cables SSE of the island. It is one of the Government Proclaimed guano islands (1.167), but landing on it is difficult, except when the sea is very smooth. No guano has been collected for a considerable time, but regular sealing operations take place between July and September every year. The remains of a metal lattice tower, which collapsed in 1973, stand near the middle of the island. Thence:

- 3 S of Kapteinsklip (4 m high) (10 miles NE), a group of rocks extending seaward for 3 cables, thence: Clear of East Shoal (9½ miles ENE), thence:

S of Swartklip (13 miles ENE), thence:

S of a dangerous wreck (14½ miles ENE), forming a fish haven, thence:

Clear of a shoal patch (14½ miles ENE), with a depth of 15·5 m over it. A reef over which there is a least depth of 17·1 m extends S from this shoal for 3½ miles. thence:

- 4 S of a shoal patch (34°08'·5S, 18°45'·8E) with a depth of 11·3 m over it, thence:

S of Blinkklip Rock (34°06'·4S, 18°47'·5E), with a depth of less than 1·8 m over it. The coast between Blinkklip Rock and Gordon's Bay 4½ miles SE, is fringed with rocky ledges.

Thence the track leads to the vicinity of 34°10'·0S, 18°47'·5E, W of Gordon's Bay.

10.115

Useful marks:

West Peak (34°02'·3S, 18°52'·2E), Helderberg Range.
The Dome (34°01'·7S, 18°53'·0E).
Tower (34°07'·2S, 18°51'·8E).

(Directions continue at 10.124)

Anchorage and harbours

Fish Hoek Bay

10.116

- 1 **Description.** Vishoekbaai (Fish Hoek Bay) (34°08'·3S, 18°26'·3E), lies 3¼ miles N of Simon's Town. Sharks have been seen in the bay. It was in a cave in the hills behind



Kalkbaai Harbour from N (10.117)

(Original dated 2003)

(Photograph – Diana Gratton-Cooper)

the town that the remains of the pre-historic Vishoek Man were excavated.

The town of Vishoek (Fish Hoek) fronts the bay.

Anchorage may be obtained in a depth of 10 m, sand.

Kalkbaai

10.117

- 1 **Description.** Kalkbaai (34°07'·7S, 18°27'·0E), close NE of Vishoekbaai is a small enclosed fishing harbour, protected by breakwaters, from which lights are exhibited.

Berths. There is a jetty 118 m in length with depths from 2·9 to 4·5 m alongside. Berths are also available alongside the inner side of the breakwater.

Small craft moorings are available in the harbour.

Gordon's Bay

10.118

- 1 **Position and function.** Gordon's Bay (34°09'·5S, 18°51'·5E), a small fishing harbour, lies about 22 miles E of Simon's Town. The South African Naval College stands at the NE corner of the harbour. The resort of Strand and the town of Somerset West, the latter a centre of a thriving wine and agricultural region, are located 3 miles NNW and 5 miles N respectively of Gordon's Bay.

Approach and entry. The bay is approached from W and entered between Die Poort (34°07'·2S, 18°49'·7E), and a rounded headland about 4 miles S.

Depths of between 1·4 to 4 m in the harbour.

Directions. The harbour is entered between breakwaters from which lights are exhibited. The entrance is 48 m in width and open NE.

- 2 **Useful mark:**

Anchor (34°10'·2S, 18°51'·8E), with letters GB on the mountainside. The letters stand for General Botha, the former name of the Naval College when it was the Merchant Navy Academy.

- 3 **Anchorage.** The bay is not recommended as an anchorage as it affords little shelter from SE gales which

sweep down Saint Lowry's Pass from the E. A heavy S swell enters the bay, and with a SE wind causes vessels to anchor there to lie beam on to the swell. The bottom is sand over rock, and the holding ground is generally poor.

- 4 **Berths.** A fish quay, 25 m in length, 21 m in width, and with average depth of about 2·3 m alongside, lies at the head of the basin.

Repairs: slipway, 30 tonne capacity.

Other facilities: boat ramp.

Rescue: an inshore lifeboat. See 1.54.

Small craft: Gordon's Bay Yacht Club has several pontoons for recreational craft within the harbour.

Small craft

Die Poort

10.119

- 1 **Description.** Die Poort (34°07'·2S, 18°49'·7E) is a natural, small boat harbour, within rocky ledges, which has a wooden pier 90 m in length at its head. There are several large hotels facing the beach. The entrance is narrow and the channel with a least depth of 0·3 m has a sandy bottom clear of rocks.

Local knowledge. Strangers should only enter at HW and never if there is a swell.

Harbour Island Marina

10.120

- 1 **Description.** The marina (34°09'·1S, 18°51'·5E) is located on the N shore of Gordon's Bay. It is enclosed by W and E breakwaters and is approached by a short channel dredged to 2·3 m. Depth within the complex of marina basins is 2·3 m; visitors moorings are available.

