NP 35

RECORD OF AMENDMENTS

The table below is to record Section IV Notice to Mariners amendments affecting this volume.
Sub paragraph numbers in the margin of the body of the book are to assist the user when making amendments to this volume.

Weekly Notices to Mariners (Section IV)

2004	2005	2006	2007

IMPORTANT – SEE RELATED ADMIRALTY PUBLICATIONS

This is one of a series of publications produced by the United Kingdom Hydrographic Office which should be consulted by users of Admiralty Charts. The full list of such publications is as follows:

Notices to Mariners (Annual, permanent, temporary and preliminary), Chart 5011 (Symbols and abbreviations), The Mariner's Handbook (especially Chapters 1 and 2 for important information on the use of UKHO products, their accuracy and limitations), Sailing Directions (Pilots), List of Lights and Fog Signals, List of Radio Signals, Tide Tables and their digital equivalents.

All charts and publications should be kept up to date with the latest amendments.

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NP 35

INDONESIA PILOT VOLUME III

The island of Timor together with Pulau Roti
Islands of the eastern part of Banda Sea and the northern part of Arafura Sea
Islands of Ceram Sea including Buru and Seram
Molucca Sea including Halmahera
Islands between the north–east coast of Sulawesi and Mindanao
North coast of Irian Jaya eastwards to 141°00′E
South–west coast of Irian Jaya eastwards to 141°01′E, including adjacent islands

THIRD EDITION
2004

PUBLISHED BY THE UNITED KINGDOM HYDROGRAPHIC OFFICE

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Area formerly included as part of the following previous editions:

First published as Eastern Archipelago Pilot

Eastern Part, Part 1	1890
Second Edition	1902

Eastern Archipelago Pilot Volume III

First published	1911
Second edition	1921
Third edition	1930
Fourth edition	1943
Fifth edition	1956
Sixth edition	1968

Indonesia Pilot Volume III

First published	1980
Second edition	2001

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PREFACE

The Third Edition of Indonesia Pilot Volume III has been prepared by Mr D.H.Thomas and Captain K.J.Bolden, 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 Notice to Mariners* are and how to use them.

This supersedes the Second Edition (2001), which is cancelled.

Information on meteorology and currents 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

Lloyds Ports of the World 2004
Fairplay Ports Guide 2004
Whitaker's Almanack 2004
Statesman's Yearbook 2004

Indonesia

Indonesian Sailing Directions Volume III 1999
Indonesian Sailing Directions Volume IV 2000
Indonesian Ports Information 1994
Indonesian Oil Terminals & Harbours Volume II and III 1997
Handbooks of Port Authorities
Indonesian Charts

United States

Sailing Directions (Publication 120 and 160) 2000–2001, and (Publication 164) 2003

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29th July 2004

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PREFACE

The Second Edition of Indonesia Pilot, Volume III, has been compiled by Captain R.P.Stanage, RD. FRIN. (Master Mariner), and contains the latest information received in the United Kingdom Hydrographic Office to the date given below.

This edition supersedes the First Edition (1980) and Supplement 9 (1996), which are cancelled.

Information on climate and currents 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:

British

Lloyds Ports of the World 2001
Lloyds Maritime Guide 2001
Fairplay Ports Guide 2001
Whitaker's Almanack 2001
Statesman's Yearbook 2001

Indonesian

Indonesian Sailing Directions Volume III 1983
Indonesian Sailing Directions Volume IV 1984
Indonesian Shipping Directory 1990
Indonesian Ports Information 1994
Indonesian Harbour Information 1983
Indonesian Oil Terminals & Harbours Volume II and III 1997
Indonesian Tourist Board – Maluku and Irian Jaya 1996
Indonesian List of Lights 1997, 2000
Tanker Safety in Indonesia 1995
Handbooks of Port Authorities
Indonesian Charts

United States

Sailing Directions (Publications 120, 160 and 164) 2000–2001

France

SHOM Instructions Nautique (K6, K8) 1995

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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.

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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, lanbys 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 yachtsman 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.

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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.

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ABBREVIATIONS

The following abbreviations are used in the text.

Directions

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

Navigation

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

Offshore operations

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

Organizations

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

Radio

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

Rescue and distress

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

Tides

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

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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

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GLOSSARY OF INDONESIAN GEOGRAPHICAL TERMS AND WORDS

(See Language and Orthography at 1.38)

Indonesian	*English*
air, ayer	water, river
alur pelayaran	channel, passage
ambang sungai	shoal, bank, bar
angin	wind
api	fire, flame
bandar	harbour, port
bandara	airport
barat	west, western
barat daya	south–west
barat laut	north–west
baru	new
batang	mainstream (of river)
batu	rock, stone, islet
batu–batu	group of rocks, stones, islets
berbahaya	dangerous, hazardous
berlabuh	anchorage, anchor
besar	large, great
beting	reef, sandbank, shoal
biduk	river boat
biru	blue
boom laut	depth charge
buaya	crocodile
bukit	hill
bulan	moon
burung	bird
cetek	shallow (river)
ci	stream, small river
daerah	area, zone, region
dalam	deep. inside, interior
danau	lake
dangkal	shallow
darat	land, shore
delapan	eight
dengan	accompanying, with
dermaga	jetty, quay, pier
diangkat	remove, delete
didasar laut	seabed
dilaporkan padam	temporarily extinguished
dilarang	prohibited
dua	two
empat	four
enam	six
gelap	eclipse, dark
gosong	shoal, sandbank
gosong–gosong	shoals, sandbanks
gunung	mountain
gunung api	volcano
hijau	green
hitam	black, dark
ikan	fish
ingerris	english
jalan	road, street
kali	small river
kampung	village
kapal	ship. vessel
kapal amunisi	vessel carrying explosives
kapal barang	freighter, general cargo vessel
kapal karantina	vessel in quarantine
kapal penambang	ferry
kapal penumpang	passenger vessel
kapal perbaikan	vessel undergoing repairs
kapal tangkar	tanker
kapal tunda	tugboat
karang	coral, reef, atoll
karang–karang	group of corals, reefs, atolls
kecil	small, little
kelelap	submerged, sunk
kepulauan	archipelago
kering	dry
kota	town, city, fort
kuala	estuary, rivermouth, confluence of two rivers
kulon	west (Jawanese)
kuning	yellow
labuhan/labuan	anchorage
lapangan (lap)	reported
larangan	prohibited
latihan	practice (area)
laut	sea, seaward
lima	five
malam	night
malim	pilot
merah	red
mesiu	ammunition
minyak	oil
muara	estuary, river mouth
nol	nought, zero
nusa	island
nusantara	Indonesian archipelago
pancang	stake, pile, pole
pangkalan	quay, anchorage
panjang	long
pantai	coast, coastline
parit	small stream
pasang	rise (of tide)
pasi(e)	coral reef, sandbank
pasir	sand. sandy beach
pegunungan	mountain range
pelabuhan	harbour, port, anchorage
pemboman	bombing (range)
pembuangan	dumping (ground)
penembakan	firing (range)
peta	chart
pipa air minum	fresh water pipe (line)
prau	boat, local craft
pulau	island
pulau–pulau	group of islands
puncak	peak, summit
puri	town
putih	white
rawa, rawah	swamp. marsh
rencana	programme, plan (chart)
rendah	low
rintangan (rint)	obstruction
rumah	house, dwelling
satu	one
sekitar	around, surrounding
selat	strait
selat–selat	group of straits
selatan	south, southern
selatan daya	south–west
sembilan	seven
sempitan	narrow passage

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Indonesian	*English*
sepuluh	ten
suar	light (beacon)
suar terhalang	light obstructed
sumur	well (land)
sungai	river
syanbandar	harbour master
tanjung	point, cape
teluk	bay
tempat	place, spot, location
tengah	middle, central
tenggara	south–east
tepi	bank, side
tepi laut	shore (sea)
terumbu	rock awash at LW
terusan	canal
tiang	mast, pole, post
tiga	three
timur	east
timur laut	north–east
tinggi	high, tall
tohor	dries
tokong	rocky islet, reef
tongkang	barge, lighter
tua	old
tujuh	seven
ujung	cape, promontory, headland
utara	north
utara barat	north–west
wai	river (place name)
wetan	east (Jawanese)

Abbreviations used: Gu–Gunung Hj–Green Kr–Karang M–Red Pu–Pulau S–Sungai Tg–Tanjung

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DUTCH

Dutch	*English*
archipel	archipelago
baai	bay
bank	bank, shoal
berg	mountain
bocht	bight
boei	buoy
boom	tree
bosch	wood, forest
brug	bridge
buiten	outer
den, de	the
diep	deep
droogte	shoal
dwars	across, athwart
eiland	island
eilanden	islands
eilandje	islet
gebergte	mountain range
geel	yellow
geul	channel
golf	gulf
groen	green
groot, groote	great, large
heuvel	hill
hoek	cape, point
hoofd	headland
hoog	high
hout	wood
huk	cape, point
kaap	cape
klein, kleine	small, little
klip	rock, crag, cliff
kreek	creek
licht	light
loods	pilot
lugu	inlet
meer	lake
midden	middle
modder	mud
nieuw	new
noord, noorden	north
noordoost	north–east
noordwest	north–west
ondiepte	shoal
oost	east
oranje	orange
oud	old
polder	reclaimed land
punt	point, corner
rede	roadstead
rif	reef
riffen	reefs
rivier	river
rood	red
rots	rock, rocky, islet, reef
schaar	channel
schiereiland	peninsula
spoorweg	railway
steen	small rock, stone
straat	strait
vaarwater	channel, navigable water, fairway, passage
valsch	false
vearke	flat
vlakte	plain
vulkaan	volcano
weg	way
west	west
wit	white
zand	sand
zandplaat	sandbank, cay
zuid	south
zwart	black

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STANDARDIZATION OF ORTHOGRAPHY

The Indonesian and Malaysian Governments have adopted a single orthography for what is virtually a common language (Malay but called Bahasa Indonesia within Indonesia). This volume has been written in the new orthography, however, there will be a delay before all charts show the common interpretation and as a consequence of this the changes are given below:

Malaysia	*Indonesia*	*Common orthography*
CH	*TJ*	*C*
J	*DJ*	*J*
SH	*SJ*	*SY*
KH	*CH*	*KH*
GH	*G*	*GH*
NY	*NJ*	*NY*
Y	*J*	*Y*
E (2nd Syllable)	*I (2nd Syllable)*	*I*
O (2nd Syllable)	*U (2nd Syllable)*	*U*
	K	*K*

INDONESIAN PRONOUNCIATION

Indonesian orthography normally allows for unequivocal interpretation of the pronounciation. The stress usually falls on the penultimate vowel; an exception to this rule occurs when the penultimate syllable contains e, in this case the stress falls on the last syllable. For example taman *(park)* is pronounced táman, and teman (*friend*) is pronounced temán, the accent illustrates the stress.

Vowels:

	Front unrounded	Central unrounded	Back rounded
High	i		u
Middle	é	e	o
Low		a	

i *is sounded like the English* ee *in* see, *but shorter. Like* i *in* pit *in closed syllable* [i]. Indonesian spelling shown as i.
é *is like the English* e *in* pet *or like* a *in* make *but shorter.* Indonesian spelling e.
a *is like the English* a *in* father *but much shorter.* Indonesian spelling a.
e *is like the English* a *in* sofa. Indonesian spelling e.
o *is like the English* o *in* coat *but shorter; or like* aw but shorter. Indonesian spelling o.
u *is like the English* oo *in* food. *In closed syllables like* oo *in* book. Indonesian spelling u.

Diphthongs:

éy *similar to the English* ay *as in* pay. Indonesian spelling ai.
ow *similar to the English* ow *as in* mow. Indonesian spelling au.
oy *similar to the English* oy *as in* boy. Indonesian spelling oi.

Consonants:

	Labial	Apico dental	Palatal	Dorso velar	Glottal
Voiceless stop	P	t	c	k	?
Voiced stop	b	d	j	g	
Sprirant	f	s	sy	kh	h
Nasal	m	n	ny	ng	
Liquids	w	r,l	y		

The following individual letter pronounciation should be noted:
b *similar to* b *in the English* rub; *example* batu (*stone*). Indonesian spelling shown as b.
p *similar to* p *in* lip; *example* asap (*smoke*). Indonesian spelling p.
d *similar to* d *in* red; *example* jihad (*holy war*). Indonesian spelling d.
t *similar to* t *in* let *but without puff of air; example* tujuh (*seven*). Indonesian spelling t.
g *similar to* g *in* dog; *example* gaji (*wage*) *or in final position similar to* k *as* bedug (*drum*). Indonesian spelling as g.

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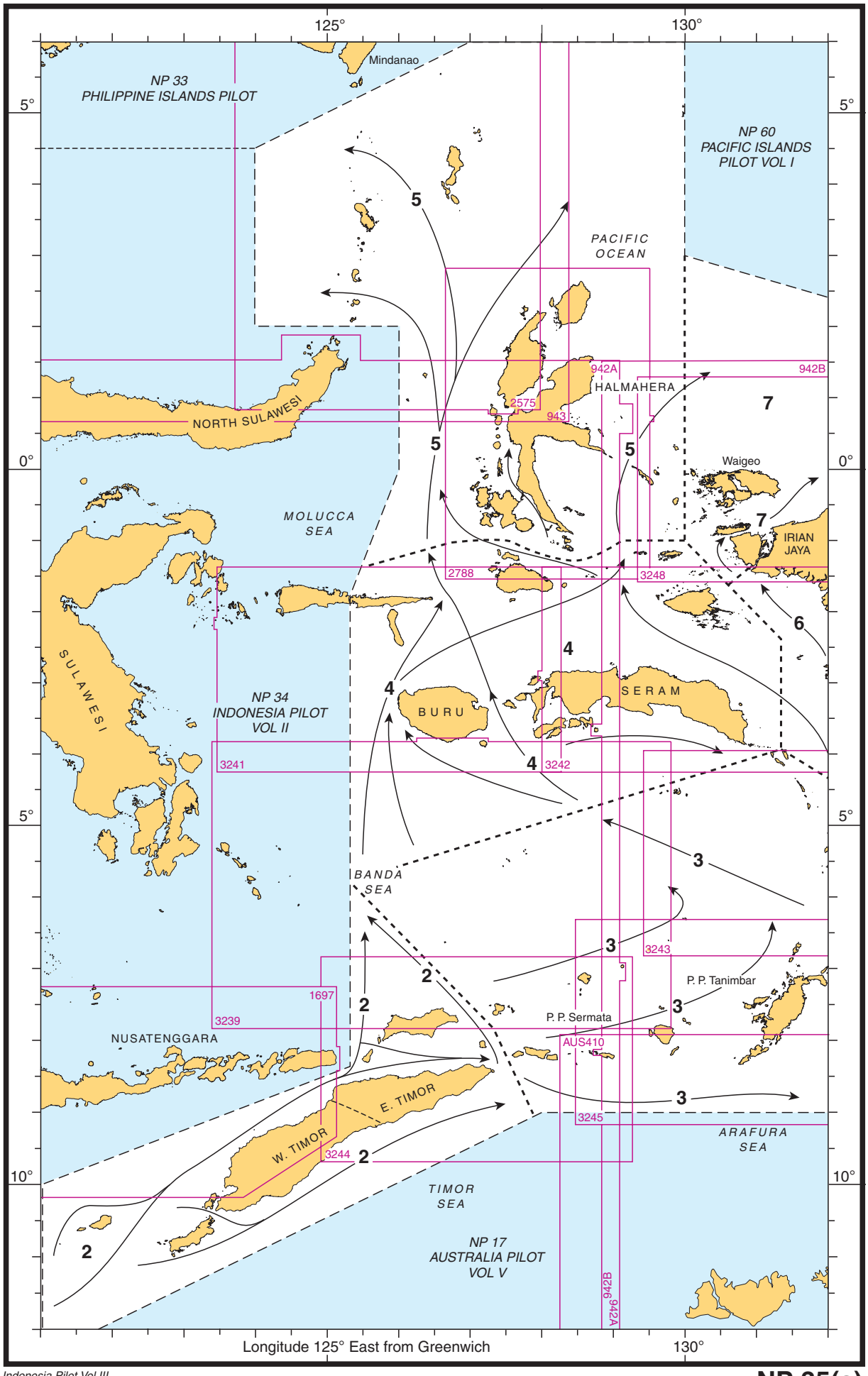
k *similar to* k *in* like *but without puff of air; example* kabar (*news*). Indonesian spelling k.
j *similar to* j *but without the* zh *sound; example* jalan (*street*). Indonesian spelling j.
c *similar to* ch *in* church *but without the* sh *sound; example* cari (*to seek*). Indonesian spelling c.
m *similar to* m *in* main; *example* minta (*to want*). Indonesian spelling m.
n *similar to* n *in* noon; *example* nama (*name*). Indonesian spelling n.
ny *similar to* ny *in* canyon; *example* nyanyi (*to sing*). Indonesian spelling ny.
f *similar to* f *in* fan; *example* fihak (*side*). Indonesian spelling f or v.
s *similar to* s *in* send; *example* sumur (*well*). Indonesain spelling s.
sy *similar to* sh *in* shoot; *example* syuker (*thanks*). Indonesian spelling sy.
z *similar to* z *in* zeal; *example* zat (*substance*). Indonesian spelling z.
ng *similar to* ng *in* singer; *example* dengan (*with*). Indonesian spelling ng.
l *similar to* l *in* leave. *Tongue more advanced than English* l (*hill*); *example* lima (*five*). Indonesian spelling l.
r *similar to* r *in* very *or* rr *in* butter. *Sometimes trilled strongly; example* roda (*wheel*) *or* kiri (*left*). Indonesian spelling r.
w *ranges between* v *in* vane *and* w *in* wane. *Example* wasit (*referee*) *or* lawan (*opponent*). Indonesian spelling w.
y *similar to* y *in* you. *Example* yang (*the one that*). Indonesian spelling y.
h *similar to* h *in* hope. *Example* hal (*thing*). Indonesian spelling h.
kh *voiceless velar spirant similar to the sound made by a mild clearing of the throat. Often pronounced* h *or* k. *Example* akhir (*end*). Indonesian spelling kh.
? *produced by holding one's breath for a fraction of a second and then releasing it: the glottal stop. Example* baik (*fine*) *or* tunjukkan/tunju?kan (*point*). Indonesian spelling k or ' *as shown in* rakyat/ra'yat (*people*).

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NOTES

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Chapter Index Diagram



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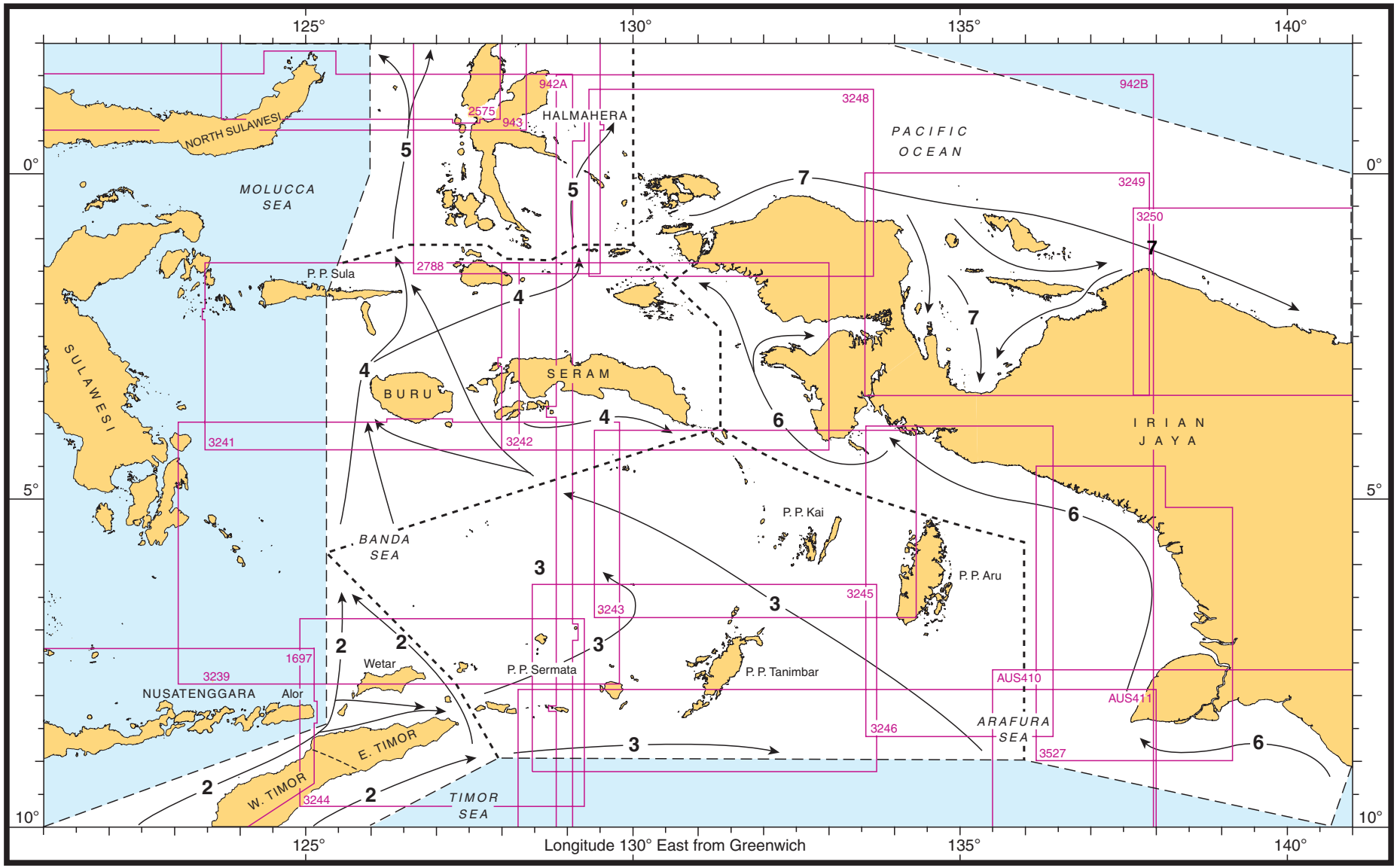
Indonesia Pilot Vol III

NP 35(a)

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Chapter Index Diagram



NP 35 (b)

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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.

INDONESIA PILOT

VOLUME III

CHAPTER 1

NAVIGATION AND REGULATIONS
COUNTRIES AND PORTS
NATURAL CONDITIONS

NAVIGATION AND REGULATIONS

LIMITS OF THE BOOK

Charts 4507, 4603

1.1

1 **Area covered.** This volume contains a description of the islands bordering Molucca Sea, including Pulau Miangas, lying between Mindanao (*Philippine Islands Pilot*) and the NE coast of Sulawesi (*Indonesia Pilot Volume II*). Also included is the whole of Halmahera and the E part of Pulau-pulau Sula in the S, islands of Ceram Sea including Pulau Obimayor (Obi Mayor) together with the N coasts of Pulau Buru and Seram, the islands of Banda Sea including the S coasts of Pulau Buru and Seram, Pulau-pulau Banda, Pulau-pulau Tanimbar, Leti and Sermata together with Pulau Wetar. Also included is the whole of the island of Timor together with Pulau Roti and Pulau-pulau Sawu in the SW part of the area. The description also includes the islands in the N part of Arafura Sea including Pulau-pulau Aru, the N coast of Irian Jaya eastwards to 141°00′E and the SW coast of Irian Jaya eastwards to 141°01′E, together with its off-lying islands.

1.2

1 The seaward limits of this volume are defined below:

From a position on the SW coast of Irian Jaya at about 9°08′S 141°01′E, at Papua New Guinea border, thence SSW to 10°00′S 140°40′E:

	Lat S	*Long E*
Thence WNW to	9°00′	136°00′
Thence W to	9°00′	128°00′
Thence WSW to	12°30′	121°00′
Thence N to	10°00′	121°00′
Thence ENE to	8°20′	125°20′

Thence N to the S entrance to Selat Capalulu at 1°53′S, 125°20′E (chart 3242):

Thence N through the strait to its N entrance:

Thence NNE to the equator	0°00′	126°00′
	Lat N	*Long E*
Thence N to	2°00′	126°00′
Thence W to	2°00′	124°00′
Thence N to	4°00′	124°00′
Thence NE to	6°00′	127°00′
Thence E to	6°00′	130°00′
Thence S to	3°00′	130°00′
Thence ESE to the equator	0°00′	141°00′

Thence S to the N coast of Irian Jaya at about 2°36′S 141°00′E continuing S through the island to the position initially mentioned on its S coast.

1.3

1 **Sea areas.** The area known as Savu Sea lies between Pulau Sumba and Timor, and Timor Sea lies between the SE-facing coast of Timor and the NW coast of Australia. Banda Sea is partially encircled by the S coasts of Pulau Buru and Seram in the N to the islands of Pulau-pulau Sermata, including Pulau Wetar, in the S, extending E to Pulau-pulau Tanimbar and Pulau-pulau Kai.

2 Arafura Sea extends, on its N side, from the SE limit of Ceram Sea, the E limit of Banda Sea and SW-facing coast of Irian Jaya to Northern Territory of Australia (*Australia Pilot Volume V)* in the S and includes Pulau-pulau Aru. Molucca Sea lies E of Pulau-pulau Sangihe and S of Pulau-pulau Talaud extending S to the N coasts of Pulau-pulau Sula and as far E as the W coast of

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Halmahera. Ceram Sea lies between Pulau Obimayor and the NW part of Irian Jaya on its N side and the N coasts of Pulau Buru and Pulau Seram on its S side.

Halmahera Sea is the area of water enclosed by the E coast of Halmahera, S by the islands separating Ceram Sea, E by Pulau Waigeo and adjacent islands and to the N by the Pacific Ocean. The area known as Celebes Sea lies W of Pulau-pulau Sangihe and N of the N-facing coast of Sulawesi (*Indonesia Pilot Volume II).*

NAVIGATIONAL DANGERS AND HAZARDS

Coastal conditions

General

1.4

1 Excepting for large tracts of the Irian Jayan coastal areas both N and S, which are low-lying, swampy and covered with mangroves or jungle, the island of Timor and those islands forming the province of Maluku are generally mountainous and forested. The central highlands of Irian Jaya contain many of the highest peaks throughout the whole of the Indonesian Archipelago with Puncak Jayawijaya (chart 4603), the highest, at close to 5000 m high.

2 Much of the area contained in this volume experiences deep water except in the approaches to some of the ports. All of the navigable straits described for shipping have deep channels, or a deep channel, by which to reach a particular destination.

For coasts already surveyed but seldom visited it is best, however, to navigate in deep water until close to a point of destination then proceed to it. Such an area lies within the limits of Teluk Irian.

Navigation in areas of coral

1.5

1 Navigation in waters where coral formations are known to exist necessitates particular precautions, especially in areas where the hydrography is uncertain. Unlike other areas of the Indonesian Archipelago, nearly all of the waters surrounding Timor, the islands of Maluku and the coasts of Irian Jaya are associated with coral.

2 These islands and islets, when surrounded by deep water render soundings useless when approaching them. It is essential therefore to follow the directions contained within when approaching an unfamiliar coastline or ports within the confines of this volume. The most up to date chart is the best guide. See also 1.134.

For details on coral, see *The Mariner's Handbook.*

Debris

1.6

1 **Sediment.** The area covered by this volume is, in part, one of rapid coastal accretion. A process due to the large quantity of sediment brought down by the many rivers which flow into the sea between points of land. Thus extension of both land points and and coastal banks should always be expected. This phenomena is particularly in evidence along both the S and N coasts of Irian Jaya.

Driftwood. Brought down by the rivers, mainly in Irian Jaya, where logging activities are in evidence or, in some cases, where a river current is so strong, particularly after heavy rains, as to uproot trees from its banks.

Former mined areas

1.7

1 Certain areas within the limits of this volume are still considered dangerous due to mines laid in the 1939–1945 war. Details of these areas, and where applicable, directions for safe passage through them, are given in Appendix I.

Air lights

1.8

1 Mariners are warned that lights (with definite characteristics), which are not ordinary navigational aids, may be displayed for the use of aircraft from structures near the coasts described within this volume.

2 The lights are often of great luminous power and elevation, and may be the first lights or loom of lights sighted when making a landfall at night. Air lights, which are likely to be visible from seaward, are shown on the charts, and are described in *Admiralty List of Lights.* They are subject to change and prompt notification to the mariner may not always be possible, therefore great care should be taken in order that they are not confused with marine navigational aids.

Piracy and Armed Robbery

General

1.9

1 The Department of Transport (UK) has brought to the attention of shipowners, masters and crews, the risk of acts of piracy on the high seas or armed robbery against ships at anchor or when underway through a coastal state's territorial waters. It has outlined the steps that should be taken to reduce the risk of such attacks, possible responses to them and the need to report attacks, both successful and unsuccessful, to the authorities of the relevant coastal State and to the ship's own maritime administration.

1.10

1 Between 2001–2004, piracy incidents in the waters around the Indonesian Archipelago continued to increase.

Mainly affecting small vessels, because of the ease in boarding, it has not been unknown for a ship and its cargo to disappear in the waters of this region only to reappear at some later stage in another area with a complete new guise and new crew. The whereabouts of the original crew are left to speculation.

Kuala Lumpur Centre

1.11

1 The International Maritime Bureau (IMB) of the International Chamber of Commerce have established a Piracy Countermeasures Centre at Kuala Lumpur, Malaysia. This centre operates for the South-east Asia Region and is able to receive and supply reports from vessels about piracy attacks within this region and advise danger areas where attacks have recently taken place through the use of NAVAREAS XI, VIII, or X.

2 The services of the centre are free of charge to all vessels irrespective of their flag. See also 1.13.

Locations and methods of attack

1.12

1 Within the limits of this volume, the proportion of attacks have never reached the levels seen much farther W within the archipelago and those occurring within Malacca Strait. However, attacks on ships underway have occurred in an area S of the islands forming Pulau-pulau Aru (3.186).

Although over recent years inter-island unrest throughout the Moluccas has taken place, this has mainly been maintained to shore-based and land-related incidences.

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2 It is known however, that under the cover of darkness, mostly between 0100 and 0600, attackers using high speed low profile craft have shown considerable skill and daring and have boarded ships travelling in excess of 17 kn and with a high freeboard.

Other incidents have taken place within certain harbour limits.

Recommended practices

1.13

1 An International SafetyNET System using INMARSAT C via the Pacific and Indian Ocean Region satellites may be used to issue, or receive daily warnings, from the Singapore Land Earth Station.

Recommended practices, including anti-attack plans, reporting, radio procedures and responses are all outlined in detail in *Admiralty List of Radio Signals Volume 1(2)* together with the telephone, telex and fax numbers and e-mail address of the Kuala Lumpur Centre which is fully operational 24 hours a day.

2 The IMO recommends that reports concerning attacks, or suspicious movements which may lead to an attack, should be made to the MRCC for the area concerned; for Indonesia see 1.76.

ROUTES

General

1.14

1 Because of the complex nature of routes within Indonesian waters and the fact that some parts are made hazardous by the existence of oilfield platforms, or are relatively unsurveyed or have not been surveyed for sometime, mariners are warned that isolated dangers might exist and that shoals be liable to form. Navigation through the area can, therefore, become difficult particularly for deep-draught vessels.

Nominated and proposed through passages have deep water channels throughout and mariners are advised to follow the directions given within the text and be guided by up-to-date charts.

2 Within the limits of this volume there are many shoals and dangers to be avoided, particularly when entering unfamiliar harbours and anchorages. In these cases it is essential to have the benefit of local knowledge or at least have the appropriate local charts.

The ship's position must be known as accurately as possible at all times, however, this may be rendered difficult by strong currents and the lack of reliable navigational aids in the area.

1.15

1 Directions for the various straits and passages, leading through the archipelago from W-E and S-N, or vice versa and through the numerous islands forming Maluku (the Moluccas) are given in their appropriate places in the body of the book. A brief account of the through tracks usually taken by vessels is given below.

Archipelagic Sea Lanes

1.16

1 Archipelagic Sea Lanes, as defined by the United Nations Convention on the Law of the Sea, have been designated within certain of the waters described in this volume. See Appendix II of this volume and *The Mariner's Handbook* for further details.

West — East routes

1.17

1 The W-E deep water routes, initially described in *Indonesia Pilot Volumes I and II,* between Singapore or Jakarta and N and E Australian ports (*Ocean Passages for the World)* lead E along the N coasts of Nusatenggara and pass through Selat Wetar (2.9), the strait linking Flores Sea with Timor Sea, thence E towards Torres Strait directly or by the recommended track. Through passages leading E along the S coasts of Nusatenggara also pass through Selat Wetar where they join the N coastal passages before continuing E.

2 The seasonal E-going route which passes S of all the islands in the archipelago passes along the SE coast of Timor thence joins the tracks exiting Selat Wetar on passage towards Torres Strait. A number of tracks lead off from the S, SE and E coasts of Timor to the port of Darwin on the N coast of Australia and are described in *Australia Pilot Volume V.*

South-North Routes

1.18

1 For vessels bound to the Philippines, Japan or Korea, from ports on the W coast of Australia, the main deep water route through the archipelago leads N from the Indian Ocean into Savu Sea passing NW of Timor by passing either side of Pulau-pulau Sawu (Savu Islands) (10°35′S, 121°45′E) and through Selat Ombai the strait separating Timor from Pulau Alor. From a position off the E extremity of Pulau Alor, the track then leads N towards Molucca Sea passing W of Pulau Buru (3°25′S, 126°35′E) and E of Pulau Lifumatola (1°49′S, 126°25′E), thence W of Halmahera. From the position W of Pulau Buru an alternative passage leads N of this island and into Ceram Sea thence N through Halmahera Sea passing E of Halmahera into the Pacific Ocean.

2 Vessels bound for the Pacific Ocean from Darwin (*Australia Pilot Volume V)* or from ports on the N coast of Australia in general, the track leads N from the NE extremity of Timor thence following the track previously mentioned above passing either side of Halmahera.

1.19

1 For vessels bound to Molucca Sea or Halmahera Sea from the W end of the recommended track (*Australia Pilot Volume V)* in the W approaches to Torres Strait, a deep water route initially leads NNW thence NW passing between Pulau-pulau Tanimbar and Pulau-pulau Aru to the NE. The route passes W of Pulau Buru to join with the routes from Timor or as an alternative Selat Manipa (4.78), the strait separating Buru from Pulau Seram, may be used.

An optional track leads direct between the W entrance to Torres Strait to the position between Tanimbar and Aru mentioned above.

Route north of Irian Jaya

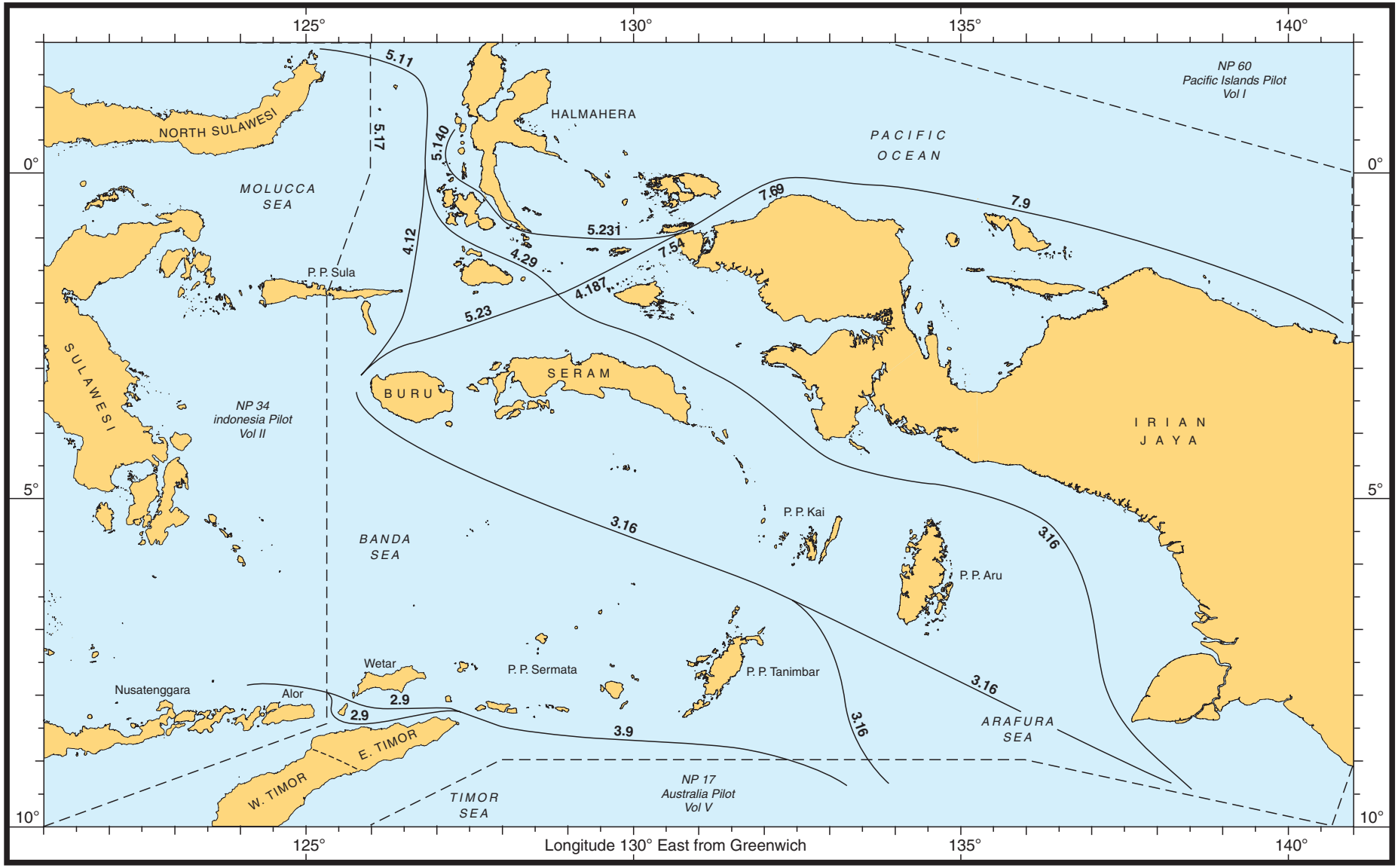
1.20

1 A through route linking Ceram Sea with ports on the E coast of Australia, which passes N of the N coast of Irian Jaya, is described in Chapter 7. This route is particularly useful for deep-draught vessels passing from the more N ports on the E coast of Australia to Europe or SE Asia or vice versa when their draught is too deep for passage through Torres Strait.

Passages through the islands off Papua New Guinea, Solomon and Bismarck Seas are given in *Pacific Islands Pilot Volume I.*

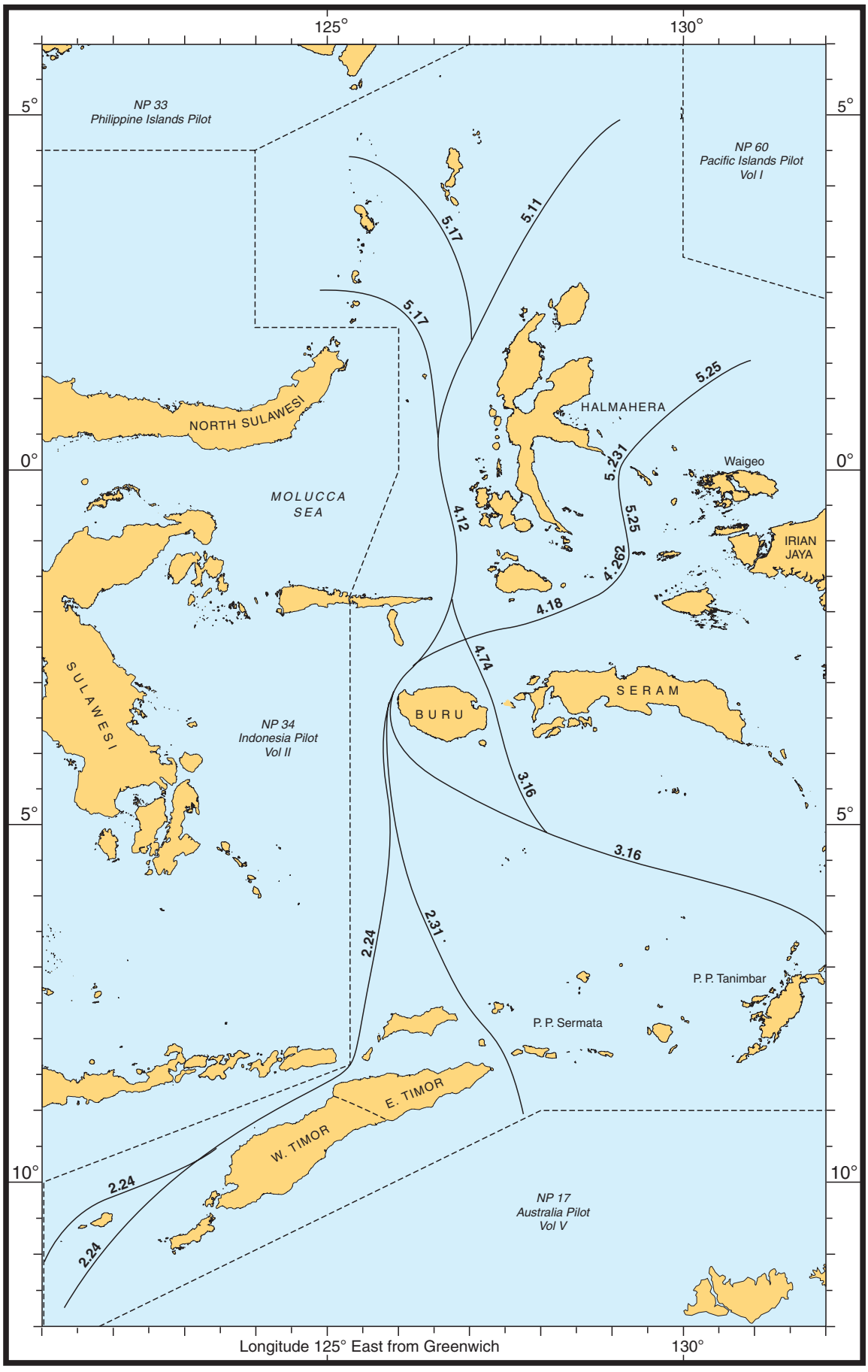
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Main East-West routes (1.17)

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Main South-North through routes (1.18)

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TRAFFIC AND OPERATIONS

Traffic

1.21

1 Regular traffic makes use of the straits and passages lying at the E end of the Indonesian Archipelago in particular those connected with through routes. In the S part of the area the most important are Selat Wetar (2.9), Selat Roti (2.17) and Selat Ombai (2.27). In the N part, Selat Manipa (4.78), Selat Obi (4.29), Selat Jailolo (5.238) and Selat Sagewin (7.54) are the most important. Bangka Passage (5.75) lying NE of the NE extremity of Sulawesi is also well used.

2 There is considerable traffic plying the waters of Selat Sele, in particular in and out of the port of Sorong (0°53′S, 131°15′E) and the three oil terminal ports (7.93) in this strait. There is also considerable traffic moving in and out of the ports of Manokwari, Biak and Jayapura, all of which lie on the N coast of Irian Jaya.

3 Tanker traffic can be expected at any time throughout the area contained within the limits of this volume especially as many of the tanker ports, though small and numerous, are often sited in less well-known areas.

However, the whole area is traversed from a series of directions by numerous large scheduled passenger ferries; cruise vessels may also be encountered in and around Pulau-pulau Banda and the harbour at Ambon (4.118).

Recreational craft

1.22

1 An increasing number of yacht marinas and harbours are being constructed in Indonesian waters and where known are described within the text of this volume. Some areas where this type of craft may be encountered lie along the islands forming Pulau-pulau Sermata, in and around Pulau-pulau Banda and the harbours at Ambon and Jayapura.

2 Much help towards the compilation of this volume has been obtained from members of the yachting fraternity when sailing through the area.

Fishing

General

1.23

1 Fishing is a major industry throughout the Indonesian Archipelago and one of its main sources of food. On many of the islands, particularly those forming the Moluccas and Pulau Biak off the N coast of Irian Jaya, fishing is a prime activity. Fish are abundant, with little evidence of migration, but certain grounds have seasonal fishing due to their exposure to the monsoons. Tuna and shellfish products are exported to Japan and the United States.

2 Sorong (0°53′S, 131°15′E) and Biak (1°11′S, 136°05′E) are the major tuna-fishing ports of Irian Jaya; Agats (5°32′S, 138°08′E), on the SW coast of Irian Jaya, is the major shark-fin exporting port.

For regulations concerning foreign fishing vessels see 1.55.

Methods of fishing employed

1.24

1 Traps, seine and drift nets, lines, lures and bottom trawls are all employed methods of fishing in the archipelago. However, there are several areas where, except for nationals, trawling is prohibited. Within the limits of this volume such areas, which are not charted, are mainly confined to the major waterways through the Moluccas and those off the NW end of Irian Jaya.

2 Fishing craft vary in size of between 3 to 15 m in length. In coastal waters large concentrations may be encountered, and even in open water the occasional lone fishing craft may be found tending to its lines. Reliability of fishing craft showing lights can never be guaranteed; some may be lit or lights may only be displayed at the last minute on the close approach of a larger vessel.

Fish havens

1.25

1 Mariners are advised that in this part of the archipelago fish havens are usually laid on the seabed close offshore, or at intermediate mid-layer depths, or floating on the surface. They are not as commonly found as they are off the coasts of Kalimantan and Jawa.

Within the limits of this volume only the W coast of Pulau Sangihe (3°30′N, 125°30′E) experiences a large area of fish havens.

Fishing stakes

1.26

1 On some of the off-lying banks and off many parts of the coasts mentioned in this volume, particularly off the mouths of rivers, fishing stakes and enclosures will be met in depths of between 5 and 10 m, and in some cases in greater depths.

2 The stakes, known as *bembans* or *belos*, are usually constructed of bamboo; the enclosures known as *seros* or *jermals* are constructed of wooden poles or bamboos firmly driven into banks and interlaced with branches. The latter can form a considerable danger to vessels navigating at night near the depth contours mentioned. The stakes may last for many years, and to mariners with local knowledge, they may prove useful landmarks for making a particular river mouth especially on the SW coast of Irian Jaya where there are few prominent objects.

3 The positions of fishing stakes are subject to change, and are only charted where their permanence and positions are known.

Exercise areas

Submarine exercises and operations

1.27

1 In general, there are no set charted areas for submarine exercises covered by this volume; the main area for such operations tends to be in the waters of Java Sea. For further information see *Indonesia Pilot Volumes I and II.*

2 Submarines, however, may be encountered in the waters covered by this volume and in the approaches to the main ports. Where exercises do take place, any surface vessels taking part or are following submerged submarines then such vessels must carry a red flag from where it can best be seen. Passing vessels should always give a wide berth. If it is necessary to approach an exercising vessel, it should be done slowly until that vessel indicates that the submarine is clear.

See also *Annual Summary of Admiralty Notices to Mariners No 8.*

Minecountermeasure vessels

1.28

1 Minecountermeasure vessels are periodically involved in exercises and operations that are held in sea areas contained within the limits of this volume. The areas are not shown on British Admiralty charts but where known are referred to within the chapter text.

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Indonesian vessels engaged in mineclearance show the signals as prescribed in Rule 27 of *International Regulations for Preventing Collisions at Sea 1972.*

Firing practice and surface exercise areas

1.29

1 **General.** Firing practice areas and surface exercise areas are not charted but where they are likely to occur, mention is made in the appropriate part of the text.

Exercises are promulgated in Indonesian Notice to Mariners (INMs). When known, vessels are requested to leave the area immediately.

Exercise areas are usually marked by buoys or light-buoys (blue and white stripes; lettered DB).

Firing exercises usually take place in areas NE and S of Pulau Biak (1°00′S, 136°00′E) and also in the W part of Pulau-pulau Padaido, a group of islands 5 miles SE of Pulau Biak.

2 **Surface exercises** are held by air and navy personnel off the NE coast of Pulau Biak. This large area, whose SW corner lies parallel and some 5 miles off the coast, extends between 1°S thence N to the equator, and between 136°E thence E to 137°E.

Caution. Vessels bound for destinations in or through the waters surrounding Pulau Biak are warned to keep a lookout for International Code flag signals displayed by naval vessels.

Marine exploitation

Development of Offshore Oil and Gas

1.30

1 **General.** Various types of ships, craft and fixed structures (platforms), used in the development of oil and gas fields, and the supply of oil and gas, may be encountered in the waters off the N and S coasts of Irian Jaya. Occasionally, structures or exploitation activity may be encountered within river reaches particularly at the E end of Teluk Bintuni, an oil and gas exporting area.

2 Methods, search and production conform in general to those prescribed in *The Mariner's Handbook.* Seismic and other survey vessels carrying out surveys in search of deposits of oil and gas may be encountered in certain areas contained within the limits of this volume. These areas are presently known to exist in and around Irian Jaya, Timor and Pulau Seram.

Seismic survey methods are outlined in *The Mariner's Handbook.*

Platforms and storage vessels are charted, where known, and are mentioned where necessary in the respective chapters of this volume.

1.31

1 **Drilling rigs** operate within Teluk Berau and Teluk Bintuni particularly at the E end of the latter. Mobile rigs may be encountered within Teluk Irian especially towards its E entrance. Buoys, lighters and other equipment associated with drilling operations are often laid near the rigs, and wires may extend up to 1½ miles from them. Mobile rigs on station are not charted, but their positions are announced by NAVAREA XI messages, when known, and are listed in *Admiralty Notices to Mariners.*

The positions of buoys laid near rigs are not usually announced, even if known, as the buoys are seldom laid for long enough in one position.

2 **Wells** no longer required for exploratory drilling are sealed off below the seabed, and the sites certified by divers as clear of obstructions. Suspended wells at which pipes and valve gear project, usually from 2 to 6 m and in some cases up to 15 m above the seabed, are charted; they are shown on charts either as obstructions or as a danger circle enclosing the depth over the wellhead, if known, and marked 'Well'.

For details on NAVAREAS see *Annual Summary of Admiralty Notices to Mariners.*

Oil and Gas fields

1.32

1 Production platforms and associated structures, including tanker moorings, storage tankers and platforms on pipelines, generally display Mo (U) lights, aircraft obstruction lights, and audible fog signals. Unauthorised navigation is prohibited within 500 m of all structures, including storage tankers which can swing about their moorings. Tankers manoeuvring in the vicinity of platforms and moorings should be given a wide berth. For further information see *The Mariner's Handbook.*

For offshore oil and gas fields within Teluk Bintuni see 6.137 and 6.156. For the gasfield W of Sungai Mamberamo see 7.283.

CHARTS

Admiralty charts

1.33

1 All the charts covering the area of this volume are published in either metric or fathoms units. Most charts carry a source data diagram or source statement indicating the date and scale of the original surveys used to compile the chart.

Many depths contained in the charts of Indonesian waters originate from relatively old surveys or passage soundings. It should be appreciated that such information is rarely comprehensive and is certainly not up to date or comparable with modern surveying standards.

2 Whenever possible, an indication of the original source and age of the depth data included in charts is given in the Title Notes and Source Diagrams of charts.

In particular, depths originating from Netherlands surveys prior to 1930 may be less than charted due to uncertainties in their reduction for tidal ranges. Such depth reductions could be as much as 0·4 to 1·7 m (1 to 5 ft), in the waters described in this volume. See 1.36 for a comparison of vertical datum used in this area.

3 Due regard, therefore, must always be given to achieve adequate under-keel clearance, especially in waters that have not been recently surveyed.

For further details on charts see *The Mariner's Handbook.*

Indonesian charts

1.34

1 Charts of Indonesian coastal waters and ports are published by the Indonesian Hydro-Oceanographic Service (Hidro-Oseanografi). In some cases these charts are of a larger scale and more recent date than the equivalent British Admiralty charts, though they are not necessarily compiled from more recent information. However, for certain smaller ports and/or navigational areas where coverage by British Admiralty chart alone is considered inadequate, larger scale Indonesian charts may have been used to compile additional information for these Sailing Directions. If this has been the case, the British Admiralty chart reference for the text concerned will be succeeded by (*see 1.34*). Indonesian charts are not quoted as reference charts in the text which has been written on the assumption

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that mariners wishing to navigate in those areas will have provided themselves with suitable charts on which to do so.

2 Indonesian charts may be obtained from the publishing authority given below and in the *Catalogue of Admiralty Charts*; they are not issued by the UK Hydrographic Office, nor are they corrected by *Admiralty Notices to Mariners.*

Publishing Authority:

Indonesian Hydro-Oceanographic Service,
Jalan Pantai Kuta V No 1,
Jakarta 14430.
Indonesia.

Datums

Horizontal datum

1.35

1 Differences in geographical positions, in some cases as much as 1 minute of longitude, exist between British Admiralty charts, based on early surveys, and more recent charts, British and foreign, based on modern datum. Satellite derived positions are normally referred to World Geodetic System (WGS) and the difference between this and the horizontal datum of the published chart is given on the chart except in Indonesian waters where the differences cannot be determined. Therefore, in the area contained within the limits of this volume when transferring positions between charts based on different horizontal datums it is advisable to do so by bearing and distance from a common reference object, and not by latitude and longitude.

Vertical datum

1.36

1 Vertical datum used for the reduction of soundings equates approximately to LAT on British Admiralty charts and is indicated on the chart. Indonesian charts adopt a water level datum decreased to Low Water Springs which indicates the lowest water level over a 6 month period.

For an explanation of LAT see *Admiralty Tide Tables.*

Elevations

1.37

1 On British Admiralty charts, elevations are usually given above MHWS or MHHW; Indonesian charts generally adopt MSL as their datum, unless stated as otherwise on the chart.

Orthography

1.38

1 Throughout this volume, every effort has been made to use the correct orthography from the most up to date sources. Within this area of the Indonesian Archipelago there are many languages and dialects written and spoken which often produce several variations of a place name. From a charting point of view, this can be confusing to the mariner. In recent years the Indonesian authorities have begun to standardize generic forms of words on their charts.

AIDS TO NAVIGATION

Buoys

1.39

1 The IALA Maritime System (Region A) is in force for the area contained within the limits of this volume. However, in some cases, obsolete systems may still be use.

There are five types of marks provided by the system: Lateral, Cardinal, Isolated danger, Safe water and Special. Red and green lights of the IALA system are reserved for Lateral marks, and yellow lights for Special marks. White lights, distinguished from one another by their rhythm, are used for the other types of marks.

For further details on buoyage including illustrations, see *The Mariner's Handbook.*

Beacons

1.40

1 Channel beacons and light-beacons follow the same colour coding and topmarks as mentioned above. Occasionally, port hand beacon topmarks carry two cans vertically placed and starboard hand topmarks two cones, points up, similarly placed.

Both buoys and beacons may be fitted with radar reflectors, but radar reflectors are, themselves, not charted; it can be assumed that most major buoys and beacons are fitted with them.

2 **Caution.** In Indonesian waters, lights, light-buoys and light-beacons are unreliable, being frequently irregular or extinguished, and buoys are often missing from, or off, station.

Landmarks

1.41

1 Caution is necessary when evaluating the descriptions given in this volume concerning landmarks, such as trees, and the colour and shape of buildings and other marks. New buildings may have been erected and old trees or houses destroyed, so that the 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.

PILOTAGE

General

1.42

1 Every port of consequence within the area covered by this volume has its own authorised pilot service and pilotage is compulsory. At some ports however, pilots may be available but the service is not necessarily compulsory; in minor ports where pilots are not available local fishermen or boatmen will act as a pilot if requested.

Pilotage arrangements are described in the appropriate places in the volume and *Admiralty List of Radio Signals Volume 6(4)* for places equipped with port radio.

Visual signals requesting a pilot at ports not equipped with VHF can be made on arrival (see below).

Signals

1.43

1 The following are signals requesting a pilot:

By day	*By night*
The national flag, surrounded by a white border, displayed at the masthead.	A blue light every 15 minutes. A bright white light flashed or shown just above the bulwark at frequent intervals.
The pilot signal UC of the International Code of Signals.	The morse signal G by lamp.
Code flag G of the International Code of Signals.	The above signals must be shown until the pilot is onboard or until an answering signal has been made.
The distant signal, consisting of a cone, point up with two balls above.	Vessels arriving at night, but not wishing to enter harbour, shall show the pilot signal at daybreak.

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Pilot vessels

1.44

1 The pilot service flag is blue with a white star in its centre.

RADIO FACILITIES

Electronic Position fixing systems

1.45

1 Full details of the electronic position fixing systems are given in *Admiralty List of Radio Signals Volume 2*; those with a limited applicability are described here.

Loran C. The Pacific Ocean Chain provides skywave coverage for only part of area covered by this volume; Timor, Pulau-pulau Tanimbar and Irian Jaya E of Teluk Irian are not covered.

Radio aids to navigation

1.46

1 Full details of the radio navigational aids outlined below are given in *Admiralty List of Radio Signals Volume 2*. Individual stations and services which may be of assistance to the mariner are listed as necessary within the text of this volume.

Racons are fitted to many light-structures, light-floats and buoys.

Radio navigational warnings

1.47

1 Long range Navigational and Meteorological Warnings for NAVAREA XI, which includes the waters of the Indonesian Archipelago, are broadcast from Tokyo (JNA) the co-ordinator for the area. For details of navigational and meteorological warnings, see *Admiralty List of Radio Signals Volume 3(2).*

Coastal navigation warnings are broadcast in English at scheduled times from coast radio stations (1.50).

1.48

1 **Navtex,** which fulfils an integral role in GMDSS (1.75), is an automated direct printing service, broadcast on 518 kHz, for the promulgation of navigational and meteorological warnings to ships. It has been developed to provide a low cost, simple, means of receiving marine safety information onboard ships at sea and in coastal waters. It is available from stations in the area covered by this volume; other stations are planned and some are on trial.