- 2 **Directions.** The line of bearing (042°) of a directional light situated at the rear of the breakwater entrance, or at night within a narrow white sector of the light, leads through the dredged channel passing;

- 3 a pair of buoys (lateral) near the outer end of the channel, thence;



Breakwater Lights

Entrance to Gordon's Bay Harbour (10.118)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

between the breakwaters marked by lights (W
breakwater: red pole on cylindrical base. E
breakwater: green pole on cylindrical base).

GORDON'S BAY TO CAPE HANGKLIP

General information

Chart 4150

Route

10.121

- 1 From a position in the vicinity of $34^{\circ}10'0S$, $18^{\circ}47'5E$,
W of Gordon's Bay, the route leads S, for about 15 miles
to a position SW of Cape Hangklip ($34^{\circ}23'2S$, $18^{\circ}49'7E$).

Principal marks

10.122

Landmark:

Tower ($34^{\circ}06'1S$, $18^{\circ}58'0E$) (Chart 4152).

Major lights:

Cape Point Light ($34^{\circ}21'4S$, $18^{\circ}29'8E$) (10.32).
Roman Rocks Light ($34^{\circ}10'8S$, $18^{\circ}27'6E$) (10.59).
Northern Spur Light ($34^{\circ}11'1S$, $18^{\circ}26'3E$) (10.92).
Cape Hangklip Light ($34^{\circ}23'2S$, $18^{\circ}49'7E$) (10.134).

Other aid to navigation

10.123

Racon:

Whittle Rock Light-buoy ($34^{\circ}14'7S$, $18^{\circ}34'2E$).
See *Admiralty List of Radio Signals Volume 2*.



Entrance to Harbour Island Marina (10.120)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

Directions*(continued from 10.115)***10.124**

- 1 From a position in the vicinity of 34°10'·0S, 18°47'·5E, W of Gordon's Bay, the track leads S, passing (with positions relative to Cape Hangklip):

W of the mouth of Steenbras River (11¼ miles N), flowing through a steep ravine in the rounded headland. The river flows out of Steenbras Dam one of the main sources of water for the Cape Peninsula. The tall red brick building of a filtration plant close NW, when illuminated at night, provides a conspicuous mark.

W of Boskloof Point (10 miles N), from which a rocky reef extends ½ cable, thence:

- 2 W of The Point (5½ miles N). Koeël Bay (10.127), where anchorage may be obtained lies NNE. Thence:

W of Die Punt (2½ miles N). Pringle Bay (10.126), where anchorage may be obtained, lies close NE. The coast between Pringle Bay and The Point 3 miles N is much indented. Thence:

W of Cape Hangklip.

Thence the track leads to the a position SW of Cape Hangklip (34°23'·2S, 18°49'·7E) (10.136).

10.125

- 1 **Useful marks:**

Hangklip (34°21'·9S, 18°49'·7E), a quoin-shaped mountain, which when seen from the S resembles an island. In some directions it appears to overhang, hence the name Hangklip.

Blesberg (34°21'·9S, 18°51'·0E).

Twee Susters (34°19'·6S, 18°49'·8E).

- 2 Buffelstalberg (34°18'·8S, 18°52'·2E), appears as a sharp peak when viewed from Simon's bay, but elsewhere it has a more rounded shape.

Klein Hangklip (34°18'·5S, 18°49'·3E)

Rooielsberg (34°17'·0S, 18°50'·1E).

Boskloof Peak (34°12'·3S, 18°50'·4E).

(Directions continue at 10.136)

Anchorage and harbours**Pringle Bay****10.126**

- 1 Anchorage may be obtained in the centre of Pringle Bay (34°20'·4S, 18°49'·4E) in a depth of 20 m. Pringle bay is being developed.

Koeël Bay**10.127**

- 1 Koeël Bay (34°15'·0S, 18°50'·0E), provides sheltered anchorage from S and E winds. The holding on the rocky bottom is not good.

Small craft**Rooiels Bay****10.128**

- 1 Rooiels Bay (not named on chart) (34°18'·0S, 18°49'·2E), provides good shelter for small craft. Local knowledge is required. Rooiels River enters the bay near its head.

CAPE POINT TO CAPE AGULHAS**GENERAL INFORMATION**

Chart 4152

Area covered**10.129**

- 1 This section describes the coastal passages, anchorages and harbours from Cape Point to Cape Agulhas (34°50'·0S, 20°00'·7E), about 80 miles ESE. For Vaalsbaai see 10.47.

It is arranged as follows:

Cape Point to Danger Point (10.131).

Danger Point to Cape Agulhas (10.144).

Natural conditions**10.130**

- 1 **Tidal streams** are negligible.

Current. Between Cape Hangklip (34°23'·2S, 18°49'·7E) and Cape Agulhas, a current setting E at a rate of 1 kn has occasionally been experienced. See 10.5.

Climatic table. See 1.226 and 1.251.