For further details, see *Admiralty List of Radio Stations Volumes 3(2)* and *5.*

Radio weather reports

1.49

1 Details of weather reports are given in *Admiralty List of Radio Signals Volume 3(2)*. Much of the Indonesian Archipelago is covered by the High Seas Forecast (Northern) from Australia; transmissions are provided from VMC Australia Weather East (Charleville) or VMW Australia Weather West (Wiluna).

Coast radio stations

1.50

1 For much of the area covered by this volume the stations situated at Amboina (PKE) (3°42′S, 128°11′E) and Jayapura (PNK) (2°31′S, 140°43′E) are the most important and the most reliable. For a list of coast radio stations which are available within or adjacent to the area covered by this volume, see *Admiralty List of Radio Signals Volume 1 (2).*

Port radio and radar stations

1.51

1 Port radio stations are in operation in all but the smallest of ports; some pilot vessels can also provide radio services.

Details of port radio and radar stations where applicable for the area covered by this volume, are given in the text; full details are given in *Admiralty List of Radio Signals Volume 6(4).*

REGULATIONS

Submarine pipelines and cables

Submarine pipelines

1.52

1 The E part of the Indonesian Archipelago has few submarine pipelines of any consequence and certainly none covering great distances. Those pipelines that are shown on the chart are described with the appropriate legend (oil) or (gas).

1.53

1 Gas from a damaged oil or gas pipeline could cause an explosion or some other serious hazard. Pipelines are not always buried in the seabed 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 may risk prosecution if damage is caused.

See *The Mariner's Handbook* for a full description of pipelines.

Submarine cables

1.54

1 The area within this volume contains only a limited number of submarine cables. There are no known long range submarine cables in existence. Where submarine cables do exist they are shown on the chart.

See *The Mariner's Handbook* for information on the International Convention for the Protection of Submarine Cables.

Restricted areas

Regulations concerning foreign fishing vessels

1.55

1 Special passages are designated for foreign fishing vessels transiting Indonesian waters, particularly from the Pacific Ocean to the Indian Ocean and vice versa. These special passages are not shown on British Admiralty charts.

2 Foreign fishing vessels are strongly advised to obtain details on special passages prior to entering Indonesian waters. One such passage lies S of Pulau Miangas (5°34′N, 126°35′E) and between it and Pulau-pulau Nanusa to the S. It leads W from the Pacific Ocean through the islands of the Kawio group to Celebes Sea, in the N part of the area covered by this volume.

During a transit foreign fishing vessels should have their fishing gear stowed at all times, and not in use.

Pollution of the sea

1.56

1 In the area covered by this volume, pollution of the sea by oil or mixtures containing oil is prohibited. See *The Mariner's Handbook* for information on *The International Convention for the Prevention of Pollution from Ships, 1973,* known as *MARPOL 1973* and modified by the 1978 Protocol to which Republic of Indonesia is a signatory to Annexes 1 and 2 of the Convention. See 1.109.

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Indonesian Government Laws also prohibit the discharge of dirty ballast, refuse, garbage, and waste matter into the sea.

National regulations

Flying the national flag

1.57

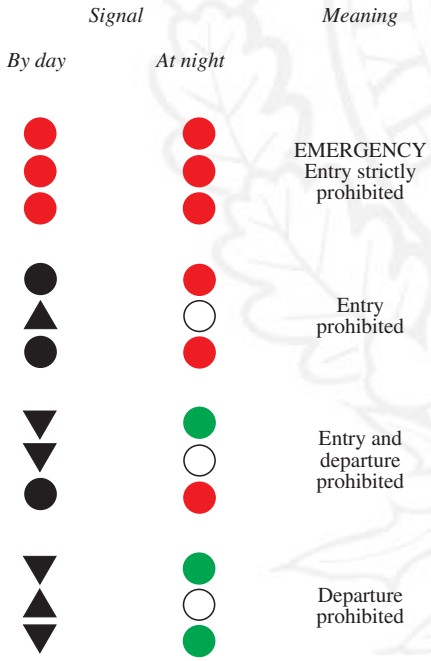
1 The Indonesian national flag should be flown at sea when in Indonesian territorial waters (1.82). It should be shown not lower than any other flag, and it should not be smaller than the vessel's national ensign or any other flag displayed.

Closure of ports

1.58

1 Should it become necessary to control the entrance of ships into, and the movement of ships within, certain ports under the control of the Indonesian government, the signals described below will be displayed. They will be disposed vertically and from some conspicuous position in, or when near, the approaches to the ports concerned and may also be displayed by an Examination or Traffic Control Vessel operating in the approaches.

2 Should entry be prohibited, a vessel must proceed, wind and weather permitting, to the examination vessel, displaying the same signal, stationed at the entrance to the port.



Port closure signals (1.58)

1.59

1 Permission or refusal to enter will be given after examination. A vessel is then only allowed to enter provided she is in the charge of a pilot, or is preceded by a naval vessel or pilot vessel. From the time the signals are shown all exemptions from taking a pilot cease. Masters of vessels are to carry out the instructions of the officer from the examination vessel and obey all signals.

2 If a warning shot is fired from the examining vessel, all vessels in the vicinity of the examination vessel must stop immediately, in so far as safety permits. Failure to comply with these regulations may result in danger to the vessel and the crew. As a general rule, permission to enter at night will not be granted.

3 If a signal is made from the shore to intimate that vessels are subject to examination and there is no examination vessel in the entrance to the fairway, then vessels must anchor or lie off.

The coming into operation of these regulations at any particular fairway or harbour will not be announced beforehand.

Port entry procedures

1.60

1 **Appointment of an Agent.** Every vessel which is scheduled to call at a port in Indonesia must officially appoint an Agent; this can be arranged using telex, facsimile or, in some cases, e-mail communications. An official letter of appointment, however, must be mailed direct to the Agent.

2 On obtaining a letter of appointment, the Agent will arrange Clearance Approval (PKKA), issued by the Directorate General of Sea Communications (1.76). Once obtained, a copy of the clearance will be forwarded to the port or ports concerned.

A vessel failing to obtain a PKKA will not be allowed to sail from Indonesia until arrangements are agreed upon by the Directorate General and the Master or Owner of the vessel.

1.61

1 **Summary of procedures.** A letter of appointment should be forwarded to arrive at least five days prior to the vessel's arrival. If an agent has already been appointed, a telex copy, or similar communication, will suffice.

The vessel should supply the following details to the appointed Agent:

Port(s) or terminal(s) to be called at.
Type of commodity and quantity.
Complete details of the vessel.
Crew List.
Copy of loading/discharging arrangements.

2 On receipt of the above, the Agent will confirm cargo details and berthing details and any other valuable information.

Prior to arrival the master should forward ETA cables in accordance with Owners/Charterers instructions.

1.62

1 **Declaration forms.** It is most important that care is taken in the completing of store lists and personal declaration forms as the Indonesian authorities are liable to carry out a detailed check and any discrepancies can lead to heavy fines.

Vessels trading in Indonesian waters should obtain an Indonesian Health Record Book, and an Indonesian Military Book, which must be produced to the authorities on arrival at each Indonesian port. Similarly, Indonesian Harbour Reports and Health Declarations are required in duplicate at most ports.

Quarantine and Customs Regulations

1.63

1 **General.** Vessels arriving at any port in Indonesia are subject to Indonesian Quarantine and Customs regulations.

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1.64

1 **Quarantine.** The following quarantine rules apply:

1. Every vessel arriving from any foreign country is under quarantine.
2. Every vessel arriving from any harbour and/or district of Indonesia which has been determined to have carried a specified quarantine disease, is under quarantine.
3. Every vessel accepting passengers and/or cargo from any other vessel affected by paragraphs 1 and 2, is under quarantine.
4. Any vessel affected by paragraphs 1, 2 and 3 is free of quarantine when it is issued with a certificate of free pratique.

2 The Master of a vessel under quarantine is prohibited from disembarking or embarking people, cargo, plants and animals, before having obtained a Certificate of Free Pratique.

1.65

1 **Free Pratique Procedures.** Vessels destined for Indonesian ports must apply, well in advance, for Provisional Free Pratique to the Quarantine Section, Department of Health, Jakarta. This can be arranged through the appointed Agent; see 1.60.

Vessels bound for an Indonesian port without prior advice must first call at a Port of Entry to obtain Free Pratique.

2 Within the limits of this volume there are no Ports of Entry; however, if Ambon or Jayapura are first ports of call within this area then Free Pratique may be applied for, by radio, well in advance of arrival. Ports of Entry lying outside the area exist at Belawan (Sumatera) (3°47′N, 98°42′E), Tanjungpriok (West Jawa) (6°06′S, 106°54′E), Tanjungperak (East Jawa) (7°14′S, 112°42′E) and Makassar (Sulawesi) (5°10′S, 119°25′E).

3 Port health clearance is issued after a vessel's arrival and is also valid for departure clearance. If Provisional Free Pratique is not granted a Port Health Officer will be appointed.

1.66

1 **Customs.** Vessels loading or discharging cargo at an Indonesian port should obtain a Customs Permit. Copies of Bills of Lading, Cargo Manifest, Ship's Stores List, Personal Effects and Crew List should be delivered to Customs and Port Administration which will include Immigration.

As already mentioned (1.62) it is most important that the lists concerning personal effects, stores and crew are completed with great care. After a vessel is secure, storerooms are sealed.

2 If arriving from a foreign port the local Agent will prepare the General Cargo Declaration; if arriving from an Indonesian port, Form 5B issued at the last Indonesian port will be retained by the Customs and the Arrival Clearance is thus granted.

Protection of Wildlife

1.67

1 Indonesia has a very extensive system of National Parks, Nature Reserves and Protected Forests which come under the jurisdiction of the Directorate General of Forest Protection, based at Bogor, W Jawa. Six per cent of the nation's land has been set aside for conservation, particularly of fauna and flora and the protection of wildlife. Visiting a reserve is only permitted by arrangement and under strict control; many of the areas of conservation are not easily accessible.

2 For the purposes of this volume only those conservation areas lying in or around coastal areas, which are of direct interest to the mariner are mentioned.

Off the E coast of Pulau-pulau Aru (3.189), the W coast of Waigeo and within Teluk Irian (7.3) there are Marine Reserves.

Photography

1.68

1 Photography of Indonesian harbours and installations is prohibited.

Small craft

1.69

1 Owners of cruising yachts intending to visit Indonesian waters must obtain a Sailing Permit. The permit, which is valid for three months only, may be secured by writing, well in advance, to:

PT Pedang Kayra Bhakti,
Wismo Kosgoro, 4th Floor,
Jakarta Pusat.
Indonesia.

2 This company will forward an application form which should be duly completed and returned accompanied by the obligatory fee. A basic route must be stated on the application form, together with intended ports of call.

At short notice it is usually possible to obtain a permit from an Indonesian Embassy.

On arrival at, or departure from, any Indonesian port the cruising yachtperson is obliged to clear Customs, Immigration, Harbour Master and Police. At some ports it is necessary to carry out this procedure, inwards and outwards, even if day sailing from that port.

SIGNALS

Storm signals

1.70

1 No visual storm signals are in force for the area covered by this volume. For details of radio warnings see *Admiralty List of Radio Signals Volume 3(2).*

A brief note on radio warnings may be found at 1.47.

Berthing signals

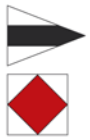
1.71

1 The flag signals (Diagrams 1.71.1 and 1.71.2) may still be in use at some ports and harbours within the Republic of Indonesia in addition to those laid down in *The International Code of Signals*:

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Displayed on shore

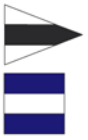
2 When two or more vessels are entering a harbour at the same time, the berthing signal for one particular vessel can be indicated by hoisting the company or national flag of that vessel below the signal.

Signal	*Meaning*
	Your berth is No 1.
	Your berth is No 2.
	Your berth is No 3.
	Your berth is No 4.
	Your berth is No 5.
	Your berth is No 6.
	Your berth is No 7.
	You must anchor in the anchorage area.
	No communication owing to bad weather.

Berthing signals onshore (1.71.1)

Displayed onboard

3 The last of these signals must be hoisted when a vessel enters the limits of the port or anchorage. If the vessel requires medical assistance, it may display the company flag above the International Code flag W.

Signal	*Meaning*
	Ship wishes to enter harbour
	Please send motor boat
	Request fresh water.
	Have passenger(s) who has come directly or indirectly from outside of Indonesia requesting disembarkation.
	Request refuse barge
	Onboard or during the voyage, there were one or more cases of contagious disease, or disease that was thought to be contagious (other than cholera or yellow fever).

Berthing signals onboard (1.71.2)

1.72 Tidal stream signals displayed on shore

Day	*Night*	*Meaning*
		In-going stream
		Out-going stream
		Slack water

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Dumping explosives at sea

1.73

1 Vessels employed in dumping ammunition or other explosives at sea show the following:

By day. A red flag not less than 4 m above the upper deck.

At night. A red light.

Mariners are requested to keep a safe distance from such activities.

Surveying vessels

1.74

1 Surveying vessels of the Indonesian government engaged on hydrographic or oceanographic surveys display the same signals as prescribed by *International Regulations for Preventing Collisions at Sea 1972.* Vessels should not pass between surveying boats carrying out a sweep and should give them a wide berth. These boats show the same signals as prescribed for the surveying vessel. In some cases the pair of sweeping boats may be followed by a third vessel over the sweep; in daylight this vessel will only show a red flag.

For signals and further details see *The Mariner's Handbook.*

DISTRESS AND RESCUE

Search and rescue organization

Global Maritime Distress and Safety System

1.75

1 The concept of GMDSS is that search and rescue authorities ashore as well as shipping in the immediate vicinity of the ship, or persons in distress, will be rapidly alerted to a distress incident so that they can assist in a co-ordinated search and rescue operation.

For full details including diagrams, and a list of MF and HF Digital Selective Calling stations which can be used within, or near, the limits contained in this volume, see *Admiralty List of Radio Signals Volume 5.*

Indonesian Search and Rescue operations

1.76

1 Search and rescue operations in Indonesia are the responsibility of the Ministry of Communications together with Basarnas (National Search and Rescue) covering air, land and sea emergencies. Within the Ministry of Communications, the Government authority responsible for sea emergencies is the Directorate of Sea Communications (DGSeacom), based in Jakarta, where there is a command centre (MRCC) operating a communication network. In case of a serious accident, a Basarnas (SAR) team (1.77) is called into the command centre to supervise and co-ordinate the rescue operation.

1.77

1 The Basarnas (SAR) team, based in Cengkarang, Jakarta, consists of members from different organizations such as the Coastguard, Navy and Air Force, depending on the type of emergency. Under Basarnas there are regional rescue organizations:

KKR (rescue and co-ordination offices) based in Jakarta, Surabaya, Makassar and Biak (Irian Jaya).

SKR (sub-rescue co-ordinating offices) which report to the KKR.

2 Both KKR and SKR are involved in all types of emergencies, but for sea-related incidents they are always supported by the Coastguard and Basarnas (SAR).

For a diagram of the Indonesian Search and Rescue Region (SRR) and associated national regions, and further details on distress, search and rescue, see *Admiralty List of Radio Signals Volume 5.*

Indonesian Coastguard

General information

1.78

1 The coastguard service in Indonesia is usually grouped with Basarnas when a marine-related rescue is in operation. In the case of an accident they deploy their own equipment and craft.

Coastguard network

1.79

1 Within the limits of this volume, the only coastguard station is situated at Ambon.

Towards the NW limits of the volume, Bitung Coastguard (North Sulawesi) (*Indonesia Pilot Volume II)* may be useful in the waters of Molucca Sea.

Medical aid procedure

1.80

1 Within the limits of this volume, medical advice and/or medical assistance cannot be obtained locally by radio on request. Within Indonesia as a whole, only Jayapura (PNK) situated in Irian Jaya provides this service.

However, for vessels passing through the area, advice or assistance can be received by radio using international networks.

The International Radio-Medical Centre, situated in Rome, is one such organization offering medical support. Details are given in *Admiralty List of Radio Signals Volume 1(2).*

2 Inmarsat Maritime Satellite Service, if fitted, allows vessels to communicate with shore telephone, telex and facsimile subscribers, or other vessels through Coast Earth Stations via satellite links., The operational station available within Indonesia, Indosat, is situated at Jaliluhur (W Jawa) offering telephone and facsimile cover. Outside of the area Singapore Telecom (Sentosa) offers all services. Further details, services offered and a list of stations, are given in *Admiralty List of Radio Signals Volume 1(2).*

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COUNTRIES AND PORTS

REPUBLIC OF INDONESIA

General description

1.81

1 The Republic of Indonesia consists of:

The islands of Sumatera, Jawa, Madura, Nusatenggara, Kalimantan (S and E part of Borneo), Sulawesi, Maluku, Irian Jaya (W part of New Guinea) and some 3000 smaller islands and islets. Situated between 6°N and 11°S and between 95°E and 141°E, the republic covers a total area of 1 904 569 square km (735 358 square miles).

2 Described within the limits of this volume are the islands of Timor, Buru, Seram and Halmahera together with Irian Jaya and the islands associated with Banda and Arafura Seas in the S, and the islands associated with Molucca, Ceram and Halmahera Seas in the N.

National limits

1.82

1 Territorial sea: 12 miles.
Contiguous zone: 24 miles.
Exclusive economic zone: 200 miles.

Indonesia has acceded to the United Nations Convention of the Law of the Sea, which came into force on the 16th. November 1994; this country also claims archipelago status. For further details on archipelagic states and the law of the sea, see *The Mariner's Handbook.*

For details on national claims to maritime jurisdiction see the *Annual Summary of Admiralty Notices to Mariners No 12.*

History

1.83

1 Knowledge of the first Indonesian kingdoms of the Classical or Hindu period is very shadowy, gleaned solely from old stone inscriptions and vague references in ancient Chinese, Indian and Classical texts. However, the first specific references to Indonesian rulers and kingdoms are found in written Chinese sources and Sanskrit stone inscriptions dating from the early fifth century. Also in the fifth century Fa Hsien, a Chinese Buddhist Monk who was shipwrecked on Jawa on his way home from India, highlighted the feature of Indianised Indonesia — a combination of Hindu and Buddhist kingdoms.

2 In subsequent years Jawa prospered having the benefits of a strong agricultural economy and lucrative overseas trade. During the fourteenth century the Jawanese became shipbuilders and mariners and, by doing so, controlled the sea lanes throughout the Indonesian Archipelago.

In the sixteenth century Portuguese traders, in the quest for spices, settled in some of the islands of Indonesia, but were ejected by the British, who in turn were ousted by the Dutch in 1595. From 1602, the Netherlands East India Company conquered the Dutch East Indies, and ruled them until the dissolution of the company in 1798. Thereafter, the Netherlands Government ruled the colony from 1816 to 1941 when it was occupied by the Japanese until 1945.

3 Indonesia was proclaimed an independent republic in 1945.

Transfer of sovereignty of the major part of the colony from the Netherlands to the Republic of the United States of Indonesia took place in 1949 after much bitter fighting and negotiations. In 1950, a new provisional constitution came into force, and the country so transferred was named The Republic of Indonesia.

Government

1.84

1 In 1959, by Presidential decree the constitution of 1945 was reinstated and the constituent Assembly dissolved. In 1960, General Sukarno, as President, took control of all political parties and established the National Front and a supreme body called the People's Consultative Assembly. Local administrations nominated 130 members representing political parties and 153 members representing functional groups, formed the new House of People's Representatives. A communist attempt to overthrow the government in 1965 was suppressed by the army, and in 1966 the military commanders under the leadership of General Suharto took over the executive power while leaving General Sukarno as Head of State. The Communist Party was at once outlawed and the National Front dissolved. In 1967 General Sukarno handed over power to General Suharto, who in 1968, was elected by the People's Consultative Assembly (composed of the House of People's Representatives together with 500 government appointees) as President.

2 In 1975 the Portuguese withdrew from the province of East Timor, and the smaller enclave of Oecussi, part of the province of East Timor, which after much unrest was incorporated into the Republic of Indonesia.

3 Until 1998 the military effectively ruled the country through its political organisation Golkar. However, in May of that year after a period of continued widespread civil unrest, together with further disruption by local factions in East Timor fighting for an independent state within a state, President Suharto finally resigned and relinquished power. A civilian government led by President B.J.Habibie was given the proviso of agreeing to new elections, and improving the nation's economic standing in SE Asia and to conduct discussions on a political settlement for East Timor by allowing free elections for the province.

4 In September 1999, the United Nations (UN), with the approval of the Indonesian Government, was given a mandate to assume the running and security of the province of East Timor which, in May 2002, became fully independent as the Democratic Republic of East Timor.

In October 1999 President Habibie relinquished power to President Abdurrahman Wahid; in 2001, after the impeachment of President Wahid, power was handed to (Mrs) Megawati Sukarnoputri, the previous Vice-President.

Population

1.85

1 In 2001, the Republic of Indonesia had a total population of 200 million, increasing at an annual rate of 1·5%; in the same year, within the limits of this volume, the islands comprising Maluku had a population of 2·5 million, Irian Jaya 2·2 million and Nusatenggara Timur, which includes West Timor, 3·8 million.

The majority of the population are Muslims, but there is religious liberty to all denominations; about 10% are Christian.

Languages

1.86

1 Within the limits of this volume the principal ethnic groups, each with its own local dialect, are the Tetum, Atoni and Mestico in West Timor, Patalima and Patasiwa on Ambon, Gelmelia and Gebmasin on Buru, Alfurs and Naulu on Seram, Tobelorese and Sahu on Halmahera, Ekari, Dani, Asmats, Mimikans, Jaqai and Marindanim in Irian Jaya. Throughout the Banda islands, Bandanese is the

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main group but the SE island groups of Kai and Aru consist mainly of a mixture of Malay-Papuans whilst those of Tanimbar consist mainly of Indonesian-Papuans.

2 Although there are over 350 local languages and dialects (250 of which exist in Irian Jaya alone), the official language of Indonesia is *Bahasa Indonesia* which is based on Malay. It has changed rapidly over the past few decades to meet the needs of a modern nation.

Physical features

1.87

1 **General.** In geological terms the Maluku islands group is complex. Three of the earths great tectonic plates meet in the region. The result of plate movement has produced a chain a islands stretching in an arc from the Philippines through the Maluku islands to Timor, Bali, Jawa, Sumatera finally ending in the Indian Ocean islands of Nicobar and Andaman.

2 Each side of the Maluku chain is strikingly different. The Outer Banda Arc (1.110), formed of contorted, mostly calcareous mudstones, limestones and rare intrusive rocks, marks the N boundary of the shallow Arafura Sea with the uplifted coral reefs of Pulau Leti and Pulau-pulau Babar in the S. This arc includes the forested, slightly larger islands of Tanimbar and Kai before turning sharply back to include the large almost inaccessible islands of Buru and Seram.

Pulau-pulau Aru, farther E, is made up of raised coral reefs cut through with narrow, mangrove-lined channels.

3 The Inner Banda Arc (1.110) is the continuation of a chain that includes Sumatera, Jawa and Bali. Here are the volcanic islands, beginning with Wetar in the W, and extending NE through the Damar and Banda groups. North of Seram the double line of islands becomes less clear. The strangely shaped Halmahera is marked on its W side by a line of young active volcanoes, including Ternate. The rest of the island is made up of older volcanic rock, calcareous sediments and ultrabasic materials forced up from beneath the ocean.

Farther W the Sula islands are anomalous, so to is Irian Jaya to the E.

1.88

1 **Nusatenggara,** within the limits of this volume, comprise only of the islands of Sawu, Roti and West Timor, the Indonesian portion of Timor. They are all mountainous, volcanic, rugged and wooded. However, each island has its own pertinent features. The whole area of Nusatenggara, in part described in *Indonesia Pilot Volume II,* is a transitional zone between Asia and Australasia and as one travels E along this part of the archipelago the climate becomes drier. The region is generally remote and in places isolated from the rest of the republic.

2 In 2001, for the purposes of this volume, Nusatenggara has one province:

Province	*Capital*
Nusatenggara Timur	Kupang

1.89

1 **Maluku** comprises the island groups of Halmahera, Buru and Seram, Mangoli and Sanana from the Sula group, Banda, Sermata, Tanimbar, Kai and Aru. They are all mountainous, hilly and wooded, excepting Aru and its adjacent islands which are low-lying and swampy.

2 In 2000, Maluku was a single province with its capital situated at Ambon. However, due to the expanse of area, there are four autonomous districts: North Maluku with its capital at Ternate, Central Maluku with its capital at Masohi, South-east Maluku with its capital at Tual and Central Halmahera with its capital at Soasui.

1.90

1 **Sulawesi**, within the limits of this volume, comprise the islands lying N of the mainland. They include Pulau-pulau Sangihe and the islands between Sangihe and the mainland, Pulau-pulau Talaud together with Pulau-pulau Nanusa, Pulau-pulau Kawio and the most N of the group Pulau Miangas (Palmas Island) situated near the Philippine land mass. Most of these islands are mountainous or hilly and are heavily wooded; some of the smaller islands however, are low-lying with only some forestation.

2 In 2000, Sulawesi was divided into four provinces. The province responsible for the islands situated N of the mainland is North Sulawesi (Sulawesi Utara) whose capital is Manado.

1.91

1 **Irian Jaya,** that part of New Guinea lying W of the meridian of 141°E, the other portion E of the meridian being Papua New Guinea, comprises a variety of landscapes from the very mountainous in the Central Highlands and N coasts, to the large low-lying and swampy tracts of the S coast. Teluk Irian, a very large indentation on the N coast consists of both high and low ground which is heavily wooded; its E side however, comprises large stretches of mangrove swamps. Pulau-pulau Biak, the island group fronting the bay, have a divided terrain; Supiori in the W is hilly and wooded whereas Biak in the E is quite low and wooded with just an occasional high outcrop.

2 Off-lying islands such as Pulau-pulau Asia, Pulau-pulau Ayu and Pulau-pulau Mapia, comprise low-lying reefs and a few islets surrounded by deep water.

In 2000, Irian Jaya consisted of a single province; its capital being Jayapura on the N coast.

Fauna and Flora

1.92

1 Indonesia has one of the richest natural environments, harbouring an incredible diversity of animal and plant species.

Alfred Wallace, the British naturalist, wrote in his classic study *The Malay Archipelago* that the Indonesian islands could be divided into two zones by the 'Wallace Line'. West of this line Indonesian fauna and flora showed great similarities to that of the rest of Asia, while to the E the fauna and flora was more akin to that of Australia. Later studies have further expanded this classification to show distinct breaks between the ecologies of Sulawesi and Maluku and further between Maluku and Irian Jaya.

1.93

1 Maluku being the province more isolated from the continental land masses has developed its own unique fauna and flora. However, it shows similarities with Sulawesi but with fewer species of fauna and flora. Mammals are generally smaller and although there are some primates, it would seem that migratory species have passed Maluku by.

2 Irian Jaya and Pulau-pulau Aru were once part of the Australian land mass. The central massive mountain range traversing Irian Jaya has isolated a number of unique environments but fauna is closely related to Australia. Like N Australia, the dangerous estuarine crocodile, is the largest reptile. In both the areas of Maluku and Irian Jaya there is an abundant exotic bird life.

3 Most of the islands, including Irian Jaya, experience their own unique geologic and climatic conditions ranging from the dense luxuriant forests of Maluku, and on the

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slopes of the Central Highlands of Irian Jaya, to the mangrove swamps and marsh-peat forests of much of the S coast of Irian jaya and Pulau-pulau Aru. There is a vast abundance of hardwood trees, bamboos, vines, orchids and carnivorous plants. Some trees reach heights of up to 61 m (200 ft) making them good landmarks.

Regulations concerning the protection of fauna and flora may be obtained from the Directorate General of Forest Protection (1.67).

Industry and trade

1.94

1 Indonesia is an agricultural nation involving nearly 70% of its inhabitants working such products as timber, rubber, rice, palm oil and coffee. The country is also rich in natural resources; oil and liquefied natural gas, coal and bauxite are the principal products, with nickel, tin, silver and gold to a lesser extent.

Exports include oil and liquefied natural gas, plywood, logs and manufactured goods; major markets being Singapore, Japan, Taiwan, South Korea and United States.

Imports include food, chemicals, capital goods and consumer goods shipped mainly from Japan, United States and Thailand.

TIMOR-LESTE (EAST TIMOR)

General description

1.95

1 The Democratic Republic of East Timor, an independent state, sometimes known locally as Timor Lorosae, occupies the E part of Timor; the W part being West Timor, part of the province of Nusatenggara Timur, Indonesia. The border with West Timor lies approximately between Batugedeh (8°57′S, 124°58′E) on the NW coast and a line joining the entrance to Sungai Motamasin (9°28′S, 125°05′E) on the SE coast.

2 Timor-Leste also includes the island of Ataúro (8°13′S, 125°35′E) (2.157), previously known as Kambing when under Indonesian administration, and the enclave of Oecussi-Ambeno described at 2.124.

National limits

1.96

1 In September 2002, maritime boundaries for Timor-Leste were established as:

Territorial sea: . . . . . 12 miles.
Contiguous zone: . . . . . 24 miles.
Exclusive economic zone: . 200 miles.

For further details see *Annual Summary of Admiralty Notice to Mariners.*

History

1.97

1 East Timor was a colony of Portugal from 1702 until Portuguese control collapsed following the 1974 coup in Portugal. A war of independence waged by the Marxist Fretilin (Revolutionary Front for an Independent East Timor) developed into a civil war between Fretilin and local conservative forces in 1975. After gaining control, Fretilin declared East Timor independent on the 27th November 1975 and this was recognised by Portugal.

2 Indonesian forces invaded East Timor on the 7th December 1975 and declared East Timor as the 27th Province of Indonesia.

Following negotiations between Indonesia and Portugal, an agreement was reached to conduct a plebiscite on the 30th August 1999, which would offer East Timor autonomy within Indonesia or independence. The plebiscite resulted in an overwhelming majority by the electorate for independence.

3 On the 19th October 1999 after much fighting, violence and intimidation by local factions supporting both sides, the Indonesian Consultative Assembly unanimously ratified the result of the referendum on the independence of East Timor and the United Nations (UN) was mandated to temporarily run and secure the country.

4 In February 2000, President Wahid signed a memorandum of understanding to allow the resumption of cross-border trade and transport between East Timor and Indonesia.

In August 2001, elections for a Constituent Assembly took place, drafting and approval of a constitution then followed. Full independence was obtained on 20th May 2002.

Government

1.98

1 In 2001, the Constituent Assembly was made up of a 75 seat National Assembly and 13 seat District Assembly. This was followed in 2002 by the election of President Xanana Gusmão.

It is reported that a UN Mission of Support will remain in place until 2004.

Population

1.99

1 In 1999 the population of East Timor was estimated at 920 000; in the same year its capital and largest city, Dili, had a population of about 180 000.

The population is predominantly Christian — Roman Catholic.

Languages

1.100

1 Portugese and Tetum, (the region's language) are the official languages together with English and Bahasa Indonesia as the working languages.

Fauna and flora

1.101

1 Much of the fauna and flora is akin to that of West Timor (1.92). In general the wildlife of Timor reflects that of Australasia.

Industry and trade

1.102

1 Timor-Leste is predominantly an agricultural country with most of its inhabitants working with such products as timber, coffee, copra, cloves and cocoa. Rice, maize and candlenuts are also widely cultivated. A small proportion of income is generated from fishing and fishing products.

2 An agreement with Australia to locate and develop offshore oil and gas fields in the Timor Gap, that area of water between Timor-Leste and the NW Australian coast, is expected to reach fruition in 2006. Timor-Leste is set to receive the largest proportion of income generated from this marine exploitation.

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PRINCIPAL PORTS AND ANCHORAGES

1.103

Place and position	*Remarks*
	West Timor
Kupang-Tenau (2.100) (10°12′S, 123°32′E)	Important port, general cargo with a petrochemical and oil terminal
	Timor-Leste
Dili (2.162) (8°33′S, 125°34′E)	An important port and main entry to Timor-Leste; mainly general cargo with an oil terminal
	North Sulawesi
Lirung (5.51) (3°56′N, 126°42′E)	Best anchorage in Pulau-pulau Talaud
Beo (5.51) (4°14′N, 126°47′E)	Open roadstead
Pulau-pulau Kawio (5.81) (4°40′N, 125°35′E)	Anchorages off Pulau Maroreand Pulau Matutuang
Tahuna (5.78) (3°37′N, 125°30′E)	Important port within Pulau-pulau Sangihe
	Maluku
Teluk Zwaan (3.116) (7°30′S, 127°24′E)	Good anchorage around Pulau Romang
Saumlaki (3.160) (7°59′S, 131°18′E)	An important port within Pulau-pulau Tanimbar
Ritabel (3.167) (7°09′S, 131°43′E)	Anchorage within Pulau-pulau Tanimbar
Tual (3.80) (5°38′S, 132°44′E)	An important port within Pulau-pulau Kai
Elat (3.90) (5°39′S, 132°59′E)	Small port
Dobo (3.198) (5°46′S, 134°13′E)	Small port on the NW side of Pulau-pulau Aru; oil terminal. Depths 4 to 5 m (13 to 16 ft alongside.
Bandanaira (3.40) (4°31′S, 129°55′E)	Important port and roadstead within Pulau-pulau Banda
Ambon (4.118) (3°42′S, 128°10′E)	Large important port with two oil terminals
Amahai (4.147) (3°20′S, 128°55′E)	Small port and oil terminal on the S coast of Pulau Seram; sometimes known as Masohi
Selor (4.157) (3°40′S, 130°27′E)	Anchorage on the S coast of Seram
Namlea (4.60) (3°17′S, 125°06′E)	Small port and oil terminal on Pulau Buru
Sanana (4.237) (2°03′S, 125°59′E)	Small port and oil terminal
Teluk Lapan (5.164) (0°38′S, 127°38′E)	Sheltered anchorage on the E coast of Pulau Bacan
Labuha (5.149) (0°37′S, 127°28′E)	Small port on Pulau Bacan
Pulau Gebe (5.279) (0°04′S, 129°23′E)	Important nickel ore port
Waisarisa (5.154) (0°03′S, 127°25′E)	Logging port
Weda (5.248) (0°20′N, 127°52′E)	Anchorage port on the E coast of Halmahera
Ternate (5.125) (0°47′N, 127°23′E)	Important port and oil terminal
Jailolo (5.157) (1°04′N, 127°28′E)	Anchorage
Teluk Galela (5.225) (1°59′N, 127°57′E)	Good anchorage on Halmahera
Berebere (5.223) (2°24′N, 128°39′E)	Sheltered anchorage on the E coast of Pulau Morotai
	Irian Jaya
Merauke (6.19) (8°29′S, 140°23′E)	An important port on the S coast of Irian Jaya near the border with Papua New Guinea
Amamapare (6.56) (4°49′S, 136°58′E)	Important copper loading port. Vessels usually complete loading at an outer anchorage
Kaimana (6.69) (3°40′S, 133°45′E)	Minor port with oil terminal
Teluk Lakahia (6.84) (4°02′S, 134°35′E)	A safe anchorage. The bay gives access to Teluk Iteba, a landlocked bay
Fakfak (6.119) (2°56′S, 132°17′E)	Anchorage and oil terminal
Muturi Terminal (6.143) (2°12′S, 133°41′E)	Crude oil loading berth and anchorage off the berth
Selat Sele: Sorong (7.85) (0°53′S, 131°15′E)	An important port; inner anchorage
Selat Sele: Arar Terminal (7.93) (1°02′S, 131°14′E)	Oil terminal
Selat Sele: Kasim Terminal (7.99) (1°18′S, 131°01′E)	Oil terminal
Selat Sele: Salawati Terminal (7.105) (1°21′S, 130°58′E)	Oil terminal
Pulau Waigeo (7.29) (0°15′S, 130°48′E)	Anchorages at Saonek (7.37); also within Teluk Waisai (7.38)
Manokwari (7.214) (0°52′S, 134°05′E)	Important port and oil terminal.
Nabire (7.264) (3°21′S, 135°30′E)	Important port situated at the seaward end of the Irian Jaya highway to the interior
Serui (7.183) (1°53′S, 136°15′E)	Main port of Pulau Sorenarwa
Biak (7.175) (1°11′S, 136°05′E)	Major port, Oil terminal and naval base.
Jayapura (7.296) (2°32′S, 140°43′E)	Major port. with an Oil berth in Teluk Imbi

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PORT SERVICES — SUMMARY

Docking facilities

1.104

1 Within the limits of this volume there are no ports offering full dry-docking facilities. However, there are facilities at Ambon (4.127) which include a floating dock for vessels up to 2000 dwt; and slipway facilities for vessels up to 100 dwt. There are also slipway facilities at Manokwari (7.221), Sorong (7.92) and Jayapura (7.302). Both Ambon and Manokwari have the services of a floating crane with a minimum lifting capacity of 50 tons.

Other facilities

Minor repair services

1.105

1 Within the limits of this volume the following Indonesian ports offer minor repair facilities: Ambon (4.127), Amamapare (6.67), Biak (7.181), Jayapura (7.302), Manokwari (7.221), Merauke (6.28), Sorong (7.92) and Ternate (5.144).

Underwater repairs can be accomplished at Ambon and Manokwari.

In Timor-Leste only Dili (2.169) offers minor repairs.

Compass adjustment

1.106

1 Although not usual for commercial vessels, compass adjustment may be carried out by Hidral (Hydrographic Department of the Indonesian Navy) at Biak.

Deratting

1.107

1 Deratting and deratting exemption certificates are issued at:

Maluku: Ambon (4.127).

Irian Jaya: Sorong (7.92) and Biak (7.181).

1.108

1 Exemption certificates issued at:

West Timor: Tenau-Kupang (2.99).

Timor-Leste: Dili (2.169).

Irian Jaya: Jayapura (7.302), Merauke (6.28) and Manokwari (7.221).

Facilities for the reception of oily waste

1.109

1 Within the limits of this volume there are no ports capable of receiving oily waste. On occasions some ports have been reported as accepting small amounts of oil sludge and waste material. It is always advisable to consult the port concerned prior to arrival if facilities exist for the removal of waste of any kind and the costs involved in doing so.

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NATURAL CONDITIONS

MARITIME TOPOGRAPHY

Charts 942A, 942B, 943, 2788, 4603

Seabed

1.110

1 The submarine features of the seas of Indonesia's Eastern Archipelago are relatively little known.

Within the area covered by this volume sediments of continental origin, formed principally in the deeper parts of the seas, occur in Banda Sea. In the less deep parts of the seas sediments of animal origin, containing chalk and silicates, are widely distributed.

2 Banda Sea is enclosed on its S side by a chain of active and extinct volcanoes known as the Inner Banda Arc. A series of deeps, culminating in Weber Basin, 7439 m (24 408 ft) deep, lies external and parallel to the volcanic chain.

A none-volcanic arc known as the Outer Banda Arc, extends from Buru to Timor, as an enormous U-shaped chain.

Deposits of calcified algae extend over wide areas near the coral reefs.

Volcanic activity

1.111

1 All the islands of the Indonesian Archipelago are relatively young; the earliest dates only from the end of the Miocene, 15 million years ago. Since that time the whole area has been the scene of violent tectonic activity producing earthwrenching volcanic explosions, the process continues today.

2 The importance of volcanoes in Indonesia cannot be overstated. The archipelago contains some 128 centres of volcanic activity, several of which lie on the seabed. The majority of these centres lie along the volcanic arc formed by the islands; within the limits of this volume that arc is known as the Inner Banda Arc (1.110).

3 Many of the volcano land sites are seen to smoke continuously whilst others will suddenly erupt. Current eruptions, and hardly a year passes without a major one, are almost all explosions with scorching ash cloud, white hot lava flows and steam. The 'ladu', an Indonesian word meaning avalanches of ashes and lava, with temperatures reaching 800°C, and 'lahar', flows of cold and hot mud, are particularly dangerous.

4 In this area, eruptions today are small in comparison with the 1883 eruption of Pulau Rakata (Krakatau) (*Indonesia Pilot Volume I*).

For general information on volcanoes, see *The Mariner's Handbook.*

Seismic activity

1.112

1 The area described in this volume lies in the middle of one of the earth's most active seismic zones. Geologically, all the islands of the archipelago were created along several fault lines where the various tectonic plates of the earth collided and folded at the edges producing a great seismic instability of the region.

2 Most of the islands have been subjected to destructive earthquakes at one time or another. In recent years the area has been subjected to about twenty earthquakes of moderate to large intensity each year. Pulau-pulau Banda (3.36) is one such area where there are frequent tremors.

For further details on earthquakes see *The Mariner's Handbook.*

CURRENTS, TIDAL STREAMS AND FLOW

Currents

General

1.113

1 Currents in the area covered by this volume are controlled to a very large extent by the monsoon winds, and by both the monsoon winds and the South Equatorial Current in the NE of the area. As a result, over most of the area the current direction changes twice each year in phase with the change in the monsoon winds. The monsoons will be referred to as the NW monsoon (November to March) and the SE monsoon (May to September), and with April, October and November being the transitional months.

2 Although the monsoons account for the reversals of current during the year, the local winds, on occasions, may not give a good indication of the set of the current since the flow of water is deflected around islands. In addition, in these restricted waters, wind drift currents may cause variations in sea level, which in turn may modify the set and strength of the current.

3 The number of current observations for this area are relatively low and therefore the pattern of the currents has to some extent been deduced from the winds and geographical variation in sea level. It should be appreciated that only the pattern of the non-tidal water movement is described in the following paragraphs.

Current diagrams

1.114

1 In the current diagrams 1.114.1 to 1.114.4, arrows indicating the Predominant Direction, Average Rate and Constancy are shown, which are defined as follows:

Predominant Direction. The mean direction within a continuous 90° sector containing the highest proportion of observations from all sectors.

Average Rate as indicated by the figures in the diagrams. It is emphasised that rates above and below those shown may be experienced.

Constancy, as indicated by the thickness of the arrows, is a measure of its persistence; e.g. low constancy implies marked variability in rate and, particularly, the direction of the current.

Currents south of Nusatenggara

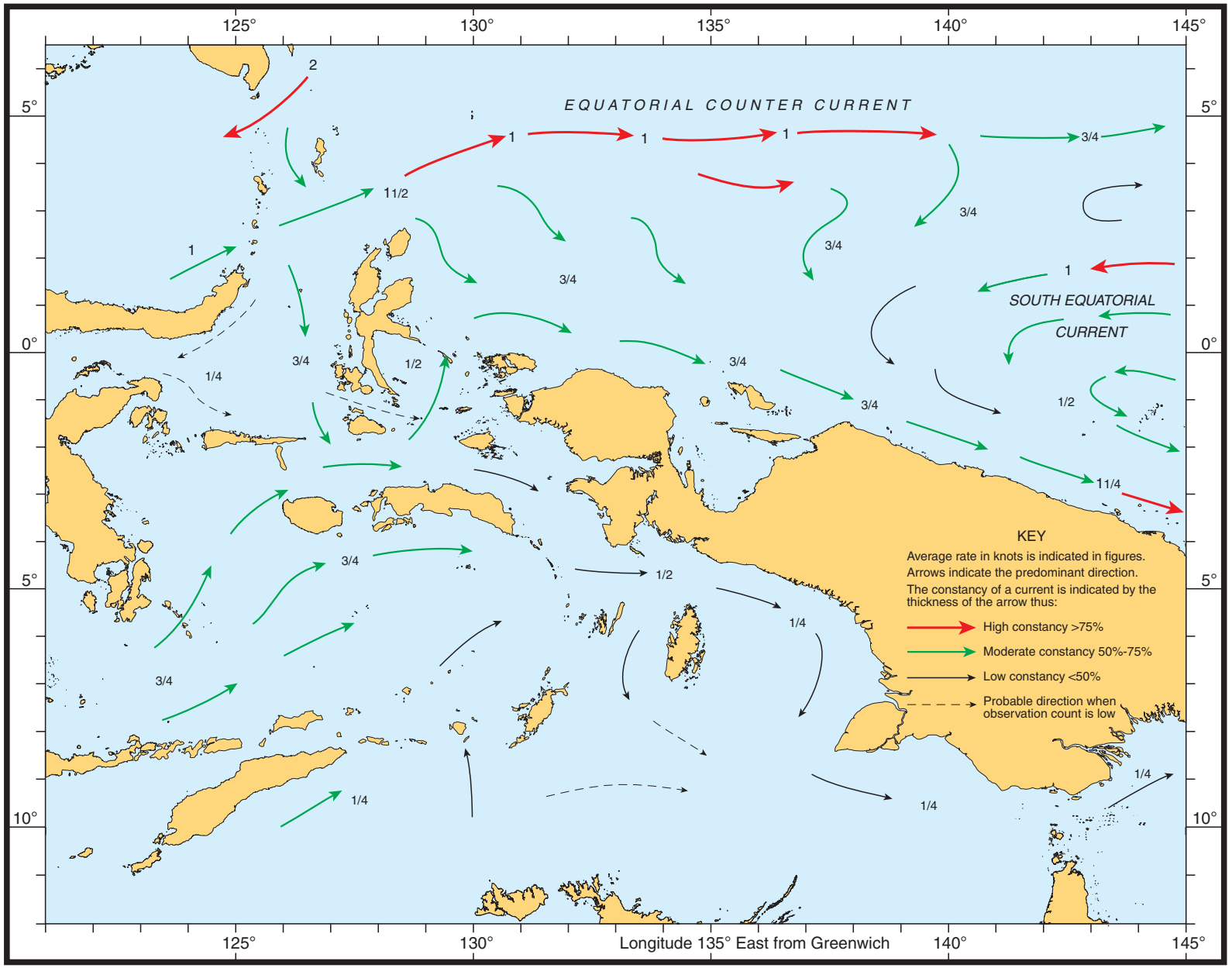
1.115

1 During the SE monsoon months of July, August and September, and the transitional month of October, the current sets W over much of the area. A minor part of the flow is derived from Banda Sea and rather more from Arafura Sea. However, the major flow is the result of the N-setting current on the E flank of the anticlockwise circulation of the South Indian Ocean which then turns W to run alongside the W sets farther N.

2 During the NW monsoon and the early part of the SE monsoon, the currents off the S coast of Nusatenggara set E and are derived from the Equatorial Counter Current. By December, this E-setting current extends E to around 125°E and then steadily recedes towards the W, and by July it lies at the W end of the Indonesian Archipelago. During the height of the NW monsoon one branch of the South Indian Ocean circulation sets NE through Timor Sea but by March the flow in Savu Sea and off the S coast of Timor is reversed setting W to SW.

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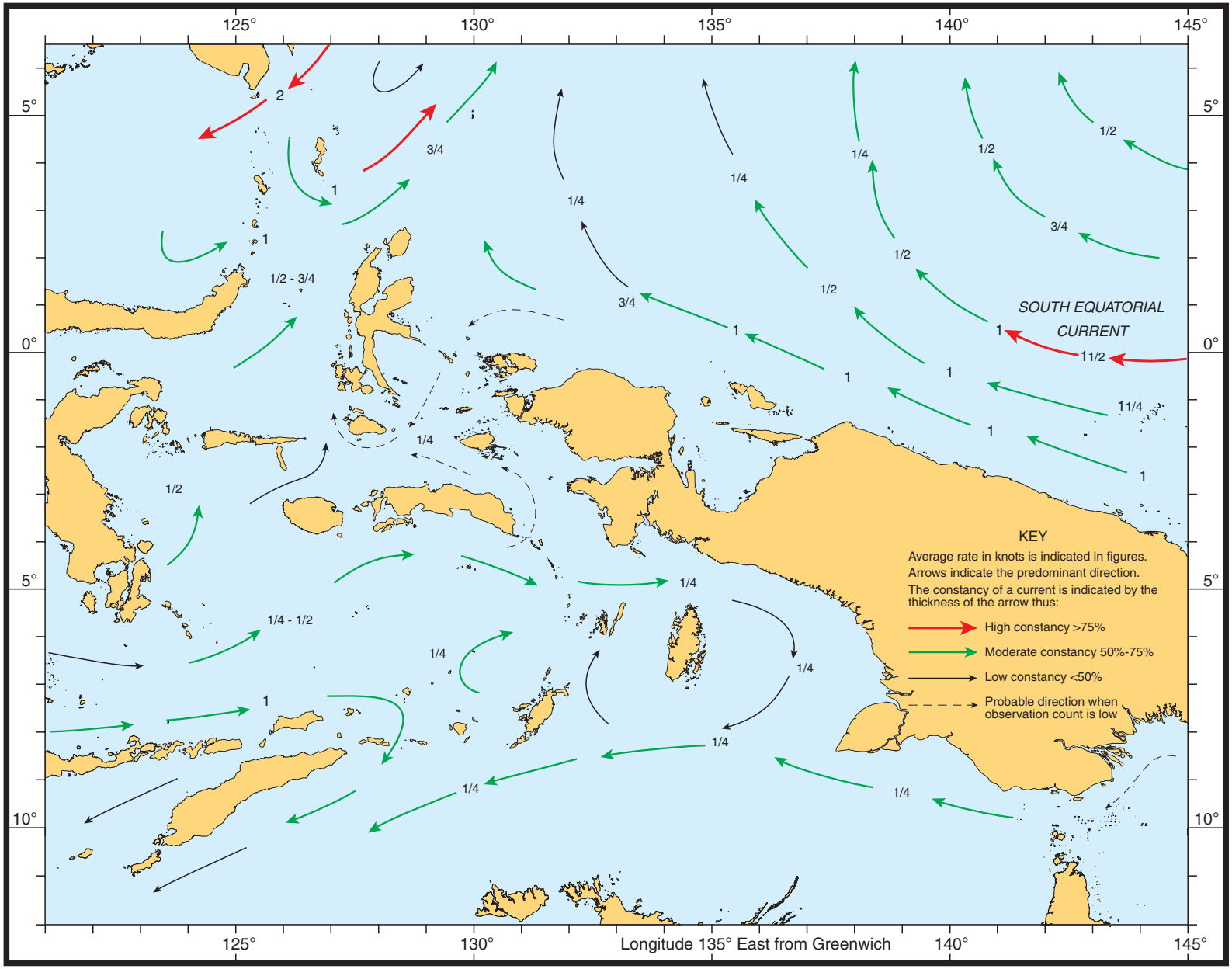
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Predominant surface currents FEBRUARY (1.114.1)

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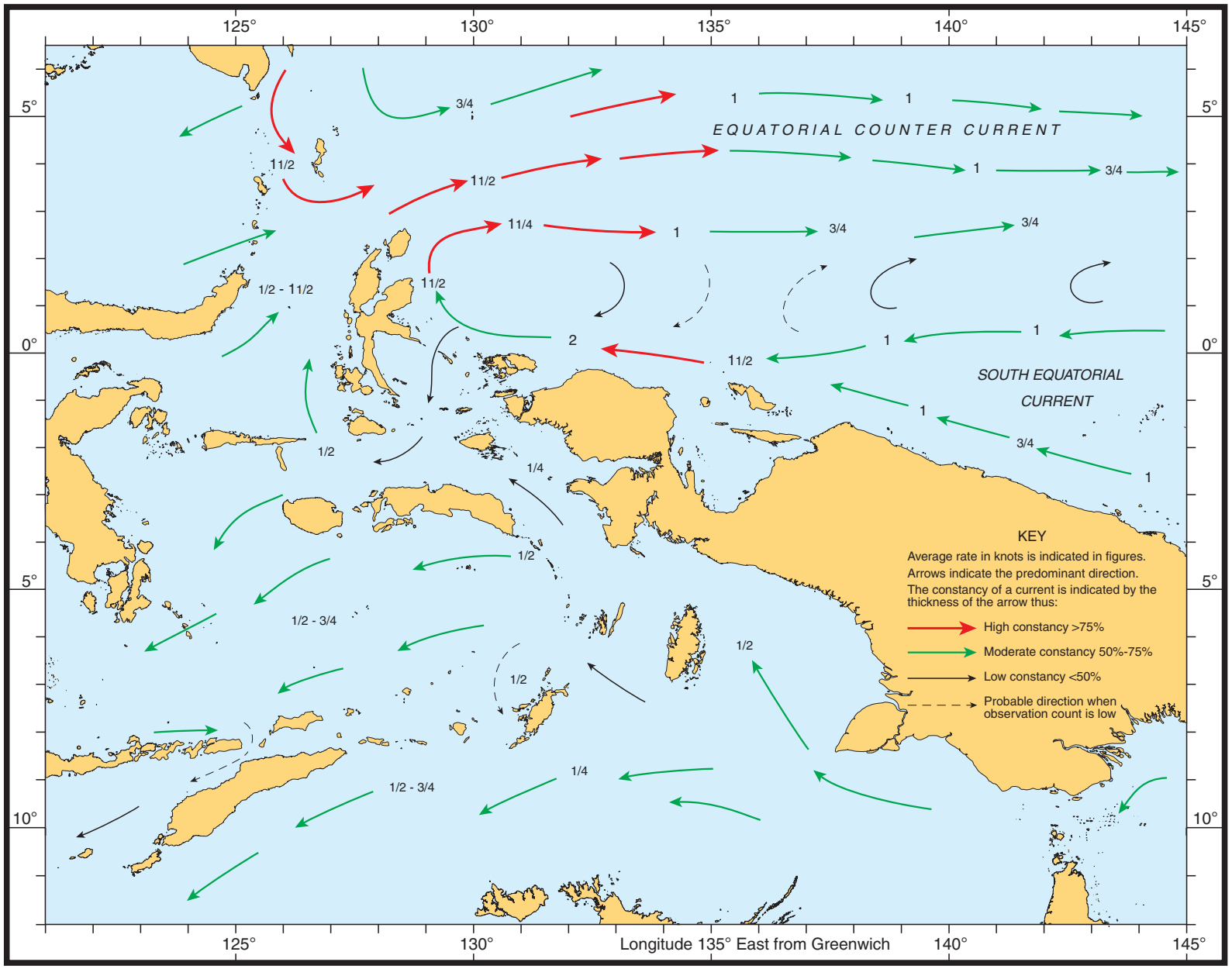
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Predominant surface currents APRIL (1.114.2)

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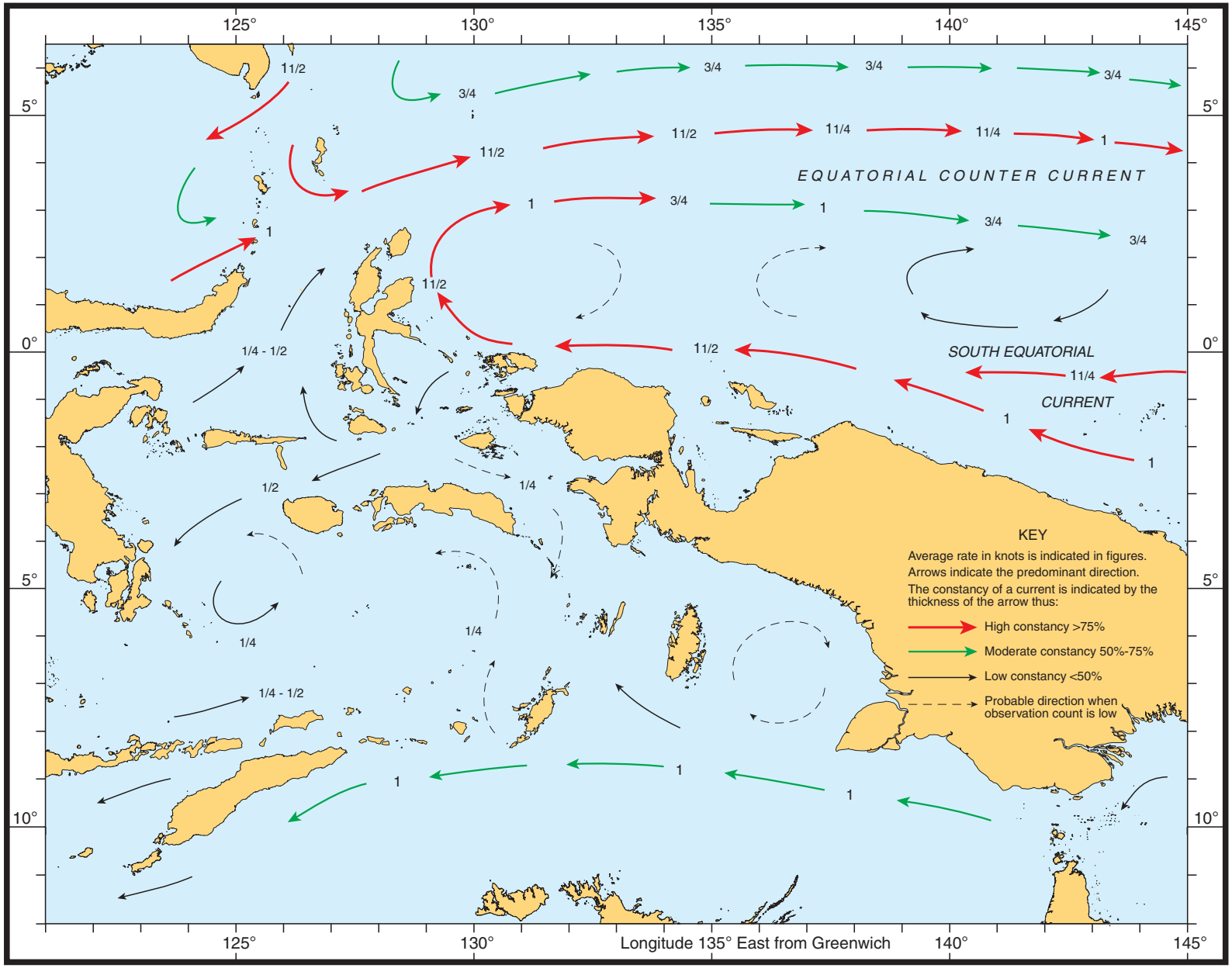
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Predominant surface currents AUGUST (1.114.3)

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Predominant surface currents OCTOBER (1.114.4)

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3 The W and E-going currents S of Nusatenggara have a moderate to high constancy and with an average rate of about 1 kn which on rare occasions may exceed 2½ kn. Farther S the mean rate is around ½ to ¾ kn and with a low to moderate constancy.