CAPE POINT TO DANGER POINT**General information**

Chart 4152

Route**10.131**

- 1 From a position SE of Cape Point (34°21'·4S, 18°29'·8E), the route leads E and SE for about 40 miles to a position SW of Danger Point (34°37'·9S, 19°17'·6E).

Topography**10.132**

- 1 Between Cape Hangklip and Danger Point, 27 miles SE, the coast, with the exception of the sandy shores of Sandown Bay and Walker Bay, consists of rocky points, and landing can only be effected at certain places.

Exercise areas**10.133**

- 1 See 10.3.

Principal marks**10.134**

- 1 **Landmarks:**

Palmietberge (34°19'·4S, 19°00'·7E), a range of hills.

Onrusberge (34°23'·9S, 19°10'·8E), a square bluff, with a pile on it.

Tower (34°25'·0S, 19°14'·7E).

Kleinriviersberge (34°23'·5S, 19°20'·5E).

Spire (34°34'·8S, 19°21'·0E).

Duinfonteinberg (34°35'·5S, 19°22'·9E).

Sand Patch (34°37'·1S, 19°19'·5E).

- 2 **Major lights:**

Cape Point Light (34°21'·4S, 18°29'·8E) (10.32).

Cape Hangklip Light (white round concrete tower, black band, red lantern, 22 m in height) (34°23'·2S, 18°49'·7E).

Danger Point Light (white octagonal tower, white lantern, red dome, 17 m in height) (34°37'·7S, 19°18'·0E).

Blesberg



Cape Hangklip Light (10.134)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)



Danger Point Light (10.134)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

Other aid to navigation**10.135****Racon:**

Whittle Rock Light-buoy (34°14'·7S, 18°34'·2E).

See *Admiralty List of Radio Signals Volume 2*.**Directions**

(continued from 10.38 and 10.125)

10.136

From a position SE of Cape Point (34°21'·4S, 18°29'·8E), the track leads E for about 12 miles, clear of Rocky Bank (10.37), to a position SW of Cape Hangklip (34°23'·2S, 18°49'·7E), a low-lying sandy promontory, joined to the mainland by a narrow strip of land. Cape Hangklip Light (10.134) is exhibited from the cape. Foul ground on which there is usually surf, extends 3 cables S, and over 6 cables W, from the cape.

Caution. Cape Hangklip should be passed at a minimum distance of 2 miles and at a greater distance in thick weather.

10.137

From a position SW of Cape Hangklip (34°23'·2S, 18°49'·7E) (10.136), the track leads SE, passing (with positions relative to Cape Hangklip):

- 2 SW of Holbaaipunt (1½ miles E). Masbaai (not charted), lying between Cape Hangklip and Holbaaipunt is rocky and foul and has not been closely examined. Silver Sands Bay (not charted), lies NE of Holbaaipunt, with the resort of Silver Sands at the head of the bay. Stony Point lies 3½ miles ENE of Cape Hangklip. Betty's Bay, (not charted), in which is the resort of the same name lies close E of Stony Point. The resort of Sunny Seas (not charted), lies about 1½ miles farther E. Thence:
- 3 SW of Sandown Bay (10 miles ENE). The mouth of Palmietrivier lies at the head of the bay, and in winter is a rapid stream, but its entrance is always blocked by sand. Landing can be effected from a boat at HW in fine weather in a small sandy cove 7½ cables ESE of the mouth of the river. Botrivier, 4 miles E of Palmietrivier, leads to Bot Lake; the entrance is blocked by sand. Thence:
- 4 SW of Mudge Point (15 miles E), a low rocky point with several submerged kelp covered rocks lying close off it. Harry's Bay, (not charted), a small rocky cove, lies about 1½ miles N of the point. The gig of HMS *Birkenhead* landed here after she was wrecked (see below). However there is safer landing in Nuwebaai (not charted) close N of Mudge Point. Thence:
- SW of Sandbaai (not charted) (18¾ miles E). Walker Bay (10.139) lies SE, where anchorage may be obtained.
- 5 Thence the track leads to a position SW of Danger Point (27¼ miles SE), formed by a tongue of low sandhills, covered with bushes and stunted trees, projecting WSW from the base of Duinfonteinberg (10.134). Danger Point Light (10.134) is exhibited from the point.
- 6 **Caution.** Depths within the 30 m contour off Danger Point are very irregular and passing vessels should maintain a distance off of at least 3 miles by day and 5 miles by night. Birkenhead Rock lies 1¼ miles SW of the point. The rock has a charted depth of 3 m over it and is steep-to. In a moderate swell the seas break continuously and violently over it but in calm weather it may break only intermittently. HMS *Birkenhead* was wrecked on this rock in 1852.