Currents in Banda Sea

1.116

1 During the height of the NW monsoon, in the N, the currents set E to NE and during the SE Monsoon W-sets predominate. In the S the currents are weaker with a low to moderate constancy, particularly during the transition months of April, October and November.

Currents in Arafura Sea

1.117

1 In that part of the sea covered by this volume, the current sets predominantly to the W except between December and February when the constancy is low but with an increased frequency of E sets. The average rate varies between ¼ and 1 kn over the year.

Currents in Ceram Sea

1.118

1 The currents in the SE are generally weak with a low constancy. Over the W part, the current predominantly sets W to SW for most the year but during the NW monsoon the current sets E to NE. Rates may exceed 2 kn in the W during July and August.

Currents in Molucca Sea

1.119

1 The constancy of the currents is low and with a predominantly N to NE-setting current for most of the year that joins the E-setting Equatorial Counter Current, and is strongest during the SE monsoon. However during the NW monsoon weak S or SE-setting currents are most likely except for near the NE coast of Sulawesi where a N-setting current may remain.

Currents east of Halmahera

1.120

1 Between May and October the W-setting South Equatorial Current turns N on approaching Halmahera then E to join the Equatorial Counter Current. Its constancy is moderate to high during this period and with rates up to 3 kn between June and August. To the SE of the island the currents are probably weak SW with a low constancy.

2 During the NW monsoon, a SE-setting current off the NE coast joins the NE-setting current off the SE coast and then flows ESE along the coast of Irian Jaya.

Currents in the north of the area

1.121

1 Close to the NE coast of Sulawesi the current sets NE and is joined by a S-setting current, that flows between the islands of Sangihe (3°30′N, 125°35′E) and the island groups 85 miles NE. This current then sets E at around 4°N as the Equatorial Counter Current, and is a major feature during the greater part of the year. Although in April it is replaced by a N-setting current at this latitude. Near the equator, to the N of Irian Jaya, is the W-setting South Equatorial Current which extends S towards the coast but from November to February the current is reversed and sets ESE along this part of the coast. During July and August the WNW-setting current near the coast is strongest and rates may exceed 3 kn.

Tropical cyclone derived currents

1.122

1 Generally only slow moving tropical cyclones produce currents of around 2 kn, and which set in the direction to which the wind is blowing. However, if a tropical cyclone is located near a coast then higher rates are possible due to the piling up of water against the coastline; see *The Mariner's Handbook* for details on tropical cyclones.

Within the limits of this volume only the N part of the region is susceptible to tropical cyclones when tracking S of Philippine Islands and those which form in Arafura Sea and track SW towards Timor. See also 1.141.

Tidal streams

1.123

1 Within the area covered by this volume, there is considerable diurnal inequality. This is least in the NW, on the coasts of Halmahera (0°40′N, 128°00′E) and Sulawesi (2°00′S, 121°00′E) and the islands in Celebes Sea to the N, where, despite the inequality, the tides are classified as semi-diurnal, and the greatest in the SE where, on the E coast of Pulau-pulau Aru (6°00′S, 134°30′E) and a stretch of the SW coast of Irian Jaya, the tide is usually diurnal. See also 1.126 and 1.127.

Flow

1.124

1 The flow of water through the region N of the Indonesian Archipelago is almost entirely derived from the Pacific Ocean whilst to the S from the waters of the Indian Ocean, and Pacific Ocean by way of Torres Strait.

During the NW monsoon, from November to March, Pacific water enters the N part of the region via Halmahera and Ceram Seas, and during the SE monsoon, from May to September via Arafura and Banda Seas.

SEA LEVEL AND TIDES

Sea level

1.125

1 Marked seasonal changes in weather, such as occur during monsoons result in changes of sea level due to the effect of wind and/or barometric pressure. Where sufficient data is available the changes are given in *Admiralty Tide Tables* and are taken into account in predictions.

For further details on some common effects of weather on sea level see *The Mariner's Handbook.*

Tides

1.126

1 In the islands of Nusatenggara, and those E of it, there is a mixture of diurnal and semi-diurnal tides; the straits are predominantly semi-diurnal. The islands of Banda Sea including Pulau-pulau Banda, Ambon, Buru and Seram all experience semi-diurnal tides whereas Pulau-pulau Aru much farther E experiences a mixture of diurnal and semi-diurnal tides with the latter predominating.

2 Between Mindanao and Sulawesi the islands of North Sulawesi also experience both diurnal and semi-diurnal tides again with the latter predominating. Halmahera and the adjacent islands are similar. Along the coasts of Irian Jaya and its adjacent islands, however, the tide is predominantly semi-diurnal.

1.127

1 In general, tidal ranges are not known to be higher than 1·5 m but there are a few exceptions.

The greatest tidal ranges are to be found in Selat Muli (6.36), where it is 5·4 m, and at the head of Teluk Bintuni

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where it is 4·4 m. In the islands fringing Celebes Sea, the range is between 1·5 and 2 m.

SEA AND SWELL

General

1.128

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

Sea conditions

1.129

1 To the S of Nusatenggara, in January, during the height of the NW monsoon, the frequency of 2 m waves is 18% in the far SE increasing to around 23% in central areas, then decreasing to around 15% in the extreme SW of the area. The percentage figures during the height of the SE monsoon is 15% in the extreme SE of the area and then steadily increasing to around 45 to 50% in the extreme SW of the area. In the transitional months March/April and October/November the frequency is generally less.

2 Over Banda and Arafura Seas, waves of 2 m or more can be expected, in January, on around 13% of occasions in the W and about 21% in the E. In April the percentage increases slightly in the W to around 16% but decreases in the E to about 10%, and in July both figures increase to around 20% in the W and 33% in the E. The lowest percentages can be expected in October, with 2 m waves expected on around 3% of occasions in the W and 12% in the E.

3 In the N part of the area (N of Halmahera and Irian Jaya) seas of 2 m or more are experienced on around 15% of occasions in January, 7% in April, 14% in the W and 6% in the E in August, and 9% in October. Over the more open central waters in the W, seas of 2 m and over are expected on around 6% of occasions, except during the SE monsoon when the percentage is around 15%. However in waters sheltered from the SE winds the seas are significantly less.

Swell conditions

1.130

1 In the S of the area the swell is usually low (from W) in January, and low (from E to SE) in July. On the rare occasions when a tropical cyclone affects the area, moderate to heavy swells are possible and these are most likely in the extreme N and S of the area.

To the N of Irian Jaya and Halmahera, the swell is usually low to moderate (from between N and ENE) in January, and low (from S) in the W in July and more variable in the E.

SEA WATER CHARACTERISTICS

Density and salinity

1.131

1 For explanations of density and salinity as applied to sea water, see *The Mariner's Handbook.*

Throughout the area described, surface salinity is extremely variable and contrasts with the uniformity of the sea temperature. The distribution of surface salinity is affected by the monsoons. Salinity is at its maximum during the SE monsoon (May to September) and at its minimum during the NW monsoon (November to March). In general, surface salinities vary little either side of 34% throughout the area covered by this volume.

2 Low salinity values and rapid changes along the coasts may result from land drainage, river discharge, heavy rains and shallow depths.

The typical density of water, at the principal ports, is shown as follows:

Port	*Berth/Harbour*	*Density g/cm^3*
Ambon	Harbour	1·020–1·025
Amamapare	Anchorage	1·025
	Berth	1·000–1·015
Biak	Harbour	1·025
Dili	Harbour	1·025
Gebe	Harbour	1·020
Jayapura	Harbour	1·020–1·025
Manokwari	Berths	1·025
Merauke	Berths	1·015–1·025
Kupang/Tenau	Berths	1·025
Sorong	Harbour	1·020–1·025
Selat Sele	Strait	1·015–1·025
Ternate	Berths	1·025
Waisarisa (Seram)	Berth	1·025

Sea surface temperatures

1.132

1 Diagrams 1.132.1 and 1.132.2 show the mean sea surface temperature for February and August. The largest range is in the SE of the area where the mean sea surface temperature varies from around 29°C in January to 25°C in July and August. Temperatures vary little within the range 27° to 29°C in the N of the area.

Variability

1.133

1 Sea surface temperatures rarely vary by more than 2°C from the monthly mean. In addition, the difference between the mean sea surface temperature, over the more open waters, and the overlying air is also small and rarely exceeds 1°C, although in shallow inshore waters the difference can be significant.

Colour and transparency

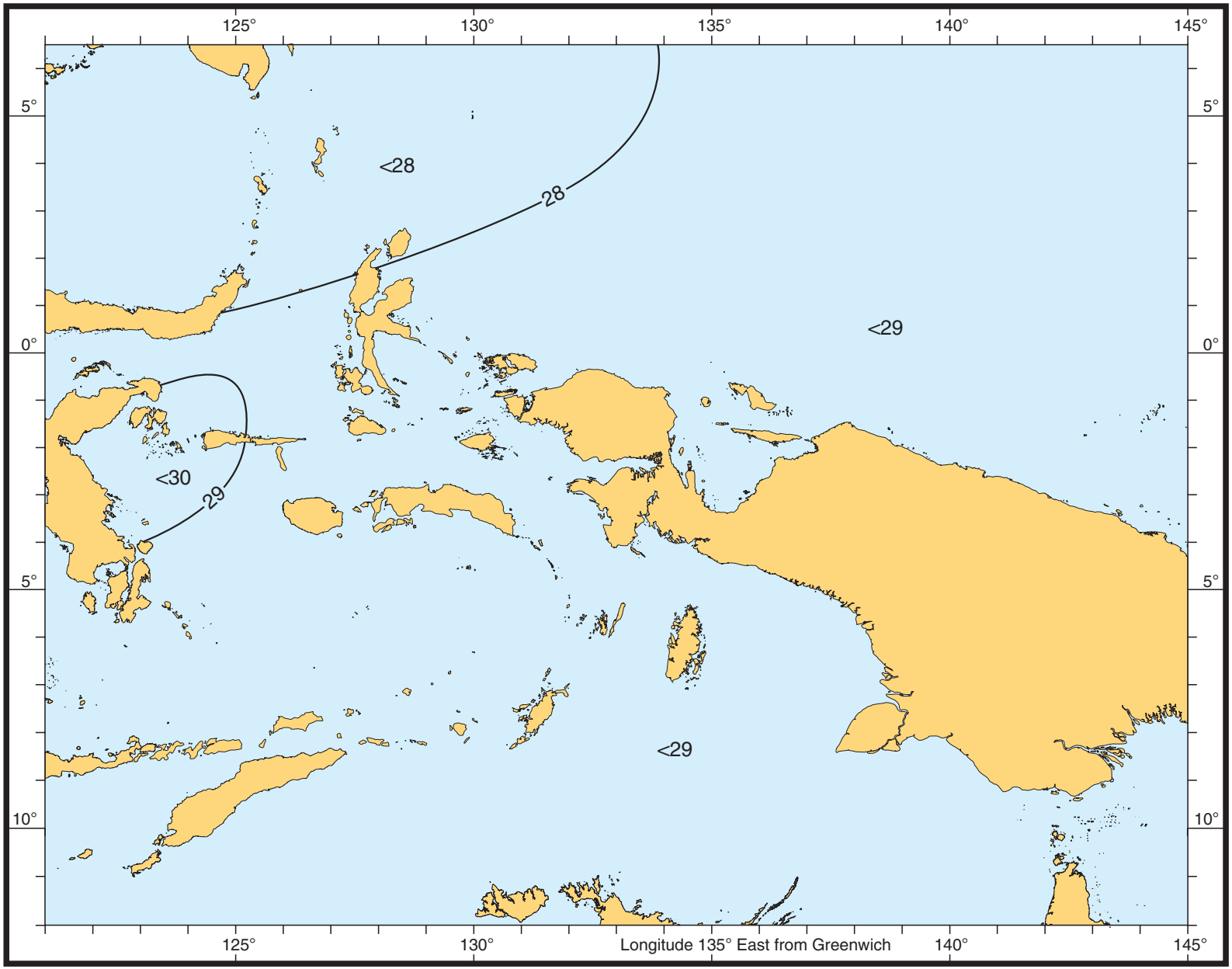
1.134

1 In general, most of the reefs and isolated rocks of the area covered by this volume can be identified by some form of discoloration of the water; however, some do not give away their position readily and will only produce a discoloration over them under the most favourable circumstances. Discoloration may vary, depending on depth and clarity of the sea water in the area, due to sunlight, from an aquamarine blue sea which indicates deep water with depths in excess of 30 m, a blue-green sea with mottled patches indicating depths of at least 15 m, or dark brown or a brown sea, indicating depths less than 10 m. However, on occasions brown patches of fish spawn, and floating debris, have both been mistaken for discoloration over reefs and the subsequent reports of such incidents have caused unnecessary concern.

2 In some of the shallower parts of the seas, ridges of sand, in depths of 5 m or less, will produce a light green or mottled green discoloration over them whilst in other areas ridges of sand in similar depths produce no discoloration whatsoever.

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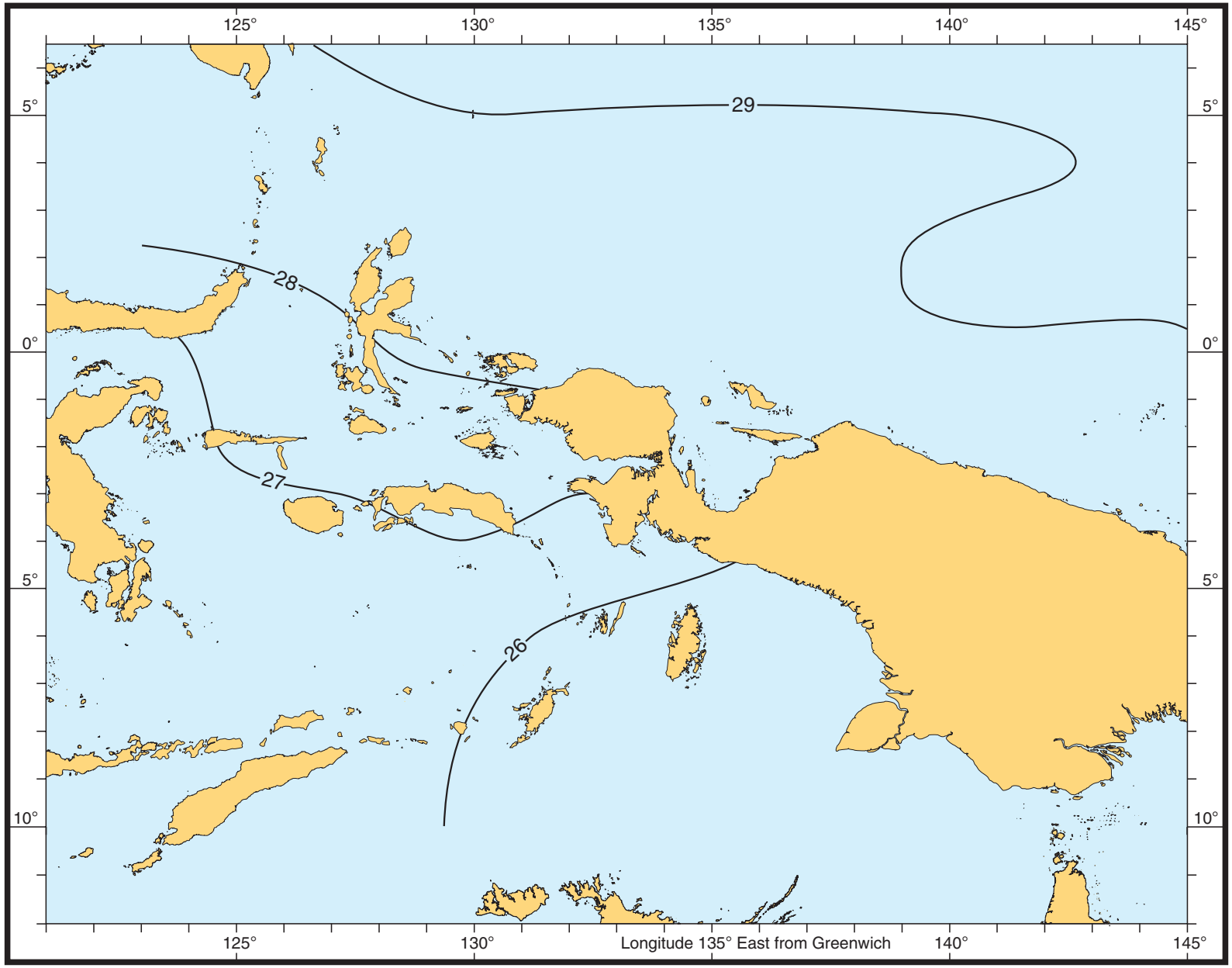
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Mean sea surface temperature FEBRUARY (1.132.1)

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Mean sea surface temperature AUGUST (1.132.2)

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Bioluminescence

1.135

1 Bioluminescence, the production of light by living organisms, may be grouped into three categories: sheet type, often appearing as a diffuse glow extending over a large area of the sea surface; spark type, observed as innumerable flicking points of light, and globe type, appearing as glowing balls of light. The organisms causing these displays include microscopic one-celled organisms called protozoa, minute shrimp-like copepods, and jellyfish.

Some spectacular displays of phosphorescence have been reported in the waters adjacent to North Sulawesi.

2 In Banda Sea large areas of the ocean are luminous at times. the light is very strong, and gives the the water an appearance of a snow covered plain, called by the Indonesians as 'the winter ocean' because of its snowy appearance. It is often seen in July and August, when an expanse of the sea may turn milky white so suddenly that it appears like a light being switched on.

Pyrosoma, a floating sea squirt, occasionally present in great numbers, is responsible for some displays of brilliant green light. However, their appearance is unpredictable.

CLIMATE AND WEATHER

General information

1.136

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 English; for details see *Admiralty List of Radio Signals Volume 3(2).*

General conditions

1.137

1 To the N of about 5°S the climate is hot and humid and with abundant rainfall. The heat and high humidity is oppressive when not modified by onshore winds. Change in the seasons is usually marked only by the prevailing winds associated with the NW monsoon (November to March) and the SE monsoon (May to September). Due to the mountainous interiors of a number of the islands there is significant modification to coastal climates, particularly those in the lee of high ground where the rainfall is often significantly less than in areas exposed to the prevailing wind. To the S of about 5°S the climate is more seasonal with the lowest temperatures in July and August and lower rainfall between June and November.

2 Light to moderate winds predominate although winds are slightly stronger and more constant during the SE monsoon. Strong winds are rare, but thunderstorms with associated violent squalls may develop quite suddenly but these are generally short lived. Tropical depressions or storms are rare but most likely in November and December to the N of about 3°N and S of about 5°S between December and May.

1.138

1 Fog is rare although visibility may fall to fog limits in heavy thundery rain. Apart from the rain, visibility is usually good to excellent during the NW monsoon but there can be considerable haze during the SE monsoon and particularly towards the end of the season when drought conditions may prevail over NW Australia.

Pressure

Average distribution

1.139

1 The average pressure distribution at MSL in January and July is shown in the accompanying diagrams 1.139.1 and 1.139.2 and illustrate the typical mean pressure fields for the NW and SE monsoons. In general the annual pressure only varies by about 1 hPa in the N and around 5 hPa in the extreme S. Day to day variations are small except when on rare occasions a tropical depression or storm may affect the extreme N or S of the area.

Diurnal variation

1.140

1 There is a regular diurnal variation of about 3 hPa, and with maxima at 1000 and 2200 and minima at 0400 and 1600. The following table gives the approximate correction in hPa to be applied at each hour to the observed pressure to allow for diurnal variation:

Local Time	*Correction*	*Local Time*	*Correction*
Midnight	–0·7	Noon	–0·65
0100	–0·2	1300	+0·2
0200	+0·23	1400	+0·9
0300	+0·6	1500	+1·4
0400	+0·7	1600	+1·6
0500	+0·5	1700	+1·5
0600	+0·1	1800	+1·1
0700	–0·5	1900	+0·5
0800	–1·0	2000	–0·1
0900	–1·3	2100	–0·7
1000	–1·3	2200	–0·9
1100	–1·1	2300	–0·9

2 *Note. The above corrections should not be applied to barometric pressure values entered in the weather log or to those transmitted in weather reports.*

Tropical cyclones

1.141

1 To the S of 5°S, tropical cyclones or storms are rare but possible between December and May. Their direction of movement is usually W or SW but may be more erratic in the early stages of development. Tropical cyclones or storms are also relatively rare between 3°N and 6°N and are most likely in November and December. They usually move between W and NW and only very occasionally result in strong winds and high seas affecting areas N of Halmahera and Irian Jaya.

Fronts

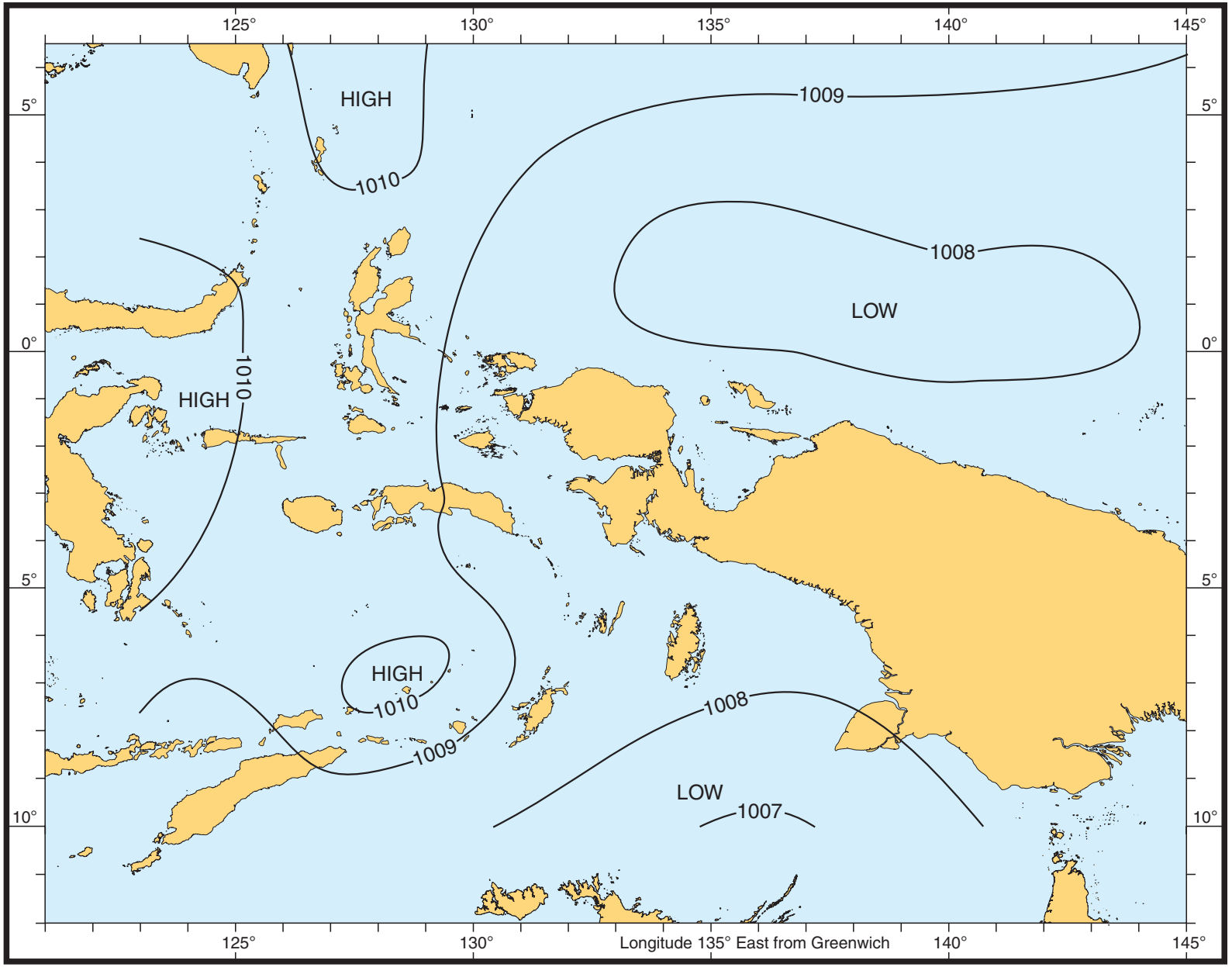
General

1.142

1 The well-marked frontal boundaries between warm and cold air of temperate latitudes are not experienced in this region. Nevertheless, belts or zones do occur, which are similar in some respects to the fronts of higher latitudes; the most important of these is the Intertropical Convergence Zone.

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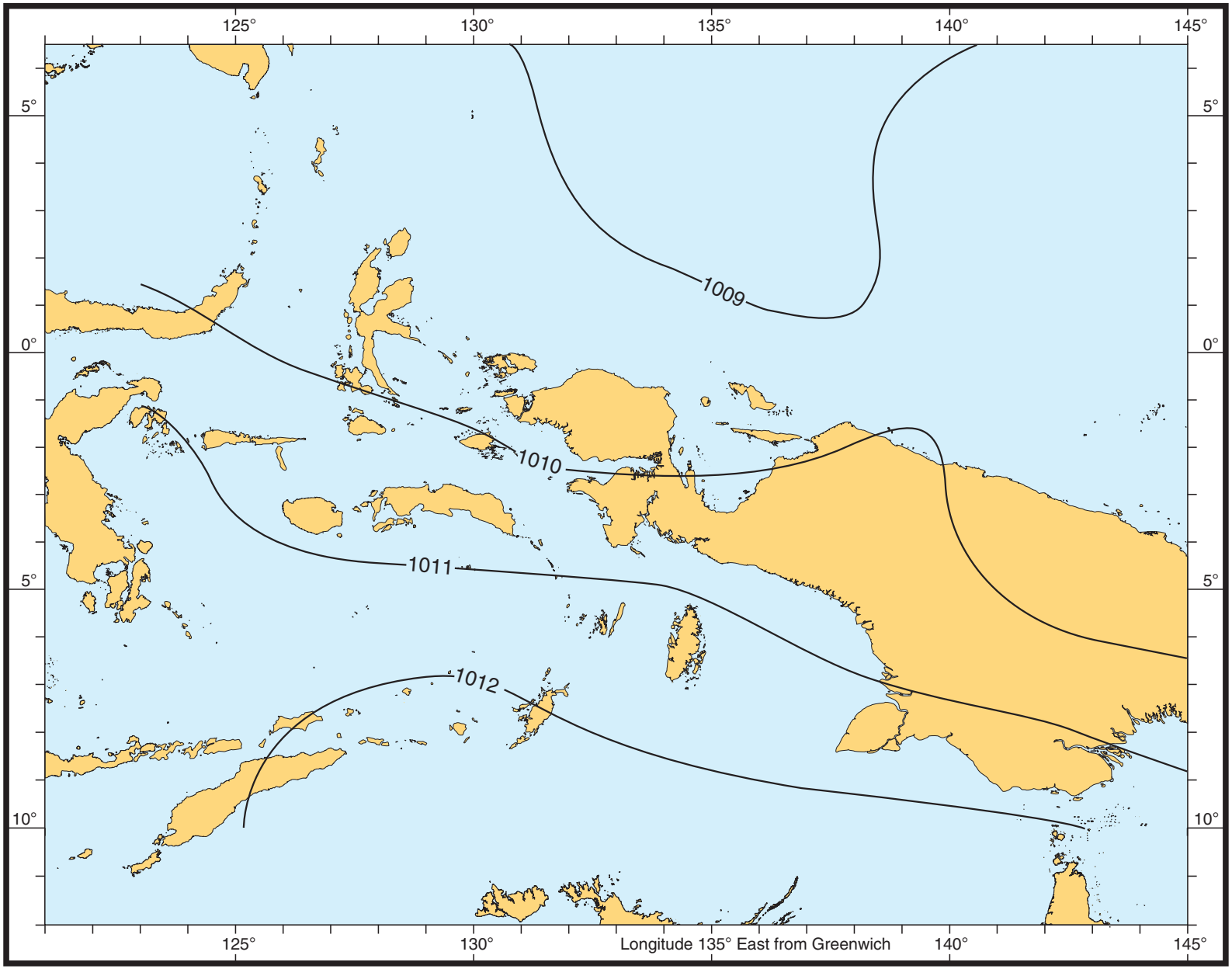
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Mean barometric pressure (hPa) (mb) JANUARY (1.139.1)

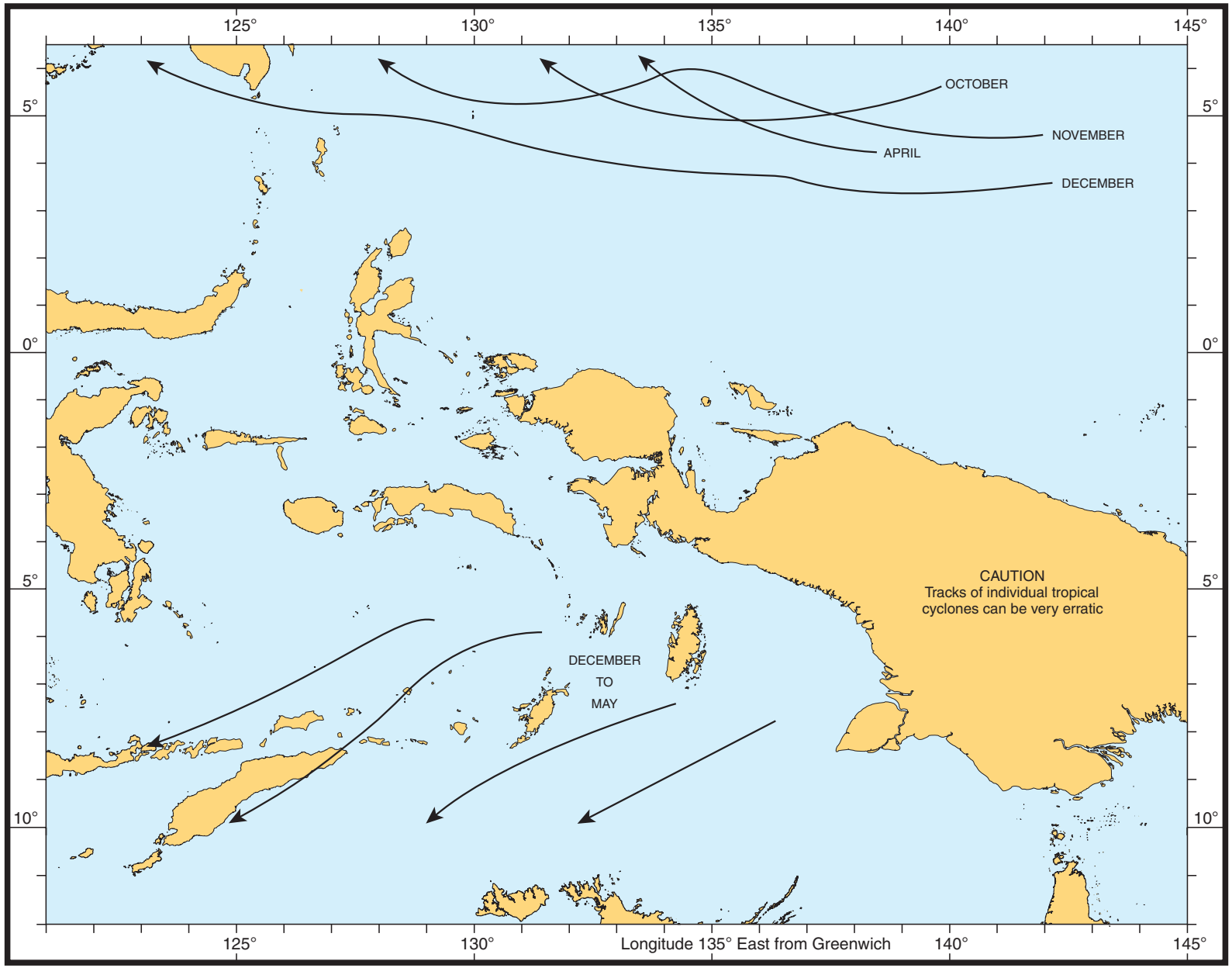
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Mean barometric pressure (hPa) (mb) JULY (1.139.2)

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Typical tracks of cyclones (1.141)

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Intertropical Convergence Zone (ITCZ)

1.143

1 The ITCZ or Intertropical Front represents the boundary between the wind circulations of the N and S hemispheres or, in the area covered by this volume, the zone between the NW and SE monsoon winds. These opposing winds do not produce a well defined boundary but rather a belt of varying width between the S boundary at which the SE winds change to light and variable winds, and a N boundary at which the winds change to NW winds. The ITCZ is orientated approximately W to E and in January lies just S of 10°S and in July N of 6°N. The approximate position of the ITCZ for April and October is shown in diagrams 1.144.2 and 1.144.4

2 The weather varies within the ITCZ and in some places may be marked by heavy cumulo-nimbus cloud with squally thunderstorms and in other parts the thundery activity is low. Apart from the ITCZ, convergence zones or tropical fronts may also develop within the NW and SE monsoons, and are characterised by squally showers and /or thunderstorms.

Winds

Average distribution

1.144

1 Wind roses showing the frequency of wind distribution, and the position of the ITCZ, for the area in January, April, July and October are given in diagrams 1.144.1 to 1.144.4.

Open seas

1.145

1 The main winds over the area covered by this volume are the NE trade winds of the Western-North Pacific and the SE trade winds of the S hemisphere and separated by the Intertropical Convergence Zone (ITCZ).

At the height of the NW monsoon in January, the winds between 4°S and 10°S are moderate from between W and NW, and with a frequency of occurrence of winds of force 5 and above of around 13% in the W and 21% in the E.

2 By mid-April the ITCZ is usually N of 4°S, and with light to moderate E to SE winds between 4°S and 10°S. These E to SE winds slowly freshen and by July the frequency of occurrence of winds of force 5 or more is around 20% in the extreme W and 34% in central and E areas. As the ITCZ starts to move S across the area in October, the frequency of winds of force 5 and above, between 5°S and 10°S, decreases to around 3% in the W and 12% in the E.

3 During the height of NW monsoon in January, the winds between 4°S and 1°N are mainly light to moderate NW, with winds of force 5 and above occurring on about 11% of occasions in the extreme E and 6% elsewhere. North of around 1°N, the winds are mainly moderate NE, with winds of force 5 and above occurring on around 13 to 18% of occasions.

4 In April the winds between 4°S and 1°N become more variable as the ITCZ moves N but with a 3 to 8% chance of winds of force 5 and above. Between May and September the winds between 4°S and 1°N are mainly moderate between S and E but with a 15% occurrence of winds of force 5 or more in the W and 6% in the E. Between mid-October and mid-November, the winds between 4°S and 1°N become more variable as the ITCZ moves S across the area.

Coastal areas

1.146

1 Winds in coastal areas generally follow the general flow of the monsoon winds but can be subject to very significant local variations, which can in some areas completely obscure the normal monsoon flow. This is due to topography, uneven effects of heating and cooling over land and water, narrow channels causing a funnelling of the winds and the orientation of the coast. See *The Mariner's Handbook* for more details.

Land and sea breezes

1.147

1 Land and sea breezes affect all parts of the region although the land breeze is generally weaker than the sea breeze, however, in some coastal areas the land breeze may be accentuated by down slope winds off high ground just inland from the coast. Similarly, these breezes may enhance or reduce the strength of the monsoon wind and/or modify the direction of this wind. Katabatic winds have been mainly recorded overnight during the SE monsoon on the N coasts of Buru, Seram and Irian Jaya. On the S coasts of Buru and Seram, the SE monsoon winds may be reinforced by the afternoon sea breeze. Between Manokwari (0°52′S, 134°05′E) and Jayapura (400 miles ESE), a strong hot and dry S wind known as the *'Wambrau'* occasionally blows during the SE Monsoon season. The wind usually persists for 4 to 8 days with the area of Teluk Irian particularly affected.

Gales

1.148

1 The frequency of winds of force 7 and over is usually less than 1% but increases in January to around 2 to 3% in the extreme NW of the area and to 2 to 4% in the extreme SE. In July the frequency of winds of force 7 or more is also less than 1% over most of the area but around 1 to 2% in the extreme NW of the area and about 2% in the extreme SE.

In coastal areas, winds of force 7 or more are rare and localised. They are mainly the result of thundery squalls, down slope winds off high ground and very occasionally due to the funnelling of the wind in narrow straits at the height the monsoon seasons.

Cloud

Open sea

1.149

1 Over the open seas to the N of around 4°S there is little variation in the total cloud amounts between the two monsoons and with an average of around 5 oktas. The largest variation in average cloud amount occurs in the SW of the area in association with the SE monsoon. In the SW of the area, in January, the mean cloud amount is between 5 and 6 oktas but falls to around 2 to 4 oktas in July as drier air spreads NW from Australia.

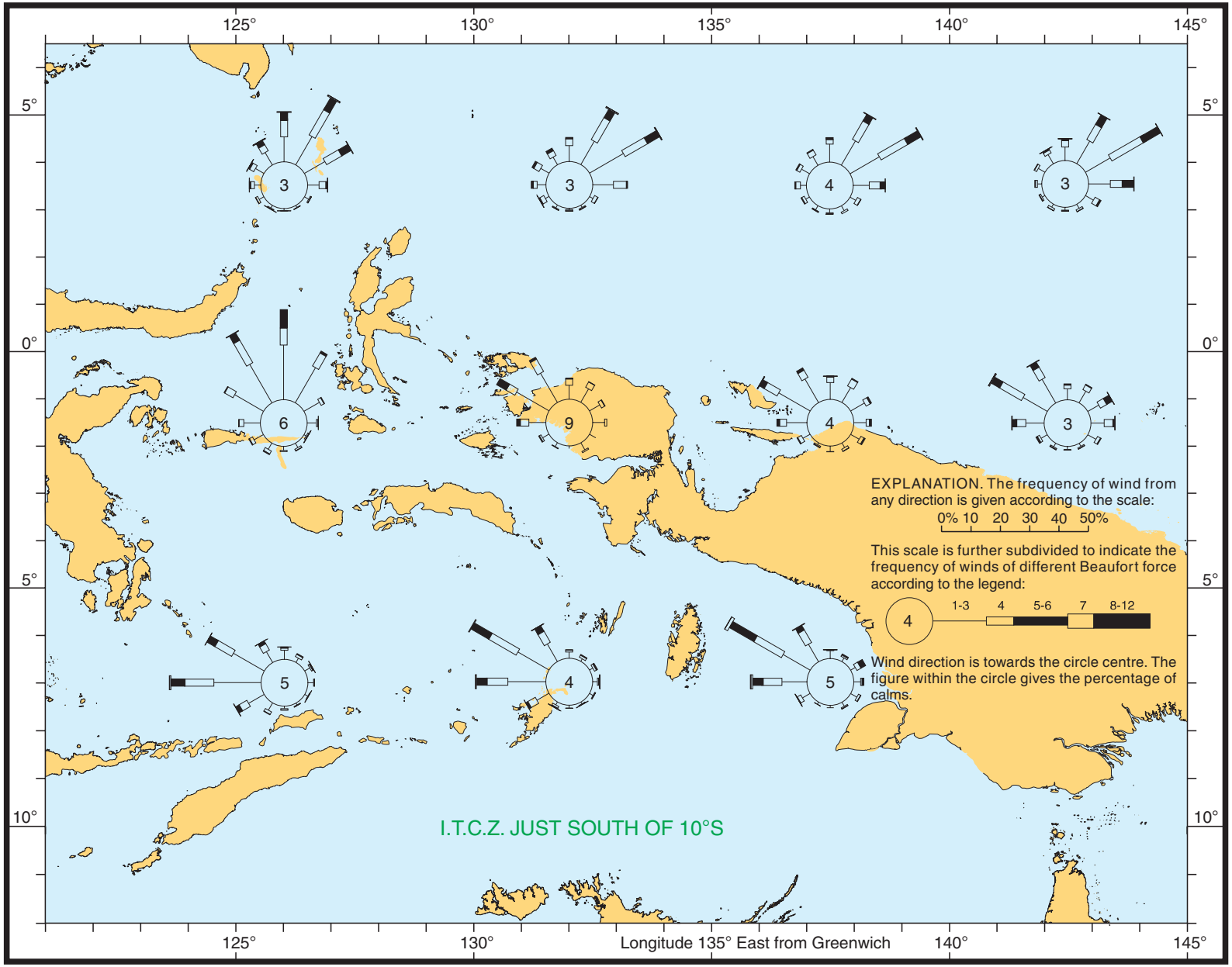
Coastal waters

1.150

1 In coastal areas there is usually a distinct diurnal variation with cumulus type cloud forming during the morning and reaching a maximum around late afternoon. In addition, cloud amounts are generally greatest on wind facing coasts than to the lee of high ground.

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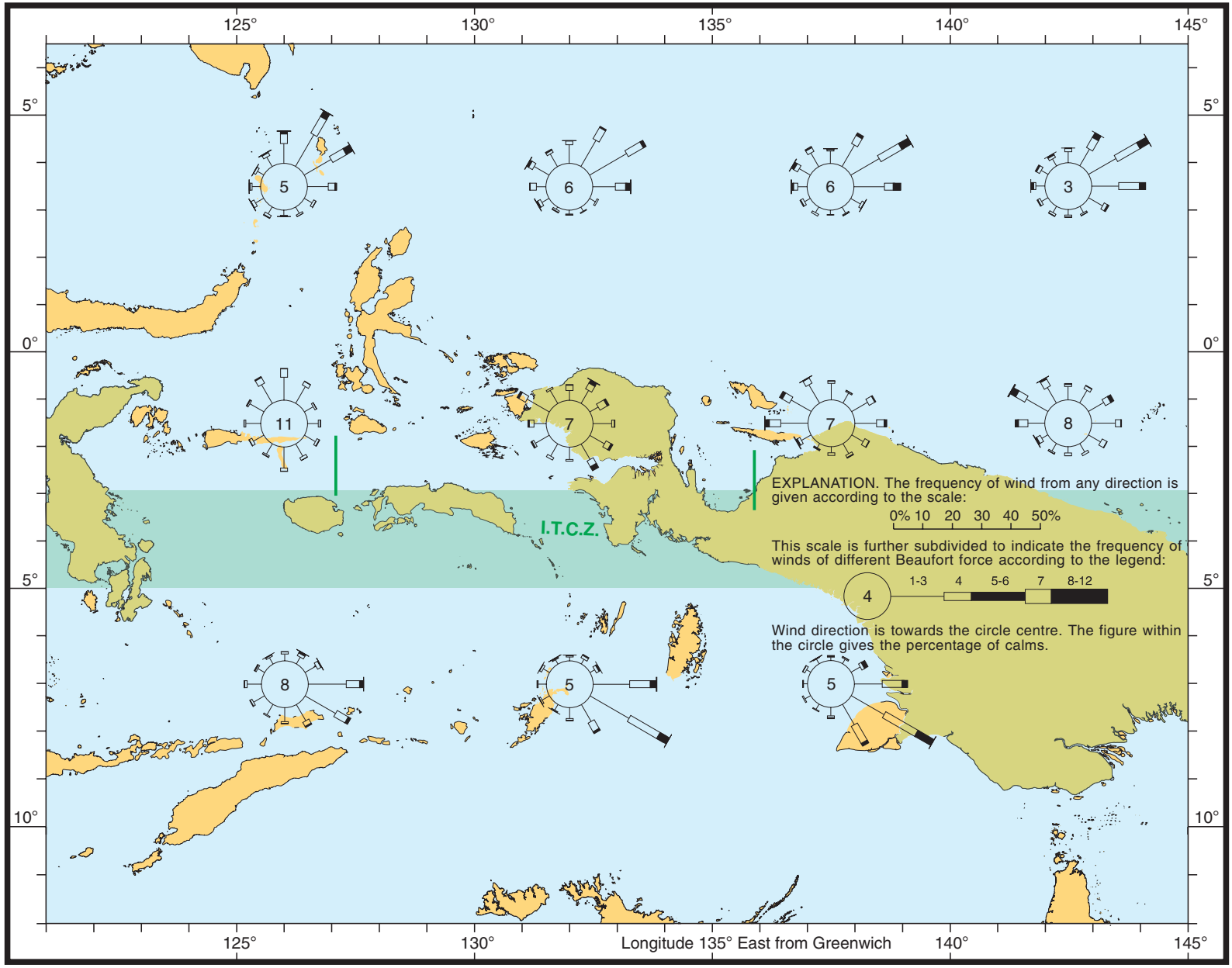
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Wind distribution and Intertropical Convergence Zone (I.T.C.Z.) JANUARY (1.144.1)

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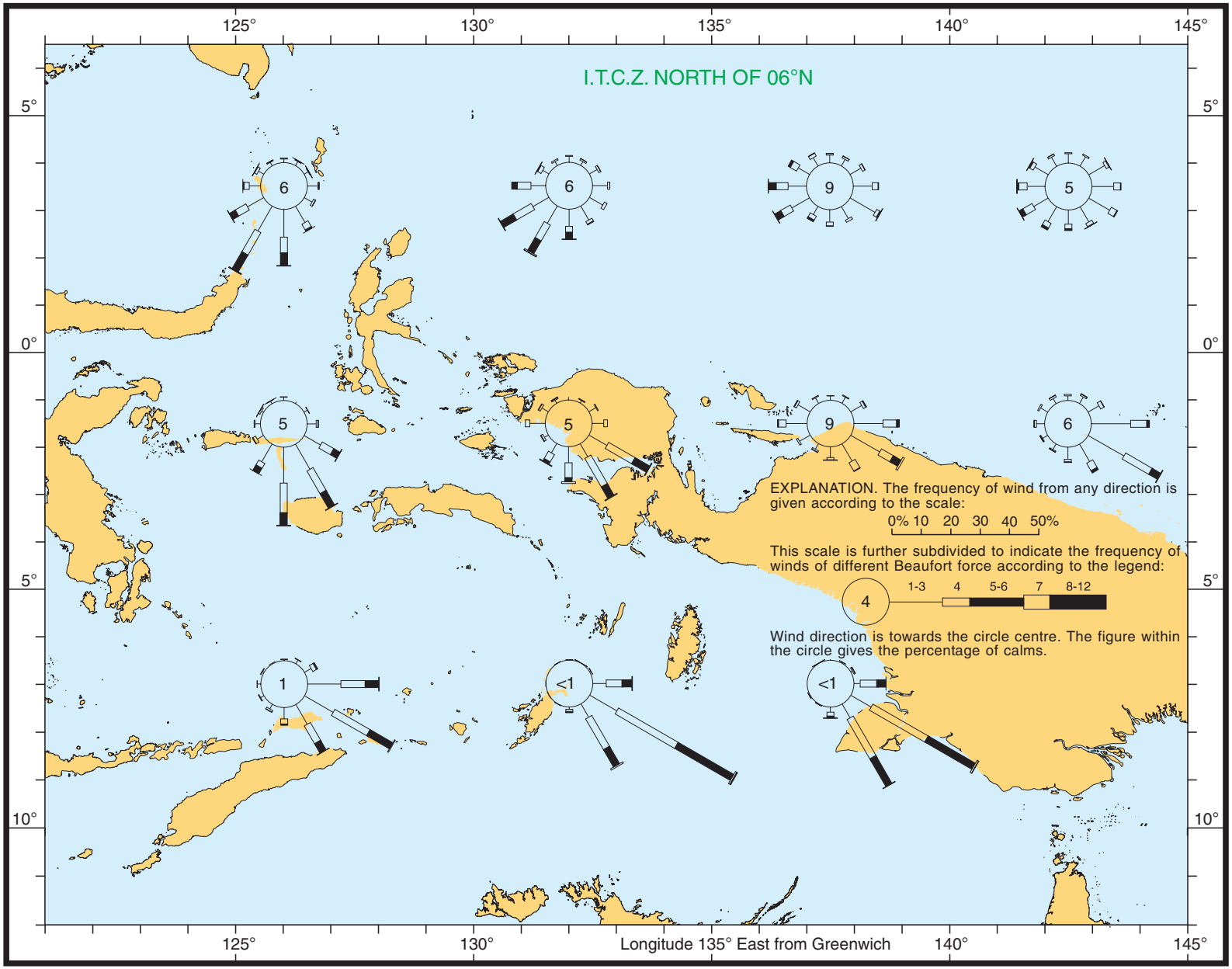
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Wind distribution and Intertropical Convergence Zone (I.T.C.Z.) APRIL (1.144.2)

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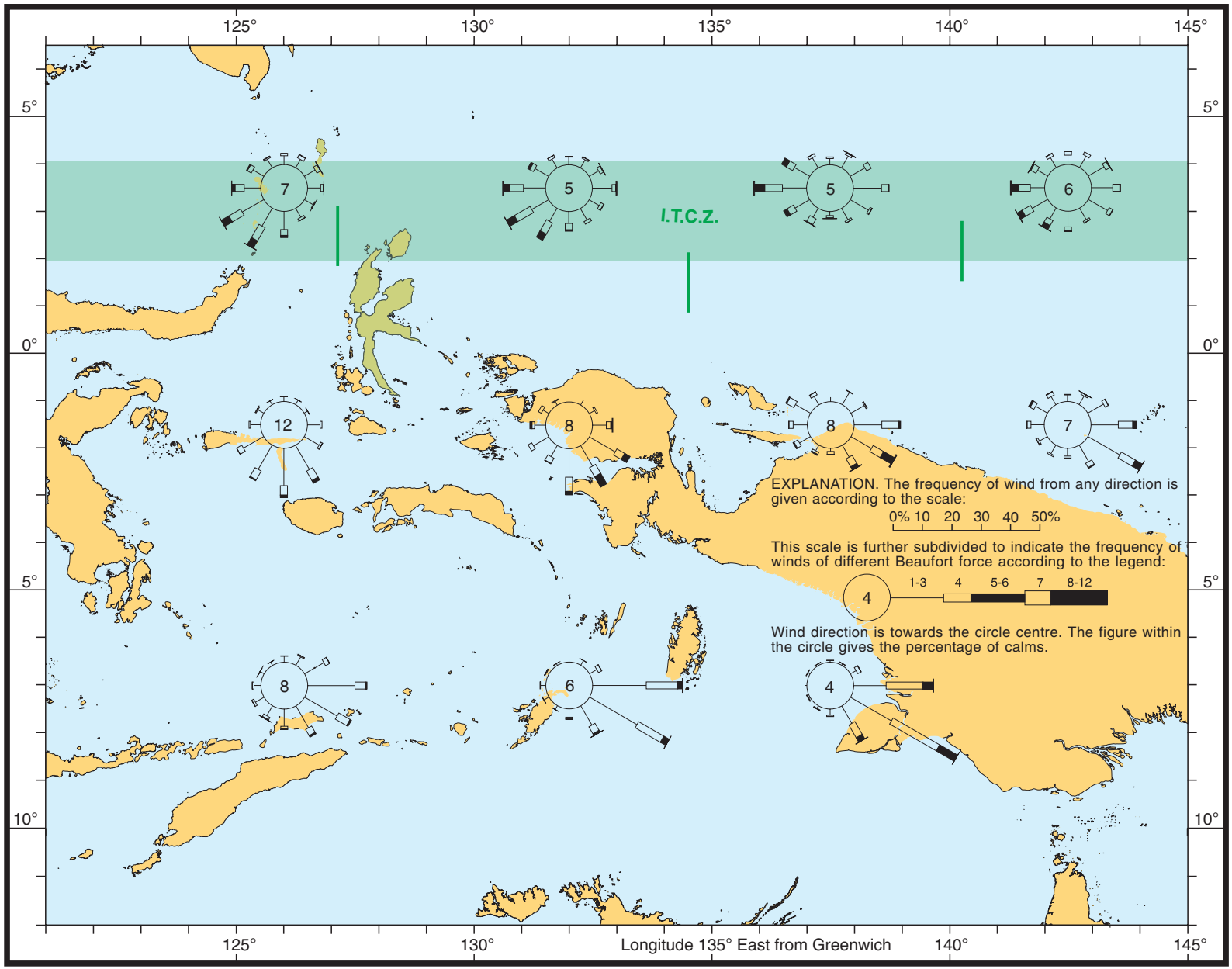
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Wind distribution and Intertropical Convergence Zone (I.T.C.Z.) JULY (1.144.3)

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Wind distribution and Intertropical Convergence Zone (I.T.C.Z.) OCTOBER (1.144.4)

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Precipitation

General

1.151

1 The mean annual rainfall in coastal areas is high and varies from around 1500 to 3000 mm, and exceeds 4500 mm in mountainous areas inland. Only in the SW of the area is there a definite dry sea season (June to November). Elsewhere the seasonal rainfall varies greatly, depending on the climate stations exposure to the monsoon winds and with somewhat drier conditions generally prevailing in the lee of high ground. Rainfall can vary significantly from month to month and from year to year.

2 Most of the rainfall occurs during heavy showers and thunderstorms. Periods of more continuous rain are possible within the ITCZ and near rare tropical cyclones. Snow is unknown except at levels over 4250 m in Irian Jaya.

Thunderstorms

1.152

1 The frequency of thunderstorms is high but very varied across the area, with an average of around 50 days with thunderstorms per year. Thunderstorms tend to be most frequent during the period when the ITCZ transits the area. See the Climatic Tables (1.159) for the mean monthly frequency of thunderstorms at a number of coastal stations within the area.

Fog and visibility

1.153

1 Visibility is generally good except in thundery showers when the visibility may fall to near fog limits. Fog is rare over the open sea although patchy radiation fog may form on coasts towards dawn, particularly near the marshy areas and river valleys, but generally clears soon after sunrise.

2 During the NW monsoon the visibility is usually good to excellent outside showers but during the SE monsoon it tends to be hazy and with the haze becoming thicker and more widespread in the S and SW parts of the area between August and November. During this period, visibilities below 5 miles are reported on around 10 to 20% of occasions. When a drought affects NW Australia the haze is often particularly thick and may spread across most of the S half of the area and on rare occasions the visibility may decrease to around 1 mile.

Air temperatures

Open sea

1.154

1 The mean air temperature over the open seas, N of 5°S, is around 27° to 28°C throughout the year. Between 5° and 10°S the mean air temperature is around 28°C in February and between 25° and 26°C in July and August. Over the open seas the mean air temperature rarely varies by more than 1° or 2°C of the monthly mean.

Coastal waters

1.155

1 In coastal areas the average daily maximum temperature is around 31°C and the average daily minimum about 23°C. Extreme temperatures of 40°C and 15°C have been recorded at some locations. See the Climatic Tables (1.159) for the mean temperatures at a number of coastal stations within the area of this publication.

Humidity

General

1.156

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 during the afternoon.

Open seas

1.157

1 Over the open seas in the SE of the area and to the N of about 5°S the average humidity is around 79 to 81% throughout the year. In the SW of the area, between 5° and 10°S, the mean humidity is around 80% in January and 75% during the dry season between July and October.

To the S of Nusatenggara the average humidity is around 76 to 78% but in the far SE of the area the humidity may decrease to as low as 64% in July.

Coastal areas

1.158

1 In coastal areas the daily variation in humidity is much greater than over the more open waters and averages around 80 to 90% around dawn and 70 to 75% in the afternoon. Areas in the lee of high ground, or affected by land breezes, may record significantly lower than average values whereas on wind facing coasts higher than average values are likely.

CLIMATIC TABLES

1.159

1 The tables, which follow, give data for several coastal stations (Diagram 1.159) 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. Precipitation along mountainous wind facing coasts can be considerably higher than at sea to windward.

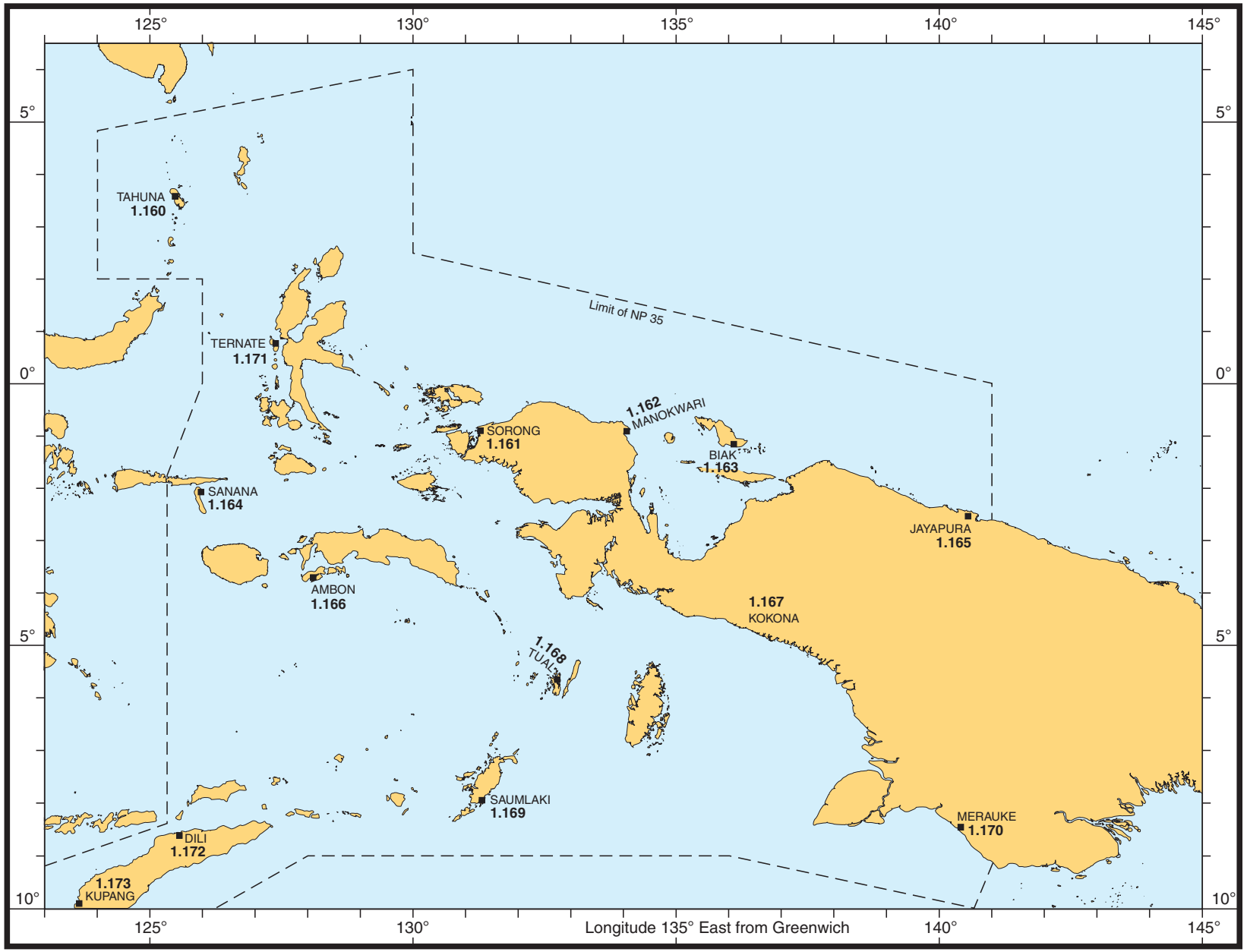
Similarly precipitation in the lee of high ground is generally less.

Air temperature over the sea is less variable than over the land.

Topography has a marked effect on local conditions.

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Location of climatic stations (1.159)

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1.160

WMO No 97008

TAHUNA (03° 35′ N, 125° 28′ E) Height above MSL – 38 m
Climatic Table compiled from 10 years observations, 1990 to 1999

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		
												0700									1300												
		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 mm or more	N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0700	1300	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1012	29	24	31	22	86	80	6	6			8	20	12	0	1	2	1	0	55	23	33	12	0	1	3	3	3	22	3	4	0	1	2
February	1013	29	24	31	22	85	78	6	6			17	30	9	1	1	2	1	3	37	20	44	12	0	⊕	4	1	9	11	4	6	0	⊕	2
March	1013	30	24	31	22	82	76	5	5			4	35	17	⊕	2	3	2	2	36	12	48	19	1	1	2	2	4	11	4	6	⊕	⊕	2
April	1012	30	24	31	23	81	76	5	5			4	34	14	1	2	5	2	0	38	8	42	20	2	4	5	4	1	13	3	5	0	⊕	4
May	1012	31	24	32	22	82	77	4	5			2	13	14	6	2	7	⊕	1	55	6	21	25	5	3	15	8	2	17	2	5	0	⊕	7
June	1012	31	24	32	22	82	76	4	6			1	4	8	7	4	16	1	0	60	3	5	27	8	7	28	7	1	15	2	6	0	⊕	5
July	1012	30	23	32	22	82	74	5	5			⊕	2	11	2	12	13	1	1	58	2	5	27	7	8	28	2	2	19	2	6	0	⊕	3
August	1012	31	23	32	21	79	71	4	5			1	2	9	6	12	20	⊕	0	50	4	6	20	6	9	32	7	⊕	16	3	6	0	⊕	4
September	1012	31	23	32	21	79	70	4	5			2	2	18	4	10	14	1	⊕	49	2	6	26	6	10	29	5	1	15	3	6	⊕	1	4
October	1012	31	23	32	22	80	73	5	6			2	5	23	4	6	12	2	2	45	4	11	21	5	5	26	5	2	20	3	5	0	⊕	7
November	1011	30	24	32	22	83	77	5	6			4	5	11	1	1	12	6	1	59	8	13	11	2	3	16	10	7	31	2	4	⊕	⊕	6
December	1012	30	24	31	22	85	78	6	6			7	18	3	1	⊕	4	3	3	61	22	24	8	2	0	4	5	9	26	2	4	⊕	1	5
Means	1012	30	24	33*	20§	82	75	5	6			4	14	12	3	5	9	2	1	50	9	21	19	4	5	16	5	3	18	3	5	–	–	–
Totals	–	–	–	–	–	–	–	–	–			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	3	51
Extreme values	–	–	–	34†	17‡	–	–	–	–			–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	10	10				10		10				10									10									10		10	10	10

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

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

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1.161

WMO No 97502

SORONG/JEFMAN (00° 56′ S, 131° 07′ E) Height above MSL – 3 m
Climatic Table compiled from 11 to 30 years observations, 1960 to 1999

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 1 mm or more	0700									1300											
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0700	1300	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1010	31	25	32	23	82	74	6	6	195	15	25	18	12	15	8	4	1	6	11	39	23	0	2	6	7	6	15	2	5	8	0	0	4
February	1011	31	25	32	24	83	75	6	6	195	14	25	17	5	15	8	5	2	14	10	36	21	1	5	3	2	6	20	7	6	8	0	1	3
March	1010	31	25	32	24	82	74	6	5	180	15	18	19	8	16	8	3	2	13	13	37	29	2	3	6	3	7	12	3	5	8	0	0	9
April	1011	32	25	33	23	85	76	6	6	238	18	10	8	14	37	15	4	1	5	7	25	29	2	1	6	4	14	18	2	5	8	0	⊕	10
May	1011	31	25	32	23	85	76	5	6	360	20	⊕	6	8	41	21	7	5	3	10	20	11	1	5	25	15	2	17	3	5	8	0	⊕	12
June	1011	31	25	33	23	86	76	6	6	361	19	2	3	3	39	32	9	3	1	9	16	5	3	4	31	17	7	11	6	6	7	0	1	9
July	1011	30	25	32	24	88	78	6	6	350	20	1	1	2	30	46	10	4	⊕	7	10	2	⊕	5	39	24	7	9	4	7	9	0	⊕	8
August	1012	31	25	32	23	86	74	6	5	254	17	⊕	2	2	26	47	12	3	2	5	10	5	1	5	42	22	4	5	6	9	10	0	⊕	7
September	1011	31	25	33	23	84	72	6	6	213	16	1	2	3	27	49	13	⊕	1	5	12	2	2	3	33	25	7	10	7	7	7	0	3	12
October	1011	32	25	33	22	84	73	6	6	193	15	2	1	5	22	44	12	3	3	8	17	9	2	5	19	13	10	20	6	5	7	0	3	12
November	1010	31	25	33	22	83	76	6	6	173	14	4	5	8	31	26	8	4	4	10	26	8	2	4	10	11	14	16	8	4	6	0	2	12
December	1010	31	25	32	24	82	75	6	6	178	18	11	6	16	21	10	7	3	10	16	39	3	1	4	4	9	9	25	6	4	6	0	⊕	11
Means	1011	31	25	34*	20§	84	75	6	6	–	–	9	7	7	26	26	8	3	5	9	25	12	1	4	18	12	8	15	5	6	8	–	–	–
Totals	–	–	–	–	–	–	–	–	–	2890	202	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0	10	109
Extreme values	–	–	–	35†	18‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	11	11				11		11		30		11									11									11		11	11	11

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

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

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1.162

WMO No 97530

MANOKWARI/RENDANI (00° 53′ S, 134° 03′ E) Height above MSL – 3 m
Climatic Table compiled from 17 to 30 years observations, 1960 to 1999

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 1 mm 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					
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1009	31	23	33	21	84	74	6	7	286	15	5	1	1	3	4	2	2	10	73	24	5	3	10	7	⊕	0	27	24	2	7	0	0	2
February	1009	31	23	32	22	85	75	7	7	279	17	8	0	1	1	3	3	3	10	70	27	2	2	15	2	5	0	27	20	2	7	0	1	2
March	1010	31	23	33	22	83	72	6	6	336	20	10	1	⊕	4	3	1	4	11	66	30	2	3	5	7	2	⊕	44	8	2	10	0	⊕	3
April	1009	31	23	33	22	82	74	6	6	294	17	6	1	3	7	4	0	2	5	72	30	2	18	18	3	2	3	16	7	2	7	0	2	3
May	1009	32	23	33	22	81	73	5	6	215	15	3	1	4	10	1	1	1	2	77	20	5	24	16	4	2	4	13	11	2	6	0	1	3
June	1009	31	23	33	22	81	72	5	6	191	14	4	1	2	8	2	⊕	1	4	78	14	4	10	28	3	3	4	10	24	2	6	0	⊕	3
July	1009	31	23	33	22	83	74	6	6	165	13	2	2	2	15	2	0	1	2	74	11	3	15	39	2	⊕	2	9	20	2	5	0	⊕	1
August	1010	31	23	33	22	81	70	6	5	147	13	2	2	4	13	4	1	1	3	72	8	3	26	29	⊕	⊕	1	17	15	2	6	0	1	1
September	1010	32	23	33	22	80	70	5	6	134	13	3	1	4	13	4	0	3	1	73	13	6	18	35	5	⊕	4	11	8	2	6	0	1	4
October	1009	32	23	33	22	79	72	6	6	104	11	4	2	5	14	5	⊕	1	3	67	13	2	22	32	1	1	2	7	20	2	6	0	3	7
November	1009	31	23	33	22	79	74	6	7	180	13	3	2	3	10	3	1	1	3	71	19	0	9	33	9	⊕	5	12	14	2	6	0	2	5
December	1008	32	23	33	22	82	74	6	6	276	17	3	0	4	7	4	2	2	5	75	14	1	6	26	8	⊕	2	23	20	1	6	0	⊕	6
Means	1009	31	23	33*	20§	82	73	6	6	–	–	4	1	3	9	3	1	2	5	72	18	3	14	25	4	1	2	17	16	2	6	–	–	–
Totals	–	–	–	–	–	–	–	–	–	2607	178	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0	11	40
Extreme values	–	–	–	34†	19‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
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

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1.163

WMO No 97560

BIAK/MOKMER (01° 11′ S, 136° 07′ E) Height above MSL – 11 m
Climatic Table compiled from 17 to 30 years observations, 1960 to 1999

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 1 mm 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					
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1010	30	24	32	22	84	80	6	6	257	20	10	4	5	3	5	8	24	16	25	10	4	7	7	6	15	32	11	10	4	6	⊕	⊕	5
February	1010	30	24	32	22	84	80	6	7	237	18	12	7	5	2	4	8	26	16	21	11	5	8	5	7	20	30	9	6	4	6	⊕	1	3
March	1010	30	24	32	22	83	79	6	6	246	19	8	7	11	5	4	8	23	13	20	8	7	11	8	9	16	27	6	7	5	7	⊕	⊕	4
April	1010	30	24	32	23	84	80	6	6	213	18	6	8	14	8	6	11	22	9	15	10	9	13	7	6	12	25	11	7	5	7	⊕	⊕	6
May	1010	31	24	32	22	83	80	6	6	245	18	4	9	23	9	5	7	15	3	24	9	8	20	9	8	9	22	7	8	4	7	⊕	⊕	6
June	1010	30	24	32	23	83	79	6	6	233	19	6	9	22	10	6	9	11	6	22	7	7	23	9	8	10	20	9	7	4	6	⊕	1	6
July	1010	30	24	31	22	84	78	6	6	268	18	6	8	18	11	8	9	15	4	22	5	6	23	9	9	15	21	5	7	4	6	0	1	7
August	1010	30	24	32	22	83	76	6	6	256	20	3	8	19	9	9	10	16	5	21	4	6	22	12	8	16	24	5	4	5	7	⊕	⊕	8
September	1010	31	24	32	22	81	76	6	6	226	19	5	5	21	16	8	9	14	4	19	10	5	21	13	10	13	17	6	6	5	6	⊕	1	8
October	1010	30	24	32	23	82	77	6	6	182	14	3	5	22	14	10	8	10	5	23	6	7	17	11	9	9	27	5	11	4	6	0	1	10
November	1009	31	24	32	22	82	77	6	6	184	16	4	3	12	8	9	14	23	6	21	6	4	9	8	6	15	36	8	8	5	6	⊕	⊕	11
December	1009	30	24	32	23	83	78	6	6	253	19	3	2	3	3	6	13	41	13	16	8	3	3	4	5	19	44	8	6	5	7	⊕	⊕	9
Means	1010	30	24	33*	21§	83	78	6	6	–	–	6	6	15	8	7	9	20	8	21	8	6	15	8	8	14	27	7	7	4	6	–	–	–
Totals	–	–	–	–	–	–	–	–	–	2800	218	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	5	83
Extreme values	–	–	–	35†	19‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
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

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1.164

WMO No 97600

SANANA (02° 05′ S, 126° 00′ E) Height above MSL – 2 m

Climatic Table compiled from 14 to 30 years observations, 1983 to 1999

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 1 mm 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					
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1010	32	19	33	19	83	72	6	7			7	1	6	8	3	2	9	7	58	10	6	18	14	9	4	17	11	12	2	5	⊕	0	2
February	1010	32	21	33	19	83	72	6	7			7	2	4	5	1	1	7	9	65	18	8	13	8	6	3	13	13	19	2	5	⊕	0	2
March	1011	32	20	34	19	84	72	6	7			6	4	9	6	3	1	2	7	63	9	8	21	15	9	4	10	9	16	1	5	0	⊕	2
April	1011	31	21	33	19	85	73	6	6			2	3	9	5	4	2	6	4	66	4	7	24	22	6	3	7	6	19	1	4	0	⊕	2
May	1011	32	21	33	20	85	74	6	6			1	3	11	15	3	3	3	3	59	3	5	27	28	7	3	5	4	20	2	4	0	0	2
June	1011	31	20	32	19	85	74	6	6			1	1	15	16	3	⊕	2	1	61	1	5	29	31	6	2	5	2	19	3	5	⊕	⊕	1
July	1011	31	20	32	19	85	73	6	6			1	2	14	22	4	⊕	3	1	54	1	6	35	29	7	4	4	3	12	4	6	⊕	⊕	
August	1012	30	20	31	18	83	70	6	6			1	1	14	23	3	1	2	1	55	1	6	42	37	2	2	1	1	8	4	5	0	⊕	
September	1012	31	20	32	19	82	68	5	6			⊕	3	14	10	6	1	3	3	60	1	6	35	32	8	3	4	⊕	10	2	4	0	⊕	1
October	1011	32	21	33	19	81	69	5	6			2	5	20	12	6	2	2	1	49	1	6	32	26	10	2	5	2	15	2	4	⊕	⊕	2
November	1010	32	21	33	19	82	72	6	6			2	5	13	10	4	32	3	1	59	3	4	21	20	12	6	8	4	20	1	4	0	⊕	3
December	1010	32	21	34	19	83	73	6	7			4	4	9	9	4	2	8	5	55	5	3	9	19	12	7	16	11	19	2	4	⊕	⊕	4
Means	1011	32	20	34*	17§	83	72	6	6	_	_	3	3	12	12	3	2	4	3	58	5	6	26	23	8	3	8	5	16	2	5	_	_	_
Totals	_	_	_	_	_	_	_	_	_			_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	⊕	⊕	21
Extreme values	_	_	_	37†	16‡	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
No. of years observations	17	17				17		17				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

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1.165

WMO No 97690

JAYAPURA/SENTANI (02° 34′ S, 140° 29′ E) Height above MSL – 99 m
Climatic Table compiled from 17 to 30 years observations, 1960 to 1999

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		
												0700									1300												
		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 1 mm or more	N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0700	1300	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1008	32	23	34	21	82	66	6	6	223	16	⊕	1	2	12	3	4	19	0	59	1	0	6	12	2	3	63	4	9	2	8	⊕	⊕	1
February	1008	32	23	34	21	82	68	7	7	248	16	1	0	2	7	3	4	24	1	58	⊕	1	4	8	3	4	68	2	10	2	8	⊕	0	2
March	1008	32	23	34	22	80	67	6	6	235	16	0	0	3	14	2	5	24	⊕	51	⊕	⊕	4	19	2	3	57	2	12	3	8	0	⊕	2
April	1009	32	24	34	22	82	70	6	6	173	14	0	0	4	22	2	3	14	0	56	2	0	11	23	3	7	36	2	17	2	5	0	⊕	3
May	1009	32	23	34	21	80	69	6	6	119	11	0	1	6	30	4	2	4	0	54	1	1	10	32	4	5	32	⊕	15	2	5	0	⊕	4
June	1009	32	23	33	22	82	70	6	6	89	10	0	1	9	31	3	1	1	0	55	1	2	18	39	2	4	20	⊕	14	2	5	0	0	4
July	1009	32	23	33	21	82	67	6	6	85	10	0	⊕	11	35	2	2	⊕	0	50	⊕	⊕	16	55	6	3	10	1	9	2	6	0	0	3
August	1009	32	23	33	21	81	67	6	6	108	12	⊕	1	8	41	4	1	3	0	42	1	1	20	50	4	2	12	⊕	9	3	6	⊕	0	3
September	1009	32	23	34	22	79	66	6	6	113	12	0	0	15	44	5	1	3	0	31	2	0	16	52	3	2	16	1	8	3	6	0	⊕	3
October	1009	33	23	34	22	78	67	6	6	107	11	1	⊕	8	45	3	2	3	0	38	⊕	⊕	13	43	2	5	25	1	10	3	6	0	⊕	6
November	1008	32	23	34	22	79	68	6	6	162	13	1	⊕	8	19	5	6	11	0	51	1	⊕	10	28	4	6	36	2	16	2	6	0	⊕	7
December	1007	32	23	34	21	79	66	6	7	197	15	0	0	2	13	3	6	28	2	46	1	1	4	13	1	4	64	6	7	3	8	⊕	0	4
Means	1008	32	23	35*	20§	80	68	6	6	–	–	⊕	⊕	7	27	3	3	11	⊕	49	1	1	11	31	3	4	36	2	11	2	6	–	–	–
Totals	–	–	–	–	–	–	–	–	–	1859	156	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	⊕	42
Extreme values	–	–	–	36†	19‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
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

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1.166

WMO No 97724

AMBON/PATTIMURA (03° 42′ S, 128° 05′ E) Height above MSL – 12 m
Climatic Table compiled from 17 to 30 years observations, 1960 to 1999

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		
												0700									1300												
		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 1 mm or more	N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0700	1300	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1008	32	24	33	22	78	67	6	7	118	14	11	10	14	5	1	2	4	17	38	10	3	4	5	16	15	13	27	8	3	6	⊕	⊕	7
February	1008	32	24	33	22	79	67	6	7	127	12	14	8	11	5	⊕	1	7	20	35	8	3	4	5	15	14	16	32	4	3	6	⊕	1	5
March	1009	31	24	33	22	78	68	6	6	139	14	11	9	17	5	1	2	3	9	44	6	3	2	8	22	23	8	20	8	3	5	0	⊕	7
April	1009	31	24	32	23	82	73	6	6	201	18	5	12	17	4	3	1	1	5	52	5	2	3	16	25	21	5	8	15	2	4	0	⊕	5
May	1009	30	24	31	22	84	76	6	6	411	23	4	12	12	5	3	1	1	4	57	3	3	8	21	30	16	2	5	11	1	4	⊕	⊕	5
June	1010	29	23	30	22	86	79	7	7	469	24	8	16	8	13	4	2	1	4	44	2	6	14	31	22	10	1	2	12	2	5	⊕	⊕	2
July	1010	28	23	30	21	88	80	7	7	534	25	6	9	8	19	6	2	2	6	41	3	6	11	42	20	5	0	1	12	3	5	⊕	⊕	1
August	1011	28	23	30	21	85	78	7	7	435	23	4	6	11	30	6	1	⊕	2	40	⊕	4	10	47	22	4	0	2	11	3	5	⊕	1	2
September	1010	29	23	30	21	82	73	6	6	312	20	3	6	9	22	10	3	⊕	2	46	⊕	2	2	34	42	12	1	1	5	2	5	⊕	⊕	1
October	1010	30	23	32	22	80	72	6	6	133	13	2	6	9	15	11	4	1	2	51	2	1	2	14	45	27	2	2	5	2	5	⊕	1	5
November	1008	31	24	33	22	78	69	6	6	74	11	3	11	22	15	3	2	2	2	40	3	5	1	8	39	32	4	4	6	2	5	⊕	1	8
December	1008	32	24	33	22	78	68	6	7	113	13	5	8	19	8	1	4	5	12	36	5	2	1	8	18	24	12	21	9	3	5	⊕	⊕	7
Means	1009	30	24	34*	19§	81	72	6	6	–	–	6	10	13	12	4	2	2	7	44	4	3	5	20	26	17	5	11	9	2	5	–	–	–
Totals	–	–	–	–	–	–	–	–	–	3066	210	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	4	52
Extreme values	–	–	–	–	36†	16‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
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

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1.167

WMO No 97796

KOKONAO/TIMIKA (04° 43′ S, 136° 26′ E) Height above MSL – 3 m
Climatic Table compiled from 17 to 30 years observations, 1960 to 1999

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 1 mm 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					
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1009	33	23	34	21	84	69	6	7	173	14	11	4	7	4	3	1	8	7	55	5	1	6	12	31	18	13	4	11	2	6	⊕	1	
February	1009	33	23	35	21	84	68	6	7	213	15	11	5	6	9	3	1	7	7	50	4	3	7	10	18	20	18	9	11	2	6	⊕	1	
March	1009	33	23	35	21	82	69	6	7	242	17	13	5	9	5	3	2	8	11	46	6	3	1	11	28	23	13	6	9	2	6	0	⊕	
April	1010	32	23	34	22	84	72	6	7	253	18	10	6	14	7	3	1	3	10	46	2	2	6	17	29	12	9	6	16	2	5	0	1	
May	1010	31	23	33	21	86	72	6	7	272	19	14	3	14	18	4	0	2	6	40	3	2	13	26	30	7	6	3	11	3	5	0	⊕	
June	1011	30	23	32	21	90	78	7	7	365	23	9	4	14	18	6	1	3	2	42	1	3	15	30	26	6	3	2	14	3	5	⊕	2	
July	1011	29	23	31	21	91	79	7	7	412	24	4	4	15	19	5	2	4	4	43	2	3	11	30	30	7	3	2	11	3	6	0	1	
August	1012	29	23	32	21	91	79	7	7	357	23	5	4	12	19	6	1	3	6	43	3	2	15	31	31	5	2	1	10	3	6	0	2	
September	1011	31	23	33	21	87	73	7	7	224	15	9	3	11	19	4	3	2	7	41	3	3	8	26	32	8	5	3	12	3	6	⊕	3	
October	1010	32	23	34	21	84	73	7	7	152	13	12	5	12	16	5	1	4	7	38	9	5	6	18	37	8	4	3	10	2	6	0	4	
November	1009	33	23	35	22	82	71	7	7	126	11	16	4	9	10	4	2	6	10	39	6	4	7	13	27	13	8	6	14	3	5	⊕	1	
December	1009	33	23	35	22	81	70	6	7	193	13	15	3	5	9	2	4	6	7	49	5	3	6	11	23	20	17	5	11	2	6	0	1	
Means	1010	32	23	35*	20§	87	73	6	7	–	–	11	4	11	13	4	1	5	7	44	4	3	8	19	29	13	9	4	11	2	6	–	–	–
Totals	–	–	–	–	–	–	–	–	–	2982	205	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	17	128
Extreme values	–	–	–	36†	18‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
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

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1.168

WMO No 97810

TUAL/DUMATUBUN (05° 41′ S, 132° 45′ E) Height above MSL – 12 m
Climatic Table compiled from 17 to 30 years observations, 1960 to 1999

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 1 mm 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					
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1009	31	24	32	22	87	82	7	7	388	24	9	1	2	4	2	2	25	30	26	8	⊕	1	3	3	3	31	38	14	5	7	0	1	3
February	1009	31	24	33	22	87	81	7	7	353	24	7	1	1	2	1	2	31	32	24	10	1	⊕	3	1	2	35	39	9	6	8	0	1	2
March	1010	32	23	33	21	85	79	6	7	354	23	5	1	3	11	3	1	21	21	34	8	1	2	16	2	1	26	28	17	5	6	⊕	⊕	2
April	1010	32	24	32	22	85	81	6	6	258	19	5	2	8	37	3	1	4	8	32	6	3	3	46	3	3	9	9	19	5	6	0	⊕	2
May	1011	31	24	32	22	83	78	6	6	236	17	2	2	6	72	6	1	1	⊕	10	⊕	1	5	74	6	2	1	1	11	8	8	0	⊕	⊕
June	1011	31	24	31	21	83	78	6	6	146	12	0	⊕	3	89	3	0	0	0	5	1	0	3	91	2	⊕	⊕	0	2	9	10	0	0	⊕
July	1012	30	24	30	21	83	79	6	6	101	10	1	1	3	91	3	0	0	0	2	0	1	1	92	3	0	0	⊕	2	10	10	⊕	⊕	⊕
August	1012	30	24	31	21	82	76	6	6	80	9	0	0	1	91	3	1	1	⊕	2	⊕	0	2	94	2	0	⊕	0	⊕	10	10	⊕	⊕	⊕
September	1012	31	24	32	21	81	74	6	5	65	7	1	1	3	85	2	1	1	⊕	6	3	2	3	87	2	1	⊕	1	1	9	9	⊕	⊕	1
October	1011	32	24	34	22	80	75	6	5	72	8	1	1	5	77	3	⊕	2	1	11	1	⊕	1	77	4	2	4	3	7	7	7	0	1	3
November	1010	32	24	34	23	80	77	6	6	166	13	8	2	8	32	6	1	7	9	27	11	⊕	3	24	5	5	14	16	22	5	5	⊕	3	6
December	1009	31	24	33	23	86	82	7	7	339	21	13	1	1	6	1	1	22	28	29	8	⊕	1	1	3	3	36	32	16	5	7	0	1	5
Means	1010	31	24	35*	18§	83	78	6	6	_	_	4	1	4	48	3	1	10	11	18	5	1	2	50	3	2	13	14	10	7	8	_	_	_
Totals	_	_	_	_	_	_	_	_	_	2558	187	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	⊕	7	24
Extreme values	_	_	_	38†	16‡	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
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

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1.169

WMO No 97900

SAUMLAKI/OLILIT (07° 59′ S, 131° 18′ E) Height above MSL – 24 m
Climatic Table compiled from 17 to 30 years observations, 1960 to 1999

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		
												0700									1300												
		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 1 mm or more	N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0700	1300	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1010	32	25	33	23	83	73	6	7	332	19	3	1	2	1	1	6	44	23	20	4	1	3	3	5	10	48	20	5	6	9	0	⊕	9
February	1010	31	24	33	22	85	76	6	7	234	17	6	2	1	0	⊕	6	46	23	17	2	1	4	3	3	14	55	15	4	5	10	⊕	⊕	9
March	1010	32	24	33	22	82	72	6	6	267	18	4	2	11	3	2	6	29	17	26	4	5	20	7	6	9	30	13	5	4	8	⊕	⊕	5
April	1011	31	24	32	22	80	74	6	6	140	12	5	4	41	18	2	2	3	11	15	2	4	50	21	3	3	6	6	5	5	7	⊕	1	5
May	1012	30	24	32	22	77	74	6	6	314	18	1	4	63	29	1	⊕	1	⊕	1	⊕	4	59	33	1	1	⊕	⊕	⊕	8	9	⊕	⊕	1
June	1013	30	24	31	21	78	73	6	6	160	12	0	3	57	37	1	0	0	0	2	1	3	51	43	2	0	0	⊕	0	9	10	⊕	0	0
July	1013	29	24	29	20	77	72	6	6	98	11	1	⊕	53	42	2	⊕	0	⊕	2	0	⊕	54	43	2	⊕	⊕	0	⊕	10	10	⊕	0	0
August	1014	29	24	30	21	75	71	5	5	27	4	1	2	59	35	⊕	1	1	⊕	1	0	1	60	38	1	⊕	0	0	0	10	11	0	0	0
September	1013	30	24	31	21	74	67	5	5	10	2	⊕	5	63	21	1	2	1	1	6	⊕	3	57	35	1	1	2	1	0	8	9	0	0	⊕
October	1012	31	24	32	22	72	66	5	5	22	3	1	5	52	24	4	4	3	1	6	1	2	48	38	5	2	1	1	1	6	9	⊕	⊕	2
November	1010	33	24	34	22	74	67	5	6	61	7	7	6	27	14	1	9	10	7	20	7	6	28	25	5	10	10	5	6	4	7	0	1	9
December	1009	32	24	34	22	81	75	6	7	247	17	9	2	5	2	3	7	29	21	20	6	4	7	7	6	9	39	14	8	5	7	⊕	⊕	12
Means	1011	31	24	34*	19§	78	72	6	6	–	–	3	3	36	18	2	4	14	9	11	2	3	36	25	4	5	16	6	3	7	9	–	–	–
Totals	–	–	–	–	–	–	–	–	–	1912	140	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		2	52
Extreme values	–	–	–	37†	15‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
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

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1.170

WMO No 97980

MERAUKE/MOPAH (08° 28′ S, 140° 23′ E) Height above MSL – 3 m
Climatic Table compiled from 17 to 30 years observations, 1960 to 1999

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 1 mm 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					
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1007	32	24	33	22	80	74	6	6	204	17	22	12	6	1	1	4	20	26	8	4	2	2	4	9	18	49	7	5	6	7	0	1	8
February	1007	31	24	32	22	83	75	6	6	308	19	25	10	4	1	1	4	22	27	6	6	1	1	5	8	20	45	13	1	6	8	⊕	1	8
March	1008	31	24	33	22	82	75	6	6	222	18	17	16	13	8	4	2	12	22	7	3	2	1	7	21	15	34	13	3	6	8	⊕	0	5
April	1009	32	23	33	22	80	75	6	6	199	16	10	19	40	17	2	1	2	5	5	3	1	9	25	35	11	10	2	4	6	8	0	0	5
May	1009	31	23	33	21	78	74	5	5	76	9	1	9	56	25	4	0	⊕	⊕	5	0	2	16	44	33	2	1	0	1	7	9	⊕	0	2
June	1010	30	22	32	20	79	76	5	5	47	8	0	2	51	41	5	0	0	0	2	0	0	15	47	37	1	0	0	0	8	11	0	⊕	⊕
July	1010	30	22	31	19	78	76	5	6	58	8	⊕	2	38	55	3	0	0	0	2	0	1	14	52	31	⊕	0	1	⊕	8	10	0	0	0
August	1011	30	21	31	19	74	75	5	5	18	4	⊕	2	36	55	5	0	0	0	1	0	0	14	49	35	2	⊕	0	1	9	12	0	0	1
September	1010	31	22	33	19	71	73	5	4	35	5	⊕	4	41	48	4	⊕	⊕	⊕	1	1	0	4	46	46	2	1	0	⊕	9	13	⊕	⊕	1
October	1009	32	23	34	21	69	74	5	4	26	5	2	8	47	31	7	1	1	0	4	⊕	0	5	34	50	9	1	⊕	2	7	11	⊕	1	5
November	1008	32	24	34	22	70	71	5	5	75	9	7	19	41	13	3	3	4	4	7	2	2	3	23	43	15	11	1	1	6	10	0	2	7
December	1007	32	24	34	22	77	73	6	6	217	17	19	16	12	5	5	3	12	19	9	3	2	1	7	29	19	29	6	3	6	8	0	1	10
Means	1009	31	23	34*	18§	77	74	5	5	–	–	9	10	31	25	3	2	6	9	5	2	1	7	28	31	10	15	4	2	7	10	–	–	–
Totals	–	–	–	–	–	–	–	–	–	1485	135	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	6	52
Extreme values	–	–	–	36†	16‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
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

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1.171

WMO No 79430

TERNATE/BABULIAH (00° 47′ N, 127° 23′ E) Height above MSL – 23 m
Climatic Table compiled from 17 to 30 years observations, 1960 to 1999

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 1 mm 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					
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1009	31	23	32	22	82	74	5	6	230	17	22	10	13	19	5	1	1	16	14	42	3	4	4	⊕	0	2	43	1	5	10	⊕	⊕	4
February	1010	30	24	32	22	83	74	6	6	166	15	21	7	13	18	4	1	2	20	13	34	6	1	4	2	⊕	2	49	1	5	10	0	⊕	4
March	1010	31	23	32	22	82	72	5	6	199	17	14	10	17	25	5	1	2	15	10	36	4	3	3	3	2	3	45	1	5	10	0	⊕	8
April	1010	31	23	33	21	83	74	5	6	175	16	10	9	25	31	4	1	1	7	12	32	9	9	10	2	1	4	30	4	4	7	⊕	⊕	8
May	1010	31	24	33	22	83	73	5	6	165	15	5	8	22	38	8	1	1	3	16	26	14	10	13	10	1	2	19	5	4	6	⊕	⊕	10
June	1010	31	23	32	21	82	74	5	6	180	17	8	5	21	29	14	2	3	5	15	26	15	10	13	13	3	1	11	7	5	6	⊕	0	6
July	1010	30	23	32	22	81	72	6	6	205	17	7	6	14	24	22	2	1	3	21	24	13	11	13	20	2	3	8	6	5	6	0	⊕	4
August	1010	31	23	33	22	80	69	5	6	156	14	8	3	15	27	28	2	1	6	11	18	12	11	16	29	5	⊕	6	2	6	8	⊕	⊕	4
September	1010	31	23	33	22	80	69	5	6	109	8	9	10	20	24	18	2	3	5	10	29	13	8	12	20	2	1	10	5	6	7	0	⊕	6
October	1010	31	23	33	22	80	70	5	6	131	9	12	11	26	21	12	3	1	6	7	21	14	11	13	15	2	1	17	5	5	7	0	2	10
November	1009	31	23	33	22	83	74	5	6	155	15	14	16	22	19	5	1	2	9	12	25	7	9	10	7	2	7	28	6	5	7	⊕	1	10
December	1009	31	24	33	21	83	75	6	6	221	17	26	9	16	11	3	0	1	24	11	36	3	4	5	1	1	3	43	3	6	10	⊕	⊕	6
Means	1010	31	23	36*	20§	82	72	5	6	–	–	13	9	18	24	11	1	1	10	13	29	9	8	10	11	2	2	25	4	5	8	–	–	–
Totals	–	–	–	–	–	–	–	–	–	2092	177	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	3	80
Extreme values	–	–	–	40†	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

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1.172

WMO No 97390

DILI AIRPORT (08° 34′ S, 125° 34′ E) Height above MSL – 6 m
Climatic Table compiled from 16 to 20 years observations, 1940 to 1998

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		
												0800									1400											
		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	N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0800	1400	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1009	31	23	32	21	78	70	5	7	127	17	4	3	2	1	⊕	2	8	8	74	39	5	1	⊕	2	2	6	44	1	1	11	0	0	3
February	1009	32	24	32	22	81	71	6	7	120	19	3	1	⊕	1	2	2	8	6	77	44	5	1	⊕	⊕	1	9	37	2	1	11	⊕	0	3
March	1010	32	23	33	21	79	68	4	6	137	18	1	1	⊕	1	1	2	10	4	79	42	19	1	⊕	⊕	3	4	29	1	<1	10	0	0	1
April	1010	32	23	33	21	77	68	4	6	110	16	⊕	1	1	⊕	2	2	4	2	86	20	48	7	1	⊕	1	4	11	9	<1	8	0	0	1
May	1011	32	22	33	20	76	66	3	5	86	9	⊕	1	1	⊕	2	3	7	2	84	30	54	6	⊕	⊕	1	1	7	1	<1	9	0	0	⊕
June	1011	31	21	32	20	75	64	3	5	26	8	1	1	2	2	⊕	1	4	1	89	12	58	17	3	⊕	⊕	3	8	1	<1	10	0	0	⊕
July	1011	31	20	32	18	73	61	3	4	13	8	⊕	3	1	⊕	⊕	1	⊕	2	91	22	54	15	3	⊕	⊕	⊕	3	2	<1	11	0	⊕	⊕
August	1012	31	20	32	17	70	62	2	4	5	4	1	3	3	1	1	1	7	1	83	15	61	17	2	⊕	⊕	1	6	⊕	<1	11	0	0	⊕
September	1012	31	21	32	18	69	63	2	4	8	5	4	5	1	⊕	⊕	2	⑤	5	78	22	57	10	3	⊕	⊕	⊕	8	⊕	<1	11	0	0	⊕
October	1011	31	22	32	21	70	63	2	4	23	5	9	7	1	⊕	1	⊕	6	6	71	35	57	4	⊕	⊕	⊕	1	2	⊕	1	10	0	0	1
November	1009	31	24	33	22	70	66	4	5	51	9	12	9	⊕	1	⊕	1	4	7	65	29	40	⊕	2	1	1	2	20	5	2	9	0	0	6
December	1008	32	24	33	22	75	68	6	7	140	17	4	4	⊕	1	1	3	7	7	74	33	11	2	1	⊕	2	3	46	4	2	11	⊕	⊕	4
Means	1010	31	22	35*	17§	74	66	4	5	–	–	3	3	1	1	1	2	6	4	79	29	39	7	1	⊕	1	3	18	2	<1	10	–	–	–
Totals	–	–	–	–	–	–	–	–	–	846	86	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	⊕	19
Extreme values	–	–	–	37†	15‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	16	16				16		16		20		16									16									16		16	16	16

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

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

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1.173

WMO No 97372

KUPANG/ELTAM (10° 10′ S, 123° 40′ E) Height above MSL – 108 m
Climatic Table compiled from 16 to 20 years observations, 1960 to 1999

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																				Knots				
January	1008	30	24	32	22	96	78	6	6	331	18	3	4	3	1	1	4	10	26	48	4	1	2	3	2	12	26	46	4	4	10	⊕	⊕	14
February	1008	30	23	31	22	97	78	6	6	338	17	3	2	5	1	⊕	3	11	26	49	4	1	⊕	3	5	7	29	47	5	4	9	⊕	⊕	10
March	1009	31	23	33	22	95	71	4	5	166	13	2	7	12	9	2	3	9	11	44	4	2	6	11	6	5	23	39	4	4	9	⊕	⊕	7
April	1010	33	24	34	22	90	62	3	4	75	6	2	8	43	21	⊕	1	2	3	21	5	6	28	21	3	3	9	21	5	6	11	⊕	⊕	2
May	1011	33	23	34	21	85	56	3	3	14	2	⊕	8	55	26	2	⊕	1	1	8	2	4	38	28	3	⊕	10	15	⊕	9	12	⊕	0	⊕
June	1011	33	23	34	20	83	54	3	3	15	1	⊕	8	54	30	2	⊕	⊕	⊕	5	2	6	45	27	2	2	7	10	⊕	10	13	⊕	⊕	⊕
July	1011	32	22	34	19	83	51	3	3	17	1	⊕	8	58	27	1	⊕	⊕	⊕	5	2	4	41	34	4	1	3	10	2	10	14	⊕	⊕	⊕
August	1012	32	22	34	19	81	51	2	3	2	1	3	7	61	21	3	⊕	1	⊕	4	2	3	26	34	3	2	9	21	⊕	10	14	⊕	0	⊕
September	1011	33	22	35	19	84	63	2	3	4	1	1	15	42	17	1	2	2	5	15	5	4	16	22	6	5	11	31	1	7	12	⊕	0	⊕
October	1010	34	23	37	21	83	55	2	3	45	4	3	16	21	10	3	3	6	14	25	5	1	8	19	11	7	11	37	1	5	11	⊕	⊕	2
November	1009	33	24	36	22	91	64	4	5	115	8	4	14	16	3	1	4	7	15	36	4	3	6	13	19	10	18	32	5	4	10	⊕	⊕	13
December	1008	31	24	33	22	96	74	6	6	222	15	4	4	5	1	2	7	12	18	48	4	⊕	3	1	4	14	28	38	7	3	9	⊕	⊕	14
Means	1010	32	23	38*	18§	89	62	4	4	_	_	2	8	31	14	2	2	5	10	26	3	3	18	18	5	6	15	29	3	6	11	_	_	_
Totals	_	_	_	_	_	_	_	_	_	1344	87	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	⊕	⊕	62
Extreme values	_	_	_	39†	15‡	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
No. of years observations	16	16				16		16		20		16									16									16		16	16	16

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

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

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1.174

METEOROLOGICAL CONVERSION TABLE AND SCALES

Fahrenheit to Celsius

°Fahrenheit

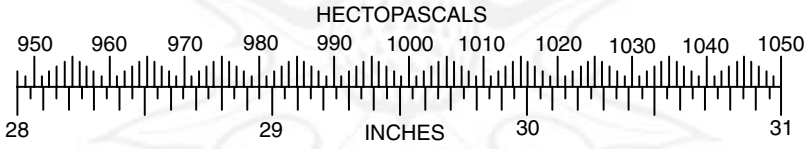
	0	1	2	3	4	5	6	7	8	9
°F				Degrees Celsius						
−100	−73·3	−73·9	−74·4	−75·0	−75·6	−76·1	−76·7	−77·2	−77·8	−78·3
−90	−67·8	−68·3	−68·9	−69·4	−70·0	−70·6	−71·1	−71·7	−72·2	−72·8
−80	−62·2	−62·8	−63·3	−63·9	−64·4	−65·0	−65·6	−66·1	−66·7	−67·2
−70	−56·7	−57·2	−57·8	−58·3	−58·9	−59·4	−60·0	−60·6	−61·1	−61·7
−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

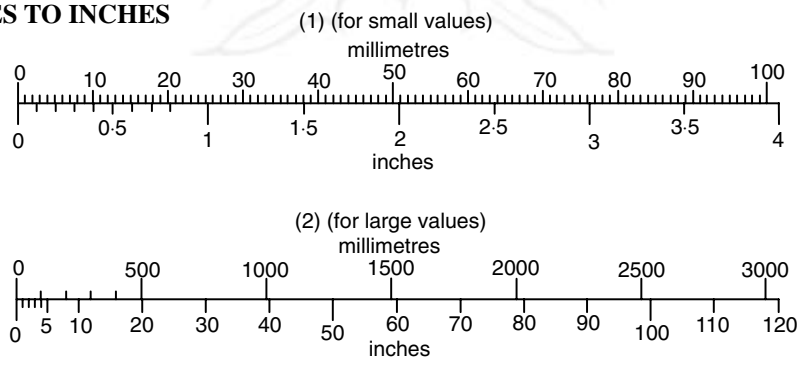
°Celsius

	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



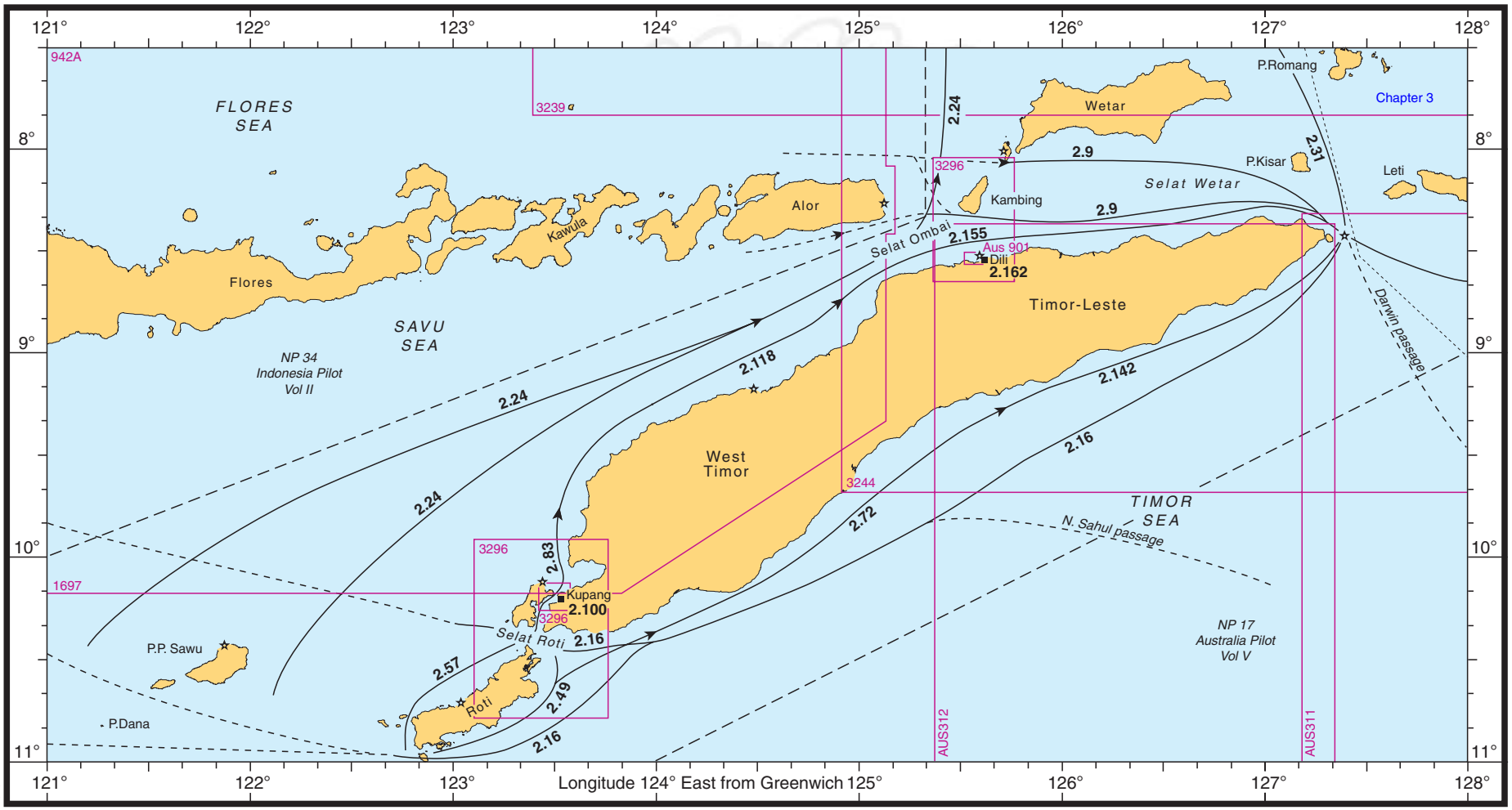
MILLIMETRES TO INCHES



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Chapter 2 - Eastern end of Nusatenggara including Timor and the south-western islands of Maluku



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CHAPTER 2

THE EASTERN END OF NUSATENGGARA INCLUDING PRINCIPAL THROUGH ROUTES, WEST TIMOR, PULAU ROTI AND PULAU-PULAU SAWU — TIMOR-LESTE — THE SOUTH-WESTERN ISLANDS OF MALUKU INCLUDING PULAU WETAR AND PULAU KISAR

GENERAL INFORMATION

Chart 942A

Scope of the chapter

2.1

1 In this chapter are described:

The principal through routes which lie at the E end of Nusatenggara including the continuance of the E-W routes through Selat Wetar and Selat Roti linking Singapore with ports in N and E Australia; the S-N routes passing either side of Timor linking ports of NW and N Australia with ports in Japan.

West Timor, including Pulau Roti and Pulau-pulau Sawu.

Timor-Leste including the enclave of Oecussi-Ambeno and the island of Kambing (2.157).

The SW islands of Pulau-pulau Maluku including Pulau Wetar together with Liran and Kisar.

Routes

2.2

1 Archipelagic Sea Lanes have been designated within certain of the waters described in this chapter. For further information see Appendix II.

Topography

2.3

1 Within the limits of this chapter, Timor is by far the largest island of Nusatenggara, lying at the E end of the Indonesian Archipelago approximately 250 miles NW of the NW coast of Australia. The island is 60% mountainous, the highest peak, standing at nearly 3000 m (9580 ft), lies in Timor-Leste. Timor's landscape is unique with lontar palms, rocky soils and central mountains dotted with villages of beehive-shaped huts. The coastline is generally high, steep and, in places, impressive.

2 Off the SW extremity of Timor lie the smaller islands of Roti and Sawu, farther W. Both sets of islands are mountainous. Except for off-lying islets, Pulau Roti is the most S island in Indonesia.

The SW islands of Maluku, one of Indonesia's remotest provinces, which are described in this chapter, are also mountainous, and excepting for a few villages are sparsely populated.

Depths

2.4

1 The coasts of Timor, Pulau Wetar and adjacent islands are generally steep-to with great depths close offshore. However, in 1999 less depths than charted were reported to exist in some areas of Selat Roti and Selat Semau, the two navigable straits lying at the S end of Timor, and within Teluk Kupang.

Natural conditions

Volcanic activity

2.5

1 Traces of volcanic lava can be found throughout Pulau Roti, the last eruption occurring in 1908 in the N part of the island.

Volcanic action has also occurred on Timor, as cold craters can be found at numerous high elevation sites.

Flow

2.6

2 For general current information concerning this area see 1.115 and 1.116. The strongest tidal streams within the coverage of this chapter are found in the straits between Pulau Roti and Timor, between Timor and Pulau Semau and between Pulau Semau and its off-lying islands; also between the NE extremity of Timor and the island of Jaco. Information on these and on tidal streams elsewhere is given in the relevant parts of the text.

Local weather

2.7

1 Timor and the surrounding area is the driest region in Nusatenggara with little rain. The climate is similar to that of N Australia. The NW monsoon brings with it heavy rains and the sky is generally overcast. During the SE monsoon the climate is dry and pleasant, cloudy at times, with poor visibility due to mist. The winds are stronger during the SE monsoon, becoming mainly light and variable during the transitional periods.

PRINCIPAL THROUGH ROUTES

GENERAL INFORMATION

Charts 942A

Scope of the section

2.8

1 In this section are described the principal through routes in Savu Sea, Selat Ombai and Selat Wetar, together with the route off the SE coast of Timor.

SELAT WETAR

General information

Chart 3244

General description

2.9

1 Selat Wetar is the wide passage between the N coast of Timor-Leste and the S coast of Pulau Wetar. It is regularly used by local shipping and by vessels on an E-W passage

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between Jawa and Australia and between Singapore and Australia (see *Ocean Passages for the World*). Vessels on the latter two routes pass N of Nusatenggara thence enter the strait from W by passing either N or S of Kambing (8°13′S, 125°35′E) (2.157) (chart 3296).

2 There are no known dangers in Selat Wetar outside the 200 m (100 fm) depth contours surrounding the adjacent islands.

For a description of Pulau Liran see 2.193, and for the S coast of Pulau Wetar see 2.198.

Currents

2.10

1 The currents in Selat Wetar are not well known, but are probably similar to those in Selat Ombai (2.27). They seldom exceed about ½ kn. See also 2.194.

Principal marks

2.11

1 **Landmarks:**

Fatumasin (8°39′S, 125°22′E) (2.159); visible on the S passage only.
Manokoko (8°16′S, 125°34′E) (2.157).
Kuri (8°30′S, 125°54′E) (2.159).
Ilitalo (Ili Talo) (7°55′S, 125°52′E) (2.200).
Tenagatu (7°51′S, 126°05′E) (2.200).
Radio masts at Kun (8°22′S, 127°04′E) (2.174).
Birak (8°32′S, 126°16′E) (2.159).

2 **Major lights:**

Tanjung Laisumbu Light (8°19′S, 125°08′E) (*Indonesia Pilot Volume II).*
Tanjung Laquebada Light (8°33′S, 125°34′E) (2.166).
Pulau Liran Light (8°03′S, 125°44′E) (2.195).
Kun Rear Leading Light (8°22′S, 127°04′E) (2.174).
Tanjung Tutpateh Light (8°13′S, 127°36′E) (3.130).

Other aid to navigation

2.12

1 **Racon:**

Tanjung Tutpateh Light (8°13′S, 127°36′E) (3.127).

For details see *Admiralty List of Radio Signals Volume 2.*

Directions for the passage south of Kambing

(continued from Indonesia Pilot Volume II)

Chart 3296 plan of Approaches to Dili, 3244

2.13

1 From a position S of Tanjung Ngo (8°19′S, 125°35′E), the S extremity of the island of Kambing (2.157), the route through Selat Wetar leads E for a distance of about 110 miles, to a position NE of Pulau Jaco (2.21), an island situated close off the NE end of Timor-Leste. The track, which lies farther offshore than the directions for the coastal passage given at 2.160, passes S of Pulau Kisar (8°03′S, 127°11′E), lying 13 miles off the coast of Timor-Leste at its closest point and at the W extremity of Pulau-pulau Sermata.

2.14

1 Anchorage may only be obtained off the E coast of Kambing and off the village of Maumeta (8°16′S, 125°36′E) (2.177), at its S end, where the narrow coastal bank extends farther seawards. Landing can be effected at Makadade, 1¾ miles WNW of Tanjung Ngo. Only limited communications exist with Dili.

Directions for the passage north of Kambing

(continued from Indonesia Pilot Volume II)

2.15

1 From a position NE of Tanjung Hatunaru (Hatu Naru) (8°08′S, 125°38′E), the N extremity of Kambing (2.157), and between it and Pulau Liran (2.193), 7 miles NE, the route to a position N of Pulau Jaco (2.21) leads ESE for a distance of about 98 miles, passing clear of Karang Sumatera (8°06′S, 125°57′E), a coral bank, position doubtful, and S of Pulau Kisar.

The passage between Kambing and Pulau Liran is known as Alur Pelayaran Wetar.

(Directions continue E at 3.13)

SELAT ROTI — SOUTH-EAST COAST OF TIMOR INCLUDING THE PASSAGE SOUTH OF PULAU ROTI

General information

Charts 942A, Aus 312, 3244

Route

2.16

1 Routes from Singapore to Australian ports via Selat Sunda following the S coast of Jawa or Sumbawa, as described in *Indonesia Pilot Volume II,* pass SW of Pulau Sumba thence through Selat Roti or S of Pulau Roti. A route also leads direct to Selat Roti from Selat Sumba. If passing S of all the islands in the Indonesian Archipelago, the route passes S of Pulau Sumba, S of Pulau Dana (10°50′S, 121°17′E) (2.35), and S of Pulau Dana (11°00′S, 122°52′E) (2.46), a small island lying off the S end of Pulau Roti, thence in all cases NE along the SE coast of Timor. They are part of through E-W/W-E routes (*Ocean Passages for the World)* between Singapore and Torres Straits, also linking the charted passages through Sahul Banks, lying roughly parallel with and about 45 miles SE of Timor and described in *Australia Pilot Volume V).*

Charts 3296 plan of Selat Roti, 942A

Selat Roti

2.17

1 Selat Roti separates Pulau Roti (2.45) from the SW end of West Timor and Pulau Semau, its off-lying island, 6½miles NE. The strait is a deep and clear channel apart from a narrow coral bank 2¼ miles SSW of Tanjung Oisina (10°22′S, 123°27′E). The bank has a least charted depth of 16 m over it, and it is advisable to give the point a berth of 3 miles as it is possible less depths may exist.

For a detailed description of landmarks on the NW coast of Pulau Roti see 2.59; for the W coast of West Timor see 2.86.

Depths

2.18

1 The SW coast of West Timor, in the vicinity of Selat Roti, can be approached fairly closely throughout as there are no off-lying dangers other than Karang Beatrice (2.20) on its E side. The maximum distance offshore that the 200 m depth contour can be found is 7 miles.

Tidal streams

2.19

1 Tidal streams may set with some strength through Selat Roti, and there is frequently a turbulent sea in the E part.

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Directions for Selat Roti

(continued from Indonesia Pilot Volume II)

2.20

1 From the vicinity of 10°20′S, 123°06′E, the track through Selat Roti leads between ESE and E passing (positions from Tanjung Oisina (10°22′S, 123°27′E)):

SSW of Pulau Tebui (12 miles WNW) (2.84), fringed by a coral reef, thence:

SSW of Tanjung Alak (8½ miles W) (2.84), the SW extremity of Pulau Semau, thence:

SSW of Tanjung Uloimi (4 miles WNW) (2.84), the steep SE extremity of Pulau Semau, thence:

2 NNE of Tanjung Pukuatu (7 miles SW), the NE extremity of Pulau Roti fronted by a drying reef. A light (white beacon) is displayed from the point. Thence:

SSW of Tanjung Oisina, the S extremity of West Timor, from where a light (white beacon) is displayed. For a distance of 4½ miles NE of Tanjung Oisina the coast is marshy and covered with mangroves, see also 2.17. And:

3 NNE of Tanjung Nakai (8 miles SSW), the NE extremity of Pulau Usu, a hilly island which rises to 124 m high near its centre. It is difficult to identify from the mainland of Pulau Roti and is separated from it by Selat Usu (2.49), a narrow strait. Thence:

S of Tanjung Mali (9 miles E), a narrow rocky point, from which a spit extends nearly 5 cables and which should not be approached within 1 mile. And:

4 N of a detached dangerous rock lying 6 miles S of Tanjung Mali. Karang Beatrice (11½ miles SE), two coral reefs, 2¼ miles apart, lie 2¼ miles farther S of the dangerous rock. The W reef, with a charted depth of 7 m over it, and the E reef with a charted depth of 5·5 m over it, are usually marked by discoloration, surf or tide-rips. The S sides of the reefs are steep-to. A 17·9 m patch lies 1¼ miles NE of the W reef. Thence:

S of Tanjung Batuputih (10°13′S, 124°05′E), a prominent, steep, white, rocky cliff, 50 m (164 ft) high, which is easy to identify from E.

5 **Useful marks:**

Baa Light (10°43′S 123°03′E) (2.47) if approaching from SW.

Tanjung Kurong Light (10°08′S, 123°27′E) (2.86) if approaching from W or N.