Danger Point from Birkenhead Rock (10.137)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

10.138**Useful marks:**

- Babilontorinberge (34°19'·4S, 19°17'·5E) tower on summit.
- Voorberg (34°20'·5S, 18°53'·7E).
- Hangklip (34°21'·9S, 18°49'·7E) (10.125).
- Blesberg (34°21'·9S, 18°51'·0E).
- Mast (34°24'·6S, 19°13'·4E).
- Radio mast (34°36'·5S, 19°20'·4E).

(Directions continue at 10.148)

Walker Bay**General information****10.139**

- 1 **Description.** Walker Bay is entered between Mudge Point (34°25'·0S, 19°07'·5E) and Danger Point 15½ miles SE.

Topography. It is remarkable for the immense stretch of sand at its head with high sandhills, which are visible from a great distance and are a distinctive feature of this part of the coast. A long heavy swell rolls into this bay.

Hermanus**10.140**

- 1 **Description.** Hermanus (34°26'·0S, 19°13'·7E), a seaside resort, is situated on the NW side of Walker Bay. There are several conspicuous buildings extending for about 1 mile along the coast. A small harbour protected by two breakwaters, from which a light (white square concrete tower) exhibited from the S breakwater. Kleinrivier enters Walker Bay ¾ miles E of Hermanus. Its mouth though of considerable size, is choked with sand.

Useful mark:

- Mast (34°24'·8S, 19°13'·2E).

Stanford's Cove**10.141**

- 1 Stanford's Cove (not charted) (34°34'·1S, 19°21'·0E), is a small rocky cove on the SE side of Walker Bay which affords landing in E and SE winds, but there are several rocky patches off this coast. Romansbaai (10.143) is preferable as a landing.

Gansbaai**10.142**

- 1 **Description.** Gansbaai (34°35'·2S, 19°20'·2E), 1 mile SSW of Stanford's Cove, provides two small harbours. East harbour, with an entrance 40 m in width, is protected by N and S breakwaters from which lights (tower) are exhibited. A rocky ledge over which there is a depth of 4·6 m extends 5 cables WSW from the N breakwater.
 - 2 West harbour is protected by a breakwater and a groyne, from which lights are exhibited.
- Berths.** Quay in E harbour with depths from 2·5 to 3·5 m alongside. Jetty in E harbour with a depth of 5·0 m alongside.

Romansbaai**10.143**

- 1 **Description.** Romansbaai (not charted) (34°36'·4S, 19°19'·0E), may be easily distinguished by a sand patch which marks the face of the hill behind it.
 - 2 **Directions.** From a position about 2 miles W of Danger Point (34°37'·9S, 19°17'·6E) (10.137), the track leads NE and ENE, for about 3½ miles, passing clear of the following dangers (not charted). A reef, on which the depths vary from 0·6 to 5·5 m, extends NW for 4 cables offshore in the N part of the bay. A rock, which does not always break, and over which there is a depth of 5·5 m lies 3 cables W of the above reef, and a shoal patch with a depth of 6·4 m lies 4 cables N of the reef.
 - 3 The line of bearing not more than 210° of Danger Point, clears these dangers.
- Anchorage** may be obtained, as indicated on the chart, about 7½ cables offshore in a depth of 22 or 26 m. This position is sheltered from SE winds by Danger Point, and the swell is less heavy than closer to the head of Walker Bay.

DANGER POINT TO CAPE AGULHAS**General information**

Chart 4152

Route**10.144**

- 1 From a position SW of Danger Point (34°37'·9S, 19°17'·6E), the route leads SE and E for about 43 miles to a position S of Cape Agulhas (34°50'·0S, 20°00'·7E).

Topography

10.145

- 1 From Danger Point to Quoin Point, 19 miles ESE, the coast is low and backed at a distance of from 2 to 4 miles inland by moderately high, bare and rugged hills.

Except S of Soetansberg (10.147), a tableland lying parallel with the coast, where it becomes steep and rocky, the coast between Quoin Point and Cape Agulhas, 19 miles E, is low and sandy. Sandberg, 3 miles NW of Cape Agulhas, rises to an elevation of 156 m.

Natural conditions

10.146

- 1 **Local weather.** Visibility off Cape Agulhas is often moderate or poor, being affected either by haze or by mist, fog and rain.

Principal marks

10.147

- 1 **Landmarks:**

Duinfonteinberg ($34^{\circ}35'5S$, $19^{\circ}22'9E$).

Sand Patch ($34^{\circ}37'1S$, $19^{\circ}19'5E$).

Water tower ($34^{\circ}39'4S$, $19^{\circ}28'9E$).

Soetansberg ($34^{\circ}44'7S$, $19^{\circ}51'9E$).

- 2 **Major lights:**

Danger Point Light ($34^{\circ}37'7S$, $19^{\circ}18'0E$) (10.134).

Quoin Point Light (diamond on framework tower red and white bands, 21 m in height) ($34^{\circ}46'8S$, $19^{\circ}38'5E$).

Cape Agulhas Light (red tower, white band and lantern, 27 m in height) ($34^{\circ}49'8S$, $20^{\circ}00'5E$).