(Directions continue along the SE-facing coast of Timor at 2.21)

Directions for the south-east coast of Timor

(continued from 2.20)

Charts 942A, Aus 312, 3244 (see 1.34)

Tanjung Batuputih to Pulau Jaco

2.21

1 From a position SE of Tanjung Batuputih (10°13′S, 124°05′E) (2.20), the track then leads NE following the coast of Timor to its NE extremity at Pulau Jaco, passing:

SE of Tanjung Batumerah (Batu Merah) (9°53′S, 124°45′E), a high, rocky point formed by a spur from mountains inland, thence:

2 SE of Tanjung Tafara (9°25′S, 125°13′E), a low point, which can be identified at some distance by casuarina trees; the mountains approach near the coast here. Kasabauk, a mountain, rises 5 miles NNW of Tanjung Tafara. Foho Rem (2.145), another mountain, rises 7 miles NW of the same point. In 1999 a depth of 25 m (14 fm) was reported to exist 6 miles E of the point. Thence:

SE of Tanjung Metiboot (Meti Boot) (9°10′S, 125°49′E), a rugged point fringed by a reef extending 3 cables offshore. On the summit of Fatu Cuac, a hill, 3 miles W of the point, stands a prominent observation post with a flagstaff. Thence:

3 SE of Tanjung Luka (8°59′S, 126°18′E), shown as Tanjung Luca on chart Aus 312, a low marshy, reef-fringed point. A mountain, with a prominent tree on its summit, rises 6 miles NW of Tanjung Luka. Thence:

SE of Tanjung Beaso (Beaco) (8°57′S, 126°28′E), a low point. From a distance it can be identified by the buildings standing at Beaso (2.149), a village lying W of the point. Thence:

4 SE of Tanjung Roroai (Roro Ai) (8°49′S, 126°37′E), shown as Tanjung Caissaeluli on chart Aus 312, a high rocky point formed by a spur from Pegunungan Matabia, a mountain range, the highest peak being Name, 10 miles N of Tanjung Roroai, and prominent on a clear day. Aliambata (2.150), a village, stands 2 miles W of the same point, and can be identified by a large pyramid structure. Thence:

SE of Tanjung Okaona (Oka Ona) (8°46′S, 126°49′E), a low sandy point with a rock lying close off it. Tanjung Batuputih, a point formed of white rocks, lies 1 mile E of Tanjung Okaona. Thence:

5 SE of Tanjung Suloro (8°42′S, 127°01′E), a low point., shown as Tanjung Lore on chart Aus 312. A prominent house stands NW of the point. Thence:

SE of Pulau Jaco (8°26′S, 127°20′E), a flat wooded, uninhabited island, previously known as Pulau Yako under Indonesian administration, lying close off the NE extremity of Timor-Leste, and reported to be a radar conspicuous landmark at 9 miles. Light coloured smooth water, breaking at the outer edges, was reported to extend 2½ miles S and E from Pulau Jaco. A light (white lighthouse) stands on the NE side of the island.

(Directions continue at 3.15)

Directions for the route passing south of Pulau Roti

(continued from Indonesia Pilot Volume II)

2.22

1 For vessels using the longer routes (*Ocean Passages for the World)* from Selat Sunda to Torres Strait, as described in *Indonesia Pilot Volume II*, passing S of all the islands in the Indonesian Archipelago, the track from W on passing S of Pulau Sumba generally leads E thence passing:

S of Pulau Dana (10°50′S, 121°17′E) (2.35), the SW and smallest of the island group Pulau-pulau Sawu, thence:

S of Pulau Dana (11°00′S, 122°52′E) (2.46), from where a light (2.51) is displayed, situated 1½ miles S of the S extremity of Pulau Roti. There is always a heavy swell, and turbulent sea off the S side of the island.

2 The track then leads NE until it joins the route, leading NE from Selat Roti, off Tanjung Batuputih, and described at 2.21, passing:

SE of Pulau Landu (10°55′S, 122°57′E), an island with two hills on it; some islets lie close off the S

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side of the island. Several villages stand on the NW and E extremities of the island. Thence:

SE of Pulau Manuk, situated close ENE of Pulau Landu; this island is reported to be radar conspicuous at over 20 miles. Thence:

3 SE of Tanjung Puleh (10°50′S, 123°13′E), a low rocky point, thence:

SE of Tanjung Piakokoli (10°39′S, 123°25′E) (chart 3296), the E extremity of Pulau Roti, thence:

SE of Tanjung Batuputih (10°13′S, 124°05′E).

2.23

1 **Alternative route.** Using chart 942A, vessels following the passage SW of Pulau Sumba may, on passing SW of Pulau Mangudu (10°20′S, 120°07′E) (*Indonesia Pilot Volume II*), from where a light is displayed, proceed direct to the W entrance of Selat Roti passing:

S of the S extremity of Pulau Sumba, thence:

N of Pulau Sawu (10°30′S, 121°52′E) from where lights are displayed.

This passage is deep and clear of all dangers and well marked.

(Directions for Selat Roti are given at 2.20)

ROUTE PASSING NORTH-WEST OF TIMOR THROUGH SELAT OMBAI LEADING TO CERAM SEA

General information

Charts 942A, 1697, 3244

Route

2.24

1 The route passing NW of Timor through Selat Ombai (2.27), thence between Pulau Alor (*Indonesia Pilot Volume II)* and Kambing (2.157), is part of the through N-S route (*Ocean Passages for the World)* from NW Australia to Ceram Sea. Guidance for mariners may be found in directions for the coastal passages given at 2.122 and 2.160. In this area the coastal and through routes are similar, except that a greater distance offshore may be preferred for the latter.

2.25

1 **Current.** In Selat Ombai during the SE monsoon there is generally a current setting in a W to SW direction, and in an E to NE direction in the NW monsoon. A SW-setting current of 3 kn has been observed.

Tidal streams. In Selat Ombai, streams may attain a rate of 3 kn with a SW current. Strong tide-rips have been reported up to 15 miles NE of Tanjung Manamoni (8°09′S, 125°06′E), the NE point of Pulau Alor (*Indonesia Pilot Volume II).*

Principal marks

2.26

1 **Landmarks comprising mountain peaks:**

Timau (9°35′S, 123°56′E) (2.86).
Mutis (9°34′S, 124°13′E) (2.86).
Fatunuaaf (9°22′S, 124°09′E) (2.121).
Lakaan (9°06′S, 125°03′E) (2.121).
Guguleu (8°40′S, 125°11′E) (2.159).
Fatamailau (8°55′S, 125°29′E) (2.139).

2 **Major lights:**

Menia Light (10°26′S, 121°52′E) (2.36).
Seba Light (10°29′S, 121°50′E) (2.36).
Baa Light (10°43′S, 123°03′E) (2.47).
Tanjung Kurong Light (10°08′S, 123°27′E) (2.86).
Mahata Light (9°11′S, 124°24′E) (2.121).
Tanjung Laisumbu Light (8°19′S, 125°08′E) (*Indonesia Pilot Volume II)*).
Pulau Liran Light (8°03′S, 125°44′E) (2.195).

Directions for Selat Ombai

General

2.27

1 For vessels N-bound from ports in NW Australia, the directions, leading through Savu Sea thence through Selat Ombai, the wide, deep passage separating Timor from Pulau-pulau Alor (*Indonesia Pilot Volume II)*, can be achieved from a position either side of Pulau-pulau Sawu (10°35′S, 121°45′E). These passages form the initial N-S route through Indonesian waters passing W of Pulau Buru (3°25′S, 126°38′E), thence into Ceram Sea, and E of Pulau-pulau Sula.

For a description of the continuing passages N or E of Pulau Buru see Chapter 4 of this volume.

Passing east of Pulau Sawu

2.28

1 From a position W of Pulau Dao Besar (10°49′S, 122°40′E), from where a light is displayed (2.47), to a position SE thence E of Tanjung Laisumbu (8°19′S, 125°08′E), the E extremity of Pulau Alor (*Indonesia Pilot Volume II)*, the track initially leads NNE thence NE for a distance of approximately 240 miles, following the details of the coastal route NW of Timor at 2.122 but farther offshore and passing NW of Pulau Batek (9°16′S, 123°59′E).

Passing west of Pulau Raijua

2.29

1 From S, and having passed either side of Pulau Dana (10°50′S, 121°17′E) and reached a position W of Pulau Raijua (10°37′S, 121°35′E) (2.35), from where a light (2.37), is displayed, the track to a position E of Tanjung Laisumbu, see above, leads NE for a distance of about 280 miles.

The passage W of Pulau-pulau Sawu is better marked by lights than the passage E of it.

(Directions continue N at 2.30; directions for Selat Wetar are given at 2.13; directions W along the N coast of Pulau-pulau Alor are given in Indonesia Pilot Volume II)

Selat Ombai to Ceram Sea (passing west of Pulau Buru)

Charts 942A, 3244

Pulau Alor to Pulau Buru

2.30

1 From a position E of Tanjung Laisumbu (8°19′S, 125°08′E), the E extremity of Pulau Alor (*Indonesia Pilot Volume II)*, from where a light is displayed, and between the point and the island of Kambing (2.157), 22 miles E, the route to Ceram Sea, leads N for a distance of approximately 300 miles, to a position W of Pulau Fogi (3°18′S, 126°00′E), an islet, near the W extremity of Pulau Buru (chart 3241).

A light (4.41) is displayed from Pulau Fogi.

(Directions continue N at 4.16, or NE at 4.22)

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ROUTE — NORTH-EAST OF TIMOR TO PULAU BURU

General information

Charts 3244, 942A

Route

2.31

1 Vessels bound for ports in the Philippine Islands, China or Japan from ports in N Australia (*Australia Pilot Volume V)* may use this through route which leads NNW from the NE end of Timor, and between it and Pulau-pulau Leti, to a position W of Pulau Fogi (3°18′S, 126°00′E), the near W extremity of Pulau Buru (chart 3241).

Directions

2.32

1 The track, which leads NNW passes:

ENE of Pulau Kisar (8°03′S, 127°11′E) (2.207), thence:

WSW of Pulau Romang (7°34′S, 127°25′E) (3.110), and the off-lying Pulau Nyata, close NW, from where a light (3.113) is displayed, thence:

ENE of Tanjung Tutunhatuloi (Hatuloi) (7°40′S, 126°49′E) (2.200), the NE extremity of Pulau Wetar, from where a light (2.200) is displayed, thence:

Clear of Pulau Gunung Api (6°38′S, 126°40′E) (3.29), thence:

WSW of the W coast of Pulau Buru to a position W of Pulau Fogi Light (3°17′S, 126°00′E) (4.41).

2 **Alternative passage.** On passing Pulau Romang, an alternative route to Ceram Sea leads N, and through Selat Manipa (3°18′S, 127°16′E), passing E of Pulau Gunung Api and W of Pulau-pulau Maisel (3.31).

(Directions continue N at 4.16, or NE at 4.22, directions for Selat Manipa are given at 4.78)

PULAU-PULAU SAWU

GENERAL INFORMATION

Pulau Raijua and Pulau Sawu

Chart 942A (see 1.34)

Scope of the section

2.33

1 In this section are described the islands of Pulau Raijua and Pulau Sawu, together with the passages, anchorages and landings associated with these islands.

General description

2.34

1 Pulau-pulau Sawu are a group of islands lying 50 miles ESE of Pulau Sumba (*Indonesia Pilot Volume II)* and between Sumba and Pulau Roti. The group consists of Pulau Raijua (10°37′S, 121°35′E) and Pulau Sawu and the off-lying Pulau Dana. The islands are comparatively low, Pulau Sawu being the largest.

2 In numerous places along the coast of Pulau Sawu, where there is a coastal reef, the outer edges of it are raised by pieces of dead coral, forming dams which dry at LW, and fishing is carried out in the basins within them. In the evenings, especially at spring tides, torches are used for this purpose, and a great number of lights are thus often seen along the coast.

Topography

2.35

1 Pulau Dana (10°50′S, 121°17′E), is the SW and smallest island of the group. Partly wooded, the W part rises to a rocky plateau 36 m high. A prominent rock, 34 m high, lies on the N side of the island.

Pulau Raijua, lying 18 miles NE of Pulau Dana, is generally low-lying with villages situated on its N side. Its highest point, Bukit Hanga, lies in the centre of the island and Namo (10°36′S, 121°37′E), its highest village, lies near the E end of the island.

2 Pulau Sawu, the highest and largest island of the group, is separated from Pulau Raijua by Selat Raijua (2.37). Tanjung Mesara (10°34′S, 121°41′E), the W extremity of Pulau Sawu, is a rocky wooded point gradually rising inland. The reef-fringed E coast of the island is indented and rocky; Merebu, a prominent conical summit, lies close inland from Tanjung Merebu (10°37′S, 121°50′E), a low point. Raipiga, the highest point of the island rises 3½miles N of Merebu. The main habitation lies on the N coast and several small rivers enter the sea along this coast.

Principal marks

2.36

1 **Landmark:**

Merebu (10°36′S, 121°50′E) (2.35).

Major lights:

Menia Light (white stone pyramid, 8 m in height) (10°26′S, 121°52′E). Visible 052°–243° (191°) but partly obscured by hills 052°–060° (8°).

2 Seba Light (white beacon) (10°29′S, 121°50′E).

Pulau Raijua Light (white beacon) (10°38′S, 121°32′E) standing at the W extremity of Pulau Raijua.

Tanjung Liegeta Light (white metal framework structure, 40 m in height) (10°32′·5S, 121°58′·9E), standing on the E coast of Pulau Sawu.

Directions for Selat Raijua

2.37

1 Selat Raijua lies between Pulau Raijua and Pulau Sawu, 3½ miles ENE, and in the fairway is deep and clear of dangers. The strait is best approached from either NW or SE.

Useful mark:

Namo Light (white beacon) (10°36′S, 121°37′E) standing near the E end of Pulau Raijua.

Anchorages

General

2.38

Care should be taken when anchoring as most of the anchorages that may be obtained around the islands of Pulau-pulau Sawu require some local knowledge on account of the great depths lying close offshore. Where a holding may be obtained, sufficient cable should be lowered into the water, prior to arrival, before finally releasing it.

Off Pulau Dana

2.39

1 Anchorage may be obtained, close inshore, on the N side of Pulau Dana (10°50′S, 121°17′E) in a depth of 29 m (16 fm), sand, NW of the prominent rock (2.35).

Landing may be obtained on the NE side of the island where there is a sandy beach.

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Off Pulau Raijua

2.40

1 Anchorage may be obtained during the SE monsoon off the W coast of Pulau Raijua, 5 cables N of the W extremity of the island, in a depth of 35 m (19 fm), sand and mud. Pulau Raijua Light (10°38′S, 121°32′E) (2.36) is displayed from the point. The anchorage is sheltered from E winds.

Anchorage may also be obtained during the SE monsoon off Namo (10°36′S, 121°37′E) in a depth of 37 m (20 fm), sand, 3 cables offshore.

There are no suitable anchorages off the S coast of the island.

Off Pulau Sawu

2.41

1 During the NW monsoon, anchorage may be obtained in Teluk Deme (10°34′S, 121°58′E), a small bay, situated under the S side of a bluff of land on the SE coast of Pulau Sawu, in a depth of 33 m (18 fm) 6 cables off the shore at the head of the bay. A light (2.36) is displayed from Tanjung Liegeta, the E point of the bay.

2 Anchorage may also be obtained during the NW monsoon between the bluff previously mentioned, and a point 5½ miles N, but the coastal reef extends as much as 8 cables offshore near the latter.

Seba, a small harbour, is bounded by the arc of a circle, with a radius of 6½ cables, centred on Seba Light (10°29′S, 121°50′E) (2.36). The village of Seba, the administrative centre of Pulau-pulau Sawu, is not easily seen from seaward. A white stone pyramid, 9 m high, stands close SW of the light, but is difficult to identify on account of a white building behind it.

3 Anchorage may be obtained off Seba during the SE monsoon in a depth of 12 m (39 ft), mud and sand, 4 cables NW of the light. A patch, which dries, lies 1½ cables SE of this position and when approaching the anchorage attention is drawn to the bottom which rises very steeply. In the NW monsoon it is better to anchor farther out in a depth of 35 m (19 fm), at least 7½ cables offshore.

Landing can be effected in a gap in the coastal reef near the light.

4 Anchorage may be obtained off the village of Wawarei (10°27′S, 121°52′E) situated close SW of Kali Menia, a small river. Good landing can be effected at the village where there is a sandy beach.

Menia Light (2.36) is displayed close E of the river entrance.

Small craft landings

Pulau Raijua

2.42

1 Landing can be made during offshore winds at a village, standing close SE of the NW extremity of the island (10°36′S, 121°33′E), where there is an opening in the coastal reef. A prominent sugar-loaf-shaped hill, 60 m high, rises 5 cables SW of the point.

Landing can be also be effected during offshore winds at Namo (10°36′S, 121°37′E) (2.35), where a white sandy patch in line with a 77 m high prominent hill S of the village leads from the beach.

Pulau Sawu

2.43

1 Tanjung Pederoh, a rocky point, 33 m (108 ft) high, lies 4½miles SE of Tanjung Mesara (10°34′S, 121°41′E) (2.35). Between these two points there is a sandy beach, 2½miles long. Two rocks, which dry, lie 4 cables S of Tanjung Pederoh, but these are the only dangers outside the coastal reef around the entire island. Landing can generally be made onto the beach through an opening in the reef 1 mile NW of Tanjung Pederoh.

2 A small inlet lies 1½miles E of Tanjung Merebu (10°37′S, 121°50′E) (2.35) where there is a sandy beach. Landing can generally be effected onto the beach or at the entrance to a small river which flows into the head of the inlet.

PULAU ROTI

GENERAL INFORMATION

Charts 942A, 3296 plan of Selat Roti (see 1.34)

Scope of the section

2.44

1 In this section are described the SE and NW coasts of Pulau Roti together with adjacent islands. Included in the description are the harbours, anchorages and passages associated with them.

General description

2.45

1 Pulau Roti, a hilly island, lies off the SW extremity of West Timor and is separated from it by Selat Roti, a well used waterway and described at 2.20. The island, which is the southernmost island in Indonesia, is not widely visited but it has a thriving economy based on lontar palm products. It is fringed in places by a fairly wide reef, outside of which the depths generally increase rapidly, and in some places off the S coast the charted 200 m (100 fm) depth contour is less than 5 cables offshore.

2 The island also experiences a great deal of surf along most of the length of its coastline. Close offshore, the bottom is mostly sand and coral, covered in places by a layer of mud and clay.

Off the S extremity of Pulau Roti lie the islands of Pulau Dana (2.46) and Pulau Haliana (2.46).

Topography

2.46

1 Ailai (10°47′S, 123°12′E) (2.47), the highest peak of Pulau Roti, rises near the middle of the SE side of the island. Only a few summits are distinctive. Both the SE and NW coasts are heavily indented.

Pulau Dana (11°00′S, 122°52′E), a rocky, uninhabited island, with a hill in its N part, lies 1½ miles S of Tanjung Boa (10°56′S, 122°51′E), the S extremity of Pulau Roti; the island often experiences a heavy swell and turbulent sea on its S side. Pulau Haliana, 1 mile NE of Pulau Dana, is a steep, rocky islet. The depths around the islet and between it and Pulau Dana are irregular.

2 Lying W of the SW extremity of Pulau Roti, lie three small rocky islands. Pulau Dao Besar (Dao), the largest and outermost, lies 7½ miles offshore; there are several villages on this island. Pulau Doo Kecil (Doo) lies 3¾ miles offshoreand is uninhabited. Pulau Nusea lies 1¾miles

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offshore and is separated from Pulau Roti by a narrow navigable channel. All three islands experience surf.

Principal marks

2.47

1 **Landmarks:**

Lelebe (10°40′S, 123°14′E), a hill with a prominent wooded summit with round-topped trees. The summit is mainly visible on the NW coast.

Ailai (10°47′S, 123°12′E), the only prominent mountain on the SE coast and, at 444 m high, the highest peak on the island.

2 **Major lights:**

Baa Light (white metal framework tower, 14 m in height) (10°43′S, 123°03′E). Visible 090°–211° (121°) on the NW coast of Pulau Roti.

Pulau Dao Besar Light (white metal framework tower, 40 m in height) (10°49′S, 122°40′E).

General directions

2.48

1 The main routes around Pulau Roti either lead E-W through Selat Roti (2.20) or E-W passing S of Pulau Dana (11°00′S, 122°52′E) described at 2.22. With local knowledge, if passing between the islands (2.46) lying W of the SW extremity of Pulau Roti, from S, it is advisable to pass E of Pulau Doo Kecil (10°50′S, 122°44′E), and then between this island and Pulau Nuse, 2½ miles N.

SOUTH-EAST COAST OF PULAU ROTI

General information

Charts 942A, 3296 plan of Selat Roti (see 1.34)

Topography

2.49

1 The irregular SE coast of Pulau Roti is indented by many bays and is backed by hills. In parts it is high and steep, becoming low and rocky in places then rising steeply near Tanjung Piakokoli (10°39′S, 123°25′E), the E extremity of the island. Between Tanjung Boa (10°56′S, 122°51′E), a rocky reef and S extremity of Pulau Roti, and Tanjung Puleh, 23 miles ENE, lie the islands of Landu (2.22) and Manuk (2.22) close NE. Selat Kufok, a very narrow strait, separates Pulau Landu from Pulau Roti. This strait, which is foul, is not navigable at its W entrance, and a drying reef lies in the middle of its E part. Teluk Buka (2.53), a sheltered bay, lies directly N of Pulau Manuk.

2 The coast between Tanjung Piakokoli and Tanjung Pukuatu (10°26′S, 123°22′E), the NE extremity of Pulau Roti, has no distinctive features when seen from a distance. Pulau Usu (10°31′S, 123°24′E) (2.20), a hilly island, is separated from Pulau Roti by Selat Usu, a strait obstructed with islets which dries in places; the E coast of the island is steep and rocky.

Current

2.50

1 During both monsoons, the main flow of current along the SE coast of Pulau Roti moves in a continuous SW direction throughout the year. A weak counter current flowing NE may be experienced close inshore.

Principal marks

2.51

1 **Landmark:**

Ailai (10°47′S, 123°12′E) (2.47).

Major light:

Pulau Dana Light (white metal framework structure, 30 m in height) (11°00′S, 122°53′E), lying on the S end of the island.

Passage directions

2.52

1 The outer route along this coast follows the through route leading NE-SW, the directions for which are given at 2.22.

With local knowledge an inshore passage follows the coastline at a distance of about 5 miles off.

From a position S of Tanjung Boa (10°56′S, 122°51′E) the track initially leads E passing either side of Pulau Dana, 1½ miles S of the point and clear of a reported shoal situated 4½ miles SSW of the island. If passing N of this island, thence clear of Pulau Haliana, and rounding the islets lying close S of Pulau Landu (10°55′S, 122°57′E) (2.22); the track then leads ENE and NE, passing:

2 SSE of Pulau Manuk (2.22), thence:

SSE of Pulau Lai (10°52′S, 123°04′E), a rocky, reef-fringed islet, lying 3 cables S of a mangrove-covered point on Pulau Roti, thence:

SSE and SE of Tanjung Puleh (10°50′S, 123°13′E) (2.22), thence:

SE of Tanjung Piakokoli (10°39′S, 123°25′E) (2.22).

If proceeding to Selat Roti the track leads N from Tanjung Piakokoli passing between the mainland and Karang Beatrice (2.20); if continuing NE, the track passes SE of Karang Beatrice thence to a position SE of Tanjung Batuputih (10°13′S, 124°05′E).

(Directions continue for the coastal passage SE of Timor from Tanjung Batuputih at 2.76)

Anchorages

Teluk Buka

2.53

1 **General information.** Teluk Buka (10°54′S, 123°00′E), a large, but restricted bay situated on the SE coast of Pulau Roti, is entered between Pulau Manuk (10°55′S, 122°59′E) (2.22), an island forming the S side of the bay, and Pulau Lai, 4 miles NE, at its N entrance point. Karang Makemu, a horseshoe-shaped reef, which dries, lies 1¼ miles NE of Pulau Manuk, and from it a chain of reefs extends W to the coast. Within the bay, Pulau Tua, a small islet on which stands a white stone pyramidal structure, lies 4½ miles W of Pulau Lai.

2 **Anchorage.** With local knowledge, anchorage may be obtained in Teluk Buka. The best berth lies 3½ cables SSE of Pulau Tua in a depth of 20 m (11 fm), mud and sand. This anchorage is safe under all conditions, as it is sheltered from SE by Karang Makemu and the reefs W of it. The depths decrease gradually towards the coastal reef.

Teluk Pepela

2.54

1 **General information.** Teluk Pepela, a sheltered bay, is entered between Tanjung Batuisi (10°37′S, 123°25′E) and Tanjung Liudese, the SW extremity of Pulau Usu (2.20), 3 miles NNW. Entrance to the bay, which should only be undertaken with local knowledge, is narrowed down to a channel 6 cables wide between reefs and the depths inside are very irregular. A shoal, over which there is a depth of 1 m lies in the fairway, 1 mile S of Tanjung Liudese. The village of Pepela stands 1½ miles WNW of Tanjung Batuisi.

2 **Anchorage** in Teluk Pepela may be obtained in a depth of 23 m, sheltered from W winds, in an inlet in the coastal reef on the S side of the entrance to the bay. Anchor when

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the alignment (274°) of Batu Luak, a large rock on the coastal reef, 1½ miles WNW of Tanjung Batuisi, with a flat hill at the head of the bay is reached.

Lakimola, a hill situated 4 miles W of Tanjung Piakokoli (10°39′S, 123°25′E), is a useful mark.

Teluk Usu

2.55

1 Teluk Usu (10°29′S, 123°24′E), on the NE coast of Roti, is situated at the N end of Selat Usu (2.49) and is entered between Tanjung Nakai (10°30′S, 123°26′E) (2.20) and Tanjung Mondo, 2 miles NW. Tanjung Okabibi, close S of Tanjung Nakai, should be given a wide berth as the coastal reef projects some distance offshore.

Anchorage during the NW monsoon may be obtained in the bay in a depth of 25 m avoiding a shoal, over which there is a depth of 5·5 m, lying 4 cables SW of Tanjung Mondo.

Off Karang Beatrice

2.56

1 Anchorage may be obtained off the N side of Karang Beatrice (10°30′S, 123°35′E) (2.20), if necessary, in a depth of 18 m. The depths between Karang Beatrice and Pulau Roti are irregular and it should be noted that a dangerous rock lies 2¼ miles N of the E reef.

NORTH-WEST COAST OF PULAU ROTI

General information

Charts 942A, 3244, 3296 plan of Selat Roti (see 1.34)

Topography

2.57

1 The short W coast of Pulau Roti extends from Tanjung Boa (10°56′S, 122°51′E), the S extremity of the island, 9½miles N to Tanjung Tonga, the SW extremity of Pulau Roti. The coast here is fronted by a reef extending up to 7½cables offshore in places. Several islands (2.46) lie between 1¾ and 10 miles W of Tanjung Tonga.

2 The NW coastline is generally irregular and fringed by a coastal reef which extends 1 mile offshore in places. From Tanjung Tonga (10°47′S, 122°49′E) to Baa (2.62), a village, 14½miles ENE, the coast is generally low, with mangroves growing in places. Farther N the coast is similar in appearance.

3 Lelebe (2.47), a hill, rises 6 miles E of Tanjung Solokaendofo (10°39′S, 123°08′E), a cliffy point. The coast between this point and Tanjung Pukuatu, the NE extremity of Pulau Roti, 19 miles NE, is low and wooded with occasional long stretches of rocky cliffs and fronted by a drying reef; it is also indented by Teluk Karobafo (2.63). Pulau Bibi (2.60), an islet, lies 3 miles SW of Tanjung Pukuatu.

Flow

2.58

1 **Current.** The main flow of current generally follows the coastline of NW Roti in a SW direction throughout the year. It is strengthened at the S end of the island by seasonal winds.

Tidal streams amongst the islands off the SW end of Pulau Roti attain a rate of 3 kn.

Principal marks

2.59

1 **Landmarks:**

Pulau Kodi, a rocky islet lying on the coastal reef 9 miles ENE of Tanjung Tonga (10°47′S, 122°49′E).

Hill (10°46′S, 123°01′E), with a prominent peak, is easy to identify from NNE when bound for Baa.

Batutermanu (Batu Termanu) (10°40′S, 123°05′E), a prominent rocky hill on which stands the ruin of an ancient building resembling a castle.

2 **Major light:**

Baa Light (10°43′S, 123°03′E) (2.47).

Passage directions

2.60

1 The outer route along this coast follows the through route, leading NE-SE, passing between Pulau Roti and Pulau Sawu, and some distance offshore, the directions for which are given at 2.28.

2 With local knowledge, an inshore passage follows the NW coast of Pulau Roti at a distance of at least 5 miles off, to a position at the W entrance to Selat Roti.

From a position W of Tanjung Boa (10°56′S, 122°51′E), the S extremity of the island, the track initially leads N thence NE passing:

E of Pulau Doo Kecil (2.46) and W of Pulau Nuse, thence:

3 NW of Pulau Bibi, a rocky islet, lying close N of a projection of the coastal reef extending 1¼miles offshore, and 3 miles SW of Tanjung Pukuatu (10°26′S, 123°22′E), the N extremity of Pulau Roti.

Caution. The channel between Pulau Nuse and Tanjung Tonga (10°47′S, 122°49′E), the SW extremity of the island is not recommended.

4 **Note:** Vessels not needing to use Selat Semau may on passing W of Pulau Nuse proceed directly NNE to the vicinity of Tanjung Gumuk (9°30′S, 123°47′E), a distance of approximately 102 miles, by passing WNW and outside of Pulau Semau, thence as described at 2.122. This track passes to seaward of the 200 m (100 fm) depth contour situated off Pulau Semau.

(Directions for Selat Roti are given at 2.20 and for the continuance of the coastal passage N through Selat Semau at 2.88)

Harbours and anchorages

Off Pulau Nuse

2.61

1 Anchorage may be obtained off the W coast of Pulau Roti either S of Pulau Nuse (10°47′S, 122°46′E), or E of Pulau Dao Besar, 4 miles SW, in depths of 15 to 20 m (49 ft to 11 fm), coral, according to the direction of the wind. Local knowledge is advisable on account of strong tidal streams (2.58).

Baa

2.62

1 **General information.** Baa (10°43′S, 123°03′E), the principal town and harbour of Pulau Roti, has its limits bounded by the arc of a circle, radius 8½ cables, centred on Baa Light (2.47) which is situated close SW of the town. The anchorage fronts the town where there is a pier, from the head of which a light is displayed when a vessel is arriving or departing.

The principal building in Baa is surmounted by a flagstaff.

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2 **Anchorage** may be obtained during the SE monsoon in depths of 20 to 26 m (11 to 14 fm), mud and sand, NNW of Baa Light, on the alignment of a rocky point with a white patch on it, 2½ miles NE of the town, with the termination of a rocky spur from Batutermanu (2.59), 4 miles NE of Baa, just visible. Another alignment is a small stone wall, with a door in the middle, standing on the beach, with a white stone beacon on a hill, 90 m (295 ft) high, 3¾ cables SE of the light. Additional landmarks are a white stone pyramid on the coastal reef 1 mile W of the light, and a hill, 69 m (226 ft) high, on the headland 1½ miles NE.

3 **Landing** may be effected at HW; the best landing place is at the pier, at the head of which are some steps and a reported depth of 1 m. At other times landing can be effected on the drying reef close E.

Teluk Karobafo

2.63

1 **Anchorage** may be obtained in the outer part of Teluk Karobafo, an elongated navigable bay, 7 miles long, which is entered between Tanjung Unggae (10°36′S, 123°12′E) and Tanjung Lean, 8 cables NE, both points being reef-fringed and covered in mangroves. The entrance to the bay is difficult to identify. Batu Nusalai, a coral reef, which nearly dries in places, lies off the entrance.

2 Near Tanjung Batupadalean, 1¼ miles SE of Tanjung Lean, the navigable passage narrows to 1 cable and then broadens out to a sheltered basin with fairly regular depths of between 9 to 20 m. Farther E, from Tanjung Bongama (10°36′S, 123°14′E), a point at the E end of the S side of the sheltered basin, a narrow passage, barely ½ cable wide in places and 1 mile long, leads between rocky shores to an inner basin which is very shoal, with drying banks extending from the mainly mangrove-covered shores. Anchorage may be obtained in the sheltered basin, 4 cables SE of Tanjung Batupadalean.

3 **Directions.** The outer part of the bay should be entered from NW by the passage leading between Batu Nusalai and Tanjung Lean.

With HW levels in the bay there is frequently a strong current in the funnel-shaped entrance and passage into the inner part of Teluk Karobafo is only navigable, with local knowledge, by small vessels.

Landing may be effected on the S side of the sheltered basin.

Off Tanjung Pukuatu

2.64

1 Anchorage may be obtained 1½ miles W of Tanjung Pukuatu (10°26′S, 123°22′E) (2.20), over a sandbank, in depths of 11 to 14 m.

WEST TIMOR

GENERAL INFORMATION

Chart 942A

Scope of the section

2.65

1 In this section are described:

The SE coast of West Timor, that portion of the island of Timor, lying in E part of the province of Nusatenggara Timur.

The W and NW coasts of West Timor.

The coastal passages, harbours and anchorages associated with the area. Kupang-Tenau is the only port of importance within the province.

General description

2.66

1 The island of Timor comprises West Timor, that portion of the E part of the province of Nusatenggara Timur, and the independent state of Timor-Leste described later within the confines of this chapter. The boundary between the two regions, which virtually splits the island into equal portions, lies approximately along the meridian of 125°E.

2 Taking Timor as a whole, the island lies in an oblique direction to the chain of volcanoes extending from Jawa to Banda Sea; its geological formation is very different to the other islands in the group. A dominant feature of Timor is the rugged range of mountains running the entire length of the island. The NW coastline is thickly populated but there are few inhabitants on the SE coast.

2.67

1 Sahul Banks, lying roughly parallel with and about 45 miles SE of Timor, are described in *Australia Pilot Volume V.*

Topography

2.68

1 The coastal areas of West Timor are hilly and in places mountainous but are interspersed by elevated plains particularly in the S of the region. Much of the hinterland of the W coast contains rural, agricultural land where there are farming communities. The central area contains several ranges of high mountains, though the highest peak on the island, Fatamailau (2.139), rises in Timor-Leste. On grassy slopes many of the beehive-shaped huts (lopos) peculiar to the island can be found. Throughout the land, dammed areas containing water can be found due to the island's shortage of fresh water. Good roads are few, the best linking the major towns leading out from Kupang.

Natural conditions

Flow

2.69

1 **Current.** Throughout the year there is generally a continuous SW current off both coasts, especially in the SE monsoon, which may on occasions be increased in strength.

Tidal streams. Off salient points, streams tend to be irregular. In the straits and inshore passages they are semi-diurnal following the direction of the coast in each direction; and rarely attain a rate in excess of 3 kn.

Local weather

2.70

1 The climate of Timor resembles that of N Australia. During the SE monsoon, when there is seldom any rain, the land appears bare and scorched, whilst the rivers are dry. The NW monsoon, which is usually accompanied by squalls and heavy rains, quickly alters the aspect. The mountain slopes then present a fresh verdant appearance, the temperature drops, and the rivers become wild torrents. During the NW monsoon, bright green discoloration, giving

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the impressions of reefs, is often found far out from the coast. This is, however, caused by the discharge from the mountain rivers.

General directions

2.71

1 The main routes around this portion of the island comprise through routes leading E-W or N-S through the archipelago and are described at 2.20 and 2.22, or 2.21 and 2.27, respectively. Coastal routes and passages are mainly used by local vessels. The main port for West Timor is Kupang-Tenau situated towards the SW end of the island.

SOUTH-EAST COAST OF WEST TIMOR

General information

Chart 942A (see 1.34)

General description

2.72

1 The SE coast of West Timor, up to the border with Timor-Leste at the entrance to Sungai Motamasin (Mota Massin) (9°28′S, 125°05′E), can be afforded a fairly close approach as the only off-lying danger is Karang Beatrice (chart 3296) (2.20), situated in the E entrance to Selat Roti. However, there are no bays or harbours which afford shelter in the SE monsoon and the coast is devoid of navigational lights. Nearly all the river entrances on this coast are inaccessible in the dry season, and even in the NW monsoon there is frequently a heavy surf so that landing is difficult.

2 The action of the surf on soft white rocks on the coast causes a whitish discoloration of the sea in some places. Patches of this discoloration are carried by the current for miles seaward.

Topography

2.73

1 Between Tanjung Oisina (10°22′S, 123°27′E) (2.20), (chart 3296), the SW extremity of West Timor, to Teluk Noilmina (2.78), 42 miles NE, the rocky coastline is indented by numerous small bays and backed by hilly land without any noticeable features. North of Teluk Noilmina the coast is generally steep from the sea, but interspersed with sandy beaches, and backed by high ground. At Tanjung Batumerah (9°53′S, 123°45′E) (2.21), the coastal mountains gradually recede leaving a wide low plain extending to Tanjung Wetoh (We Toh) (9°38′S, 124°59′E), the low S entrance point to Teluk Maubesi (chart 3244) (2.81). The coastal area of Teluk Maubesi leading NE to the border with Timor-Leste, consists of marshy land through which several rivers and creeks gain access to the sea.

Flow

2.74

1 See 2.69.

Landmarks

2.75

1 Lunu (9°54′S, 124°36′E), a high peak, noticeably visible on clear days.

Maubesi (9°18′S, 125°05′E) (2.145) with Foho Rem, another peak but lower in elevation, rises 3 miles SE.

Passage directions

(continued from 2.20 or 2.52)

2.76

1 From a position S of Tanjung Oisina (10°22′S, 123°27′E) (chart 3296) (2.20), the SW extremity of West Timor, from where a light is displayed, the coastal passage initially leads E following the through route track and marks described at 2.20, thence NE following the through route NE from Tanjung Batuputih described at 2.21, but closer inshore, to a position SE of Tanjung Tafara (9°25′S, 125°13′E).

(Directions continue NE at 2.146)

Anchorages

Teluk Sakala

2.77

1 Anchorage may be obtained in offshore winds, in Teluk Sakala (chart 3296), 3 miles ENE of Tanjung Mali (10°22′S, 123°36′E), in a depth of 27 m. There is a small village at the head of the bay.

Teluk Noilmina

2.78

1 Teluk Noilmina (Noil Mina Bay), a large indentation in the coast, lies immediately NE of Tanjung Batuputih (10°13′S, 124°05′E) (2.20). The bay has a wide bright sandy shore over the greater part of its head. The W side of the bay is backed by hilly land. Sungai Noilmina enters the sea, 3 miles NE of Tanjung Batuputih, through a low, marshy plain. Inland on the NE side of Teluk Noilmina there is a ridge of mountains terminating in Fatubonino, 1060 m high, 20 miles NE of Tanjung Batuputih.

2 Anchorage may be obtained in the NE monsoon in the W part of the bay in depths of 5 to 9 m (16 to 30 ft). The bottom rises very gradually towards the shore. In the SE monsoon the shore should not be approached closely. Local knowledge is advisable for entering the bay but a line of bearing 317° of a prominent mass of rocks, on the beach, 1 mile N of Tanjung Batuputih leads to the anchorage.

Small craft

Teluk Kolbano

2.79

1 Teluk Kolbano (10°02′S, 124°33′E), a slight indentation in the coast with a steep shingle beach at its head, lies 26 miles NE of Teluk Noilmina (2.78). At Kolbano, a village, standing 3½ cables inland behind groves of palm trees at the S entrance point to the bay, there is a drying reef and sandy beach where landing can be effected. An oil research survey project, which in 1996 was in evidence in the area, provides access to the road leading to Kupang on the W coast of the province. Anchorage for local craft can be obtained 3 cables E of the N end of the reef in depths of 20 m (11 fm).

Sungai Motabesikama

2.80

1 Sungai Motabesikama (Mota Besikama), the longest river in Timor, enters the sea close N of Tanjung Wetoh (9°38′S, 124°59′E) (2.73), the low S entrance point to Teluk Maubesi. A mudbank lies at the river entrance which, during the NW monsoon, may be negotiated by small craft giving access into the river for a short distance inland.

Teluk Maubesi

2.81

1 Teluk Maubesi, a slight indentation in the coast, lying N of Tanjung Wetoh (9°38′S, 124°59′E) contains innumerable

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branches and creeks, in its marshy backed coastline, which are suitable for small craft on HW. There is a reported depth of 3 m (10 ft) on the bar at the entrance to Sungai Motawedeliek (Mota We Dilik) situated 4½ miles N of Tanjung Wetoh. It is, however, advisable to have the benefit of local knowledge before attempting to enter this river as the entrance channel is known to change.

Sungai Motamasin

2.82

1 Sungai Motamasin (Mota Massin), a river forming the boundary, at its S end, between West Timor and Timor-Leste, enters the sea 13 miles NNE of Tanjung Wetoh (9°38′S, 124°59′E). The river is navigable by small craft in the NW monsoon, but dries in places during the SE monsoon.

WEST COAST OF WEST TIMOR INCLUDING SELAT SEMAU AND THE PORT OF TENAU

General information

Charts 3296, 1697 (see 1.34)

General description

2.83

1 The W coast of West Timor lies between Tanjung Oisina (10°22′S, 123°27′E) and Tanjung Gumuk, 55 miles NE, Between Tanjung Oisina and Teluk Kupang, 15 miles NNE, the land is hilly with no distinctive summits but gradually becoming mountainous farther N towards Tanjung Gumuk.

Pulau Semau (2.84), lies 1½ miles W, at its narrowest part, off the S part of mainland Timor, and is separated from it by Selat Semau, a deep navigable channel which is free of dangers in its fairway.

The port of Tenau (2.92) lies on the E side of Selat Semau, and the port of Kupang (2.100) lies on the S side of Teluk Kupang.

Topography

2.84

1 The coastline between Tanjung Oisina (10°22′S, 123°27′E) and Tanjung Fanot (2.100), 12 miles NNE, is hilly and wooded. North of Tanjung Fanot the coast is heavily indented by Teluk Kupang (2.100), a large reef-fringed bay. Between Tanjung Pakulak (10°03′S, 123°36′E), the N entrance point to Teluk Kupang, and Tanjung Gumuk, 35 miles NNE, the coast is steep and rocky with occasional sandy beaches backed by hills and more mountainous ground.

2 Pulau Semau, a large hilly and heavily indented island lies with Tanjung Uloimi (10°20′S, 123°24′E), its steep SE extremity, 3½ miles WNW of Tanjung Oisina on the mainland. The island, which is reef-fringed, has no remarkable summits and is generally covered in forest. It is well inhabited with villages on or near the coasts.

Pulau Tebui, a low islet, stands on the extending coral bank, 3¼ miles NW of of Tanjung Alak (10°20′S, 123°19′E), the SW extremity of Pulau Semau.

Flow

2.85

1 See 2.69. Within Selat Semau, the S-going tidal stream is of shorter duration than the N-going stream, the rate seldom stronger than 3 kn. In the N part of the strait the tidal streams sometimes set across the strait in the bight between Tanjung Lelindo (10°14′S, 123°29′E) and Tanjung Fanot, 4 miles NE.

Tide-rips are often found off the salient points in this locality and should be given a wide berth.

Principal marks

2.86

1 **Landmarks:**

Timau (9°35′S, 123°56′E), a conspicuous mountain.

Mutis (9°34′S, 124°13′E), with arid slopes, the highest mountain rising at the S end of the central range behind the NW-facing coast of Timor.

Kotto (9°31′S, 123°48′E), a prominent summit, 367 m (1201 ft) high, close inland from Tanjung Gumak.

2 **Major lights:**

Tanjung Kurong Light (white metal framework tower, 16 m in height) (10°08′S, 123°27′E). The light structure stands about 1 mile S of the point.

Tenau Light (10°12′S, 123°32′E) (2.95).

Tanjung Gumuk Light (white metal framework tower, 40 m in height) (09°30′S, 123°48′E).

Other aid to navigation

2.87

1 **Racon:**

Tanjung Kurong Light (10°08′S, 123°27′E).

For further details see *Admiralty List of Radio Signals Volume 2.*

Directions for Selat Semau

(continued from 2.60)

2.88

1 From a position between Tanjung Oisina (10°22′S, 123°27′E), from where a light (2.20) is displayed, and Tanjung Uloimi (2.84), 3¼ miles WNW, in the S entrance to Selat Semau, the track leads NNE thence NE through the strait thence N into open water, passing (with positions from Tanjung Kaumbatu (10°16′S, 123°25′E)):

ESE of Tanjung Bonbala (Bonhala) (3 miles S), the S entrance point to Teluk Utefoana, a reef-obstructed bay, thence:

ESE of Tanjung Lelat (2 miles S), the N entrance point to the same bay, thence:

2 WNW of a coral bank (3½ miles ESE), and coral reef extending into the strait from Timor, thence:

ESE of Pulau Kambang (1¾ miles NE), with a hillock on its S side, thence:

WNW and NW of Tanjung Lelindo (4½ miles NE), a low reef-fringed point.

NW of a coral patch (6½ miles ENE), over which there is a least depth of 2·2 m, marked on its S side by a light-buoy (isolated danger).

3 The channel narrows to pass W of Tanjung Fanot (10°11′S, 123°32′E) (2.100), the S entrance point to Teluk Kupang; a number of obstructions exist near the coast in this vicinity where a mid-channel track is preferred, thence the track passes E of Tanjung Lelaka (10°09′S, 123°29′E), the E point of a small bay on the E coast of Pulau Semau.

4 **Caution.** The E side of Selat Semau between Tanjung Oisina and Tanjung Lelindo, 8 miles N, should be given a wide berth on account of the irregular depths close outside a detached coastal reef, and a turbulent sea and tide-rips may

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make steering difficult. It has been reported that depths shoaler than charted may exist within Selat Semau.

2.89

1 **Useful marks:**

Tanjung Pukuatu Light (10°26′S, 123°22′E) (2.20).

Kupang Light (10°10′S, 123°34′E) (2.104).

(Directions for Tenau are given at 2.96 and for Kupang at 2.104)

Selat Semau to Tanjung Gumuk

2.90

1 From the N end of Selat Semau, the track for the coastal passage initially continues N, passing (positions from Tanjung Kurus (9°46′S, 123°38′E)):

E of Tanjung Kurong (23 miles SSW), the N extremity of Pulau Semau, which is steep and fringed by a narrow reef, plainly marked by discoloration. Tanjung Kurong Light (2.86) is displayed from a position 1 mile SW of the point. Thence:

2 W of Pulau Kera (20 miles SSW), which lies in the middle of the entrance to Teluk Kupang. The islet is covered with coconut palms and fringed by a reef, which dries, plainly marked by discoloration, and there is usually a surf on its N side. A light (beacon) stands on the NE side of the islet, Thence:

W of Tanjung Pakulak (16 miles S), a reef-fringed, sandy, wooded point, thence:

3 W of Tanjung Siflana (11 miles SSW), steep and rocky, thence:

W of Tanjung Barate (9°54′S, 123°36′E), which forms the S point of a large indentation in the coast; it may be identified by a large rock lying close W on the drying coastal reef. The village of Barate stands 2 miles E of the point. Ayer Kosambe, a reef, marked by a beacon, lies 2½ miles ENE of Tanjung Barate.

4 The track then leads NNE, passing:

WNW of Tanjung Kurus (9°46′S, 123°38′E), a rocky point with a bare reddish-coloured hill rising from it. Inland the ground rises to a mountain 2¾ miles ESE. Thence:

WNW of Tanjung Mas (9°38′S, 123°40′E), which has a steep hill on it; several rocks lie close offshore N of the point. Thence:

WNW of Tanjung Gumuk (9°30′S, 123°47′E), from where a light is displayed (2.86), which is formed by a spur from Kotto (2.86), 1 mile SE. The coastal reef extends 5 cables offshore at the point; vessels should not pass less than 1 mile off.

5 **Useful mark:**

Fatubenao (Fatu Benao) (9°43′S, 123°41′E), a prominent black, pillar-shaped, rock lying close to the coast.

(Directions continue NE from Tanjung Gumuk at 2.122)

Passage west of Pulau Semau

2.91

1 An alternative passage to Tanjung Gumuk, though longer and less sheltered, passes W of Pulau Semau. Whether proceeding from the NW coast of Pulau Roti or from Selat Roti, on passing W of Pulau Tebui (10°19′S, 123°16′E) (2.84) lying off the SW coast of Pulau Semau, the latter island should not be passed at a distance of less than 2 miles on account of strong tidal streams and tide-rips existing close offshore.

2 **Caution.** The passage between Pulau Tebui and the W coast of Pulau Semau should not be attempted as the depths are shoal and irregular, and the bottom is rocky; the streams are also strong in the passage.

Useful mark:

Bare red hill (10°18′S, 123°18′E), 45 m (148 ft) high, which rises close to the coast.

Tenau

Charts 3296 plans of Selat Roti, Approaches to Tenau and Kupang

General information

2.92

1 **Position.** Tenau (10°12′S, 123°32′E), a town and port, is situated on the E side of Selat Semau in the bight between Tanjung Lelindo (10°14′S, 123°29′E) and Tanjung Fanot, 3¾ miles NE.

Function. The port, which lies 3½ m SW of Kupang (2.100), is frequently visited by local and foreign vessels, mainly handles general cargo imports. The main exports are coffee, sandalwood and coal. An oil and petrochemical terminal lies 5 cables S of the harbour.

Port Authority. Kupang Port Administration, Dit Jen Perhubungan Laut, Jl. Yos Sudarso 23, Tenau. Kupang. Timor Barat. Indonesia.

Limiting conditions

2.93

1 **Deepest and longest berth.** The S wharf (2.97) is reported to have a depth of 8 m alongside.

Tidal levels: Mean spring range about 1·4 m, mean neap range about 0·4 m, see *Admiralty Tide Tables* for Kupang.

Density of water: 1·025 g/cm3.

Local weather. The period of heaviest rainfall, when visibility may be reduced, lies between January and April. The strongest winds, which may reach gale force, occur between December and March during the NW monsoon.

Arrival information

2.94

1 **Port operations.** Mooring and unmooring is conducted during daylight hours only.

Port radio operates from Tenau and there is a coast radio station operating from Kupang; for communication details see *Admiralty List of Radio Signals Volume 6(4).*

Notice of ETA. Masters should forward their ETA, 10, 3, 2 and 1 day in advance to their local agents.

2 **Outer anchorage.** Anchorage may be obtained in depths of between 50 to 90 m, 7 cables WSW of the port. Because of the great depths, anchors should already be lowered into the water prior to arrival. Anchorage off the wharves is foul owing to sunken moorings. In the NW monsoon, sheltered anchorage may be obtained off Pulau Burung (10°02′S, 123°39′E) (2.100).

Pilotage is compulsory; requests for a pilot should be made 6 hours prior to arrival or 3 hours prior to departure.

Tugs are available.

Harbour

2.95

1 **General layout.** The harbour of Tenau, which lies on the E side of Selat Semau, comprises a rectangular-shaped basin with wharves on the seaward ends of the basin. Tenau Oil Terminal (2.98) lies 5 cables S of the port.

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Major light:

Tenau Light (white beacon) (10°12′S, 123°32′E); the light is mainly visible from N and within Selat Semau.

Directions

2.96

1 Although berthing can be accomplished port or starboard side-to, the recommended time to berth port-side to is just before or at HW when the tidal stream sets parallel with the wharves. After HW the SE-going stream sets strongly out from the NE part of the N wharf for half its length, but there is slack water at the SW end. Tide-rips and small whirlpools appear 1 cable off the wharf during the SE-going stream which attains a rate of up to 3 kn.

2 When approaching from N, attention is drawn to underwater obstructions lying 6½ cables and 5 cables WNW of Tenau Light.

If approaching from SW, care must be taken to avoid the coral patch (2.88) situated 1 mile SW of Tenau.

Caution. A dangerous wreck lies 1 cable W of the S wharf.

Berths

2.97

1 **Anchorage** may be obtained in the SE monsoon 2½ cables NW of Tenau Light, in a depth of 18 m. During the NW monsoon it is advisable to anchor farther offshore.

Alongside berths. Wharves extend along the the sides of the basin. The main berths are situated on the seaward ends of two arms forming the N and S sides of the basin.

2 The N wharf is 94 m long with a depth of 5·5 m alongside. Of concrete construction, it has wooden facings and dolphins connected by cat-walks at each end; this berth can accommodate vessels up to 123 m in length and up to 10 000 dwt depending on draught.

The S and longest wharf is 223 m long with a depth of 8 m alongside and can accommodate vessels of up to 20 000 dwt.

3 **Other berths.** Close SW of the wharves are the remains of a small stone causeway. A hard, used by landing craft, is situated 1 cable S of the causeway. A ferry pier, with deep water alongside its head, extends over the coastal reef 1½ miles S of Tenau.

2.98

1 **Tenau Oil Terminal** consists of a T-head berth and is used for the importation of oil and petrochemicals.

Vessels up to 17 500 dwt, having a length of 224 m, can berth alongside in depths of 10 m.

Terminal Operator: Pertamina (PKK–UPPDN–V) Surabaya, Jl Yos Sudarso, Kupang. Barat Timor.

Port services

2.99

1 **Other facilities:** hospital at Kupang; deratting exemption certificates issued.

Supplies: fuel by road tanker at the wharves; fresh water; provisions.

Communications. Eltari Airport (Kupang), 23 km distant E.

Kupang

General information

2.100

1 **Position.** Kupang (10°10′S, 123°34′E), a small port and important town, lies at the entrance to Sungai Kupang on the S side of Teluk Kupang.

Function. Superseded by Tenau (2.92) as the major port for general cargo in the area, Kupang has an anchorage and some alongside berths; it is mainly used by local vessels. Livestock is handled throughout the year. It is also a ferry terminal with sea connections to Sawu, Sumba and Flores.

In 1995 Kupang, which is the regional capital of East Nusatenggara (NTT), had a population of about 400 000.

2 **Topography.** Teluk Kupang, a large reef-fringed bay which in the S part is backed by wooded hills, is entered between Tanjung Fanot (10°11′S, 123°32′E) and Tanjung Pakulak (2.90), 9 miles NNE. The N shore of Teluk Kupang is backed by rolling hills. The town of Kupang is hilly, with the main residences hugging the waterfront. Tanjung Usapa, a low rocky point, lies 3 miles ENE of Kupang and Tanjung Manikin, a point on which stands the village of Manikin, 3¼ miles farther ENE. Pulau Burung (10°02′S, 123°39′E), a wooded islet, lies on the N coast of the bay.

3 **Port limits.** The port limits lie between Pulau Kera (10°05′S, 123°33′E) and lines joining that island with Tanjung Fanot and Tanjung Usapa.

Traffic. In 2003 the port was used by 78 vessels with a total of 271 920 dwt.

Port Authority. Port Administrator, Jl. Yos Sudarso 23, Kupang, Timor Barat. NTT.

Limiting conditions

2.101

1 **Controlling depth.** There is a depth of 1·0 m off the entrance to Sungai Kupang.

Tidal levels. See *Admiralty Tide Tables.* Mean spring range about 1·4 m, mean neap range about 0·4 m.

Density of water: 1·025 g/cm3

Maximum size of vessel handled: 10 000 dwt, having a length of 169 m and draught of 8 m, in the anchorage.

Local weather. See 2.93.

Arrival information

2.102

1 **Port operations.** See 2.94.

Notice of ETA. Masters should forward their ETA, 10, 3, 2, and 1 day in advance to their local agents.

Prohibited anchorage. An area 3 cables NW of the river entrance at Kupang as shown on the chart.

Pilotage is compulsory for the port; requests for a pilot should be made at least 24 hours thence 6 hours prior arrival to the local agent and/or to the Port Administrator (Adpel). Pilotage is not required for departure from the anchorage.

Tugs. A tug service can be provided if required.

Harbour

2.103

1 **General layout.** The harbour at Kupang lies on the S side of Teluk Kupang and within the entrance to Sungai Kupang. It consists of three alongside wharves and an anchorage N of the river entrance. The harbour office and a flagstaff stand on the W side of the river entrance close N of Kupang Light (2.104).

A quay with buildings is situated at Tanjung Toddeh, 5 cables NE of Kupang.

Climatic table. See 1.159 and 1.173

Landmark:

Radio mast (red and white bands) standing 1½ miles E of Kupang is conspicuous.

Directions

2.104

1 The approach to an anchorage or the river entrance is best undertaken from N with the Harbour Office and flagstaff, bearing S, ahead. The river entrance is wide and, excepting

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the 1 m patch (2.101), deep, and affords easy access on HW for suitable craft.

Useful marks:

Kupang Light (white metal framework tower, 11 m in height) (10°10′S, 123°34′E) displayed from the W entrance to Sungai Kupang.

Tanjung Toddeh Light (white stone pyramidal beacon, 3 m in height) (10°09′S, 123°35′E).

Berths

2.105

1 **Anchorage** may be obtained during the SE monsoon in a depth of 18 m, 2½ cables NW of Kupang Light. In the NW monsoon it is better to anchor farther out in a depth of 33 m.

With a heavy sea, anchorage may be obtained in the N part of Teluk Kupang near Pulau Burung (10°02′S, 123°39′E) (2.100).

Alongside berths. The port is reported to have three alongside berths. A concrete pier, 55 m long, part of the sea wall which extends NNW from the river entrance is sometimes used for livestock shipments.

Port services

2.106

1 **Other facilities:** hospital; deratting and deratting exemption certificates issued.

Supplies: fuel oil; fresh water; provisions.

Communications. Eltari Airport lies 15 km E of the town; inter-island communication by sea.

Small craft landings

2.107

1 Landing can be effected during the SE monsoon at some stone steps on the E side of the entrance to Sungai Kupang or at a pier beside the Harbour Office on the W entrance point to the river. In the NW monsoon, when conditions are favourable, boats can enter upriver and land at several villages.

Anchorages

Charts 3296 plans of Selat Roti and Approaches to Tenau and Kupang, 1697 (see 1.34)

Hainsisi

2.108

1 **General information.** On the E side of Pulau Semau, the roadstead of Hainsisi fronts the coast 4 cables W of Tanjung Hainsisi (10°11′S, 123°30′E). The village of Hainsisi stands a short distance inland from the roadstead; a stone pier, used by ferries, extends S from the shore at the village, and an extensive area fouled by wrecks lies SW of the pier.

2 **Anchorage** may be obtained off the village in depths of not less than 33 m, mud, as the depths decrease rapidly towards the shore. A small vessel may anchor in a depth of 7 m, S of a red water tank situated between two sheds at the village.

Toblolong

2.109

1 Anchorage may be obtained in a depth of 33 m, 1 mile W of Toblolong (10°19′S, 123°29′E), a village standing on the E side of Selat Semau.

Ayer Kosambe

2.110

1 With local knowledge, anchorage may be obtained in a depth of 13 m (42 ft) WSW of the beacon standing on Ayer Kosambe (9°53′S, 123°38′E) (2.90).

Fatubenao

2.111

1 Anchorage may be obtained in favourable weather between Fatubenao (9°43′S, 123°41′E) (2.90) and a point 4 miles N, and 5 cables offshore, and also at a distance of 2 miles S of the rock described at 2.90.

Small craft anchorages and landings

Off Pulau Kambang

2.112

1 With local knowledge, anchorage may be obtained in depths of 11 to 21 m between Pulau Kambang (10°15′S, 123°26′E) (2.88) and the coastal reef leading to the entrance to Teluk Pelikan (2.116), 1 mile W.

Hainsisi

2.113

1 Landing can be effected at all times at the steps of the stone pier fronting Hainsisi (10°11′S, 123°30′E) (2.108).

Toblolong

2.114

1 Landing can be effected in all seasons on the beach abreast the village of Toblolong (10°19′S, 123°29′E) (2.109).

Batubau

2.115

1 Anchorages for small craft may be obtained between a detached coral reef, with a least depth of 4·3 m over it, 7½cables W of the village of Batubau (10°18′S, 123°29′E), and also adjacent to the village in a depth of 8 m. The S approach to the anchorages inside the coastal reef is easier than the N approach; see caution at 2.88.

Teluk Pelikan

2.116

1 Teluk Pelikan, a large, but partially obstructed bay, lying on the E side of Pulau Semau, gives access to small craft visiting settlements within the bay. The bay is entered W of Pulau Kambang (2.88), and although the passage is deep it is extremely narrow; above-water rocks lie on either side of the entrance but once inside several anchorages in depths of up to 12 m may be obtained.

Off Tanjung Siflana

2.117

1 On the N side of Tanjung Siflana (9°56′S, 123°35′E) (2.90), there is a small inlet with a sandy beach where boats can land. A village stands on the E side of the inlet.

NORTH-WEST COAST OF WEST TIMOR INCLUDING THE ENCLAVE OF OECUSSI-AMBENO

General information

Chart 1697 (see 1.34)

Route

2.118

1 From a position NW of Tanjung Gumuk (9°30′S, 123°48′E) to a position NW of Tanjung Parimbala, the NW extremity of Timor, situated in Timor-Leste, approximately 94 miles NE, the coastal passage leads parallel with the NW coast of the island but farther inshore than the route described at 2.27 leading NE through Selat Ombai.

Excepting for Pulau Batek (9°16′S, 123°59′E), an off-lying island, the route is deep and clear of dangers.

Topography

2.119

1 Between Tanjung Gumuk (9°30′S, 123°48′E) and Tanjung Parimbala, the coastal area is irregular-shaped, interspersed

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with sandy beaches, and with many bights backed by wooded ground. It is also mountainous over its greater part but occasionally broken by lower hilly land. The highest mountains on the central range behind the NW coast are Mutis (9°34′S, 124°13′E) (2.86) and Fatamailau (8°55′S, 125°29′E) (2.139); the latter rising in Timor-Leste and being the highest mountain on the island.

A number of villages stand on the coast; the only harbour of consequence lies at Atapupu (9°00′S, 124°52′E) (2.125).

Flow

2.120

1 See 2.69.

Principal marks

2.121

1 **Landmarks:**

Timau (9°35′S, 123°56′E) (2.86).
Mutis (9°34′S, 124°13′E) (2.86).
Kotto (9°31′S, 123°48′E) (2.86).
Fatunuaaf (9°22′S,124°09′E), a mountain near the coast which is prominent from all directions.
Lakaan (9°06′S, 125°03′E), an isolated mountain with a prominent conical peak.
Guguleu (8°40′S, 125°11′E) (2.159).

2 **Major lights:**

Pulau Batek Light (white beacon) (9°16′S, 123°59′E)
Mahata Light (metal framework tower) (9°11′S, 124°24′E).

Passage directions

(continued from 2.90)

2.122

1 From a position NW of Tanjung Gumuk (9°30′S, 123°48′E), the coastal passage, to a position NW of Tanjung Parimbala (8°39′S, 125°07′E) leads NE for a distance of approximately 94 miles, passing (with positions from Pulau Batek (9°16′S, 123°59′E)):

NW of Tanjung Noiloi (11½ miles SSW), formed by a spur from the prominent hills rising 2¼ miles ESE of the point, thence:
NW of Tanjung Tobo (5 miles S); Batu Anyo, a rock, lies 1¾ miles SW of Tanjung Tobo, thence:

2 Clear of Pulau Batek a prominent white limestone islet with deep water all around, from where a light (2.121) is displayed, thence:

NW of Tanjung Batumerah (Batu Merah) (11 miles E), a rocky bluff, thence:
NW of Tanjung Lusanbatu (Lusan Batu) (26 miles ENE), a low point, backed by hills. A light (2.121) is displayed from the village of Mahata situated 1½ miles SE of the point. Thence:

3 NW of a bold headland (9°03′S, 124°42′E) on which Tanjung Tuwakmeseh (Tuwak Mesah) stands at its SW extremity, and Tanjung Batuputih, at its NE extremity. This headland may be identified by several patches of white rock on it. Thence:

NW of Tanjung Fatusu (Fatu Su) (8°52′S, 125°00′E), 98 m (321 ft) high, thence:
NW of Tanjung Fatuboro (Fatu Boro) (8°42′S, 125°06′E), a rocky point, thence:
NW of Tanjung Parimbala (2.155).

Useful marks

2.123

1 Channel lights at Atapupu (9°00′S, 124°52′E) (2.128).
Large rock, lying close to the coast 1 mile NNE of Batugadeh (8°57′S, 124°58′E) (2.176).
Atabai (8°47′S, 125°12′E) (chart 3244), a mountain with a prominent round-topped tree on its summit.

(Directions continue for the passage N of Timor at 2.160)

Oecussi

General information

2.124

1 **General description.** The enclave of Oecussi, known formerly as Oikusi or Ambeno, and occasionally Ambenu, under Indonesian administration, lies on the NW coast of Timor. Being part of independent Timor-Leste, the enclave lies between the rivers Noilbesi and Noilmeto, nearly 28 miles apart along the coast; irregular-shaped, it extends SE into the interior for a distance of about 14 miles.

2 The town of Pante Macassar (9°12′S, 124°22′E), previously known as Pantemakassar or Pantemakasar under Indonesian administration, is the capital of the enclave district. Lying on the coast and between it and the surrounding hills it is linked by road with Kupang and Dili. A prominent white monument surmounted by a religious statue stands in the town. A light (2.121) is displayed from Mahata, a village 1½ miles NE of the town.

In 1995, Pante Macassar had a population of 8000.

3 The port for Oecussi lies about 12 km W of Pante Macassar at Tanjung Tualeo (Tua Leo) (9°12′S, 124°18′E) and consists of a T-headed pier, 50 m long and 8 m wide at its head, with a least depth of 3 m, at MLWS, alongside. The pier extends a short distance from a wharf area constructed on reclaimed land.

The port may be identified by a prominent lattice tower standing on the wharf area.

4 **Anchorages.** Although there are several coastal villages in this enclave, trade is mainly conducted by road using Kupang or Dili. The coastal area is fronted by great depths 1 mile offshore throughout its length, and the few anchorages available are not recommended without local knowledge. One such anchorage lies at Sutrana (9°20′S, 124°04′E), a town, where vessels may find a berth in a depth of 40 m (22 fms), sand; another anchorage, in similar depths, lies 2 cables off Pante Macassar. Landings may be effected, in good weather, at, or close by, both of these towns.

5 **Small craft.** A jetty, 40 m long, of concrete construction, suitable for small craft, lies a short distance N of Pante Macassar. The jetty is accessed by a short built-up rocky groyne from the shore.

Atapupu

General information

2.125

1 **Position.** Atapupu (Atapoepoe) (9°00′S, 124°52′E), a small town and harbour, is situated at the head of a narrow inlet in the coastal reef on this NW coast of West Timor.

Function. Atapupu is an anchorage port for local vessels; there is also an oil and gas terminal, 3½ cables N of the inlet, whose main imports are petrochemicals. There is a regular ferry service between the port and Kalabahi (Alor) (*Indonesia Pilot Volume II*).

2 **Port limits.** The port limits are bounded by the arc of a circle, radius 6 cables, centred on a white monument (2.129) in the town.

Approach and entry. The port is approached from seaward through a channel, between the coastal reef, marked by light-beacons, thence into the inlet.

Traffic. In 2003 the port was used by 2 vessels with a total of 2 528 dwt.

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Limiting conditions

2.126

1 **Controlling depth.** There is a least depth in the inlet of 2·2 m (7 ft).

Tidal levels. See information in *Admiralty Tide Tables.* Mean spring range about 1·8 m, mean neap range about 0·6 m.

Local weather. The strongest winds, which may reach gale force, occur between December and March during the NW monsoon. The period of heaviest rainfall, when visibility may be reduced, occurs in January and February.

Arrival information

2.127

1 **Port radio** operates from the location of the coast radio station at Atapupu. For details, and operating times, see *Admiralty List of Radio Signals Volume 6(4).*

Harbour

2.128

1 **General layout.** The port is located on the E side of the mouth of a small inlet which is entered between Tanjung Raitakar (9°00′S, 124°51′E) and a built up point, 1 cable E; a breakwater extends 160 m N from the latter point. The town of Atapupu stands on Termanu, a hill, on the E side of the inlet. There are two small piers for boats on the E entrance point, and a white monument (2.129), with a custom shed nearby.

2 The channel leading to the inlet is ¾ cable wide between the outer extremities of coastal reefs, widening out to a basin with charted depths of 5 to 16 m (16 to 52 ft). The edge of the reef on the W side of the entrance is marked by a channel light-beacon (starboard hand), and on the E side by a channel light-beacon (port hand).

Atapupu Oil and Gas Terminal (2.132) lies 3½ cables N of the inlet where a walkway-pier extends nearly 2 cables W from the shore into the basin.

Directions

2.129

1 With local knowledge, the channel may be approached when the starboard hand light-beacon (2.128) has been sighted and confirmed, thence into the channel to the oil berth or inlet.

2 **Useful marks:**

Atapupu Light (white metal framework tower, 10 m in height) (9°00′S, 124°52′E).

White monument and custom shed, standing on the E entrance, are prominent.

Anchorage

2.130

1 Anchorage may be obtained in the basin (2.128) unless restricted by other craft; or in deeper water outside of the entrance to the channel between 20 to 40 m (11 to 22 fm). During the SE monsoon, anchorage may be obtained outside the coastal reef in depths of 54 to 78 m (29 to 42 fm).

Communications

2.131

1 The nearest airport is situated at Atambua, 11 km S of Atapupu.

Atapupu Oil Terminal

2.132

1 **Position.** Atapupu Oil Terminal, which also handles petrochemical products, lies 3½ cables N of the inlet at Atapupu (9°00′S, 124°52′E). The terminal consists of an L-shaped island berth, with dolphins, joined to the shore by a walkway.

Terminal Operator: Pertamina-Surabaya, with offices at Atapupu.

2 **Maximum size of vessel handled.** Vessels up to 1500 dwt, having a maximum length of 80 m, can berth alongside in depths of 5·2 m.

Tidal levels. See information in *Admiralty Tide Tables.* Mean spring range about 1.8 m; mean neap range about 0.6 m.

Port operations. Berthing and unberthing during daylight hours only, vessels may berth port or starboard side alongside.

3 **Notice of ETA.** Masters should forward their ETA, 72, 48 and 24 hours in advance to the terminal, then again 6 hours prior to arrival.

Pilotage is not compulsory.

Anchorage. See 2.130.

Facilities and supplies: limited; hospital at Atambua; fresh water and limited provisions may be obtained at the oil berth.

Anchorages

Naikliu

2.133

1 The large village of Naikliu stands at the head of a bight with a sandy shore, between Tanjung Gumuk (9°30′S, 123°48′E) and Tanjung Naisoneh, a low point, 3½ miles ENE. The village may be identified by its flagstaff and the summit of an irregular-shaped hill 3 miles SE of Tanjung Gumuk.

Anchorage may be obtained N of Naikliu in depths of 27 to 29 m (15 to 16 fm), sand and mud, but the depths decrease rapidly to the shore.

Wini

2.134

1 Anchorage may be obtained off Wini, a village, which lies at the head of a small bay entered between Tanjung Banuru (9°11′S, 124°29′E), a low point, and a similar point 1½ miles farther E. The best berth lies on the alignment (193°) of a white mosque at the head of the bay with Hoimusu (Hoi Musu), a mountain, 5 miles SSW of Tanjung Banuru which leads to an anchorage in a depth of 25 m (14 fm) 1½ cables from the head of the bay.

The alignment, however, passes 1 cable E of a 3·5 m (11 ft) patch 1¾ cables NW of the mosque.

Malintah

2.135

1 Anchorage may be obtained, in a depth of 10 m (33 ft), off Malintah, a village, situated 3½ miles SSW of Tanjung Tuwakmeseh (9°03′S, 124°42′E) (2.122). The best berth lies on the line of bearing 157° of a prominent white painted tree standing at Malintah.

Sungai Motalus

2.136

1 Anchorage may be obtained off Sungai Motalus (Mota Lus), a river situated in Timor-Leste, which enters the sea 3 miles S of Tanjung Fatuboro (8°42′S, 125°06′E) (2.122). This river is the only one on the whole island that does not dry in the SE monsoon.

The best berth lies WNW of an isolated hut on the beach.

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TIMOR-LESTE

GENERAL INFORMATION

Chart 942A

Scope of the section

2.137

1 Within this section are described the N and SE-facing coasts of the independent state of Timor-Leste (1.95) which lies NE of a line joining Batugadeh (Batu Gadeh) (8°57′S, 124°58′E) on the NW coast and the entrance to Sungai Motamasin (9°28′S, 125°05′E) on the SE coast. The description also includes Kambing (2.157), an island lying 14 miles N of Dili (8°33′S, 125°34′E), and the routes, harbours and anchorages associated with these coasts.

Dili, the region's capital and only port of importance in the area, lies on its N coast.

General description

2.138

1 In 1999 Timor-Leste became an independent state wholly detached from Indonesia, with borders based on the original Portuguese limits which separated that part of Timor from territory administered by the Netherlands. The East Timorese enclave of Oecussi-Ambeno has been described at 2.124. For a more detailed account of the historical facts of this transition see 1.97.

Topography

2.139

1 As with West Timor, Timor-Leste comprises a similar terrain. The central range of mountains is much in evidence with the highest peak on the island, Fatamailau (8°55′S, 125°29′E) rising to 2920 m (9580 ft) high, lying towards the NE end. The summits of the inland peaks, however, are often obscured by cloud but when clear may be seen for some considerable distance.

2 The coastal area throughout consists of numerous indentations and the coastal mountains facing Selat Wetar virtually rise steeply from the sea but are backed inland by agricultural land. There are numerous villages along the N coast which contain large mission houses and churches. Some of the houses are built to resemble forts, and give the whole a picturesque appearance as well as affording good landmarks. The SE-facing coast is little populated, is more desolate and seldom visited. Deep water lies close to the N coast but a narrow coastal bank up to 7 miles wide lies along the SE coast.

Currents

2.140

1 Currents around Timor-Leste are not well known but are not thought to be more than ½ kn except in areas that experience changes in current directions, for example, in the vicinity of Pulau Jaco, lying off the NE extremity of the island, where the rate is known to be about 3 kn. The general flow of current in the N of the area tends to follow the directions of the monsoons; farther S, off both coasts, the flow tends to be continuously SW.

General directions

2.141

1 Vessels passing through the area usually follow the open water routes for passing N of Timor through Selat Wetar at 2.13, or for either side of Timor given at 2.21, when passing SE of the island, or 2.27 if passing NW. Coastal routes follow similar tracks but closer inshore; they are given at 2.160 when passing along the N coast of the island, or 2.122 if passing NW, or from 2.76 thence 2.146 if passing SE.

SOUTH-EAST COAST OF TIMOR-LESTE

General information

Charts 3244, Aus 312 (see 1.34)

Route

2.142

1 From a position SE of Tanjung Tafara (9°24′S, 125°13′E) the coastal route continues NE to a position SE of Jaco (8°26′S, 127°20′E) (2.21) following the through route described at 2.21 but closer inshore.

Topography

2.143

1 In keeping with the SE coast of West Timor, the coastline is rocky and indented with numerous shallow-shaped bays which are backed by hilly ground and interspersed with low plains. This portion of Timor is not, generally, as high as that found farther S. However, the high peaks of the central range, which lie some distance inland, can be identified from seaward along this coast. In many of the bays there are shingle beaches, but only the occasional signs of habitation.

Flow

2.144

1 See 2.69.

Landmarks

2.145

1 Maubesi (9°18′S, 125°05′E) with Foho Rem, another peak but lower in elevation, rises 3 miles SE; on its summit stands an observation post surmounted by a flagstaff.

Samora (8°50′S, 125°52′E), a prominent mountain with a sharp peak; on the seaward slopes there is a prominent white military post. Between the coast and the peak, Fotuberliu, a lesser mountain, has a prominent flagstaff on the summit.

2 Mundoperdido, a prominent mountain, rises 15 miles NNW of Tanjung Beaso (8°57′S, 126°28′E).

Name (2.21), the highest peak of Pegunungan Matabia, which rises 10 miles N of Tanjung Roroai (8°49′S, 126°37′E).

Paitekauile (Pai Tekauile) (8°29′S, 127°11′E), a mountain with a very defined peak, 1036 m (3396 ft) high, which is prominent when seen from SW.

Passage directions

(continued from 2.76)

2.146

1 From a position SE of Tanjung Tafara (9°24′S, 125°13′E) the coastal route continues NE to a position SE of Pulau Jaco (8°26′S, 127°20′E), following the through route described at 2.21 but closer inshore. Although the coast here may be approached fairly closely it is not recommended, especially by small craft, as the current tends to set shoreward and the swell produces a strong rolling surf in both monsoon seasons. Vessels should maintain a deep water passage to seaward of the 200 m (100 fm) depth contour.

Useful mark:

Pulau Jaco Light (8°26′S, 127°20′E) (2.21).

Anchorages

Off Tanjung Suai

2.147

1 Anchorage, with local knowledge, may be obtained in a depth of 37 m (15 fm) off the W side of Tanjung Suai

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(9°21′S, 125°16′E), which is fringed by a reef extending 3 cables offshore. Suai, a village, with a prominent flagstaff, stands close E of the point, where a road leads inland to Dili (2.162) on the N coast. Suai airfield lies 2½ miles NNE of the village.

Betona

2.148

1 Anchorage may be obtained in a depth of 20 m off Betona (Betano), a village which lies 2½ miles NE of Tanjung Laletek (9°12′S, 125°41′E), a low, marshy point, which can be identified by a custom house and a beacon. A hill, 424 m high, rises 3 miles NE of Betona; the hill is surmounted by a flagstaff.

Landing can be effected onto the beach S of the village within a projecting tongue of the coastal reef, but there is a heavy surf with onshore winds.

Beaso

2.149

1 Anchorage may be obtained off the village of Beaso, which lies 1½ miles W of Tanjung Beaso (8°57′S, 126°28′E) (2.21). The village may be identified by the custom house and a white pillar. The best berth, in a convenient depth lies SSW of the white pillar. A road from Beaso leads 7 miles NW to the town of Viqueque, the capital of the district. Viqueque airfield lies 1 mile SSE of the town.

Landing may be effected on a short sandy beach between the drying reefs at the village; the white pillar should be approached on a track of NNE.

Aliambata

2.150

1 Anchorage may be obtained in a depth of 18 m, off the village of Aliambata which lies 2 miles W of Tanjung Roroai (8°49′S, 126°37′E) (2.21). The best berth, in this depth, lies SE of a large pyramid standing in the village. It has been reported that there are depths of 16 m 4½cables offshore, and depths of 37 m 7½cables offshore.

Elomar

2.151

1 Anchorage may be obtained, in a depth of 7 m, off the village of Elomar which stands on the shore of a small bay, 2½miles W of Tanjung Okaona (8°46′S, 126°49′E) (2.21). The best berth lies on the alignment (026°) of two pillars standing in the village.

A reef extends from the E shore of this bay, but off the village there is a broad sandy beach; landing may be effected onto this beach.

Saenamo

2.152

1 Saenamo (Lore), a village and landing place, lies 1½miles W of Tanjung Suloro (8°42′S, 127°01′E) (2.21) where the road from Aliambata reaches the coast. The anchorage at Saenamo is the roadstead for the local district. Suloro, the centre of the timber trade, stands 2¼ miles N of Tanjung Suloro.

A channel 5 cables wide, leads through the coastal reef to the landing place, which is sheltered in both monsoons. The alignment (350°) of two pillars near the beach leads through the middle of this channel.

2 Large vessels may anchor off Saenamo in a depth of 18 m SSE of the pillars. Anchorage for small craft can be obtained inside the reef in calm waters, even when there is a heavy surf on the outer edge of the reef.

Small craft

Luka

2.153

1 Luka, a village, stands 3¾ miles W of Tanjung Luka (8°59′S, 126°18′E) (2.21). Landing may be effected on the beach at the village under favourable conditions.

Selat Yako

2.154

1 Selat Yako (Jaco), a passage lying between Pulao Jaco (8°26′S, 127°20′E) (2.21) and the mainland, at the NE extremity of Timor, has a clear but narrow channel with a least width of 3 cables, which with local knowledge can be navigated, in good conditions, by small craft maintaining a mid-channel course. However, tidal streams through Selat Yako may attain a rate of 4 kn at springs and the direction changes regularly; the N-going stream is of longer duration than the S-going stream. There are whirlpools in both entrances, and there is a confused sea off the S entrance to the strait during the SE monsoon.

NORTH-WEST AND NORTH COASTS OF TIMOR-LESTE INCLUDING THE PORT OF DILI

General information

Charts 3244, 3296 (see 1.34)

General description

2.155

1 The small portion of the coast NW of Batugadeh (8°57′S, 124°58′E) and virtually the whole of the N coast of Timor-Leste facing Selat Wetar is mountainous. Around Tanjung Parimbala (8°39′S, 125°07′E), the rocky NW extremity of the island, it is particularly high. Here the mountains rise steeply from the sea. The summits of the higher ranges farther inland are generally obscured by clouds except during the SE monsoon. Dili, the main town, 27 miles E of the point, lies in a low plain. See 2.139.

2 The NE end of Timor is occupied by a fairly flat ridge of mountains, terminating in an almost perpendicular cliff 1 mile within Tanjung Cutcha (Sewirawa) (8°23′S, 127°18′E), the NE extremity of Timor. Pulau Jaco, (2.21), lies close E of the NE extremity and is separated from it by Selat Yako (2.154).

Route

2.156

1 From a position NW of Tanjung Parimbala (8°39′S, 125°07′E), the track to the NE extremity of Timor, and a position NE of Pulau Jaco (8°26′S, 127°20′E) (2.21) at the E entrance to Selat Wetar, initially leads ENE thence E for a distance of about 142 miles.

This coastal track lies closer to the coast than the through route described at 2.13.

Topography

2.157

1 Deep water lies close off the whole length of the coast. From Aipelo (8°35′S, 125°22′E) (2.160) to Dili (2.162), 11 miles E, the coast is formed by sandy beaches and patches of reef with an unbroken stretch of coastal reef extending up to 5 cables offshore. East of Dili the coast is fringed by an irregular reef, and the immediate coastline is generally low and covered with mangroves until Tanjung Fatulana (8°28′S, 125°51′E) is reached, thence becoming hilly and steep again as far as Tanjung Bundura (8°25′S, 126°25′E). The lower slopes of Kuri (2.159), a mountain, dominate this part of the coast.

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2 Between Laga (8°28′S, 126°36′E), a village, with a prominent fort (2.159), and Tanjung Irakuro (Ira Kuro), a low point, 24 miles NE, the coastline consists of sandy strips interspersed with stretches of reef, and, in places, is reef-fringed. East of Tanjung Irakuro the land rises steeply to a marshy plateau. Danau Iralaloro (Surubeco), a lake, lies towards the E end of the plateau.

3 Kambing (8°13′S, 125°35′E), a high and prominent island, previously part of Indonesia, and reported to be renamed Ataúro under East Timorese administration, lies 14 miles N of Dili. This island rises steeply from the sea on all sides appearing barren and almost inaccessible. Manokoko (Mano Koko), the distinctive pointed summit of the island, rises in the S part of the island.

Flow

2.158

1 **Currents** within Selat Wetar are not well known but are not thought to be more than ½ kn. They tend, however, to follow monsoonal directions W/SW in the SE monsoon and E/NE in the NW monsoon.

Tidal streams are noticeable but though the S side of the strait is free from tide-rips compared to the N side, there is often a heavy swell onto the coast.

Principal marks

2.159

1 **Landmarks:**

Guguleu (8°40′S, 125°11′E), the highest summit at the W end of a ridge of hills extending 17 miles E and parallel with the coast from Tanjung Parimbala. Guguleu is frequently obscured by clouds but when clear, its bare rounded summit can be identified from a great distance.

Prominent building situated on the hill at Maubara (8°37′S, 125°12′E) (2.178).

2 Fatumasin (8°39′S, 125°22′E), a prominent mountain.

Fatamailau (8°55′S, 125°29′E) (2.139).

Manokoko (8°16′S, 125°34′E) (2.157) situated on Kambing.

Statue of Christ, standing on Tanjung Fatukama (8°31′S, 125°36′E) (2.166).

Kuri (8°30′S, 125°54′E), a prominent mountain.

3 Prominent black cliff at Tanjung Subang (8°29′S, 125°57′E); the coast here rises steeply from the sea.

Laleia (8°32′S, 126°10′E), a village, situated high up on the hills and standing on the road from Manatutu (8°31′S, 126°01E) (2.181).

Wemase (Wemasse) (8°31′S, 126°12′E), a village, standing on a hill midway between Manatutu and Tanjung Bigono (8°25′S, 126°22′E).

4 Summit of Birak (8°32′S, 126°16′E), a mountain; prominent especially from N.

Fort, standing at Laga (8°28′S, 126°36′E), white and prominent.

Name (8°38′S, 126°36′E) (2.21), a mountain.

Fort, standing on a rocky point at Lautaim (8°22′S, 126°54′E) (2.185).

5 Radio masts standing at Kun (8°22′S, 127°04′E) (2.174).

Loikero (8°22′S, 127°10′E), a village, resembling a fort, which stands on the slopes of the hills, 2½miles SW of Tanjung Hero.

6 **Major lights:**

Tanjung Laisumbu Light (8°19′S, 125°08′E) (*Indonesia Pilot Volume II).*

Tanjung Laguebada Light (8°33′S, 125°34′E) (2.166).

Pulau Liran Light (8°03′S, 125°44′E) (2.195).

Kun Rear Leading Light (8°22′S, 127°04′E) (2.174).

Tanjung Tutpateh Light (8°13′S, 127°36′E) (3.130).

Directions

(continued from 2.123)

2.160

1 From a position NW of Tanjung Parimbala (8°39′S, 125°07′E), the coastal route initially leads ENE thence E, to a position at the E entrance to Selat Wetar, passing (with positions from Tanjung Fatukama (8°31′S, 125°36′E)):

NNW of Tanjung Parimbala (29½miles WSW), thence:

NNW of Tanjung Palila (15 miles WSW), a high, rocky point formed by a spur from a mountain which rises 1½ miles S of the point. Aipelo, a village, lies close E of Tanjung Palila and may be identified by its prison, a large building surrounded by a low wall. Thence:

2 NNW of Tanjung Mauduki (5½ miles WSW) (2.165), situated in the W approaches to Dili, thence:

NNW of Tanjung Fatukama (2.165), the E entrance point to Dili, rising inland to a mountain 507 m (1663 ft) high, 1¾ miles SE, thence:

NNW of Tanjung Fatulana (Fatu Lana) (15 miles ENE). Matamusin (Mata Musin), a rock, lies close to the coast 5 cables W of Tanjung Fatulana.

3 Thence (with positions from Tanjung Laivai (8°24′S, 126°44′E)):

NNW of Tanjung Bigono (22 miles W), a hilly, bluff point, thence:

NNW and N of Tanjung Bundura (18½ miles W), a high and steep point, thence:

N of Tanjung Laivai (Laifai), a low point, charted as Tanjung Laidalu on chart Aus 312, thence:

4 N of Tanjung Khatu (17 miles ENE), the low N point of Timor, thence:

N of Tanjung Hero (8°20′S, 127°11′E), a rocky headland, with rising ground to the S, thence:

N of Tanjung Cutcha (Sewirawa) (8°24′S, 127°18′E) the rocky NE extremity of Timor, thence:

N of Pulau Jaco (8°26′S, 127°20′E), from where a light (2.21) is displayed, and between it and Pulau Leti, 20 miles NE.

2.161

1 **Useful marks:**

Large building at Liquisa (Likisa) (8°36′S, 125°19′E) (2.179).

Light (8°32′·5S, 125°32′·3) (2.170) displayed from a position close W of Dili Oil Terminal.

Tree, standing at Tanjung Sika (8°22′S, 126°53′E).

Dili

Chart 3296 plans of Approach to Dili, Aus 901.

General information

2.162

1 **Position.** Dili (8°33′S, 125°34′E), a large town and seaport, is situated at the head of a bay on the N coast of Timor-Leste.

Function. The port, handles mainly general cargo, with the main exports being coffee and copra. An oil terminal (2.170) lies 1½ miles W of the port. In 1999, this capital town of independent Timor-Leste had a population of about 150 000.

2 **Approach and entry**. The port is approached from NW, within the white sector of a direction light given at 2.167, and entered between two light-beacons marking the entrance to the W passage.

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Traffic. In 2003 the port was used by 90 vessels with a total of 262 101 dwt.

Port Authority. Harbour Master Dili, Jalan Americo Tomas, Dili. Timor-Leste.

Limiting conditions

2.163

1 **Controlling depths.** In 2003, there was a least charted depth of 14·5 m in the W entrance channel; a shoal patch with a least depth of 6·5 m over it, lies 2¾cables E of Tanjung Laguebada, within the basin in the approach to the berths.

Deepest berths: 7·9 m at the main quay alongside.

Tidal levels: See *Admiralty Tide Tables.* Mean maximum range about 1·6 m, mean minimum range about 0·8 m.

Density of water: 1·025 g/cm^3.

2 **Maximum size of vessel handled:** 140 m in length, draught of 7·2 m has berthed alongside.

Local weather. The period of heaviest rainfall, when visibility may be reduced, lies between January and April. The strongest winds, which may reach gale force, occur between December and March during the NW monsoon.

Arrival information

2.164

1 **Port radio.** Call sign 'Dili Radio', which operates from the harbour office.

Notice of ETA required. Masters should forward their ETAs at least 48 hours in advance, thence 24 hours, to local agents and/or Port Authority, stating last port of call and maximum draught.

2 **Outer anchorage.** Large vessels may obtain an anchorage in the outer roadstead, as shown on chart Aus 901. However, a charted area of foul ground lies in the E part of the anchorage, 7½cables N of Tanjung Laguebada. Within the roadstead a dangerous wreck lies 8½cables WNW of Tanjung Laguebada (8°33′S, 125°34′E). Prior to arrival, mariners should be advised from the port the nominated anchorage position to proceed to.

Pilotage is compulsory for vessels entering the harbour through the reefs.

Tugs. A tug is available.

Harbour

2.165

1 **General layout.** The harbour at Dili, which lies on a low plain at the head of a small bay, is entered between Tanjung Mauduki (8°32′S, 125°31′E), a low muddy point, and Tanjung Fatukama (Fatocama), 5 miles ENE. A line of reefs extend E across the entrance to the bay from Tanjung Laguebada (8°33′S, 125°34′E), a low reef-fringed point, through which two channels give access to a sheltered basin fronting Dili. The W of the two channels being the main entrance channel.

Dili Oil Terminal (2.170) lies 1½ miles W of the town.

Climatic table. See 1.159 and 1.172

Principal marks

2.166

1 **Landmarks:**

Green statue of Christ standing on a green and blue globe with a white base, facing W, on Tanjung Fatukama (2.165) is conspicuous.

Steeple, 2 cables SSE of Tanjung Laguebada (2.165) is conspicuous.

Radio Mast (red and white bands) standing 4½cables SE of Tanjung Laguebada, is prominent.

2 Governor's Office, situated at the head of the bay, close S of the directional light, as shown on the chart, is prominent.

Steeple, 6¼cables S of Tanjung Laguebada, is conspicuous.

Mosque, 5 cables WSW of Tanjung Laguebada, is conspicuous.

Major light:

Tanjung Laguebada Light-tower (metal framework tower, white stone base, with blue bands; 17 m in height) (8°33′S, 125°34′E).

Directions

2.167

1 **Directional Light (WRG):**

White triangle point down above white triangle point up on metal framework tower (8°33′·2S, 125°34′·7E).

Initially, Tanjung Laguebada Light should be approached from N until the directional light-beacon bears 132°, thence the track leads SE, through the W channel and within the white sector 129°–140° (11°) of the directional light, into the harbour, passing (positions from Tanjung Laguebada):

2 Between the light-beacons (port and starboard) (2 cables NNE), marking the seaward extensions of the coral reefs fronting the harbour, thence:

Close NE of a rocky shoal (3 cables ESE), over which there is a least depth of 6·5 m, thence the track leads S towards the berths (2.168).

3 In the E part of the harbour there is a rocky shoal (5¼cables SE) over which there is a least depth of 5·4 m; a detached reef, marked by a beacon (isolated danger), lies 1 cable NE of the shoal.

The E channel is not recommended without local knowledge; there is a least depth of 4·1 m in the fairway.

4 **Useful marks:**

Dili Oil Terminal Light (8°33′S, 125°33′E) (2.170).

Light (White beacon), displayed 5½ cables WNW of the terminal light (2.170).

Post, situated on the E reef, 5 cables NE of the direction light.

Berths

2.168

1 **Anchorage.** Anchorage may be obtained in the inner roadstead, E of Tanjung Laguebada, and clear of the reefs, in a depth of 22 m, mud and sand. There are also several mooring buoys in the harbour. The best time to anchor is in daylight, on LW, when the reef-heads are visible.

Alongside berths. The main cargo wharf, of concrete construction and well fendered, is situated on the W side of the harbour; it is 295 m long, 14 m wide, and with a charted depth of 7·9 m alongside.

2 **Other berths.** A ferry terminal, and berths for local craft, lie at the head of the bay where there are depths from 2 to 7 m alongside.

Landing may be effected on the beach at Komoro Airfield (2.169).

Port services

2.169

1 **Repairs** of a minor nature can be undertaken.

Other facilities: hospital and medical assistance; deratting exemption certificates issued.

Supplies: fresh water; provisions. In 1999 these items could only be supplied in limited amounts.

Communications. Dili Airfield lies 5 km W of the town, with connections to points in Indonesia and N Australia. In

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1999, the port was on the scheduled call for Pelni ferries, linking ports within the Indonesian Archipelago as far away as Tanjungperak and Ambon.

Dili Oil Terminal

General information

2.170

1 **Position.** Dili Oil Terminal (8°33′S, 125°33′E) lies 1½ miles W of the town of Dili. The terminal, from where a light (white concrete structure) stands at the root of the pier, and is displayed when vessels are due, consists of a single T-head island berth, with dolphins, joined to the shore by a stone causeway.

Function. The terminal is mainly used for the importation of petrochemicals.

Terminal Operator. Pertamina PKK–UPPDN, Harbour Master Dili Terminal, Jalan Pantai Kelapa, Dili. Timor-Leste.

2 **Maximum size of vessel handled.** Vessels up to 6500 dwt, having a length of 107 m, can berth alongside in depths of 12 m.

Arrival information

2.171

1 **Port operations.** berthing/unberthing is conducted during daylight only.

Port radio. The terminal has its own VHF/Radio communications system.

Notice of ETA. Masters should forward their ETA 3, 2 and 1 day in advance to the terminal, then again 6 hours prior to arrival.

Pilotage is compulsory. Request for a pilot should be made to Pertamina at least 24 hours in advance and 6 hours prior to departure.

Tugs are not available; nor are there any mooring boats.

Facilities

2.172

1 Facilities are limited; fresh water and limited provisions are available alongside.

Minor harbours

Chart Aus 312 (see 1.34)

Kairabela

2.173

1 **General information.** Kairabela (Karabela) (8°29′S, 126°17′E), approximately 43 miles E of Dili, is a small ro-ro ferry terminal. Consisting of a single concrete-constructed adjustable ramp, with added dolphins extending 60 m W on its S side, the berth lies at the head of a curving pier from the shore, 140 m in length and 9 m wide. Depths alongside range between 3 and 4 m.

The port fronts the fishing village of Kairabela which is surrounded by brackish swamp land. However, a good road system links the terminal with the coast road leading W to Dili or E to Kun.

Landing may be effected onto the beach 4 km W of the village.

2 **Directions.** The terminal ramp, which faces W, is open to the weather from N; it is initially approached from N with the final approach being made from WNW.

Facilities. In 2000 there were no facilities.

Chart 3244 (see 1.34)

Kun

2.174

1 **General description.** Kun (8°22′S, 127°04′E), a town, which stands on the termination of the coast road linking with Dili, offers an anchorage and an alongside berth. This small sheltered natural harbour, which fronts the town, is formed by an opening in the coastal reef and is easily approached on the leading line (see below). It is available to vessels up to 2000 dwt.

2 The entrance to the harbour is narrow, barely 1 cable wide, but it is marked by beacons on each side. The channel has a least depth of 28 m (15 fm) on the leading line. There is a jetty, L-shaped, 80 m long, with a least depth of about 8 m alongside, which lies at the head of a stone and concreted pier.

Local knowledge is necessary for entry to the harbour.

Landmark:

Radio masts, two in number, painted white on silver, and prominent, stand close S of the town.

3 **Directions.** From open waters, the alignment (217¼°) of the following leading lights leads SSW through the marked channel to an anchorage berth or the jetty:

Front light (8°21′·9S, 127°03′·9E).

Rear light (180 m SSW of the front light).

Anchorage may be obtained, even in the NW monsoon, off the berth, or in a depth of 46 m (25 fm), stony bottom, NE of a rocky point close E of the town.

Facilities: limited.

Anchorages

Charts Aus 312, Aus 901, 3244, 3296

General information

2.175

1 The 200 m (100 fm) depth contour lies almost continuously close to the coast, and fairly good anchorages may be obtained in places. In the anchorages described, local knowledge is essential.

Batugadeh

2.176

1 Anchorage may be obtained off Batugadeh (Batu Gadeh) (8°57′S, 124°58′E), a village on the NW coast of Timor-Leste close N of the border with West Timor. The best berth lies NW of the fort, situated in the village, in a depth of 20 m (11 fm), sand and mud, and 1½cables offshore. The depths increase rapidly seaward of this position. A conspicuous rock, which lies close to the shore shows up plainly against the green background.

Landing can be effected at Batugadeh. The landing site lies at the E end of the village and should be approached on a track leading ESE on account of rocks and fringing reefs lying farther E along the beach.

Maumeta

2.177

1 Anchorage may be obtained off Maumeta (8°16′S, 125°36′E), a village, standing on Kambing (2.157). The best berth lies 5 cables ESE of the government official's house in a depth of 37 m, sand and stones.

Ataúro Airfield stands on the coast 8 cables N of Maumeta.

Maubara

2.178

1 Temporary anchorage may be obtained in a depth of 49 m (27 fm) off Maubara (8°37′S, 125°12′E), a village, identified by its church and by a house with high walls, standing close

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to the sea. The residence of a local official, situated on the summit of a hill, is also prominent.

The best berth lies on the alignment of a detached rock, close W of the village, with Tanjung Morai (Rai Meo Ilo), 1½ miles WSW of the village, and the roads on either side of the house, near the beach, open.

Tidal streams off Maubara cause strong eddies and may cause a vessel to swing and foul her anchor.

Liquisa

2.179

1 Anchorage may be obtained off Liquisa (Likisa) (8°36′S, 125°19′E), a village standing on the coastal road which can be identified by a large church. The best berth lies in a depth of 49 m (27 fm), sand, on an approach to the church from NW.

Off Sungai Comoro

2.180

1 Anchorage is reported to be good off a white sandy beach, which extends 1 mile E from Sungai Comoro, whose entrance lies close W of Tanjung Mauduki (8°32′S, 125°32′E) (2.165). This anchorage is, however, exposed during the NW monsoon.

Manatutu

2.181

1 Anchorage may be obtained off Manatutu (Manatuto) (8°31′S, 126°01′E), a village, in a depth of 55 m, but the bottom is soft mud and not good holding ground. The village can easily be identified by a white church with two towers, and some houses on a hill nearby.

Lamsana

2.182

1 Anchorage may be obtained off Lamsana, a village standing near the head of an inlet 3½miles E of Manatutu (8°31′S, 126°01′E). The best berth, however, lies outside the entrance to the inlet in a depth of 20 m.

Laga

2.183

1 Anchorage may be obtained off Laga (8°28′S, 126°36′E), a village which can be identified by its fort (2.159). The best berth here lies close to the coast in a depth of 29 m, mud, and NNW of the fort.

Llilai

2.184

1 Anchorage may be obtained in a depth of 29 m (16 fm), coral, NE of the flagstaff on the fort at Llilai (8°24′S, 126°44′E), a village, situated on the slopes of the hills close SE of Tanjung Laivai (Laidalu) (2.160).

Lautaim

2.185

1 Anchorage may be obtained off Lautaim (8°22′S, 126°54′E), a town, in a depth of 20 m (11 fm), mud, and NW of four stone pillars on the beach. The depths decrease rapidly towards the shore.

Lautaim Airfield stands on the coast, 3½ miles WSW of the town, which in 2000 had a population of about 17 000.

A fort stands at Lautaim.

Small craft anchorage and landing

Aidabeleten

2.186

1 Landing may be effected at Aidabeleten (8°47′S, 125°06′E), a village situated on the NW coast of Timor-Leste. A conspicuous church marks the N limit and a white building on a hilltop marks the S limit of this landing area.

Laclo River

2.187

1 Laclo River (8°30′S, 126°00′E), previously known as Sungai Laclo under Indonesian administration, which has a wide entrance, enters the sea on the N coast of Timor-Leste, 1¾ miles SE of Tanjung Subang. There is a passage in and out of the river, for small craft, at HW; the hinterland is an important export trading centre.

Landing may be effected on the beach at Manatutu (2.181), 1 mile SE of the river entrance.

Off Lamsana

2.188

1 Sheltered anchorage for small craft may be obtained off Lamsana (8°31′S, 126°04′E) (2.182), in a depth of 5 m (18 ft).

Baucau

2.189

1 Baucau (8°28′S, 126°27′E), known as Baukau under Indonesian administration, is after Dili the largest town on this stretch of coast, lying at an elevation of 319 m. The town contains a government building on which there is a flagstaff.

Anchorage may be obtained off the coastal road adjacent to the town in a depth of 10 m (33 ft), coral, where vessels can swing clear of the narrow coastal reef, and lie well in both monsoons.

A brisk trade is carried out by praus from the anchorage.

Fatusika, which comprises a noticeable group of rocks, lies close offshore, 1¾ miles NW of the anchorage.

SOUTH-WESTERN ISLANDS OF PULAU-PULAU MALUKU

GENERAL INFORMATION

Chart 3244

Scope of the section

2.190

1 In this section are described three of the many islands forming Maluku (1.89). Previously known as the Moluccas, this island group contains over one thousand islands.

Also described are the passages and anchorages associated with the three islands.

General description

2.191

1 The islands lying E of Nusatenggara forming the SW portion of the province of Maluku comprise Pulau Liran, Pulau Wetar and Pulau Kisar (8°03′S, 127°11′E). They are all hilly, with coasts fringed by steep-to narrow reefs and great depths lying close offshore.

The adjacent islands of Pulau-pulau Sermata are described in Chapter 3.

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General directions

2.192

1 The N coast of Pulau Wetar is not frequented by vessels other than local craft trading around the islands, particularly as there are no anchorages or harbours of shelter on this coast.

Most of the E-W traffic in the area passes S of Pulau Wetar and S of Pulau Kisar using the through route as described from 2.9, or the coastal passage leading along the coast of Timor described at 2.160.

The only anchorage offering shelter off Pulau Wetar lies on the S coast of the island within Teluk Sau (2.202).

PULAU LIRAN INCLUDING SELAT LIRAN

General information

Chart 3244 (see 1.34)

Topography

2.193

1 Pulau Liran (8°00′S, 125°44′E) is wooded and mountainous, rising to 430 m (1409 ft) high in its central part. The island is reef-fringed, and off its N part lie several detached coral reefs and rocks. Karang Nautilus, the largest, lies 1¼ miles N of Pulau Liran.

Selat Liran, the strait separating Pulau Liran from Pulau Wetar, is barely 1½ miles wide at its narrowest part. The N-S fairway, 8 miles in length, is clear of dangers.

Flow

2.194

1 Whilst currents around Pulau Liran are not well known, tidal streams off the island, at certain states of the tide, cause heavy tide-rips at the S end of the bank extending from the S point of the island. They are also in evidence off the N extremity of the island particularly in the channel separating the island from Karang Nautilus.

In Selat Liran, the tidal stream sometimes attains a rate of 3 kn.

Principal marks

2.195

1 **Landmark:**

Summit of Pulau Liran (8°00′S, 125°44′E) which is particularly prominent from NW or SE.

Major light:

Pulau Liran Light (metal framework tower) (8°03′S, 125°44′E) (chart 3296) standing 5 cables N of the S extremity of the island.

Directions for Selat Liran

2.196

1 From N or W, the strait should not be entered until the dangers N of Pulau Liran have been passed. The track then leads S with the fairway open midway between the islands.

From S, the track leads N in reverse to the above. There is a least depth of 26 m (14 fm) in the fairway.

Anchorages

2.197

1 Anchorages in the SE monsoon may be obtained in a depth of 60 m (33 fm), sand, 2 cables from the coastal reef, W of Pulau Liran Light (8°03′S, 125°44′E) (2.195).

Anchorage in the NW monsoon may be obtained in a depth of 35 m (19 fm), sand and coral, SE of Pulau Liran Light.

Caution. The depths are irregular and detached dangers lie 4 cables offshore. The coastal reef on the E side of the island extends considerably farther from the coast than on the W side, but is steep-to and plainly marked by discoloration under favourable conditions.

PULAU WETAR

General information

Chart 3244 (see 1.34)

Topography

2.198

1 Pulau Wetar is generally rugged and mountainous with coasts that are high, steep and inhospitable. The S coast of the island between Tanjung Tutunpibia (Pibia) (8°01′S, 125°48′E), its steep SW extremity, and Tanjung Tutuneden (Eden), 40 miles E, its steep, rocky SE extremity, consists of sand and shingle beaches alternated by steep, rocky points, but always backed by the mountain ranges. Between Tanjung Tutuneden (7°58′S, 126°28′E) and Tanjung Tutuniskanawatu (Iskanawatu), its rocky E extremity, 25 miles NE, the coast forms a wide bight, with Dom (Ilporo Huhun) (2.200) prominent.

2 The W coast of Pulau Wetar is steep in places, and indented, gradually rising to the mountains within. Pulau Reong (2.200), lies close W of Tanjung Tutunlihuwai (Lihuwai) (7°39′S, 125°58′E), the rocky NW extremity of the island. The N coast is steep and rocky almost everywhere and there are a few small bays. East of Tanjung Tutunliloeng (Liloeng) (7°41′S, 126°15′E), the sombre, forbidding coast has a more hospitable appearance where there are some villages.

Tanjung Tutuntujau (Tujau) (7°33′S, 126°38′E), a bold headland, and the N extremity of Pulau Wetar, can be identified from a considerable distance from W or E.

Local weather

2.199

1 On the E side of Pulau Wetar, during the SE monsoon, there is often a heavy sea and bad weather between the E and N extremities of the island; W of the N extremity, there may be a calm sea and practically no wind.

Heavy surf greatly affects the E coastline in both monsoons and there are strong tide-rips close offshore throughout the year.

Principal marks

2.200

1 **Landmarks:**

Ilitalo (7°55′S, 125°52′E), a mountain with a crater-shaped crest.

Tanjung Tutunhatumasin (Hatumasin) (7°59′S, 125°52′E), a prominent, high, steep headland.

Ilmetang, a mountain, 666 m (2183 ft) high, with numerous white patches standing on it, rising from the S coast, 1 mile NNE of Lemar (7°54′S, 126°02′E), a village.

2 Tenagatu (7°51′S, 126°05′E), a high mountain with a flat top visible only on the S coast.

Dom (Ilporo Huhun) (7°45′S, 126°34′E), a dome-shaped mountain. Another mountain, with a flat summit rises 5 miles E of Dom. From SE when passing through Selat Wetar both these mountains are prominent.

3 Pulau Reong (7°40′S, 125°55′E), is prominent from W. The island is separated from the NW extremity of Pulau Wetar by a narrow, clear, deep channel.

Ilwai (7°44′S, 126°10′E), a prominent mountain with a conical summit.

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White Mark, situated on the N coast, 3 miles SW of Tanjung Tutuntute (Tute) (7°38′S, 126°23′E) is conspicuous.

Tanjung Tutunhatuloi (Hatuloi) (7°40′S, 126°49′E), the steep, prominent NE extremity of Pulau Wetar.

4 **Major lights:**

Pulau Liran Light (8°03′S, 125°44′E) (2.195).

Tanjung Tutunhatuloi (Hatuloi) Light (white metal framework structure, 30 m in height) (7°39′S, 126°49′E).

Directions

2.201

1 See the general directions given at 2.192.

Anchorages

South coast of Pulau Wetar

2.202

1 The only anchorage offering any shelter, and the best anchorage off the entire island, exists in Teluk Sau, at the E end of the S coast of Pulau Wetar. The bay is entered between Tanjung Tutundare (7°56′S, 126°24′E) and Tanjung Tutuneden (2.198), 5 miles ESE. Ilwaki, the main village on the island, stands a short distance inland at the head of the bay, and 2¼miles E of Tanjung Tutundare. A number of buildings stand on the shingle beach fronting Ilwaki. There is sea communication with Timor by local vessels.

The best berth, in both monsoons, lies in a depth of 55 m (30 fm), 2 cables S of Ilwaki.

West coast of Pulau Wetar

2.203

1 During the SE monsoon, anchorage may be obtained off Air Panas, a village, standing at the head of a small inlet, 1½ miles E of Tanjung Tutundiruru (Diruru) (7°51′S, 125°48′E), a low mangrove-covered point. The best berth lies in depths of 29 to 40 m (16 to 22 fm), 2 cables offshore, and NW of a prominent white tree. Within the village there is a warm-water spring, as shown on the chart.

North coast of Pulau Wetar

2.204

1 Anchorage may be obtained, in depths of 40 to 49 m (22 to 27 fm), off the entrance to Kuala Lihutau which enters the sea 3 miles SW of Tanjung Tutuntute (7°38′S, 126°23′E) (2.200). The best berth lies 1 cable offshore with a hawser to the shore.

A village stands on the E side of the river entrance, which is inaccessible owing to a shoal bar.

2.205

1 With local knowledge, anchorage may be obtained in a depth of 40 m (22 fm), NW of the entrance to a small river which enters the sea at the head of Labuhan Maka (Makka) (7°35′S, 126°31′E), a small indentation in the coast. It is the roadstead for Uhak, a village, situated 1¼ miles W. The roadstead is easily identified, as a prominent rock lies close under the coast at the W entrance to the bay.

Small quantities of fresh provisions may be obtainable at Uhak.

Small craft anchorage

2.206

1 Anchorage for small craft may be obtained off Tuputi (7°50′S, 126°33′E), a village on the SE-facing coast, with a hawser laid out to the shore.

PULAU KISAR

General information

Chart 3244 (see 1.34)

Topography

2.207

1 Pulau Kisar (8°03′S, 127°11′E), a high, steep, and rocky island sparsely covered in vegetation, lies 13 miles N of the NE coast of Timor. Its coastline consists of coral-lime broken only where streams flow out to the sea. The highest part of the island, Tailutu, rises to 239 m (785 ft) high in its NW part but is not prominent. In general, although hilly, there are no landmarks of prominence.

Major light

2.208

1 Tanjung Tutunmahin (Ujung Mahin) (white metal framework structure, 30 m in height), (8°06′S, 127°14′E).

Directions

2.209

1 Pulau Kisar lies at the intersection of through routes leading E-W through Selat Wetar, the directions for which are given at 2.13 or 2.15, or N and S routes, leading to/from Australia, the directions for which are given at 2.32.

Pulau Kisar is only visited by local vessels

Pantai Wonreli

General information

2.210

1 **General description.** The only roadstead off Pulau Kisar lies adjacent to the village of Pantai Wonreli (8°05′S, 127°09′E) on the W coast. The village, which lies at the head of a slight indentation on the coast, is the headquarters of a government official, and stands a short distance inland. It may be recognised by a large church; a light (white metal structure, 10 m in height) is displayed from the shore near the village.

2 **Anchorage** may be obtained in a depth of about 48 m (26 fm), coral and stones, about ½ cable NW of a distinctive white pyramid near the village. Farther offshore the anchor may drag owing to the steep bottom. Sudden squalls can make this anchorage dangerous.

Tidal streams set NNE/SSW here.

Landing. The best place for landing or loading cargo is near the mouth of a small river close to the village. It is exposed from WSW but a narrow reef ½ cable offshore, with greater depths inside, acts as a breakwater. A shallow channel, suitable for boats at LW, leads over the reef.

Facilities are limited, but some supplies may be obtained.

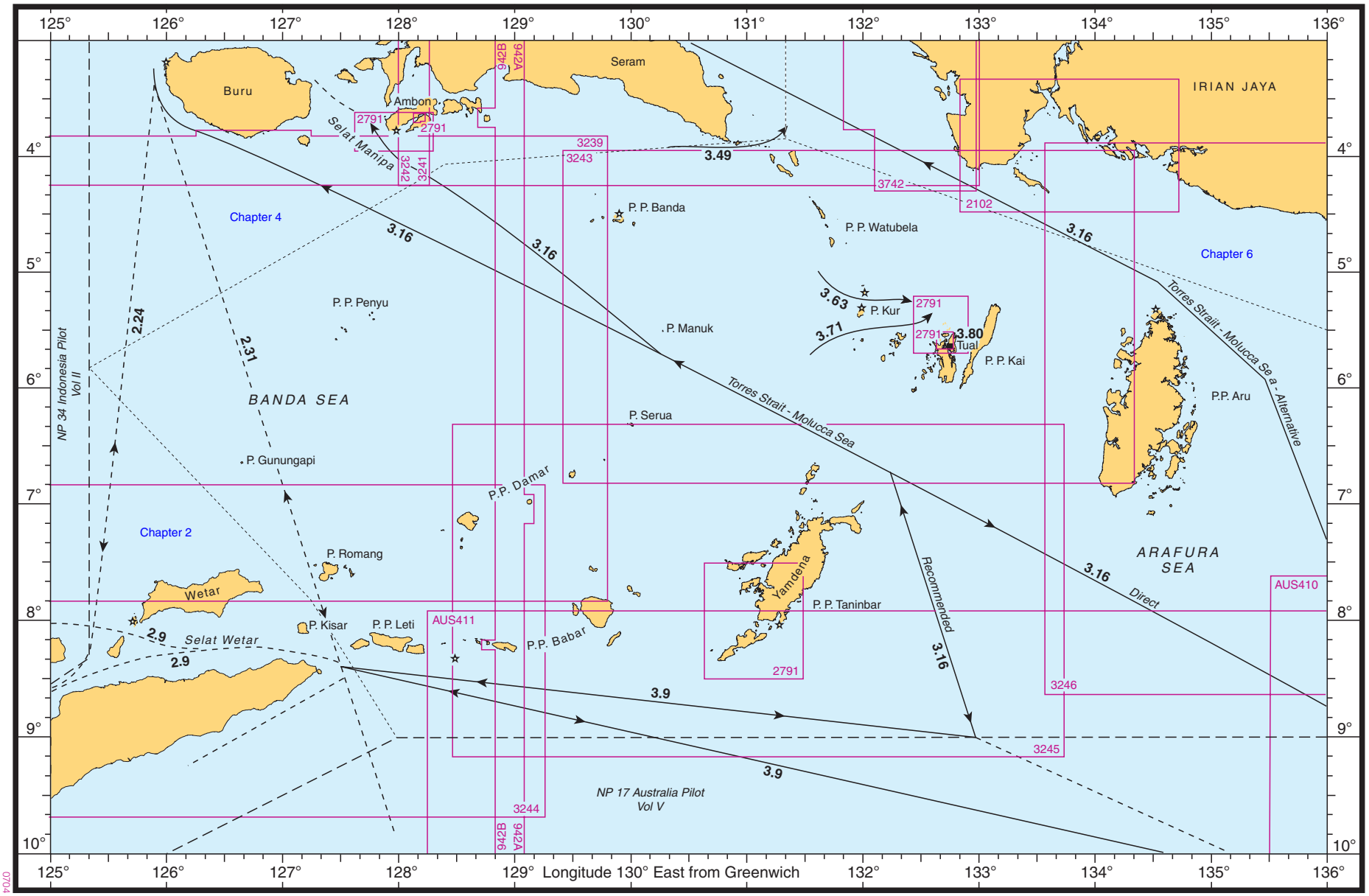
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Chapter 3 - Banda Sea and the northern part of the Arafura Sea



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CHAPTER 3

BANDA SEA AND THE NORTHERN PART OF ARAFURA SEA INCLUDING THE THROUGH ROUTES LEADING TO AND FROM TORRES STRAIT

GENERAL INFORMATION

Chart 4603

Scope of the chapter

3.1

1 In this chapter are described the islands and outlying dangers within the central Banda Sea; the islands lying SE of the SE extremity of Pulau Seram; Pulau-pulau Kai; the N and S groups of islands which form Pulau-pulau Sermata situated on the S side of Banda Sea.