Directions

(continued from 10.138)

10.148

- 1 **Caution.** The coastline is indistinct and soundings do not give an accurate indication of position.

A long heavy swell constantly breaks on the coast, which is everywhere inaccessible from the sea except NW of Quoin Point (see below).

From a position SW of Danger Point ($34^{\circ}37'9S$, $19^{\circ}17'6E$) (10.137), the track leads SE and E, passing (with positions relative to Danger Point):

- 2 SW of a rock ($6\frac{1}{2}$ miles SE). Dyer Island (10.151), and a group of islets and rocks with foul ground between them lie close NE. Geyser Island, lies $2\frac{1}{2}$ cables S of Dyer Island. Dyer Island is one of



Quoin Point Light (10.147)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

the Government Proclaimed guano island (1.167). Both islands are low and rocky. Sandy Point lies about $3\frac{1}{2}$ miles NE. Anchorage may be obtained off Dyer Island. Thence:

SW of a rock ($12\frac{3}{4}$ miles ESE), a stranded wreck lies about $1\frac{1}{2}$ miles NE of the rock, thence:

- 3 SW of a rock (19 miles ESE). Quoin Point, the S extremity of the hummocky land extending in that direction from Buffeljagsberg (10.150) lies about 1 mile NNE; it is fringed by submerged rocks and breakers, which extend up to 1 mile offshore. Quoin Point Light (10.147) is exhibited from the point and a stranded wreck lies close N. Viewed from S, Quoin Point may be distinguished by two sandhills close to the point. Landing is practicable $2\frac{1}{2}$ miles NW of Quoin Point in SE winds.

10.149

- 1 Thence the track leads E, passing (with positions relative to Quoin Point ($34^{\circ}46'8S$, $19^{\circ}38'5E$):

S of the rock mentioned above, thence:

S of a rock (8 cables SE), thence:

S of Quoin Rock ($1\frac{1}{2}$ miles ESE), thence:

S of foul ground ($4\frac{1}{2}$ miles E), with a number of rocks lying on it, thence:

Clear of a dangerous wreck (11 miles ESE), thence:

S of Sandknoll Point (15 miles E), thence:

Quoin Point Light



Quoin Point from S (10.148)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)



Cape Agulhas Light bearing 075°, 5 miles (10.149)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

S of a rock (11¼ miles E), lying at the WNW end of a rocky and foul area. A stranded wreck lies on the coast.

Bredasdorp an aero light (radio mast) (34°31'·7S, 19°53'·5E) on top of Bredasdorpberge.

(Directions continue in Africa Pilot Volume III)

Anchorage

Dyer Island

10.151

Description. The reef surrounding Dyer Island (34°40'·9S, 19°25'·0E) forms a natural breakwater.

Topography. Dyer Island and Geyser Island are difficult to make out when seen against the sandhills on the adjacent coast.

Directions. From a position SW of Dyer Island, the track leads NW. The line of bearing (320°) of the valley of Palmietriver (34°20'·0S, 18°59'·5E), open SW of Danger Point, clears the reef off the S side of Dyer Island.

When Geyser Island is in transit with Buffeljagsberg (101°), course may be altered ENE towards the anchorage.

Anchorage may be obtained in fair weather off the NW side of the island, as indicated on the chart, in depths of about 20 m, with the extremities of the island bearing 128° and 156°, distant 1 mile. The anchorage is exposed to SW winds and the bottom, being sand and rock, does not always provide good holding.

Landing. There is a short jetty on the NW side of the island which provides the only reasonable landing place. It lies at the head of a gully running between two reefs.

2 Thence the track leads to a position S of Cape Agulhas (18¾ miles E), the S extremity of Africa. Also, it is situated on the meridian of 20°E, the official boundary between the Atlantic and Indian Oceans. The name Agulhas is derived from the Portuguese word for needles and was so named by the Portuguese discoverer Bartolomeo Dias as a result of problems he experienced with his compass needles, when in 1486 he became the first European to round the Cape. A light (10.147) is exhibited from Cape Agulhas.

3 Depths of 4·5 m lie 1½ miles SSW, and 8·5 m lie 2½ miles SW, respectively of the cape. Mariners are advised to exercise caution and give the cape a wide berth. When approaching the coast from W, the light, which is obscured when bearing more than 095°, should always be kept in sight. Six Mile Bank and Twelve Mile Bank lie at about these distances SSW of the cape.

The cape itself and the coast farther E are described in *Africa Pilot Volume III*.

10.150

1 Useful marks:

Radio mast (34°36'·7S, 19°19'23'·1E).

Buffeljagsberg (34°43'·5S, 19°38'·0E), a bluff hill also known as Gunner's Quoin on account of its shape.

When seen from W, its resemblance to a quoin is not apparent.