Also described are the islands and off-lying dangers of the Arafura Sea including Pulau-pulau Aru.

2 Included in the description are the harbours, anchorages and waterways associated with the islands in both sea areas; the only ports of any importance are Bandanaira (3.40) in the Banda group, Tual (3.80) situated in Pulau-pulau Kai, Saumlaki (3.160) situated on the island of Yamdena, and Dobo (3.198) situated on the island of Wamar in the Aru group.

Routes

3.2

1 **Through routes.** The two main recommended routes (*Ocean Passages for the World*) through the area confined by the limits of this chapter, link Torres Strait with Molucca Sea for vessels bound to or from Japan, and Flores Sea with Torres Strait for vessels bound to or from Singapore using Selat Karimata (*Indonesia Pilot Volume I).*

2 The former route leads W from the W entrance to Torres Strait, as described in *Australia Pilot Volume III,* thence NW to the position 9°00′S, 133°05′E. The track then leads NNW passing between the island groups of Pulau-pulau Tanimbar and Pulau-pulau Kai, thence WNW passing S and W of Pulau Buru (3°25′S, 126°35′E).

The latter route passes N of the archipelagic islands of Nusatenggara (*Indonesia Pilot Volume II)* thence E through Selat Wetar passing S of Pulau-pulau Tanimbar to the position 9°00′S, 133°05′E, thence to the W approach to Torres Strait previously mentioned.

3 **Other routes.** On the S-N route, alternative passages (*Ocean Passages for the World)* lie direct from Torres Strait passing between Pulau-pulau Tanimbar and Pulau-pulau Kai, thence as described for the recommended route, or passing W of Ujung Salah (Tanjung Salah) (8°25′S, 137°38′E), E and N of Pulau-pulau Aru and N of Pulau Seram. However, parts of these tracks are unsurveyed especially in the E portion of Arafura Sea and off Irian Jaya.

4 On the E-W routes, deep-draught vessels have on occasions been known to proceed directly ESE from Selat Wetar to the recommended position N of Cape Wessel (*Australia Pilot Vol V)* thence E to Torres Strait.

Archipelagic Sea Lanes have been designated within certain of the waters described in this chapter. For further information see Appendix II.

Topography

3.3

1 Many of the islands, excepting those in Pulau-pulau Aru which are low-lying, are wooded, high, and in some cases mountainous and in general visually provide good landmarks. Most are reef-fringed with deep water close to. Some of the smaller islets rise from coral reefs and are covered in vegetation; they are also wooded. Most of the islands, including the smaller ones, are known to provide good radar targets.

2 Yamdena, the largest and most important island of Pulau-pulau Tanimbar, is hilly in its S part, N and W of Teluk Dalam (8°00′S, 131°17′E) (3.160) but has no outstanding peaks. There are many coconut plantations and an undeveloped area of oilfields. Saumlaki, the most important port on the island, is situated on a rocky and wooded peninsula whose W side overlooks Teluk Dalam.

For a description of Banda Sea and its boundary limits see 1.3.

Shoals

3.4

1 There are several reported shoals situated S of Pulau Buru on or near the through route passages, the positions of which are doubtful and approximate.

A reef (4°19′S, 126°16′E) was reported (1927) to lie 36 miles SW of Buru.

A shoal (4°02′S, 126°21′E) was reported (1950) to lie about 20 miles SW of Buru.

A shoal (4°09′S, 127°17′E) was reported (1974) to lie 30 miles SE of Buru.

Natural conditions

Volcanic activity

3.5

1 Within the limits of this chapter there are several areas where volcanic activity has been reported in recent years. As many of the islands are of volcanic origin, especially those islands following the more N circular group of Pulau-pulau Sermata, earthquakes are not uncommon. Some of the more prominent areas of activity, which are described in more detail within the text, are briefly described below:

Gunung Api (4°31′S, 129°53′E), which rises in Pulau-pulau Banda, last erupted in 1988.

2 Pulau Manuk (5°33′S, 130°18′E), 60 miles SSE of Pulau-pulau Banda, has been seen emitting smoke from the crater summit.

Pulau Gunungapi (Gunung Api) (6°38′S, 126°40′E), rising in the off-lying Romang group of islands, in the S of the region, is sometimes active; vapour may be seen rising from the crater summit.

3 Teun (6°59′S, 129°08′E), which rises in Pulau-pulau Damar, last erupted in 1904. Wuwarlali (7°08′S, 128°40′E), rising from Pulau Damar in the same group, emits steam and sulphur fumes from several places. It has been reported that earthquakes and sea disturbances often occur in this area.

Nila (6°46′S, 129°31′E), an island with an active volcano, rising 23 miles NE of Teun, last erupted in 1932.

Flow

3.6

1 **Currents** are mainly monsoon generated, flowing E or W depending on the season; the E current being the stronger. In general the rate of current through the region is about ½kn

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in each direction but is not usually more than 1 kn. In Arafura Sea, throughout the year, the current sets SW-W from Torres Strait to Timor and Banda Seas.

2 **Tidal streams**, however, are strong through the narrow channels produced by the island groups. Through the channels of the islands lying SE of Seram, tidal streams attain a rate of 3 kn; they set N with a rising tide and S with a falling tide. Similarly off the N and S coast of Pulau-pulau Aru a rate of 3 kn may be attained but other coasts bordering this group of islands have a rate of between 1 to 2 kn.

3 In the Romang group and around the S part of Pulau-pulau Tanimbar the tidal streams set N on a rising tide and S with a falling tide; around Pulau-pulau Aru the tidal streams set E on a rising tide and W with the falling tide.

Local weather

3.7

1 During the year the strongest winds tend to be found in Banda Sea particularly in February; direction being seasonal but predominantly W (known locally as Barat) throughout. Only in the transitional periods of April and October do the winds decrease and the weather patterns of the Australian Continent have less influence. Maluku is the main exception to the climate rule in Indonesia and can be contradictory. Whilst the wet season everywhere else is from October to April, in central Maluku the wet season is from April to August with drier weather from November to March. This is due mainly to very high temperatures inevitably producing heavy rainfalls, and this is much in evidence in the islands bordering Banda Sea.

2 There are, however, regional variations. The N and central islands experience heavier rainfall in the wet season, and it can rain periodically throughout the year in the N, whilst in the S it is much drier with less rain and between May and September the weather is actually quite fine. Towards Pulau-pulau Tanimbar, whilst the seasons are more regular than anywhere else, the wind force is more prominent.

Generally, the best months for transiting the area are from October through to March.

PRINCIPAL THROUGH ROUTES

GENERAL INFORMATION

Charts 942A, 942B

Scope of the section

3.8

1 In this section are described the principal through routes in Banda Sea and the N part of Arafura Sea

SELAT WETAR TOWARDS TORRES STRAIT

General information

Charts 3244, 942A, Aus 410, Aus 411

Routes

3.9

1 From a position NE of the island of Jaco (Yako) (8°26′S, 127°20′E) (2.21) the main E-W track to the outer position (9°00′S, 133°05′E) of the recommended route leading to Torres Strait (*Australia Pilot Vol III)* leads ESE for a distance of about 336 miles.

From a position SE of Jaco, for vessels having taken the longer route S of all the islands in the Indonesian archipelago, the track to the outer position of the recommended route to Torres Strait leads E for a distance of about 330 miles. This route continues to offer the mariner landfall fixes throughout.

Currents

3.10

1 Off the N coast of Australia, and between it and the archipelagic islands of Indonesia, during the SE monsoon (April to November) the current flows W through Torres Strait and WSW through Arafura and Timor Seas. During the W-NW monsoon period (December to March) the direction is reversed.

Principal marks

3.11

1 **Landmarks:**

Paitekauile (Pai Tekauile) (8°29′S, 127°11′E) (2.145).

Lkamar (8°08′S, 127°51′E) (3.130) together with Kogotea, 3 miles W, situated at the W end of Pulau Moa.

Kuli (8°11′S, 127°59′E) (3.130), the highest point of Pulau Moa, rising in its E part.

2 Summit of Pulau Sermata (8°13′S, 128°53′E) (3.130) can be recognised from a distance.

Summit of Pulau Babar (7°55′S, 129°45′E) (3.130); particularly prominent from SE.

Summit of Masela (8°10′S, 129°51′E) (3.130), particularly from SW.

3 **Major lights:**

Tanjung Tutpateh Light (8°13′S, 127°36′E) (3.130).

Pulau Meatij Miarang Light (8°20′S, 128°30′E) (3.130).

Other aids to navigation

3.12

1 **Racons:**

Tanjung Tutpateh Light (8°13′S, 127°36′E).

Pulau Meatij Miarang Light (8°20′S, 128°30′E).

For further details see *Admiralty List of Radio Signals Volume 2.*

Directions

(continued from 2.15)

Recommended route

3.13

1 From a position NE of Pulau Jaco (8°26′S, 127°20′E) from where a light (2.21) is displayed, the route to the outer position (9°00′S, 133°05′E) of the recommended route leading to the W entrance to Torres Strait (*Australia Pilot Vol III)*, leads ESE for a distance of about 336 miles, passing:

SSW of Tanjung Tutpateh (8°13′S, 127°36′E), the W extremity of Pulau Leti, from where a light (3.130) is displayed, thence:

2 SSW of Tanjung Nyadora (8°16′S, 128°14′E), the rugged E extremity of Pulau Lakor, thence:

SSW of Pulau Meatij Miarang (8°20′S, 128°30′E) from where a light (3.130) is displayed, thence:

SSW of Tanjung Watupati (8°14′S, 129°02′E), the E extremity of Pulau Sermata, thence:

SSW of the S extremity of Masela (8°10′S, 129°51′E) (3.128), thence:

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3 SSW of Tanjung Arousu (8°20′S, 130°45′E), the S extremity of Pulau Selaru, in the Tanimbar group of islands, thence to position 9°00°S, 133°05′E.

Useful marks:

Summit of Pulau Kisar (8°03′S, 127°10′E) (2.207).

Summit of Pulau Luang (8°11′S, 128°42′E) (3.128).

Alternative track

3.14

1 From the E entrance to Selat Wetar and a position NE of Pulau Jaco (8°26′S, 127°20′E) (2.21), ocean-going vessels have been reported to opt for an alternative track leading ESE-WNW direct to or from the recommended position N of Cape Wessel Light (11°00S, 136°45′E) (*Australia Pilot Volume V)*, in the approaches to Torres Strait, a distance of about 565 miles. Although this track lies in deep water and has been used by deep-draught vessels, it has not been fully surveyed.

2 **Useful mark:**

Crossing the 200 m (100 fm) depth contour at about Long 131°20′E.

(Directions for the W approaches to Torres Strait are given in Australia Pilot Volume V)

Directions from the south-east coast of Timor

(continued from 2.21)

3.15

1 From a position SE of Pulau Jaco (8°26′S, 127°20′E) the route, to the recommended position at 9°00′S, 133°05′E leading to the W approaches to Torres Strait, leads E for a distance of about 330 miles passing S of the landmarks as described on the passage at 3.13.

This route passes N of the shoals (*Australia Pilot Volume V)* lying at the N end of Timor Sea.

(Directions for the W approaches to Torres Strait are given in Australia Pilot Volume III)

TORRES STRAIT TOWARDS MOLUCCA SEA

General information

Charts 942A, 942B, Aus 410

Routes

3.16

1 The recommended through route to and from Torres Strait and Molucca Sea initially leads NNW from the outer position (9°00′S, 133°05′E) of the recommended track leading NW from Cape Wessel (*Australia Pilot Volume V)*, to a position NE of Pulau-pulau Tanimbar, and thence between this group of islands and Pulau-pulau Kai, another group, 60 miles NE. The track then leads WNW passing S and W of Pulau Buru (linking with the N-S routes from Timor) thence E of Pulau Lifumatola (1°49′S, 126°26′E) situated at the E extremity of Pulau-pulau Sula.

2 On reaching a position on the recommended route off Pulau Manuk (5°33′S, 130°18′E) an alternative passage may be shaped for a transit of Selat Manipa (4.78), the navigable strait separating Pulau Buru from the small group of islands lying W of Pulau Seram, thence continuing NNW to the position E of Pulau Lifumatola previously mentioned. In all cases the chart is the best guide.

3 A more direct route from Torres Strait, which may be used in all seasons, passes S and W of the shoals W of Ujung Salah (also charted as Kaap Valsch), thence adopts the same track as described at 3.16 from a position between Pulau-pulau Tanimbar and Pulau-pulau Kai. This route, however, does not have the benefit of the safety aspect of the recommended route, as the central and E parts of Arafura Sea, particularly those reported reefs 100 miles S of Pulau-pulau Aru and off Irian Jaya, are largely unsurveyed.

4 Lesser used routes (*Ocean Passages for the World)* which provide some protection from the open waters of Banda Sea particularly during the monsoon periods (see 3.6), initially lead NE from Torres Straits passing W of Ujung Salah (8°25′S, 137°38′E), thence N of Pulau-pulau Aru and N of Pulau Seram and either N or S of Pulau Obi Mayor leading to or from the Molucca Sea or on passsing N of Seram, thence W of Pulau Batanme leading N to the Halmahera Sea. Details of coastal passages along this stretch of coast are given in Chapter 6.

Topography

3.17

1 Most of the islands observed on these passages are low-lying and landmarks are few, but individual off-lying islands of Banda Sea are high and prominent from a distance in good weather. Some of the larger island groups experience monotonous wooded coasts or are thickly covered in vegetation; the E coast of Pulau-pulau Aru for example appears as a low uniform stretch of land.

Depths

3.18

1 A number of shoals are known to exist on or near the routes that vessels may use on passage between Torres Strait and Molucca Sea, and vice versa. Some shoals are based on old reports and their reported existence is doubtful. However, there is always the possibility that other shoals may exist especially in unsurveyed areas. Whilst the chart is the best guide, the existence of uncharted dangers cannot be ignored especially in the shoal waters of Arafura Sea. A vigilant lookout should be kept for the safety of the vessel and where possible vigias (see *The Mariner's Handbook)* may be confirmed or removed.

Flow

3.19

1 See 3.6 and 3.10.

Principal marks

3.20

1 **Landmarks:**

Summit (7°01′S, 131°58′E) of Pulau Fordate (3.148).

Summit (6°41′S, 131°34′E) of Pulau Molu (3.149).

Pulau Serua (6°19′S, 130°01′E) which can be identified at a great distance in good weather.

Pulau Manuk (5°33′S, 130°18′E) (3.34) can be identified at a great distance in good weather.

Tomahu (3°14′S, 126°05′E) (4.58) which rises from the NW coast of Buru is prominent from SW and W.

2 **Major lights:**

Pulau Fogi Light (3°17′S, 126°00′E) (4.41).

Tanjung Bartutui Light (white metal framework structure, 40 m in height) (3°54′S, 127°13′E).

Directions

Recommended route

3.21

1 From a position 9°00′S, 133°05′E on the recommended route leading from Torres Strait (see *Australia Pilot Volume III)*, the route to Molucca Sea initially leads NNW to a position ENE of Pulau Fordate (7°01′S, 131°58′E) (chart 3245), a distance of approximately 140 miles, thence

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between that island and the islands of Pulau-pulau Kai, 60 miles NNE.

The sea-lane track then leads WNW for a distance of about 420 miles to a position S of Pulau Fogi Light (3°17′S, 126°00′E), passing:

2 NNE of Pulau Molu (6°44′S, 131°34′E) (chart 3245), with a prominent summit at its N end, thence:
NNE of Pulau Serua (6°19′S, 130°01′E) (3.114) with a prominent volcanic summit, thence:
SSW of Pulau Manuk (5°33′S, 130°18′E) (3.34), a high prominent island, thence:
SSW of a reported shoal (4°09′S, 127°17′E) (3.4), thence:
SSW of Tanjung Bartutui (3°54′S, 127°13′E), the S extremity of Pulau Ambelau (4.38) (chart 3241), on which stands a light; thence:

3 NNE of a reported reef (4°19′S, 126°16′E) (3.4), thence:
Clear of a reported shoal (4°02′S, 126°21′E) (3.4), thence:
SSW of Tanjung Walwawat (3°37′S, 126°11′E) (chart 3241), the SW extremity of Pulau Buru with the long range light on Pulau Fogi (3°17′S, 126°00′E) visible bearing N.

4 The track then generally leads round the W coast of Pulau Buru, for a distance of about 35 miles, until a position W of Pulau Fogi Light is reached. The coast here is fronted by a narrow coastal bank and deep water approaches the coast up to 1 mile off salient points.

Caution. Pulau Fordate should not be closely approached as there are reported shoals up to 6 miles offshore.

(Directions continue N at 4.16, or NE at 4.22)

3.22

1 **Alternative passage.** On passing Pulau Manuk, course may be shaped NW for a transit of Selat Manipa (chart 3241), weather conditions permitting. This passage reduces the distance to a position E of Pulau Lifumatola (1°49′S, 126°26′E), situated at the entrance to Molucca Sea, by about 90 miles compared to that of the sea-lane route passing W of Pulau Buru.

The strait is 14 miles wide at its narrowest part, but is serviced by two major lights and several landmarks.

(Directions for Selat Manipa from SE are given at 4.79)

Torres Strait to Molucca Sea — Direct route

3.23

1 This route (see *Ocean Passages for the World)* initially leads WNW thence NW direct from the W approaches to Torres Strait (see *Australia Pilot Volume III)* to the position between Pulau Fordate (7°01′S, 131°58′E) and Pulau-pulau Kai, 60 miles NNE, described at 3.21. The route, which is governed by unsurveyed areas and reported reefs particularly off the coast of Irian Jaya, passes:

2 S and W of shoals over which there is a least charted depth of 9·3 m (30 ft), lying 22 miles W of Gosong Le Cher (8°30′S, 136°15′E) (3.24) (chart 3527), situated off the the islands of SW Irian Jaya, thence:
NE of a reported reef (8°32′S, 134°26′E) (chart 3246), the existence of which is doubtful, thence:

3 SW of a shoal (7°05′S, 133°38′E) (chart 3246) lying 30 miles off the SW coast of Pulau-pulau Aru, over which there is a least depth of 6 m (20 ft), thence as described at 3.21 leading to Pulau Buru or the alternative track leading to Selat Manipa described at 3.22.

Torres Strait to Molucca Sea — Alternative route

3.24

1 An alternative route (see *Ocean Passages for the World)*, but well used, W from Torres Strait (*Australia Pilot Volume III)* to Molucca Sea or vice versa is briefly described below. The track leads E of Gosong Le Cher (Le Cher Bank as shown on chart 3246) (8°30′S, 136°15′E), with depths of 22 m (12 fm) over it, and between it and Ujung Salah (8°25′S, 137°38′E), the SW extremity of Pulau Kolepon (Dolak), maintaining an appropriate depth for the draught of the vessel (see Caution), thence passing:
W of Gosong Dolak (7°00′S, 136°50′E) (6.46), thence:
N of Pulau-pulau Aru.

2 The track then initially leads WNW thence NW between Pulau Seram and mainland Irian Jaya, passing NE of Karang Bais (2°55′S, 130°26′E), the only offshore danger in this area, thence passing N or S of Pulau Obi Mayor and finally passing W of Halmahera.

3 In March 1981, a 74 000 dwt vessel on passage between Mindanao and Torres Strait reported that, excepting Ujung Salah (6.13), recognized headlands on this route were radar conspicuous.

4 **Caution.** Vessels are advised to give the SW extremity of Pulau Kolepon, at Ujung Salah, a wide berth as bad weather and swell is frequently experienced off this coast of Irian Jaya. A 10 m sounding of doubtful existence, best seen on chart 3527, lies 57 miles W of Ujung Salah.

(Directions continue for the passage S of Pulau Obi Mayor at 4.27, for the passage towards Halmahera Sea at 4.28 and for the passage through Selat Obi at 4.32)

ISLANDS OF BANDA SEA

GENERAL INFORMATION

Charts 4603, 942A, 942B

Scope of the section

3.25

1 Within this section are described the outlying islands of Banda Sea including Pulau-pulau Banda, islands off the SE end of Pulau Seram, and Pulau-pulau Kai.

Also described are the harbours, anchorages and passages associated with these islands.

The only ports of importance are Bandanaira (4°32′S, 129°52′E) within the Banda group, and Tual (5°38′S, 132°44′E) within the Kai group.

General description

3.26

1 Pulau-pulau Maluku, a group of islands previously called the Moluccas and which includes Halmahera, described in Chapter 5, comprises about a thousand islands basically surrounding Banda Sea. Originally the fabled Spice Islands, it is one of Indonesia's most remote provinces. Maluku is divided into three districts, North, Central and South-east. The central district, whose capital is situated at Ambon (3°42′S, 128°10′E), is covered in this section .

2 Pulau-pulau Banda, lying about 60 miles S of Pulau Seram, consists of seven islands all of volcanic origin. Pulau-pulau Kai, lying 120 miles ESE of Pulau-pulau Banda, consists of several groups of non-volcanic islands including

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Pulau-pulau Tayandu and Pulau-pulau Tiga Saudara. Many of the islanders live chiefly by fishing or the cultivation of coconuts.

Ferry services connect most of the islands to each other and with larger ports further afield. Some have an airport that connects with the larger islands.

Natural conditions

3.27

1 For general comments see 3.5; the NE islands of Banda Sea always experience more cloud and heavier rain periods than that farther S and mist is more frequent. Around the islands SE of Pulau Seram weather conditions are indifferent, neither good nor bad but seldom bright. Wind strengths generally tend to be less around the islands in the N part of the region as opposed to those in the central and S areas.

2 In the NW part of Banda Sea, currents are strongest in the NW monsoon and the reverse occurs in Molucca Sea. Sea conditions around Pulau-pulau Banda are never bad compared to the area S of Pulau Buru where sea conditions can be quite rough, but during June to September a rolling sea coming from the open S waters of Banda Sea may be experienced, generated by the SE monsoon. Calm months are March, April, October and November, the seasonal transitional periods.

OUTLYING ISLANDS AND ISOLATED DANGERS

General information

Chart 4603

General description

3.28

1 All the inner islands of Banda Sea stretching from Wetar to Pulau-pulau Banda are of volcanic origin. In between there are several isolated islands of similar structure with some still volcanically active. Some of these islands rise steeply from the sea and are high and heavily forested; others are relatively low-lying, wooded, and exist on a portion of a coral bank.

2 Except Pulau Gunungapi (6°38′S, 126°40′E) and Pulau Manuk (5°33′S, 130°18′E), the other islands could be considered well away from general shipping routes. Both these islands are good landmarks; neither, however, have lights.

Whilst safe anchorages may be obtained off some of the islands, landings can be made on all of the them.

Pulau Gunungapi

Chart 3239

General description

3.29

1 Pulau Gunungapi (Gunung Api) (6°38′S, 126°40′E), sometimes known as Volcano Island, is an off-lying island of the Romang group, 67 miles SE. Uninhabited, the only residents are thousands of seabirds. It is a high volcanic island, shaped like a truncated cone, with almost bare slopes; it occasionally shows volcanic activity. In the middle is the crater; the W side is lower than the other sides. The highest point of the island rises from the S edge of the volcano.

2 A coastal reef, nowhere wider than 1 cable, extends in places. In good weather the island can be seen from a considerable distance, providing a landmark for vessels on passage between the NW coast of Timor and Selat Manipa or the NE coast of Timor and the W coast of Pulau Buru.

Anchorage and landing

3.30

1 Anchorage may be obtained for small vessels, in light SE winds, about 1½ cables offshore, sand and rock, on the coastal bank which extends from the N side; however, local knowledge is necessary.

Landing may be obtained, in the SE monsoon, in a small bay just S of the NW point of the island. There is, however, no fresh water on the island. Occasionally islanders from the Damar group visit the island to collect shells, oysters and mussels.

Pulau-pulau Maisel including Karang Skaro

General information

3.31

1 **General description.** Pulau-pulau Maisel (5°30′S, 127°32′E), situated in the central part of Banda Sea, consists of four wooded coral islands lying on a reef, the edge of which dries, and is steep-to. The islands are uninhabited, but from October to December, and sometimes in April, turtle fishermen from Buru and Ambon visit the group.

2 Pulau Mai (5°29′S, 127°31′E) is the NW and largest island with trees over 30 m (98 ft) high; drinking water may be obtained from wells on the NW side of the island. Pulau Selatan, the SE island, lies 3 miles from Mai with the islets Laponda and Kaurangka between.

The group forms a good radar target at a distance of at least 15 miles.

Caution. The reefs surrounding Pulau-pulau Maisel are reported to have extended considerably and caution should be observed when in the vicinity.

3 **Landing** may be effected on the lee side of the group if the sea is not too heavy.

Karang Skaro

3.32

1 Karang Skaro (Beting Sekaro), a drying reef, lies about 6 miles SW of Pulau-pulau Maisel. Two white sand and rocky patches on it only cover at the highest high tides. There is a clear deep channel between the group and the reef.

A stranded wreck on the NE side of the reef has been reported radar conspicuous.

Pulau-pulau Penyu

General description

3.33

1 Pulau-pulau Penyu (5°22′S, 127°46′E) an uninhabited group of islands, lie 14 miles NE of Pulau-pulau Maisel. The group consists of Mai, Kadola and Bingkudu, three sand and coral islands covered with high trees and lying on detached drying reefs which are steep-to. Pulau Mai and Pulau Kadola are covered with coconut palms and fresh water may be obtained from a well on Pulau Mai. The channels between the islands are clear and deep; however the coral reefs have been reported to have extended considerably and caution should be observed in their vicinity.

2 It has been reported that these islands are visible at a distance of at least 16 miles.

Landing. Like the neighbouring islands of Pulau-pulau Maisel, they are occasionally visited at HW, when boats can be landed, by islanders from the Banda group in search of turtle eggs.

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Pulau Manuk

Chart 3243

General description

3.34

1 Pulau Manuk (5°33′S, 130°18′E), which lies about 60 miles SSE of Pulau-pulau Banda, presents a good landmark. It rises steeply from a narrow coastal bank which is itself steep-to from great depths. The island, 285 m (932 ft) high and uninhabited, is volcanic and shaped in the form of a truncated cone. So far as is known this island volcano has never erupted in recent times although in 1899 dense vapour was seen rising from the crater summit and sulphur deposits have been found since.

Anchorage

3.35

1 Anchorage may be obtained by small vessels in calm weather, in the transition periods of the monsoons (April and November), in a depth of about 80 m (44 fm) and a distance of about 1¼ cables off a sandy beach situated on the W side of the island. A reef extends 2 cables NW from the NW extremity of the island; landing from the anchorage cannot be made.

2 Landing on the SE side by boat has been achieved in calm conditions between the reef lines. However, the island is seldom visited as large rats and seabirds occupy the available ground space.

PULAU-PULAU BANDA

General information

Charts 3243, 3239

General description

3.36

1 Pulau-pulau Banda (4°30′S, 129°55′E), lying 120 miles NE of Pulau-pulau Penyu, is a group of hilly, lush and breezy islands; considered the most beautiful of the Molucca Islands, the main group consists of Pulau Banda Besar, Pulau Naira, and Pulau Gunungapi. The outer islands consist of Suanggi, Run, Ai and Hatta. The only off-lying danger is Karang Hata (Hatta) (4°38′S, 130°03′E) (3.37) lying 2 miles SSE of Pulau Hatta.

2 Volcanic tremors are not uncommon and destructive volcanic eruptions have occurred in the past; the latest was in 1988 when the islanders of Pulau Gunungapi were evacuated. They have since returned to tend the rich fertile soil.

All the islands are inhabited except Pulau Suanggi.

Topography

3.37

1 All the islands are of volcanic origin and coral-fringed but only Pulau Gunungapi and the highest point of Pulau Naira have the traditional conical shape of a volcano. Most of the islands have lush verdant vegetation with coconut palms, nutmeg and mace groves.

Pulau Gunungapi is virtually taken up on all sides by its prominent volcano. Situated W of Pulau Naira and separated from it by the Zonnegat, a navigable waterway, this active volcanic island is a constant threat to the surrounding islands. Its main inhabitants live in two villages on the E coast of the island; the crater summit is rocky and devoid of vegetation on its W side.

2 Pulau Naira is generally hilly but with sufficient low ground to support a large town (3.40) and an airport. Pegunungan Papen, a small range of hills containing the highest point of the island lies on its NW coast; Tuju is a low central hill.

Pulau Banda Besar, the largest island of the group lying S of Naira and separated from it by Sempitan Lontor (3.45), consists of a ridge of hills, covered with vegetation, running throughout its length. Bandera, its highest point, takes a central position; however, none of the hills on this island are prominent.

3 Pulau Pisang and Pulau Batu Kapal, two small islets, lie off the N extremity of Pulau Banda Besar and are separated from it by Selat Burung.

Pulau Run (4°33′S, 129°41′E), the most W island of the group, is hilly throughout; a small islet lies at the N end of a reef extending NE from the main island. Habitation exists on the W side of this island. Pulau Ai, 4½ miles ENE of Run, is also high with a prominent summit (3.39) rising from its E side.

4 Pulau Hatta (4°35′S, 130°02′E), situated 5 miles SE of Pulau Banda Besar, has a prominent summit (3.39). Karang Hatta, a reef upon which the sea breaks heavily, lying 2 miles SSE of Pulau Hatta, dries about 1 m (3 ft) at its N end and is marked only by discoloration.

Pulau Suanggi (4°19′S, 129°42′E), the N island of the group but somewhat remote from it, is 107 m (348 ft), high. It has almost vertical bare sides and a wooded summit. The island is reef-fringed except on its W side.

Tidal streams

3.38

1 Tidal streams set strongly through the narrow channels of the main group, and between Pulau Hatta and Karang Hatta. On occasions the turbulence shown by the streams gives the impression of breakers.

Principal marks

3.39

1 **Landmarks:**

Summit of Pulau Gunungapi (4°31′S, 129°53′E), conically-shaped with verdant vegetation particularly on the lower slopes. Prominent from a distance in clear weather.

Kotabatu Merah (4°36′S, 130°02′E), the prominent and easily recognizable summit of Pulau Hatta.

Kotaperampuan (4°32′S, 129°47′E), the summit of Pulau Ai which rises on the E side of the island, is prominent.

2 **Major light:**

Pulau Suanggi Light (white beacon, 15 m in height) (4°20′S, 129°42′E).

Bandanaira

General information

3.40

1 **Position.** Bandanaira (Banda Naira) (4°32′S, 129°54′E), sometimes known as Naira, the only major town and port in the Bandas, is situated in the S part of Pulau Naira.

Function. The harbour roadstead lies S of the town but an anchorage area within the Zonnegat, the waterway separating Pulau Naira from Pulau Gunungapi, W of the town, can be used. There is also a pier fronting the Zonnegat that is used by the inter-island and regular long-haul ferry services to and from Ambon, Tual and Saumlaki.

In 1995 the town had a population of about 15 000.

2 **Approach and entry.** Bandanaira can be approached from W through Sempitan Lontor (3.45), from N using the Zonnegat, or from E using the open water between Pulau Naira and Pulau Banda Besar. The Zonnegat can be entered from N and S but local knowledge is needed for the latter.

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Traffic. In 2003 the port was used by 4 vessels with a total of 10 852 dwt. The port mainly handles local vessels and there is a regular ferry service.

Port Authority. Adpel Bandanaira, Komp. Pelabuhan Bandanaira, Naira. Maluku.

Limiting conditions

3.41

1 **Depths.** From W if using Sempitan Lontor, least depth 8 m (26 ft), the fairway leading N into the Zonnegat has a least depth of only 4·7 m (15 ft) but is narrow. From N the least depth in the fairways lying either side of Pulau Kraka (4°30′S, 129°53′E), leading S into the Zonnegat, are 12 m (39 ft) W of the island and 19 m (10 fm) E of it.

Tidal levels. See *Admiralty Tide Tables.* Mean maximum range about 1·6 m, mean minimum range about 0·8 m.

Local knowledge is advised for entering the Zonnegat from either end but particularly from S.

Arrival information

3.42

1 **Port operations.** A resident port administrator for Bandanaira is responsible for cargo operations.

Port radio. The Bandas are not supported by a coast radio station. Information for Bandanaira should be processed via Ambon CRS; a port radio service cannot be confirmed; for details see *Admiralty List of Radio Signals Volume 1(2).*

Pilotage. There is no pilotage service throughout the islands. Vessels calling at Bandanaira should have local knowledge.

Harbour

3.43

1 **General layout.** The main roadstead lies, fronting the town, off the SW end of the island. Two small piers extend S into the roadstead. From the W side of the town overlooking Pulau Gunungapi, a second roadstead exists with deep water. A pier is situated here which can accommodate the larger vessels calling at these islands.

Tidal streams. In the roadstead S of Bandanaira the stream sets E with the rising tide and W with the falling tide at a maximum rate of 3 kn.

Directions for entering harbour

3.44

1 **For Zonnegat.** If approaching the roadstead within the Zonnegat from N, vessels may pass:

Either side of Pulau Kraka (4°30′S, 129°53′E), an islet 25 m (83 ft) high, covered in vegetation, standing on a reef at the N end of the Zonnegat. A light (white framework tower, 10 m in height) is displayed from the E side of the islet.

2 If passing SW of Pulau Kraka the track leads SE with a village, situated on the W side of Pulau Naira, 9 cables SE of Pulau Kraka, bearing 121° and open NE of Pulau Vera, the NE extremity of Pulau Gunungapi. This track leads over the bar SW of Pulau Kraka in a depth of 12 m (39 ft). Thence the track passes through the narrows and leads S to the berth at the government pier.

3 If passing E of Pulau Kraka, the track leads SSE to the berth passing:

ENE of a 1 m (3 ft) patch lying close E of Pulau Vera.

Useful marks:

Light (white beacon, 6 m in height) displayed from Tanjung Batu Pulaumati (4°30′S, 129°53′E), the NW extremity of Pulau Naira.

Light (white metal framework structure, 6 m in height) displayed from the S side of the government pier (4°31′·5S, 129°53′·5E).

Benteng Belgica, an old fort standing in the town SW of the government pier, is prominent.

4 **Caution.** Approaching the Zonnegat from S is only suitable for small vessels or local craft; there is a navigable channel over the bar but this entrance is narrow and requires local knowledge; see 3.41.

3.45

1 **For the roadstead S of the town.** Approaching from W through Sempitan Lontor, the track leads E between the reef-fringed N coast of Pulau Banda Besar and the S coast of Pulau Gunungapi, thence to an anchorage off the town. See 3.41.

2 Approaching from N, the track leads S between the islands lying off the N extremity of Pulau Banda Besar and Pulau Naira, thence W to the anchorage off the town.

3 Approaching from NE vessels use Selat Burung, the deep and clear channel separating the N extremity of Pulau Banda Besar and Pulau Pisang, 6 cables NNW, thence SW and W to the anchorage. The channel between Pulau Pisang and Pulau Batu Kapal, 3 cables NW, though narrow, is clear with a least depth of 14 m (46 ft) in its fairway.

Berths

3.46

1 **Anchorages**. Good anchorage may be obtained anywhere in the roadstead S of the town over sand, coral and stone in any desired depth. In the Zonnegat, depths are generally rather deep for anchoring.

Government Pier. Situated on the W side of the town, this bridged pier, 50 m in length at its head, accepts most of the inter-island traffic and larger ferry vessels through the Zonnegat. There are depths of 7 m at LW alongside, and vessels must berth bow N using the port anchor.

2 **Piers**. Two piers extending S from the S side of the town can only be used at or near HW. They are normally used by craft that can take the ground, otherwise vessels may anchor close by and come alongside when there is sufficient water. Preference is for larger vessels to anchor in this locality using local craft to ply the waters between ship and shore.

Port services

3.47

1 **Facilities** are limited; medical assistance available.

Supplies: also limited; provisions are available but expensive; fresh water supplies are scarce.

Communications. There is an airport on Pulau Bandanaira with connections to Ambon or Pulau Seram.

Ferry services connect with Ambon and other ports with the archipelago.

Anchorages

Off Pulau Run

3.48

1 Anchorage may be obtained, in the NW monsoon, on the SE side of the bight of a drying reef situated between Nailaka (4°33′S, 129°42′E), an islet lying at the N end of the reef extending NE from Pulau Run, in a depth of 54 m (30 fm), sand and rock.

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ISLANDS OFF THE SOUTH-EASTERN END OF PULAU SERAM

General information

Charts 3242, 3243 (1.34)

General description

3.49

1 Numerous islets and drying reefs extend about 22 miles ESE from the SE end (3°52′S, 130°52′E) of Pulau Seram as far E as Pulau Koon (3°55′S, 131°12′E), a wooded islet. Four channels through the islets and reefs lead N from Banda Sea, two of which are navigable waterways for suitably sized vessels; the other two, whilst navigable, are not recommended. Pulau-pulau Gorong, a group consisting of three islands, lies 30 miles ESE of Pulau Seram. Pulau-pulau Watubela, consisting of seven islands, extend from about 13 to 45 miles SE of Pulau-pulau Gorong.

Topography

3.50

1 The islands extending SE from the SE coast of Pulau Seram are mainly high, rocky and covered with coconut palms. Many of the islets stand on reefs and are wooded but low-lying. Some of the islands, like Panjang (4°00′S, 131°13′E), are densely wooded and bordered by mangroves.

All of the islands and most of the islets are inhabited.

Former mined area

3.51

1 An area N and S of Selat Kilwaru (3°53′S, 130°54′E) is dangerous due to mines from World War II. See 1.7 and Appendix I.

Marine exploitation

3.52

1 An area covering 126 square miles centred on position 3°55′S, 130°57′E has been designated an oil exploration area. Vessels traversing the area and particularly those using the navigable channels at the SE end of Seram, should maintain a good lookout for the possibility of encountering oil rigs, platforms and attendant craft. Oil rigs and platforms require a wide berth.

For general information on oil rigs, platforms and passing distances see *The Mariner's Handbook.*

Tidal streams

3.53

1 Through the navigable channels of Selat Kefing (Helfing) and Selat Kilwaru situated close S of Pulau Seram the tidal streams attain a rate of 3 kn at springs, and when opposed to the wind often cause a rough sea. The stream sets N with the rising tide and S with falling tide. Off Pulau Geser, the island separating the two straits, at springs, the S-going stream starts 2 hours after HW and at neaps about 1 hour after HW.

2 The direction of the tidal stream through Selat Kilwaru is sometimes indicated by flag signals (Diagam 3.53.1) displayed from the flagstaff on the pier on the NE side of Pulau Geser:

3 Tidal streams E and W of Pulau Koon (3°55′S, 131°12′E) (3.49), lying 16 miles E of Pulau Seramlaut, are strong and variable and cause heavy tide-rips.

Flag	*Stream*
	N-going.
	Slack.
	S-going.

Landmarks

3.54

1 Suru (3°47′S, 130°47′E) (4.145), situated on Pulau Seram; when approaching the straits from either N or S, is prominent.

Summit of Pulau Seramlaut (3°53′S, 130°56′E) (3.56) which is prominent.

Pulau Kifar (3°54′S, 130°59′E); although only 40 m (131 ft) high, the island is prominent when approaching the straits from N or S.

Directions for the navigable straits

Selat Kefing

3.55

1 Selat Kefing (Helfing) lies between Pulau Seramrei (3°52′S, 130°52′E), a low islet, covered with high trees, situated close SE of the mainland of Pulau Seram, and Pulau Geser, a low, flat, wooded islet, nearly 2 cables E. Both islets are reef-fringed.

2 The track through the strait leads N in the fairway between the fringing reefs with the headland of Tanjung Danama (3°35′S, 130°53′E), the E extremity of Pulau Seram, bearing 000°. There is a least depth of 16 m (52 ft) in the fairway; there is a depth of 9 m (30 ft) close off the SW entrance point and a depth of 7 m (23 ft) close off the SE entrance point. Depths at the N entrance are deep throughout. The best time to negotiate this strait is in daylight at or near LW when the reef edges are visible and the stream is at its weakest.

For tidal information see *Admiralty Tide Tables.*

Selat Kilwaru

3.56

1 Selat Kilwaru lies between Pulau Geser (3.55) and the W side of Pulau Seramlaut (Seram Laut), a high island, rocky and, for the most part, covered with coconut palms, 5 cables E. The navigable channel, which has been swept and is marked by beacons (starboard hand), is obstructed on either side by fringing reefs. There is a least depth of 11 m (36 ft) in the fairway. The track from S initially leads NNE thence N, until the entrance to a lagoon off the village of Geser (3.69), situated on the E side of Pulau Geser is reached, thence NE to the open sea. A light (white metal framework structure, 6 m in height) is displayed from the N end of the entrance to the lagoon on Pulau Geser when vessels are expected. The small islet of Pulau Kilwaru, on which there are several villages and some mosques, lies E of Pulau Geser on the fronting reef of Pulau Seramlaut. The best time to negotiate this strait is in daylight at or near LW when the

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edges of the fringing reefs are visible and the stream is at its weakest.

For tidal information see *Admiralty Tide Tables.*

Pulau-pulau Gorong

General description

3.57

1 Pulau-pulau Gorong (4°05′S, 131°20′E) consists of three islands, Pulau Panjang, Pulau Manawoka and Pulau Gorong (shown as Gorona on chart 3242). Each island is fringed by a steep-to coral reef and no dangers lie beyond 1 mile offshore. The channels between the islands are deep, but there are strong tide-rips both N and S of them; see 3.59. All three islands are inhabited.

Topography

3.58

1 All the islands in this group are thickly covered with vegetation. All have a narrow coastal bank surrounding them. Pulau Panjang, the low NW island of the group, has rocky S and SW sides interspersed with sandy beaches and much of its coastline is bordered by mangroves. Manawoka (4°07′S, 131°20′E), the SW and central island, has a coastline that is alternately low and rocky and there are a number of coconut plantations particularly at the N end; Lololi, the prominent summit of the island, and of the group, appears as a table-mountain from SW but as a peak from N or S.

2 Pulau Gorong, 7½ miles E of Pulau Panjang, has a low coastline with many coconut plantations. On both the NW and NE sides there are reefs lying close offshore.

Tidal streams

3.59

1 In the passage between Pulau Koon (3°55′S, 131°12′E) and Pulau Panjang, the NW island of Pulau-pulau Gorong, the stream sets strongly towards the ridge of reefs on which Pulau Koon stands.

Near the Gorong group the tidal streams generally set N with the rising tide and S with the falling tide. There are strong tide-rips in places, especially off the N and S ends of these islands. Tidal streams, however, set SSW with the falling tide S of Pulau Manawoka.

Landmark

3.60

1 Summit of Pulau Manawoka (4°07′S, 131°20′E) (3.58).

General directions

3.61

1 Local knowledge is required for approaching any of the small harbours situated within this group of islands. The channels between the islands are deep and clear. Vessels using the waterway between Pulau Panjang and Pulau Manawoka, should maintain a central course as there are extending reefs and shallow depths close S of Panjang and close N of Manawoka. Vessels passing either side of Pulau Gorong should not approach the island at a distance of less than 1 mile.

2 Within the group, the only light (red beacon) is displayed from Tanjung Namalen (3°57′S, 131°25′E), the sandy NE extremity of Pulau Gorong, shown as Tanjung Sekaru on chart 3242.

Anchorages and landings

3.62

1 Anchorage may be obtained, in a depth of about 12 m (39 ft), near or on a small bank lying N of the flagstaff standing at the village of Amar (4°05′S, 131°18′E), situated 2 miles SE of the N point of Pulau Manawoka. This anchorage is, however, open to monsoon winds and there is often a gathering of small craft in the vicinity. A flag is often displayed when vessels approach, as the flagstaff is not easily visible.

Landing is possible at the village when conditions permit, otherwise it can be difficult especially near some rocks lying at the edge of a drying reef E of the flagstaff.

2 Anchorage may be obtained off Ondur (4°00′S, 131°23′E), a village standing on the W side of Pulau Gorong. With local knowledge, small vessels can enter a marked channel leading between the coastal reefs to an inner anchorage S of the village in a depth of 15 m (49 ft), sand; larger vessels should remain outside the coastal reef, at a distance of at least 6 cables offshore, in depths of between 26 and 60 m (14 to 33 fm), rock and sand.

3 Good anchorage may be obtained off the village of Kailakat (4°03′S, 131°26′E) situated on the E coast of Pulau Gorong. The small horseshoe-shaped bay, formed by the coastal reef, has depths of from 21 to 50 m (12 to 27 fm), sand and rock; smaller vessels may anchor closer inshore in a depth of 10 m (33 ft). A white bridge, which spans a river entrance at the head of the bay, is a useful mark; vessels should approach the anchorage on a bearing of the bridge of 265°. The main village lies on the N side of the bridge and may be identified by two mosques and a flagstaff.

Landing is possible on HW at the village, and also within the river.

Pulau-pulau Watubela

General description

3.63

1 Pulau-pulau Watubela, a group of islands, extend from about 13 to 45 miles SSE of Pulau Manawoka (4°07′S, 131°20′E) and consist of a mixture of seven elongated islands and islets fringed by reefs and coastal banks. Most are hilly, and are thickly covered in vegetation. The channels between the islands are clear of dangers in the fairway.

Rumahlusi (4°42′S, 131°44′E) (3.68), the main village, lies on Pulau Tioor. Copra and fishing are the main industries, but there is little trade. Three of the islets are uninhabited.

Topography

3.64

1 Pulau Ingar (4°21′S, 131°33′E), the rounded N island of the group, is low, but covered with coconut palms and bordered by a white beach. It lies at the NW end of a coastal bank on which stand the islands of Watubela and Kasiui. Pulau Ingar is uninhabited.

Pulau Watubela, lying 2½ miles SE of Pulau Ingar, is hilly. Its central summit (3.66) is distinctive. There are several villages on the island. At each extremity of the island there are extending drying reefs.

2 Pulau Kasiui is separated from Pulau Watubela by Selat Horotlomi (Horot Lomi), a navigable waterway whose fairway is narrowed to a width of about 1¾ cables by the reef extending S from the latter island previously mentioned. The island is hilly throughout its length and there is an extensive fringing reef situated on its E side.

Pulau Kurkap (4°33′S, 131°47′E), an islet 35 m (115 ft) high and fringed by a reef, lies 6½ miles E of the S end of Pulau Kasiui. A detached reef lies 5 cables E of the islet.

3 Pulau Baam, 6 miles SW of Pulau Kurkap, has a hill at each end of its somewhat yoke-shaped terrain. Between the hills there is a low sandy strip covered with vegetation.

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Pulau Tioor, about 10 miles SSW of Pulau Kurkap, consists entirely of rugged hilly land rising to 376 m (1233 ft), charted as 1230 ft. Several shoals lie within 2 miles of its E side. A number of villages lie on both its E and W coasts. Pulau Uran, a low and sandy islet, lies on an extensive reef 6½ miles E of Pulau Tioor; there are shoals extending up to 1 mile off its E side.

Tidal streams

3.65

1 In the vicinity of Pulau-pulau Watubela the tidal streams set generally E with the rising tide and W with the falling tide. The rate between the islands is considerable, the W-going stream during the SE monsoon being stronger than the E-going stream during the NW monsoon.

Along the N and S coasts there are heavy tide-rips during the full strength of the stream and these should be avoided. With a W-going stream there is slack water along the W coast of the larger islands, and along the E coast with the E-going stream. An E-going stream has been observed N of Pulau Baam in February and March with a rate of 3½kn.

2 Selat Horotlomi, separating Pulau Watubela from Pulau Kasiui, is not recommended, except for small craft or with the benefit of local knowledge, because of the strong tidal streams and tide-rips experienced in this passage.

Landmark

3.66

1 Dadang (4°24′S, 131°35′E), the central summit of Pulau Watubela, is distinctive from E or W.

General directions

3.67

1 This group of islands is usually by-passed by ocean-going vessels, which prefer to use the passages SE of Pulau Seram described at 3.55, when coastwise between Ambon and ports on the SW coast of Irian Jaya, or the passage farther S between Pulau Kur (5°20′S, 131°59′E) and Pulau Kaimeer, 7 miles N. Through routes in this area are described at 3.16 for passages between Torres Strait and Molucca Sea.

Anchorages and landings

3.68

1 Temporary anchorage may be obtained NW of Pulau Ingar (4°21′S, 131°33′E) in a depth of 38 m (21 fm), stones, but the tidal streams here are strong.

Temporary anchorage may be obtained, in depths of 50 m (27 fm), N of the village of Ilila (4°23′S, 131°34′E) which lies at the N end of Pulau Watubela. The coastal bank here is barely 1 mile wide and the holding ground is not good as the tidal streams are strong. There are also great depths on each side of the bank.

2 Temporary anchorage may also be obtained off the edge of the coastal reef at the village of Temeer Barat (4°31′S, 131°39′E) on the W side of Pulau Kasiui. However, the bottom is steep and stony and there is a tidal stream.

Anchorage may be obtained off the village of Rumahlusi (4°42′S, 131°44′E) standing on the E side of Pulau Tioor. The best berth lies NE of the village in a depth of about 55 m (30 fm), sand and stones and is clear of the tidal streams. There are deeper depths of up to 90 m (49 fm) before the coastal bank falls off to deep water.

Landing may be effected at the village.

Small craft

Pelabuhan Geser

3.69

1 **Anchorage** may be obtained in Pelabuhan Geser (3°52′S, 130°54′E), adjacent to the village of Geser, situated on the E side of Pulau Geser and within Selat Kilwaru. A small pier, on which a light (3.56) is displayed, extends a short distance from the N entrance to a lagoon. The entrance to the lagoon is spanned by a bridge.

The best berth to anchor lies about 1 cable offshore abreast of the pier in depths of between 9 and 18 m (30 to 59 ft). Copra and timber products are collected and shipped from the area to the larger port of Ambon.

2 **Landings** can be effected at Geser and on a small stone pier, 75 m long, on which stands a cupola, extending N from the N shore of Pulau Geser.

Off Pulau Marlau

3.70

1 Anchorage may be obtained for small craft in the bight of the reef N of Pulau Marlau (3°52′S, 130°57′E), a reef fringed islet lying close E of Pulau Seramlaut.

PULAU-PULAU KAI

General information

Charts 3243, 2791 (see 1.34)

General description

3.71

1 Pulau-pulau Kai, pronounced ‘Kay’, lying S of Pulau-pulau Watubela, comprise several groups of islands formed almost entirely of coralline limestone lying within 40 miles of position 4°30′S, 132°30′E. Other groups include Pulau-pulau Tayandu and Pulau-pulau Tigasaudara lying to the W of the main islands. Pulau-pulau Kur, the most NW group of islands consists of four islands; Pulau Kur (5°20′S, 131°59′E), the main island, together with three other islands lying between 7 and 12 miles farther N.

2 These coral islands, described in more detail at 3.72, are thickly covered in vegetation and most are dominated by tall coconut palms; all have brilliant white sandy beaches. Collectively they have a population of about 100 000.

Tual (5°38′S, 132°44′E), the main port of the islands, is situated on Pulau Kai Dulah.

Topography

3.72

1 Within the overall group, Nuhu Yut, shown as Nuhu Cut on chart 3243, previously known as Pulau Kai Besar, and Nuhu Roa, shown as Nuhu Rowa on chart 3243, previously known as Pulau Kai Kecil, together with Pulau Kai Dulah, form the main islands lying on extensive coastal banks separated by Selat Nerong (3.79), a deep waterway.

2 Nuhu Yut, the most E of the islands, is long, thin and generally mountainous with spurs extending to the coast on each side. Several reefs lie off its W side. The peaks at the N end of the island are more difficult to identify than those farther S. All the peaks, however, are wooded with verdant vegetation.

3 Nuhu Roa, in effect, consists of several low-lying islands; the largest island, Nuhu Efruan, swampy as well as low, is further split into islands or ‘nuhu’ by means of river passages; Nuhu Tawun forms the N part of the island whilst Nuhu Tutut forms the S part.

4 Pulau Kai Dulah, lies close off the NE coast of Nuhu Efruan and has a similar terrain. It is separated from it by Selat Rosenburg (3.83). On the W side of Kai Dulah, and at

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this N end, stands Tual (3.80) the largest town within the group.

5 W and SW of Nuhu Efruan lie a group of islets and reefs situated on the coastal bank extending up to 23 miles SW from the island. Mitfeer (5°45′S, 132°31′E), a 7 m (23 ft) coral shoal, is the outermost danger W of Nuhu Efruan. Kai Tanimbar (6°02′S, 132°27′E), the outermost SW islet, from where a light (3.77) is displayed, has a round topped tree standing on its summit; a shoal over which there is a least depth of 10 m (33 ft), sand, lies 5½miles SSE of the islet. Nuhu Taa, a low sandy patch, lies 5 miles N of Kai Tanimbar. Mitroa (6°00′S, 132°43′E), a detached rocky shoal, with a least depth of 5 m (16 ft) over it, lies S of Nuhu Efruan.

6 N of Nuhu Efruan lie several islets and shoals. Karang Ender (5°20′S, 132°41′E), a coral and sand shoal, is the N-most danger. Karang Batavier, a similar shoal with a least depth of 5·2 m over it, lies 5½ miles SE of Karang Ender; Karang Datu, a shoal over which there is a similar depth, lies 2½ miles SW of Karang Batavier. Pulau Duroa is separated from the N part of Nuhu Efruan by Selat Duroa (3.86), a navigable channel.

3.73

1 Pulau-pulau Tayandu, lying 15 miles W of Nuhu Efruan, consist of three main islands, several islets and some reefs all of coral formation. Pulau Tayandu, the main island of this group, is hilly and covered in vegetation; it is heavily indented by a large bay on its N side. North of the island lie some unmarked reefs; Karang Huisman (5°29′S, 132°13′E) has a least depth of 5·5 m (18 ft), sand and stones, over it, Karang Rembang (5°26′S, 132°24′E), with a depth of 12 m (39 ft), sand and stones, over it and Karang Telegraf, charted as Telegraap, 2½ miles SSW of Rembang, comprising two shoals lying close together, over which there is a least depth of 16 m (56 ft). A dangerous rock lies 3½ miles W of Karang Telegraf.

2 Pulau Walir, separated from Pulau Tayandu by a passage obstructed by drying reefs; Pulau Ree, an islet, lies 2 miles W of Pulau Walir.

3 Pulau Taam (5°45′S, 132°11′E), the S island of this group, is high (3.77) and fringed by a drying reef and is steep everywhere. Many rocks, covered with vegetation, lie on this reef particularly on the W side of the island.

4 Pulau Nunial, Pulau Nusreen and Nuwait, a rock, lie together on a reef about 1½ miles NE of Tanjung Tungor (5°43′S, 132°11′E), the N extremity of Taam; deep water channels lie between these islands and Taam to the W and Walir to the N.

3.74

1 Pulau-pulau Tigasaudara (Tiga Saudara), shown as Drie Gebruders on chart 942B, lies S of Pulau Kur (3.75), and within 4 miles of position 5°37′S, 131°57′E; the group consists of the reef-fringed islands of Manggur, Wonin and Fadol. Only the latter has a steep appearance. There are no off-lying dangers.

3.75

1 Pulau-pulau Kur consist of Bui (Boei) (5°07′S, 132°00′E), Tengah and Kaimeer, the three N islands which lie on a drying reef 5 miles in extent, with Pulau Kur 7 miles S. Pulau Bui is wooded; its N coast is rocky and steep but the S coast is bordered by a sandy beach. Pulau Tengah, close N of Kaimeer, is a sandbank covered with coconut trees. Pulau Kaimeer, 150 m (492 ft) high, has a remarkable terrace formation and upper part which gives the island the appearance of a large fort from seawards. Most of the plantations are on the W coast; elsewhere vegetation is scarce.

Caution. Mariners should note the charted shoals, least depth 4·9 m (16 ft), lying up 11¼miles N and NW of Pulau Bui.

2 Pulau Kur (5°20′S, 131°59′E), 7 miles S of Kaimeer, rises to Namsar its central summit, appearing from N as a sharp peak. This hilly island is steep on its E coast but slopes gradually on the W side.

Natural conditions

3.76

1 **Flow.** See 3.7. There is little information on currents in this area but the probability of currents existing near the islands cannot be ignored. Winds set up perceptible surface movements. Around Pulau-pulau Tayandu, a LW level may be expected to be about 1 m below MSL generally in June and December. The HW level may be about 1 m above MSL; this occurs during all semi-diurnal spring tides.

2 **Local weather.** The coasts of Nuhu Yut are subject to violent squalls which sweep down from the mountains onto the lee coasts during the SE and NW monsoons. These squalls are dangerous to small craft and call for vigilance in larger vessels. Such squalls are especially strong near the centre of the E coast and at the S end of the W coast.

3 Rain in the Kai group falls mainly in two periods: June through July during the SE monsoon, and more heavily from December through to April during the NW monsoon.

Principal marks

3.77

1 **Landmarks:**

Summit of Pulau Kur (5°20′S, 131°59′E) (3.75).

Summit of Pulau Taam (5°45′S, 132°11′E), which rises from its W coast, is easily recognisable from some distance.

2 Tanjung Ngidiun (5°36′S, 132°36′E), the prominent high NW point of Nuhu Tawun which can be seen from some distance.

Tanjung Borang (5°17′S, 133°09′E), the steep and prominent N point of Nuhu Yut which, except from S, can be seen from a considerable distance. The point is the termination of a fairly high spur from the mountains inland. Tanjung Patingru, the rocky NW headland of Nuhu Yut, is easy to identify because of a rock close NW of the headland.

3 Kaar (5°23′S, 133°06′E), the sharp summit of a conical-shaped mountain rising on Nuhu Yut. Boo (Bo), another mountain with a serrated peak, rises 2 miles S and is slightly higher than Kaar. It should be noted that the conical peak of Daab, the highest point of Nuhu Yut, is usually obscured by cloud and therefore infrequently seen.

Tanjung Weduar (6°01′S, 132°50′E), the steep, prominent S point of Nuhu Yut which is visible at a distance of over 20 miles.

4 **Major lights:**

Pulau Kur Light (white metal framework structure, 40 m in height) (5°19′S, 132°00′E) is displayed near Tanjung Songliyer, the N point of the island.