Cape Agulhas Light from S (10.147)

(Original dated prior to 2004)

(Photograph – Hydrographer, SA Navy)

APPENDIX I

IMO RULES FOR THE NAVIGATION OF LADEN TANKERS OFF THE COAST OF SOUTH AFRICA

- 1 Laden tankers when westbound off the South African coast, should adhere to the following:
1. Laden tankers should maintain a minimum distance of 20 nautical miles off the following landmarks:
1. South Sand Bluff 2. Bashee River 3. Hood Point 4. Cape Recife. (See *Africa Pilot Volume III*)
 2. These tankers should then steer to pass through the westbound or northern lanes of the traffic separation schemes off the FA Platform and the Alphard Banks and then maintain a minimum distance of 20 nautical miles from the following landmarks:
1. Cape Agulhas 2. Quoin Point 3. Cape Point 4. Slangkop Point 5. Cape Columbine.
- 2 Laden tankers when eastbound off the South African coast, should similarly maintain a minimum distance of 25 nautical miles when passing the points listed in 1.1 and 1.2 and, when between Cape Agulhas and Cape Recife, steer a course to pass through the eastbound or southern lanes of the traffic separation schemes off the Alphard Banks and FA Platform.

Exemptions

- 3 The following exemptions to the laden tanker rules apply:
1. 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 westbound, Cape Point Light bears 000°(T) at 20 nautical miles, thence altering course to position Slangkop Point Light 070°(T) at 20 nautical miles. From this position, course may be altered to the rendezvous area 5 nautical miles to the west of Green Point Light.
 2. Laden tankers engaged on voyages solely between ports in the Republic of South Africa are exempted from the provisions in paragraph 1 and 2 of these regulations and are to maintain a minimum distance of 10 nautical miles off salient points of the coast, subject to weather, sea and current conditions, when setting courses to their ports of loading and discharging.
 3. During the winter season (16 April to 15 October), westbound laden tankers should maintain the minimum distance of 20 nautical miles off the appropriate landmarks in paragraph 1.1. However, on approaching the winter zone, they may remain within the summer zone as close to the separation line as possible, and for the minimum period necessary, to ensure that they can remain on their summer load line throughout. In the vicinity of the Alphard Banks and the FA Platform, they are to adjust their course to pass through the westbound traffic lanes.

Definition

- 4 *Laden tanker* means any tanker other than a tanker in ballast having in its cargo tanks residual cargo only.

APPENDIX II

REPUBLIC OF SOUTH AFRICA REGULATIONS

Closing of Ports-Restriction of Movements

Should it be necessary, under certain circumstances, to control the entrance of ships into and the movement of ships within certain ports of the Republic of South Africa, the signals described below will be displayed. These signals will be shown from some conspicuous position in or near the approaches to the ports concerned and may be displayed also by any Examination or Traffic Control Vessel operating in the approaches.

The signals and their meanings are:

- (a) Entrance to the port prohibited.
By day — three red balls disposed vertically.
By night — three flashing red lights disposed vertically and visible all round the horizon.
- (b) Entrance to the port permitted.
By day — no signal.
By night — three green lights disposed vertically and visible all round the horizon.
- (c) Movement of shipping within the port or anchorage prohibited.
By day — a blue flag.
By night — three lights red, green, red, disposed vertically and visible all round the horizon.

The lights described above, when exhibited by Examination Vessels, will be carried in addition to their ordinary navigation lights.

Masters of vessels are warned, that on the approach to the entrance of a port which is under naval control, they should not enter a declared Dangerous Area or approach boom defences without permission, nor should they anchor or stop in a dangerous area or prohibited anchorage unless instructed to do so. Masters are advised therefore to communicate with any Government or Port Authority vessels found patrolling in the area to ascertain the recommended approach route to the port.

Examination service

In certain circumstances it may be necessary to take special measures to examine, or to establish the identity of, individual vessels desiring to enter ports and to control their entry. This is the function of the Examination Service, whose officers will be afloat in Examination Vessels or Traffic Control vessels. These vessels will wear the distinguishing flags of the Examination Service, which are:

- (a) The Examination Service special flag.



Examination Service Flag

- (b) The National flag, or exceptionally the naval ensign.

If ordered to anchor in an Examination anchorage, masters are warned that it is forbidden, except for the purposes of avoiding an accident, to do any of the following without prior permission being obtained from the Examining Officer:

- (a) To lower any boat.
- (b) To communicate with the shore or with any other ship.
- (c) To move the ship.
- (d) To work cables.
- (e) To allow any person or object to leave the ship.

Local regulations and routeing instructions

Nothing in the above paragraphs is to be taken as over-ruling any regulations issued by local authorities at particular ports or by routeing authorities.

APPENDIX III

REPUBLIC OF SOUTH AFRICA — PRACTICE AND EXERCISE AREAS

<i>Name</i>	<i>Location</i>	<i>Limits</i>
<i>Function</i>		
(a) PAPENDORP	Doringbaai	31°42'·4S, 18°11'·7E
Anti-aircraft Weapons		31°37'·5S, 18°05'·0E
		31°44'·0S, 18°02'·0E
		31°50'·0S, 18°06'·0E
		31°52'·0S, 18°13'·5E
		31°43'·5S, 18°12'·5E
		31°42'·4S, 18°11'·7E
Closed area		
(b) SALDANHA	Saldanha	32°45'·0S 17°49'·0E
Air to Air Weapons		33°26'·0S 18°05'·0E
		33°29'·0S 17°54'·0E
		33°48'·0S 17°38'·0E
		32°45'·0S 17°49'·0E
Closed area		
(c) NORTH HEAD	Saldanha	33°03'·0S, 17°54'·5E
Weapons		33°03'·0S, 17°53'·2E
		33°00'·7S, 17°53'·1E
		33°01'·2S, 17°54'·3E
		33°03'·0S, 17°54'·5E
Closed area		
(d) TOOTH ROCK	Saldanha	Circle, radius 3·5 nautical miles centred at:
Air to Ground weapons.		32°59'·0S, 17°51'·0E
Jacob's Reef Bombing.		
Test firing of illuminants.		
(e) WESTERN CAPE	Cape Point	34°15'·0S, 18°23'·0E
Naval Exercises		34°24'·0S, 17°44'·5E
		Arc of circle, radius 50 nautical miles centred at:
		33°58'·1S, 18°36'·0E From
		34°24'·0S, 17°44'·5E To
		34°44'·0S, 19°00'·0E
		34°30'·0S, 19°00'·0E
		34°30'·0S, 18°48'·0E
		34°15'·0S, 18°48'·0E
		34°15'·0S, 18°28'·3E
		34°15'·0S, 18°23'·0E
Closed area		
(f) BELLOWS ROCK	Cape Point	34°23'·3S, 18°29'·6E
Naval Weapons		(Rocket as target)

(g) **GARDEN NO 1**
Sound Testing Range

Valsbaai

34°08'·6S, 18°27'·1E
34°08'·6S, 18°28'·3E
34°09'·6S, 18°28'·2E
34°09'·6S, 18°27'·1E
34°08'·6S, 18°27'·1E

Closed area

GARDEN NO 2
Sound Testing Range

Valsbaai

34°10'·9S, 18°27'·1E
34°10'·9S, 18°27'·1E
34°10'·9S, 18°27'·0E
34°10'·9S, 18°27'·1E
34°10'·9S, 18°27'·1E

Closed area

(h) **PROOF NORTH**
Proof Range

Valsbaai

2·2 nautical miles (4000 m) from
34°11'·1S, 18°26'·3E
between bearings 235° and 243°

PROOF SOUTH
Proof Range

Valsbaai

8·5 nautical miles (15 500 m) from
34°11'·1S, 18°26'·3E
between bearings 265° and 275°

(i) **LOWER NORTH**
Weapons Testing

Valsbaai

11 nautical miles (20 384 m) from
34°10'·5S, 18°25'·8E
between bearings 254° and 283°

(j) **STRANDFONTEIN**
Proof Range

Valsbaai

34°05'·5S, 18°32'·0E
34°04'·5S, 18°41'·5E
34°05'·5S, 18°47'·8E
34°15'·0S, 18°44'·0E
34°16'·5S, 18°31'·5E
34°05'·5S, 18°32'·0E

Closed area

(k) **SWARTKLIP**
Proof Range

Valsbaai

34°04'·4S, 18°42'·1E
34°05'·0S, 18°41'·0E
34°18'·0S, 18°44'·0E
34°08'·0S, 18°48'·0E
34°05'·0S, 18°45'·0E
34°04'·5S, 18°43'·9E

(l) **MACASSAR**
Anti-aircraft Weapons

Valsbaai

8 nautical miles (14 830 m) from
34°04'·4S, 18°42'·2E
between bearings 314¼° and 046¼°

(m) **SIMON'S TOWN**
Shallow water demolition range

Valsbaai

34°11'·3S, 18°26'·7E
34°11'·'S, 18°26'·9E
34°11'·4S, 18°26'·7E
34°11'·3S, 18°26'·7E

Closed area

(n) **SIMON'S TOWN**

Valsbaai

Deep water demolition range

34°11'·3S, 18°30'·0E

34°11'·5S, 18°32'·0E

34°10'·0S, 18°32'·0E

Arc of circle, radius 1 nautical mile,
centred at:

34°09'·0S, 18°32'·0E from

34°10'·0S, 18°32'·0E to

34°09'·3S, 18°30'·9E

34°09'·5S, 18°30'·0E

34°11'·3S, 18°30'·0E

Closed area

(o) **LANGEBAAN**

Saldanha

Road range

Air to Air Weapons

32°45'·0S, 17°40'·0E

32°45'·0S, 17°40'·0E

32°58'·0S, 17°55'·0E

33°06'·0S, 17°56'·0E

33°08'·2S, 17°58'·0E

33°14'·9S, 18°05'·8E

33°21'·0S, 18°09'·0E

33°29'·0S, 18°04'·5E

33°27'·0S, 17°59'·0E

33°00'·0S, 17°40'·0E

32°45'·0S, 17°40'·0E

Closed area

Table showing approximate distance between ports
along the west coast of South Africa

Douala	Owendo	Port Gentil	Pointe Noire	Cabinda	Matadi	Porto de Luanda	Porto de Lobito	Walvis Bay	Lüderitz	Saldanha Bay	Cape Town	Simon's Town
240												
325	85											
645	405	320										
695	455	370	50									
795	555	470	150	100								
975	735	650	330	280	180							
1185	945	860	540	490	390	210						
1785	1545	1460	1140	1190	1090	910	700					
2105	1865	1780	1460	1410	1310	1130	920	220				
2510	2270	2185	1865	1815	1715	1535	1325	625	405			
2570	2330	2245	1925	1875	1775	1595	1385	685	465	60		
2620	2380	2295	1975	1925	1825	1645	1435	735	515	110	50	

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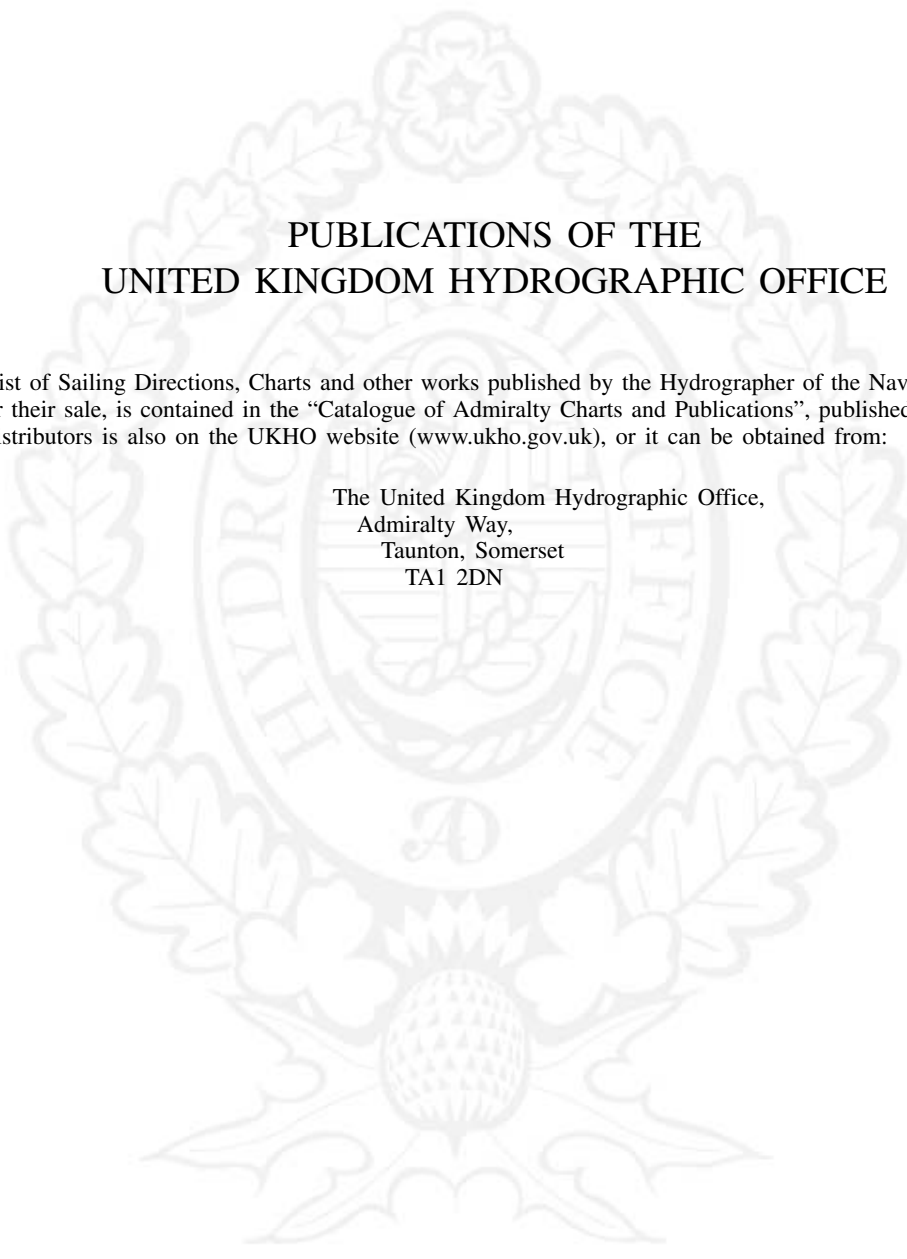
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