Kai Tanimbar Light (white tower, 60 m in height) (6°01′S, 132°26′E).

Directions

General

3.78

1 The Kai group of islands lie at the crossroads of routes between Banda Sea and those within Arafura Sea. Through routes leading to and from Torres Strait pass NE or SW of

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the islands. There is a regular trade with Indonesian national vessels throughout the region but particularly linking the S archipelagic islands with Irian Jaya and/or Ambon with the ports of the E islands of Maluku. Such vessels pass N of Pulau Kur (5°20′S, 131°59′E), where there is a long range light (3.77), or N of Pulau Bui (5°07′S, 132°00′E), where there is a light (white metal framework structure, 15 m in height).

Selat Nerong

3.79

1 Selat Nerong, the deep water strait separating Nuhu Yut and Nuhu Roa, is generally orientated N-S. Approaching from S or SW the high land of Nuhu Yut will first be sighted, resembling two coffins; a very large one being formed by mountains and hills between the village of Fer (5°58′S, 132°52′E) (3.103) and the mountains 8 miles NNE, and the other, much smaller and lower, situated between Tanjung Weduar (3.77), the S-most point of the island, and the village of Weduarfer, 1¼ miles N.

2 The fairway has depths in excess of 300 m (164 fm) but in places near the edge, particularly on its W side, there are shoals with depths of less than 5 m (16 ft) over them.

On reaching the S end of Pulau Kai Dulah from S the strait opens out considerably between the islands.

3 **Useful marks:**

There are sufficient useful marks to enable mariners to maintain the deep channel throughout; Dufin (5°52′S, 132°52′E), an islet, is one of the best on the SW side of Nuhu Yut.

Karang Tegal Light (5°29′S, 132°49′E) (3.84).

The light displayed from Elat (5°39′S, 132°59′E) (3.90), a village lying on Nuhu Yut, is only visible from N and through a narrow gap on the coast, between it and Nuhu Yaan.

Tual

General information

3.80

1 **Position.** Tual (5°38′S, 132°44′E), the most important port within the Kai group of islands, is situated on the W coast of Pulau Kai Dulah.

Function. Tual is the collecting point for copra exports from all the islands of the group which are then usually transported to Ambon by inter-island vessels. Tual is also on the major ferry routes between the islands and other parts of Indonesia. An oil jetty lies close N of the town.

In 1993 the town had a population of about 35 000.

2 **Port limits.** The port limits are bounded by lines drawn 225° through the point 2¼ miles SSW of the village of Dulah (5°34′S, 132°46′E) and 045° through the SE end of Pulau Fair (3.83).

Approach and entry. Approach to Tual may be made from N or W thence through a marked channel to the anchorage or the berth.

Traffic. In 2003 the port was used by 6 vessels with a total of 19 534 dwt.

Port Authority. P.H. Kakanpel, Komp. Pelabuhan Tual, Kai Dulah. Maluku.

Limiting conditions

3.81

1 **Tidal levels.** Mean maximum range about 1·2 m, mean minimum range about 0·6 m, see *Admiralty Tide Tables.*

Largest vessel: one of 6000 dwt, having a length of 120 m, may berth at the oil jetty.

Local weather: during the NW monsoon period (December to April) the port can experience heavy rain and strong winds.

Arrival information

3.82

1 **Port operations.** Vessels should berth and unberth in daylight hours only.

Port radio. There is a port radio service at Tual; however, the coast radio station at Ambon should initially be used for radio communications with the port. For further details see *Admiralty List of Radio Signals Volumes 1(2)* and *6(4).*

Notice of ETA: vessels should advise the port and/or agents at least 48 hours in advance of arrival, together with last port details, arrival draught and nature of call.

2 **Outer anchorage:** may be obtained off Dulah (5°34′S, 132°46′E), a village, in depths of from 40 to 50 m if required. However, this anchorage experiences heavy squalls during the NW monsoon. The in-going stream sets at 180° and the out-going stream at 034°; in both cases the rate is about 1 kn.

Pilotage is not compulsory.

Tug assistance is not available.

Harbour

3.83

1 **General layout.** Tual Harbour lies on the W coast of Pulau Kai Dulah and at the N end of Selat Rosenburg, a narrow, tortuous and shallow strait which separates Kai Dulah from Nuhu Tuwan, the N part of Nuhu Efruan. The harbour is sheltered to an extent by the low reef-fringed island of Pulau Fair lying opposite of the town, and the NE coastline of Nuhu Tawun, with Pulau Ubur another low island lying NW of the town. Watdek Bridge, which carries the main road leading to the airport and other towns on Nuhu Tawun, spans the strait linking Tual with the district of Langgur.

Local weather. See climatic table at 1.159 and 1.168

Directions — Approaching from north

3.84

1 **From N or NE,** the best approach track leads S, with Tanjung Serbat (5°32′S, 132°48′E), the low sandy N extremity of Pulau Kai Dulah, ahead, passing:

E of Karang Batavier (5°24′S, 132°45′E) (3.72), thence:

W of Karang Tegal (5°29′S, 132°49′E), a reef with a least depth of 10 m over it, and between it and the reef lying close NE of Pulau Rumadan, 3 miles W. A light (white metal framework tower, 12 m in height) is displayed from Karang Tegal.

2 The track then leads SW, with the mosque at Tawinohoi (5°32′S, 132°45′E), a village, standing on Pulau Duroa, ahead, passing:

NW of a group of shoals marked by a beacon (port hand) standing 4½ miles SW of Karang Tegal.

The track then passes:

E of Pulau Dranan (5°31′S, 132°45′E), a reef-fringed islet, and between it and the group of shoals previously mentioned, thence:

E of a shoal, marked by a light-beacon (starboard hand) which lies 5 cables off Pulau Duroa (5°33′S, 132°43′E), a low, wooded, island.

3 The track then resumes SW until abreast of Tanjung Lobi (5°35′S, 132°45′E).

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Useful mark:

Ngadi Light (5°34′·7S, 132°45′·0E), standing 4 cables SW of the village of Ngadi; two light-beacons (special) stand close offshore at the village.

3.85

1 From a position NW of Tanjung Lobi, the track leads S to the harbour, passing:

E of a light-beacon (starboard hand) standing close NE of Tanjung Ubursuen (5°36′S, 132°44′E), the SE extremity of Pulau Ubur. A 4·6 m patch lies 1½cables SE of the light. Thence:

W of shoal, lying midway between the coast of Pulau Kai Dulah and Pulau Ubur, over which there is a least depth of 3 m, and marked by Mangon Light-beacon (port hand), thence to the port passing E of beacons (starboard hand). A 7 m patch lies close E of the fairway, 2 cables NNW of the light.

Directions - Selat Duroa

3.86

1 **From SW,** the approach track initially leads E, passing:

N of Tanjung Ngidiun (5°36′S, 132°36′E) (3.77), the NW extremity of Nuhu Tawun, and between it and the wooded islets of Godon and Er nearly 2 miles NW.

2 The track then leads NE a short distance, before resuming an E track again, passing:

NW of a shoal, with a least depth of 5·6 m over it, lying 2 miles NE of the point, thence:

Over a narrow bank, over which there is a least depth of 8·1 m, extending NW from Pulau Krus (5°35′S, 132°40′E), a low islet with a distinctive sandy beach on its N side, lying at the NW end of an extended reef close NW of Pulau Ut, thence:

S of a reef, on which a light (beacon, port hand) is displayed, and between it and the N edge of Pulau Krus, thence:

3 Through Selat Duroa, a marked navigable channel leading E between Pulau Duroa and Pulau Ubur; thence as described at 3.85 from a position NW of Tanjung Lobi towards Tual.

3.87

1 **From NW,** the track leads SE passing NE of the islets of Godon and Er, thence to a position S of the light-beacon as described at 3.86.

Useful mark:

Mariners approaching from NW may find that when approaching Tanjung Ngidiun, which is prominent, they should do so from N, with the headland bearing 180° until E of Pulau Godon, thence E to pass S of the light-beacon, previously mentioned, as being a better alternative when using Selat Duroa from that direction.

Berths

3.88

1 **Anchorage** may be obtained off the port in both monsoons in depths of about 22 m, sand and mud.

Alongside berths. A short T-head pier, from where a light (white metal framework structure, 9 m in height) is displayed, extends 35 m from the shore at the S end of the town. Mainly used by the inter-island ferry services there is a reported depth of 5 m on its outer side and 2 m inside.

2 **Oil Jetty.** An oil jetty, 200 m in length, extends from shore at the N end of the town. A T-head berth has a least depth of 9 m alongside. Small product-tankers (see 3.81) use the berth on a regular basis.

Other berths. A pier extends from the shore at Langgur (05°40′S, 132°44′E), on the island of Nuhu Tawun. A berth for small craft lies in a basin, within Selat Rosenburg, S of the town.

Port services

3.89

1 **Facilities** are limited; hospital.

Supplies: fresh water; limited provisions may be obtained.

Communications. Dumatubun Airport, at Langgur, on Nuhu Tawun, lies about 5 km distant from Watdek Bridge (3.83).

Elat

General information

3.90

1 **General description.** Elat (5°39′S, 132°59′E), a small port and town, lies at the head of Teluk Elat, a bay whose sides consist of undulating land with reeds and coconut palms. Nuhu Yaan, a wooded islet, lies on the SW side of the entrance; on the E side there are several drying reefs extending S to the town. Timber is exported using local vessels and there is a ferry service linking with Tual.

2 **Directions.** With local knowledge, a marked channel, passing W of the drying reefs, leads S to a stone pier at Elat, from where a light (white metal framework structure, 6 m in height) is displayed. The pier may also be approached by a channel passing E of the reefs. There is no difficulty in entering the bay but there are several reef patches close to the fairway leading to the pier; the least depth 2 m (7 ft) lies 8 cables ESE from the N extremity of Nuhu Yaan. The passage S of Nuhu Yaan is only navigable by small craft.

3 **Berths.** Anchorage is possible in the bay W of the pier at Elat in depths of 26 m (14 fm), mud and sand. Vessels may anchor farther out in the entrance to the bay; here the depths are between 40 and 60 m (22 and 33 fm).

4 The stone pier at Elat extends 302 m N from the shore with depths of 5 m at its head. A large warehouse stands at the root of the pier.

5 **Facilities** are limited, but provisions and fresh water can be obtained.

Communications: the nearest airport is at Langgur (3.89).

Anchorages

General

3.91

1 All the anchorages described below covering the island groups within Pulau-pulau Kai require local knowledge and may only be suitable for a temporary period. The exception to this rule would apply to the few open anchorages, where there would be little difficulty in entering or departing with the onset of poor weather and where there would be little or no effect from tidal streams.

Off Pulau-pulau Kur

3.92

1 Temporary anchorage may be obtained during the SE monsoon in an indentation on the W side of the surrounding reef between Pulau Bui (5°07′S, 132°00′E) and Pulau Tengah.

2 Similar anchorage may be found during the NW monsoon off the E side of Pulau Kaimeer (5°10′S, 132°01′E); depths of 27 m (14 fm) exist near the N end of the island with greater depths farther S where an anchor is likely to slip off the steep coastal bank. If approaching this anchorage from S, vessels should pass at a convenient distance from the island; a rocky coast will first be seen, then a small sandy beach

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extending to a dark rocky mass, thence farther N another sandy beach terminates at a low rocky point. Anchor with this point bearing 302° and S of a reef lying E of the N tip of the island.

3 Temporary anchorage may be obtained during the SE monsoon off the W side of Pulau Kur (5°20′S, 131°59′E). The best berth lies off a village situated about 2½ miles N of Tanjung Batual, the high and rocky S point of the island. The bottom here is mostly sand. There is an inlet in the coastal reef near the anchorage which makes a good harbour for smaller vessels.

Off Pulau-pulau Tigasaudara

3.93

1 The only suitable anchorage within these islands lies off the NW side of Pulau Manggur (5°35′S, 132°00′E) during the SE monsoon and off the SE side during the NW monsoon. Manggur, which lies on a substantial coastal bank, is fringed by a drying reef; there are suitable depths of 30 to 60 m (16 to 33 fm) on the NW side of the island and similar depths on the SE side.

Off Pulau-pulau Tayandu

3.94

1 Anchorage for large vessels may be obtained E or W of a line of reefs between Pulau Tayandu and Pulau Walir, 1 mile SW. In the W anchorage vessels should keep W of an islet lying 2 miles SSW of Tanjung Watlus (5°32′S, 132°18′E), the W extremity of Pulau Tayandu; in the SE monsoon this is a good berth. In the E anchorage a vessel is safe during the NW monsoon S of Tanjung Watloron, the S extremity of Pulau Tayandu. Depths of about 50 m (27 fm), rock and coral, exist at both anchorages.

2 When approaching the E anchorage the track leads WNW with the islet, previously mentioned in the W anchorage, ahead, until the last islet on the reef E of Pulau Walir disappears behind the E rocky coast of Pulau Heniaar, an islet lying close off the NE coast of Walir. An easily identified mosque stands in Yamtil, a village on the N point of Heniaar.

Off Nuhu Yut

3.95

1 Anchorage may be obtained anywhere N of Teluk Elat (5°39′S, 132°59′E) (3.90) on the W side of the island, in depths of about 44 m (24 fm), sand and rock, during the SE monsoon; however, heavy squalls occur during this period.

2 Whilst this side of the island has an extended coastal bank, several miles wide, there are some off-lying dangers, over which there are depths of less than 1 m, which should be avoided if using the area for anchorage purposes. Mituwat, situated 3 miles SW of Tanjung Hebri (5°27′S, 133°03′E) and Mitduan, in two parts, 1 mile farther S, are two such dangers. Mitnaloa, lying in the N approaches to Teluk Elat, is a drying reef. Between Mitnaloa and Mitduan there is a 3 m (10 ft) patch.

The channel between these dangers and the coast is deep and safe.

3 Temporary anchorage may be obtained anywhere on the E side of Nuhu Yut during the monsoon transition months October/November or March/April. From April to October the coast is exposed to SE winds and from November to March heavy squalls blow down from the mountains.

4 During the NW monsoon, good anchorage may be obtained off the village of Ur (5°22′S, 133°10′E) in a depth of about 55 m (30 fm), sand, about 2½ cables off the coastal reef; a bridge over a stream close N of the village bearing between 292° and 315° presents a lead-in to the anchorage. Another such anchorage lies off the village of Weduar (5°50′S, 132°56′E) in depths of about 35 m (19 fm); the best berth lies with a prominent house, standing close S of the village, bearing 235°. An 8·8 m (29 ft) shoal lies about 3 cables SE of the village. The coastal bank here, unlike the W side, is barely 1 mile wide.

Small craft anchorages and harbours

Teluk Lengiar

3.96

1 Teluk Lengiar, a small reef-fringed bay, is situated on the N side of Pulau Tayandu. Entered between Tanjung Matot (5°32′S, 132°22′E) and a point 2 miles WNW, the bay offers secure anchorage for small craft. Lengiar, a village, lies at the head of the bay and anchorage may be obtained off the village. Sunken rocks obstruct part of the entrance to the bay so local knowledge is essential. Raja, a hill, stands on the NW point of Pulau Tayandu, 2 miles W of the bay.

Teluk Gelanit

3.97

1 Teluk Gelanit is an inner bay, situated on the N side of Nuhu Tawun and separated from the harbour at Tual by Pulau Fair (5°38′S, 132°43′E), a low island. The bay actually consists of two basins, with depths of over 9 m, connected by a bar with a least depth of 3·7 m.

The entrance channel S of Pulau Fair is narrow and tortuous with a least depth of 5·5 m, and is used only by small craft gaining access to Gelanit, a village lying on the W side of the inner basin. A hill, with the same name, lies 5 cables N of the village.

Totoad

3.98

1 Totoad (5°45′S, 132°41′E), a village, stands on the S side of an inlet, about 1 mile SE of the N extremity of a low and sandy peninsula on which it stands, and about 7 miles SW of Tual. A small pier extends from the shore at the village. Two islets lie in the entrance to the inlet and there are several villages on its N bank. A strong stream usually runs out of the inlet.

2 The inlet is best approached from S passing E of Pulau Utir (5°54′S, 132°31′E), a low wooded islet, standing on an extended reef, with Pulau Ur, 1 mile N on the same reef, thence E of Pulau Manir (5°51′S, 132°36′E), a high wooded island, standing on an extended reef with Pulau Warbal close NW on the same reef, thence E of Pulau Taroa, 3 miles N and Pulau Liek, a low islet, 1 mile farther N.

3 If coming from the W, local knowledge is essential. The approximate track initially leads E passing N of Pulau Nai (5°43′S, 132°34′E); thence SSE passing either side of a 4 m (13 ft) patch (5°45′·5S, 132°36′·2E); thence E passing N of Pulau Liek, previously mentioned; thence NE passing between Pulau Wahru (5°46′S, 132°39′E) and the peninsula.

Teluk Uf

3.99

1 Teluk Uf, situated at the S end of Nuhu Tutut, is entered E of Tanjung Doan (5°57′S, 132°41′E), which is easily identified by its orange coloured rocks and by the crest of a small hill about 1 mile N of it. The bay is best approached from S, passing E of Noiko, an islet 5 cables S of Tanjung Doan; if coming from W, pass S of Noiko, thence in the fairway where there is a least depth of 9 m (30 ft), passing E of three reefs lying between 8 cables SE and ENE of Tanjung Doan.

2 Between Tanjung Doan and Tanjung Arat, 3 miles NW, there is a bay in which anchorage may be obtained in a

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depth of 10 m (33 ft), off Ohoideertutut, a village on the E shore which is recognisable by a prominent mosque.

Teluk Wair

3.100

1 Teluk Wair, situated on the N coast of Nuhu Yut, is entered between Tanjung Patingru (5°17′S, 133°07′E) (3.77) and Tanjung Borang, 2 miles E. The bay affords safe anchorage during the SE monsoon in depths of 40 m (22 fm), 2 cables off a village situated at the head of the bay.

Nerong

3.101

1 Anchorage may be obtained on the W side of Nuhu Yut in a small inlet at the head of which lies the village of Nerong (5°47′S, 132°56′E).

Hoiko

3.102

1 Anchorage may be obtained off Hoiko (5°51′S, 132°53′E), a village standing at the head of a small inlet on the W side of Nuhu Yut. Landing can be effected here.

The village stands at the foot of a mountain with vertical sides and is easily recognizable from seawards.

Langgear and Fer

3.103

1 Anchorage may be obtained off the W coast of Nuhu Yut off the villages of Langgear (5°58′S, 132°51′E) and Fer, 5 cables N. Both villages have a prominent mosque. The best anchorage lies midway between the two villages in a depth of 11 m (36 ft), sand and coral, about 4 cables offshore.

Landing can be made by boats at either village.

Teluk Hoh

3.104

1 Teluk Hoh, an elongated inlet, is entered E of Tanjung Borang (5°17′S, 133°09′E). A narrow, navigable, passage, suitable only for small craft, leads S over a bar, with a least known depth of 7 m (23 ft), to an anchorage in depths of 9 to 13 m (30 to 43 ft). Local knowledge is essential.

Hollat

3.105

1 Hollat (5°30′S, 133°08′E), a village standing on the E side of Nuhu Yut, provides good anchorage for local craft within a small opening in the coastal reef. The village, which exports copra by praus, is built on a steep slope with roads made of slate steps. The anchorage is best approached with the Roman Catholic Church, which stands without a tower, broad and clumsy-looking, close N of the highest point of the built-up area, bearing 276°, and anchoring off the coastal reef which is well marked by discoloration when Tanjung Nuwahan, a steep, rocky point 4 miles SSW, bears 196°.

Praus can work from the beach during the NW monsoon.

ISLANDS ON THE SOUTH SIDE OF BANDA SEA

GENERAL INFORMATION

Charts 942A, 942B (see 1.34)

Scope of the section

3.106

1 In this section are described the islands forming the N and S chains of Pulau-Pulau Sermata, and Pulau-Pulau Tanimbar. Also described are the passages, harbours and anchorages associated with these islands.

Saumlaki (7°59′S, 131°18′E), the only port of importance within these islands, stands on the S coast of Pulau Yamdena.

General description

3.107

1 Pulau-Pulau Sermata is formed by N and S chains of islands, the N chain consists of Romang group and Pulau-Pulau Damar, these islands are generally hilly and are of volcanic origin. The S chain consists of Pulau-Pulau Leti and Pulau-Pulau Babar, these islands are mainly hilly and have been formed by limestone and coral.

Pulau-Pulau Tanimbar includes Pulau Yamdena, with many islands lying offshore. These islands are mainly forested and are formed by limestone or raised coral.

General directions

3.108

1 Through routes in the area lie S of Pulau-Pulau Babar, to the S and W of Pulau-Pulau Leti, and to the W of Romang group.

PULAU-PULAU SERMATA — NORTHERN CHAIN

General information

Charts 4603, 3244, 3245 (see 1.34)

General description

3.109

1 Pulau-pulau Sermata consists of two chains of islands extending ENE and E from the vicinity of the E end of Selat Wetar (8°00′S, 127°00′E) to approximately the meridian of 130°E. The N chain, or inner arc, which eventually leads N to Pulau-pulau Banda, is geologically of volcanic origin; the S chain, or outer arc, which eventually leads N to Pulau Seram, has been formed by limestone and raised coral. The N chain described here, excluding the islands of Liran described at 2.193, and Pulau Wetar described at 2.198, consists of the islands of the Romang group and those of Pulau-pulau Damar including Pulau Serua. Timber is the main export, collectively gathered from the islands by local craft and shipped to Dili or Ambon.

Topography

3.110

1 The Romang group, situated at the W end of Pulau-pulau Sermata, consists of several hilly islands (3.113) with Nyata (7°31′S, 127°18′E), the high, W-most, reef-fringed island, lying 44 miles N of the E end of East Timor.

2 Pulau Romang (7°34′S, 127°25′E), the largest island, is fringed by steep-to reefs with depths of 20 m (11 fm) at its edge. The N coast is rocky, with some sandy beaches; the summit of the island rises from its NW part. Several villages exist on the W and the more protected SE sides of the island. Pulau Mitan, an islet, covered in grey coral lime, lies 1 mile off the SE side of Romang. Pulau Telang (Tellang), together with Pulau Laut, a mass of rocks, close NE, Pulau Limtutu, close E, and Pulau Kital, close SE, all lying on the

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same reef as Telang, lie 3 miles E of the NE part of Romang. Pulau Maopora with Pulau Juha, consisting of several sandy islets covered with vegetation, lie 2 miles SE of Pulau Telang; the N coast of Maopora is rocky and steep, its E coast is marshy and its W coast consists almost entirely of a sandy beach.

3.111

1 Pulau-pulau Damar, the E group of the N chain of Pulau-pulau Sermata, includes Pulau Damar (7°08′S, 128°37′E), mountainous and volcanic, with spurs extending to the coast, and the volcanic off-lying islands of Teun, Nila together with Serua (6°19′S, 130°01′E) (chart 3243), stretching away NE. All are hilly and steep-to with peaks forming good landmarks (3.114); they are also all inhabited. See also 3.5.

2 To the S of Pulau Damar lie two small islands; Pulau Terbang Utara lies 6 miles SW of Damar, and Pulau Terbang Selatan lies 2½ miles S of Terbang Utara. South-west of Pulau Damar, 9 miles distant, lies Pulau Nusleur consisting of two islets standing close together on a steep-to coral reef.

Flow

3.112

1 **Current.** During the SE monsoon an E-going current prevails on the N side of Pulau-pulau Sermata.

Tidal streams. Tidal streams off the Romang group set N with the rising tide and S with the falling tide.

Principal marks — Romang group

3.113

1 **Landmarks:**

Summit of Pulau Nyata (7°31′S, 127°18′E), at 315 m (1034 ft) high (charted 1031 ft), is prominent.

Summit of Pulau Romang (7°34′S, 127°25′E), conical-shaped, rising nearly 750 m (2500 ft), 2¾ miles S of the NW point of the island, is prominent.

2 Summit of Pulau Telang (7°32′S, 127°32′E), conical-shaped, the lowest of the peaks, is prominent.

Summit of Pulau Maopora (7°35′S, 127°36′E), conical-shaped, is prominent.

3 **Major light:**

Pulau Nyata Light (white beacon) (7°31′S, 127°18′E), which is displayed from the W extremity of the island.

Landmarks — Damar group

3.114

1 Wuwarlali (7°08′S, 128°40′E), the prominent summit of Pulau Damar. The summit consists of four peaks which dominate the NE peninsula of Damar. Two prominent regular cone-shaped peaks rise at the W end of the island and there is also a prominent peak rising at the S point of the island. All are volcanic and in places steam and sulphur fumes are emitted. Earthquakes and sea disturbances often take place.

Summit of Pulau Teun (6°59′S, 129°08′E), is prominent; a large crater is just visible from N but not from S.

2 Summit of Pulau Nila (6°45′S, 129°30′E), high and conically-shaped, is prominent. Steam with sulphur vapour and hot springs is regularly observed on the E side.

Summit of Pulau Serua (6°19′S, 130°01′E), high and conically-shaped, is prominent; a prominent knob 244 m (800 ft) high rises near the NE end of the island.

General directions

3.115

1 The channels between Pulau Romang and the islands near it, and also that between Pulau Maopora and Kital, are deep and clear of dangers.

Except for Pulau Nila, all the islands of the Damar group have deep surrounding water and are clear of dangers virtually up to their respective shores. Karang Dusborgh (6°40′S, 129°25′E), an atoll-shaped drying reef, lies 4½ miles NW of Pulau Nila; however, because of surf and discoloration on it, this reef is visible from a fair distance.

2 Karang Nildesperandum (Nil Desperandum) (6°37′S, 129°47′E), previously known as Griffin Reef, lies between Pulau Nila and Pulau Serua. The reef, a coral and sandy patch which dries 1·8 m (6 ft), should be given a wide berth.

Anchorages

Off Pulau Romang

3.116

1 Good anchorage may be obtained in Teluk Zwaan (Angsa) (7°30′S, 127°24′E), which indents the W end of the N coast of Pulau Romang (3.110). Local knowledge is necessary as the bay can only be entered when the fringing reefs are plainly visible. Small vessels can then anchor S of a small detached reef in the middle of the bay with a radius of about 200 m swinging room.

2 Anchorage may also be obtained near the village of Hila (7°35′S, 127°22′E), which lies in an indentation on the W side of Pulau Romang. The best berth lies just N of the N entrance point of the indentation, with the outermost houses of the village just clear of this point bearing 150°, in depths of about 35 m (19 fm), stones, and about 1¼ cables from the coastal reef, which is fairly narrow.

3 Anchorage may be obtained on the S coast of Pulau Romang in depths of 29 to 35 m (16 to 19 fm), sand and stones, off a sandy beach fronting an abandoned village. The best berth lies on a bearing 094° of the S extremity of the island, with an isolated hut standing between this point and the SW extremity bearing 004°.

4 Anchorage may be obtained off the village of Jerusu (7°36′S, 127°27′E) situated on the E side of Pulau Romang. With local knowledge, vessels anchor here during the NW monsoon. The best berth lies about 1½ cables offshore in depths of about 35 m (19 fm), with a conspicuous house bearing 281° and the two points N in line.

During an anchorage survey the tidal streams here attained a rate of 1½ kn.

Off Pulau Telang

3.117

1 Anchorage may be obtained, in a depth of 22 m (12 fm), between Pulau Telang (7°32′S, 127°32′E) (3.110) and Pulau Kital, but local knowledge is necessary on account of the tidal streams running between the islands, which may on occasions attain a maximum rate of 2½ kn.

Off Pulau Maopora

3.118

1 Anchorage may be obtained on the coastal bank surrounding Pulau Maopora (7°35′S, 127°36′E) (3.110), particularly on an 11 m (36 ft) patch, 8 cables E of the N extremity of the island. However, there are strong tide-rips near here.

Good anchorage may be obtained in the channel between Pulau Maopora and Pulau Juha where the depth is about 49 m (27 fm); anchoring at/near LW when the reefs are clearly visible.

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Off Pulau Damar

3.119

1 Anchorage may be obtained, during the SE monsoon, in Teluk Wilhelmus situated on the NE coast of Pulau Damar (3.111). Although the holding ground is poor, the best berth lies off the village of Kumur (7°06′S, 128°39′E), which may be identified by a flagstaff and the walls of an old fort, in depths of between 40 and 50 m (22 and 27 fm). The village stands on the N side of a small river; on the S side lies the village of Bebar. Small vessels should approach the mouth of the river on a bearing of 235°, with the anchor lowered, until the appropriate depth is reached by sounding approximately 2 cables offshore. Larger vessels should anchor farther offshore in a depth of about 60 to 70 m (33 to 38 fm), sand and rock.

2 Anchoring may also be obtained near Tanjung Paran (7°13′S, 128°39′E), the S extremity of Pulau Damar. This anchorage should be approached with the SE tangent of Pulau Terbang Utara bearing 210°, astern. Vessels should then anchor on that line of bearing in any desired depth clear of the coastal reef.

Off Pulau Nila

3.120

1 Anchorage may be obtained, for suitable vessels, on the N coast of Pulau Nila (3.111) in a position W of a reef, extending N from Tanjung Keliatutnu (6°43′S, 129°32′E), the NE point of the island. Pulau Kari (Nika), an islet, 47 m (154 ft) high, stands on this reef 4 cables N of the point. An opening in the reef gives access to sheltered anchorage; in 1992 there were depths of at least 15 m (49 ft), with a swinging diameter between the reefs of at least 2 cables. The opening, which has a least depth of 6 m (23 ft) in the 1 cable-wide fairway, should be approached on the bearing 190° of the summit of the island or 192° of Pulau Nusafnu, an islet lying on the edge of the inner reefs 1¼ miles inside the opening. The latter mark, however, is sometimes difficult to see. All the reefs and the bottom of the entrance channel are marked by discoloration but due allowance may be required for the tidal stream which sets across the entrance to the opening.

2 This anchorage may be approached from W by smaller vessels with the S end of Pulau Kari bearing 093°. However, this channel is narrow and can only be navigated with local knowledge, passing close N of a small drying reef lying 7 cables W of Pulau Kari.

Off Pulau Serua

3.121

1 Anchorage may be obtained in depths of about 65 m (36 fm), rocky bottom, in the deep passage situated between Pulau Serua (3.114) (chart 3243) and the islets of Kekeh Besar (6°18′S, 129°59′E) with Kekeh Kecil, 4 cables W. The two islets lie on a reef extending up to 1½ miles W of the W extremity of Pulau Serua. This anchorage unfortunately is open to wind and tide and preference may be given to the anchorage on the N coast.

2 Anchorage may also be obtained off the N coast of Pulau Serua; a prominent knob rises on the NW side of the island. The best berth here lies about 5 cables NE of the knob in a depth of between 50 and 70 m (27 and 38 fm), and at a distance of at least 1½ cables from the fringing reef. This anchorage is N of a sandy beach which can be identified by some sheds; it may be approached from N on the alignment (186°) of the sheds with the village of Lesluru high up on the saddle NW of the summit.

Small craft

Teluk Rumahkuda

3.122

1 Teluk Rumahkuda (7°36′S, 127°25′E) indents the E coast of Pulau Romang (3.110), which is mostly steep, 4 miles NE of the S point of the island. A long sandy beach extends 6 miles farther N to the village of Jerusu (3.116).

2 Good anchorage may be obtained, in depths of 40 m (22 fm), sand, off the village of Rumahkuda, which lies 1 cable inside the E entrance point to the bay and may be identified by its flagstaff. Depths farther out are too deep for anchoring other than of a temporary measure by local vessels. The shore reef is plainly marked by discoloration.

The island exports copra and timber products and is a collecting point from nearby islands.

Teluk Solat

3.123

1 Teluk Solat (7°09′S, 128°41′E), on the E side of Pulau Damar (3.111), is free from dangers in the fairway. Solat and Kehli are two villages lying on the N shore; the former lies at the W end of a tongue of land extending W. The village of Wulur lies on the S side of the bay. Flagstaffs are situated in the village of Solat and Wulur and are useful marks.

Good anchorage may be obtained in the bay during the NW monsoon, in a depth of about 49 m (27 fm) with the boat pier at Solat bearing 000°.

Copra is exported from the villages.

Layoni

3.124

1 Layoni (7°00′S, 129°08′E), which stands in a small bay on the SW coast of Pulau Teun (3.111), is the most important village on the island. Anchorage may be obtained in a depth of 13 m (42 ft), coral, with a flagstaff in the village bearing 050° and the N entrance point of the bay bearing 332°. This anchorage position is narrow as the edge of the bottom is very steep-to. The flagstaff is clearly visible but the village church is partly obscured by a large tree.

Landing can be made at Layoni; a narrow channel for boats exists following the edge of the N fringing reef.

Wotai

3.125

1 Anchorage may be obtained off the village of Wotai (6°46′S, 129°30′E) situated on the S coast of Pulau Nila (3.111), in depths of about 6 m (20 ft), on a narrow shoal tongue extending SE from a reef fronting the entrance to Teluk Solat. This anchorage, however, is open to wind and sea during the SE monsoon and local knowledge is necessary.

Landing may be effected at the village; boats can cross the fronting reef on HW where depths in the sheltered inner part of the bay are quite deep.

PULAU-PULAU SERMATA — SOUTHERN CHAIN

General information

Charts 4603, 3244, 3245, Aus 310 (see 1.34)

General description

3.126

1 The S chain of Pulau-pulau Sermata, excluding Pulau Kisar, described at 2.207, consists of Pulau-pulau Leti and Pulau-pulau Babar. Most of the islands of both groups are hilly; Pulau Lakor in the Leti group, however, is quite flat. These groups of islands are rarely visited except by local

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vessels; with a lack of spice trees and coconut plantations, the population in general is quite sparse compared to islands farther W.

All the islands can be approached closely.

Topography

3.127

1 Pulau-pulau Leti consists of three islands. Pulau Leti (8°12′S, 127°40′E), the W-most island, which is hilly, is traversed by many ridges of round hills extending E and W. Wuarlawan, the central summit of the island rises to 406 m (1330 ft). Tanjung Tutpateh, its W extremity, is low and rocky.

2 Pulau Moa, also hilly, lies about 2½ miles E of Leti and is separated from it by Selat Moa (3.133); the island consists of a coral lime plateau up to 20 m (66 ft) high, from which the land rises in the E and W parts. Kuli (3.130), the summit of Pulau Moa, is situated in the E part of the island. Pulau Lakor, separated from Pulau Moa by Selat Lakor (3.134), is low with trees 50 m (164 ft) high. Lakor has mostly a rocky coast, with sandy beaches in some places, such as the low NW point.

These islands can be observed at a distance of 17 miles.

3.128

1 Pulau-pulau Babar lies with Pulau Meatij Miarang (8°20′S, 128°30′E), the W of its principal islands, about 16 miles ESE of Pulau Lakor; lying near the SE end of an extensive drying reef it is densely covered with vegetation. The other islands of the W group consist of Pulau Luang, Pulau Kalapa (Kelapa) (8°11′S, 128°47′E), and Pulau Sermata which, unlike Meatij Miarang, are hilly and, excepting Luang which is barren, covered in vegetation. Pulau Sermata is crossed by rounded hills mostly covered with reeds; limestone terraces rise at its E end.

2 Pulau Babar (7°55′S, 129°43′E), the largest island, situated 38 miles ENE of Sermata, is high near its centre with a ridge descending steeply to its NE point. The water from its rivers often cause discoloration for some distance seawards. Pulau Wetan, separated from the W side of Pulau Babar by Selat Wetan (3.135) is high at each end with a coral lime terrace between. Pulau Masela (8°09′S, 129°50′E), a narrow island fringed by a coral reef, lies 7 miles SE of Pulau Babar. Pulau Dai, 13 miles N of Pulau Babar, is high and a good landmark. Eleven miles NE of Babar lie the islands of Dawera and Daweloor, close SE; both are high, the former island being prominent.

Natural conditions

3.129

1 **Flow.** See 3.7.

Tropical storms are not a regular weather disturbance for this area. However, they do occasionally occur, tending to track S of Pulau-pulau Tanimbar and Pulau-pulau Leti. In the early 1900s, the islands of Kisar and Leti were hit by storms.

Principal marks

3.130

1 **Landmarks:**

Kuli (8°11′S, 127°59′E), the summit of Pulau Moa, is prominent; the summit has two peaks and it is the W-most of these which is the highest point.

Lkamar (8°08′S, 127°51′E), another prominent peak covered with vegetation, together with Kogotea, high and bare, lying 3 miles W of it, in the W part of Pulau Moa.

2 Summit of Pulau Sermata (8°13′S, 128°53′E) rises from the E end of the island; a ridge leading W from the summit, gradually lessens in elevation.

Summit of Pulau Babar (7°55′S, 129°45′E), is prominent from a distance; a peak 754 m (2475 ft) high, rising in the NE part of the island is also prominent particularly from NW and SE.

Summit of Pulau Masela (8°10′S, 129°51′E), rising centrally from the island, is prominent from SE.

3 **Major lights:**

Tanjung Tutpateh Light (white metal framework structure) (8°13′S, 127°36′E).

Pulau Meatij Miarang Light (white metal framework tower, 24 m in height) (8°20′S, 128°30′E); displayed from the NW side of the island.

Other aids to navigation

3.131

1 **Racons:**

Tanjung Tutpateh Light (8°13′S, 127°36′E).

Pulau Meatij Miarang Light (8°20′S, 128°30′E).

For further details see *Admiralty List of Radio Signals Volume 2.*

Directions

General

3.132

1 The main through route between Selat Wetar and Torres Strait passes S of the islands and is described at 3.13; there is little traffic coverage N of these islands except for local vessels. Excepting those straits which are described in more detail below, all the channels between the main islands are deep and clear of dangers.

Selat Moa

3.133

1 Selat Moa (8°10′S, 127°45′E), the passage between Pulau Leti (3.127) and Pulau Moa, is free of dangers but tidal streams are strong and raise a rough sea when against the wind.

Selat Lakor

3.134

1 Selat Lakor (8°14′S, 128°04′E) separates the E end of Pulau Moa (3.127) from Pulau Lakor. The strait, which is free of dangers, is barely 1½ miles wide. Tidal streams of between 2 and 4 kn may be experienced in the strait particularly off the SE side of Pulau Moa and there are often tide-rips and eddies off the NW coast of Lakor.

Selat Wetan

3.135

1 Selat Wetan (7°54′S, 129°34′E) separates Pulau Wetan from the W coast of Pulau Babar (3.128). Deep in the fairway it has a width of about 1 mile. A 7 m (23 ft) shoal lies about 1 mile S of the E end of Pulau Wetan.

Anchorages

Off Pulau Leti

3.136

1 The best anchorage during the SE monsoon lies off the village of Serwaru (8°09′S, 127°40′E) situated on the NW coast of Pulau Leti (3.127). The best berth lies on the bearing 180° of Wuarlawan (3.127) and the N point of the island bearing 101°. The anchorage should be approached on the 180° bearing. The holding ground, coral and stones, is poor and during the NW monsoon is dangerous.

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Off Pulau Moa
3.137

1 Anchorage may be obtained off the village of Pati (8°12′S, 127°52′E) standing on the S coast of Pulau Mao (3.127); this anchorage, however, has deep water and the sea is usually too heavy for anything but a temporary stay. Temporary anchorage may also be obtained off the village of Klis, about 5½ miles E of Pati, with the village flagstaff bearing 047° and Tanjung Tutnei (8°15′S, 127°58′E) bearing 151°.

Off Pulau Wetan
3.138

1 Anchorage may be obtained off the village of Herlei (7°54′S, 129°33′E) which is situated at the head of a small bay on the E side of Pulau Wetan (3.128). The anchorage, in depths of 49 m (27 fm), provides a safe berth but the swell at times may be troublesome.

Off Pulau Babar
3.139

1 In general, anchorages may be found anywhere off the SW side of Pulau Babar (3.128) and off the S and E coasts of the island. However, excepting the SE-facing coast where the coastal bank is quite wide, the coastal bank is generally narrow and steep-to and anchoring must be done with caution.

2 Safe anchorage may be obtained off the village of Tepa (7°53′S, 129°35′E), situated in an indentation on the W coast of Pulau Babar, during the SE monsoon. With NW winds there is sometimes a considerable sea and surf on the coast but there is no danger of dragging unless the wind blows hard. During the NW monsoon it is better to anchor off Herlei (3.138).

3 Vessels should approach Tepa with the village flagstaff bearing 090° and anchor in the desired depth. The tidal stream here sets N or S and should be allowed for. Depths decrease suddenly when nearing the roadstead. It is recommended to lower the anchor into the water with about 55 m (2 shackles) of cable, approaching as slowly as possible until the anchor makes contact with the bottom.

Off Pulau Masela
3.140

1 Anchorage may be obtained off the village of Telalora (8°12′S, 129°50′E), where there is a bight in the coastal reef situated on the SE end of Pulau Masela (3.128). When the reef can be clearly seen by discoloration, anchorage may be obtained in about 10 m (33 ft), clear of the reef. Once again in this area, the anchor should be lowered well into the water and the anchorage approached slowly.

2 Anchorage may also be obtained off Lawawang (8°11′S, 129°50′E), a village on the W side of the island, in a depth of 8 m (26 ft), on a narrow bank running parallel with, and about 4 cables off the coast.

Off Pulau Dawera
3.141

1 Well sheltered anchorage may be obtained, during the SE monsoon, in depths of about 55 m (30 fm), W of the village of Ilmarang (7°44′S, 129°59′E) situated on the SW side of Pulau Dawera (3.128). Here, there is an indentation in the coast formed by a tongue of the coastal reef extending 1½miles W of the SW point of the island which is marked by discoloration. In clear visibility, small vessels can enter the indentation without difficulty.

Off Pulau Daweloor
3.142

1 Anchorage may be obtained off the village of Watuwai (7°46′S, 130°03′E), situated on the W side of Pulau Daweloor (3.128), in depths of about 35 m (19 fm). This anchorage is sheltered by a tongue of reef, extending from the land, which is marked by discoloration, and should be approached from N and not through the stretch of water separating Dawera and Daweloor.

Off Pulau Dai
3.143

1 The only anchorage off Pulau Dai (3.128) lies off the village of Lewa (7°33′S, 129°42′E) situated on the N coast in a shallow indentation. A vessel approaching this anchorage should veer anchor and cable to about 70 m (2¾ shackles). Strong and sudden squalls make this anchorage unsafe during the SE monsoon (April to November) and even during the transitional periods (April and November).

Small craft

Off Pulau Leti
3.144

1 Local craft use Serwaru (8°09′S, 127°40′E) (3.136) as a collecting point for local produce. Loading and unloading can only take place at HW because of the drying reef which fringes the coast. Landing is possible but difficult when there is a rough sea.

2 A small bay, sheltered from W winds, lies near Tutukai, a village a short distance ENE of Serwaru (3.136). Boats can approach this bay through a narrow channel in the reef by keeping two crosses on posts in line which leads towards two sheds on the shore.

3 Small craft may also anchor in depths of 35 to 69 m (19 to 38 fm), near the village of Luhulele which stands on the S side of the island 2½ miles W of Tanjung Supurmela (8°12′S, 127°45′E), the SE point of the island, between a crescent-shaped reef and a sand spit W of it extending from the sandy beach.

Off Pulau Meatij Miarang
3.145

1 Anchorage may be obtained in the S part of a lagoon which is situated within the reef extending N from Pulau Meatij Miarang (8°20′S, 128°30′E) (3.128). Two channels lead into the lagoon from E; the S-most of these channels, which is partly marked, gives access for small craft into the lagoon on a bearing of 222°.

2 Boats can also reach a small village lying N of the light-structure (3.130) on the island at HW.

Off Pulau Masela
3.146

1 Landing from boats can be effected at HW at the village of Lawawang (8°11′S, 129°50′E) on the W coast of Pulau Masela (3.128).

PULAU-PULAU TANIMBAR

General information

Charts 3245, 2791 (see 1.34)

General description
3.147

1 Pulau-pulau Tanimbar lie in the SE part of Banda Sea and extend NE from the vicinity of 8°20′S, 130°45′E to 7°00′S, 132°00′E. The islands are low and flat, except for Molu, Maru, Fordate and Laibobar and the larger islands off the W coast of Pulau Yamdena, the principal island.

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2 The islands are composed of limestone and/or raised coral and covered with an abundance of forested ground; within the interior of the principal island there are a number of undeveloped oilfields. Yamdena and six of the smaller islands are populated, totalling about 70 000 people.

The main town and port for the area is Saumlaki (7°59′S, 131°18′E) situated near the S extremity of Pulau Yamdena; the main export is copra.

Topography

3.148

1 Pulau Yamdena, the largest and most important island, is hilly in the S part, N and W of Teluk Dalam (8°00′S, 131°16′E), but there are no outstanding peaks; a few hills stand near the E coast. There are many coconut plantations. Yamdena, with its attendant islands, is surrounded by a narrow coastal bank on which there are a number of islets and coral reefs. Pulau Larat, an island separated from the NE side of Yamdena by a narrow channel, is low and covered with vegetation; Pulau Fordate (7°01′S, 131°58′E), a hilly island with a prominent summit, is separated from the NE side of Larat by a navigable channel (3.158). Pulau Nukaha, a high islet covered with vegetation, lies on a reef 4½miles SE of Fordate.

2 Off the SW end of Yamdena lies Pulau Selaru, a low island, which is separated from it by Selat Egeron, a navigable channel. Pulau Riama, a low islet covered with vegetation, lies 5½ miles NW of Tanjung Arousu (8°20′S, 130°45′E), the SW point of Selaru.

3.149

1 Pulau Molu (6°44′S, 131°33′E), together with Pulau Wayangan, close SW, and Pulau Maru, 2 miles farther SW, are high and wooded islands, situated on a detached bank 13 miles N of the N coast of Pulau Yamdena; Pulau Molu has a prominent summit. Between these islands and Yamdena lie a number of reef-fringed islets.

2 Off the W coast of Yamdena, lie the islands of Selu (7°32′S, 130°55′E), Wuliaru, close NE, and Wotap, 4 miles farther NE. All these islands are hilly and reef-fringed. Pulau Seira (7°41′S, 131°02′E), low and swampy, lies close off the SW side of Yamdena and is separated from it by Pintu Tandula, a narrow channel.

Local magnetic anomaly

3.150

1 Vessels should take care when passing the village of Alusi (7°40′S, 131°35′E) on the E coast of Pulau Yamdena, as a local magnetic anomaly, due to the presence of iron in the vicinity, may affect the magnetic compass.

Flow

3.151

1 Little is known of the current in the surrounding waters of the islands. West of Pulau Selu, the current is known to set N or S.

2 Tidal streams tend to set in the direction of the various straits at a rate of about 1 kn. South of Pulau Selu they generally set S with the rising tide and N with the falling tide at a maximum rate of 2 kn; it is not known when the streams turn in this area. Directions for the navigable straits should be followed as closely as possible; in some, discoloration of the water takes place caused by tidal stream disturbance when passing through, thus preventing the ability to identify the presence of reefs, in others, strong tide-rips may be encountered when the prevailing wind is against the stream.

Principal marks

3.152

1 **Landmarks:**

Summit of Pulau Molu (6°44′S, 131°33′E), prominent; visible in the N approaches to the islands. From S, the summit has a distinctive saddle which rises to the peak.

Summit of Pulau Fordate (7°01′S, 131°58′E) rising in the N part of the island is prominent; visible in the N part of the group.

2 Summit of Pulau Laibobar (7°14′S, 131°22′E), prominent in the N part of the area; densely covered with vegetation it is the highest point of the group. The summit can easily be seen from the E side of Yamdena.

Pulau Sukler (7°38′S, 130°57′E) (3.156), in the S approaches to Selat Yamdena, is an excellent mark.

3 Amatdawah (Amat Dawah) (7°33′S, 130°52′E), the prominent summit of Pulau Selu rising from the SW part of the island; another prominent peak rises 1½miles N. Both peaks are only visible in the W part of the group.

Lubwaan (6°53′S, 131°29′E), the very prominent conical-shaped summit of Pulau Maru. Visible on the NW approach to the group.

4 **Major lights:**

Pulau Kalbur Light (white metal framework structure, 40 m in height) (6°39′S, 131°35′E).

Tanjung Waarlangier Light (white metal framework structure, 40 m in height) (6°59′S, 132°01′E).

Saumlaki Light (7°59′S, 131°18′E) (3.163).

General directions

3.153

1 From NW, the usual route for vessels bound for Ritabel (7°09′S, 131°43′E), Tanimbar's only other port of significance, is to pass between Pulau Wayangan (6°49′S, 131°32′E) and Pulau Maru where there is a deep clear channel between the fringing reefs, thence NE of Pulau Nuslima (Nus Lima) (6°59′S, 131°35′E), a group of islets on a reef, 9 miles SSE of the channel, then approach Ritabel from N. An alternative passage is to pass S of Pulau Maru and N of Pulau Kyabrengan (6°57′S, 131°34′E), the NW islet of the Nuslima group, thence NE of Pulau Nuslima as previously described.

3.154

1 Vessels proceeding from Ritabel to Saumlaki should, during the NW monsoon, pass N of Pulau Larat, through Selat Orafruan, described at 3.158; thence from a position SE of Pulau Larat the track leads SSW, passing (with positions from Karang Saribatsir (7°30′S, 131°48′E)):

2 ESE of Karang Sarikarmut (Sari Karmut) (15 miles NNE), a reef lying SW of the SE end of Larat, thence:

ESE of Karang Sarikarmuta (Sari Karmuta) (9½miles N), another reef, thence:

ESE of Karang Saribatsir (Sari Batsir), a reef, with Karang Sariwaturu (Sari Waturu), a dangerous rock, lying 1½ miles SSW, thence:

3 ESE of Karang Sarikilmasa (Sari Kilmasa) (10 miles SSW), a reef, with numerous below-water rocks close N and NW of it, thence:

ESE of the S extremity of Pulau Asutubun (8°04′S, 131°17′E), an islet from where a light (white metal framework structure, 15 m in height) is displayed, lying S of the headland on which Saumlaki stands.

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4 The track then leads W thence N, rounding Pulau Asutubun, to pass between this islet and Pulau Matakus (3.159), 3 miles W. Thence NE to the port.

Useful marks:

Summit of Pulau Laibobar (3.152), visible in the N part of the passage.

Saumlaki Light (7°59′S, 131°18′E) (3.163).

South-western end of Pulau Selaru

3.155

1 If from E, the S coast should not be passed closer than 1 mile of Pulau Batarkusu (8°20′S, 130°49′E), an islet standing close off the SE extremity of Pulau Selaru; if proceeding NW on passing Tanjung Arousu (8°20′S, 130°45′E), the SW extremity, the track leads NW passing close SW of Pulau Riama (3.148). This will avoid a 10 m patch 3 miles SW of that island. The passage between Pulau Riama and the mainland is clear of dangers.

2 **Useful mark:**

Pulau Batarkusu Light (white metal framework structure, 10 m in height).

Caution. When proceeding towards the S coast, along the E side of Pulau Selaru, there are least depths of 9 m at the edge of the coastal bank; the chart being the best guide.

Directions for the straits

Selat Yamdena

3.156

1 **General information.** Selat Yamdena lies between the W side of Pulau Yamdena and the islands W of it. Discoloured water is frequently seen in this strait and in the adjacent channels, being caused by wind and current turbulence. The maximum rate of tidal stream is 1 kn, though S of Pulau Selu it is 2 kn. Off Tanjung Metanuan (7°33′S, 130°50′E), the SW extremity of Pulau Selu, strong tide-rips raising a heavy sea occur at times.

2 **Approach from south-west.** On passing W of Karang Barasadi (Bara Sadi) (7°48′S, 130°48′E), a detached coral reef, which is generally visible from a good distance on account of seas breaking on it and which is situated W of the W coast of Pulau Yamdena, the track initially leads NE to a position NW of Pulau Sukler (Sukeler) (7°38′S, 130°57′E), a prominent islet standing on the E part of a reef, in the S approaches to Selat Yamdena, passing NW of a small coral reef, over which there is a least depth of 8 m, lying 3½ miles W of Pulau Sukler. Pulau Lengwati, an islet, lies at the W end of the reef on which Pulau Sukler stands.

3 The track through the strait then leads NE, passing:

SE of three detached rocks (7°34′S, 131°03′E) extending ESE from the N end of Pulau Selau, thence:

Either side of Pulau Kiswui (Keswu) (7°32′S, 131°09′E), a hilly island, with Pulau Wolas close E. A number of reefs lie close E of Wolas, but the channel between these reefs and the fringing reefs of Yamdena, and the channel close W of Kiswui and between it and detached reefs extending from Pulau Wuliaru, are clear of dangers. Deeper water lies in the channel close W of Pulau Kiswui. Thence:

4 SE of Pulau Yarngurual (Natraal) (7°26′S, 131°12′E), a sandbank covered with vegetation, standing on a reef, thence:

Between the SE extremity of Pulau Wotap and Pulau Babuan (7°24′S, 131°20′E), an islet close N of the middle of the W coast of Yamdena.

Useful mark:

Pulau Nisnitu (Nitu) (7°29′S, 130°50′E), an islet lying off the NW end of Pulau Selu, forms a very good mark when approaching the W entrance to the strait.

5 With local knowledge, if bound for Ritabel, passage may be continued between the islands of Vulmali, Ungar, Laibobar (3.152) and Nustemar (Temar) farther N and the mainland, passing N or S of Pulau Kabawa (7°07′S, 131°29′E) together with Pulau Karata, 1 mile SE, both high and prominent, and N of Pulau Farnusan (7°05′S, 131°39′E). Otherwise the track lies E of Pulau Wotap leading N to the open sea.

Approach from north-west. From NW, vessels usually proceed E of Pulau Wotap thence follow these directions in reverse.

Selat Wotap

3.157

1 Selat Wotap, a navigable strait, separates Pulau Wotap (3.149) from Pulau Wuliaru. With local knowledge, it is a convenient passage through which to enter Selat Yamdena from NW.

2 The recommended channel lies N of Pulau Yarngurual (Yarngur Rual) (7°23′S, 131°12′E) and Pulau Yarnguraa (Yarngur Raa), 2 miles ESE; but the channel S of these sandbanks may also be used. From NW and using the N channel, a dangerous rock lying 5 cables NW of Yarngurual should first be passed N and E thence the track leads SE between the fringing reefs of Pulau Wotap and the islands.

Both channels can safely be navigated by eye when the reefs are clearly marked; for tidal streams see 3.151.

Selat Orafruan

3.158

1 Selat Orafruan (7°05′S, 131°55′E), separating Pulau Fordate from Pulau Larat 1½ miles S, is clear of dangers in the fairway and is frequently used. The shore reefs on each side of the strait are well marked by discoloration.

2 **Useful marks:**

Pulau Vatsori (7°07′S, 131°46′E), a rock lying on the coastal reef near its W end on the N side of Pulau Larat, resembles a large prau without masts when seen from a distance. Visible on the passage between Ritabel and Selat Orafruan.

3 Pulau Frinun (7°03′S, 131°34′E), a low, but thickly wooded islet surrounded by a reef, bearing 276° leads through the fairway. A remarkable rock lies off the N end of the islet.

Church at the village of Aweer (7°04′S, 131°55′E), standing at the S end of Pulau Fordate, is prominent.

Selat Egeron

3.159

1 Selat Egeron is the navigable strait that separates Pulau Selaru from the S end of Yamdena. The direct channel leads in WNW-ESE direction passing S of Pulau Matakus (8°04′S, 131°13′E) and Pulau Anggormasa, 6 miles WNW, and N of Pulau Nuyanat, 6 miles W; Pulau Matakus is continually changing its appearance as the trees of the coconut plantation on the island are felled.

2 If proceeding across the strait from Saumlaki (7°59′S, 131°18′E) to Adaut (3.168), 14 miles SW, vessels should

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pass between Pulau Matakus and two islets, Pulau Nustabun and Pulau Batkawat, lying on a reef 1½ miles N.

Saumlaki

General information

3.160

1 **Position.** Saumlaki (7°59′S, 131°18′E), an important port and town, lies on the E side of Teluk Dalam situated at the S end of Pulau Yamdena.

Function. Saumlaki is the most important port on Yamdena, having a safe anchorage and an alongside berth; an oil jetty lies 1 mile S of the town. The port has a regular ferry service connecting the neighbouring islands and some of the larger ports further afield within the archipelago, including Dili (Timor-Leste). In 1997 the town had a population of 4000.

2 **Topography.** Teluk Dalam, is a reef-fringed bay situated at the S end of Yamdena. The bay is formed on its E side by a peninsula, with Saumlaki fronting its protected side, and on the W side by a wooded rocky coast interspersed by mangrove swamps. The entrance to the bay is protected from SE and SW by several off-lying islands.

Approach and entry. Saumlaki is approached from S or W and entered from Teluk Dalam.

Traffic. In 2003 the port was used by 2 vessels with a total of 649 dwt.

Port Authority. Commercial berth: Harbour Master (Kakanpel) Saumlaki, Jalan Bhineka, Kompleks Pelabuhan Saumlaki, Yamdena. Maluku; Oil berth: Pertamina PKK UPPDN–VIII, Jalan Kampung Olilit Baru, Saumlaki. Yamdena, Maluku.

Limiting conditions

3.161

1 **Local weather.** The heaviest rainfall occurs between December and June; during this period the visibility is reduced considerably. The strongest winds (from WNW) blow during this period, but ease after March.

Arrival information

3.162

1 **Port operations.** Berthing and unberthing can only be accomplished during daylight hours.

Port radio. In 1997, it was reported that the port had VHF/Radio communications. For long range communications vessels should use the coast radio station at Amboina (Ambon); for details see *Admiralty List of Radio Signals Volume 1(2).*

Pilotage is available but not compulsory.; Requests for pilotage assistance should be made through the local agent using the coast radio station; see above.

Tugs not available.

Harbour

3.163

1 **General layout.** The harbour area fronts the E shore of Teluk Dalam; the shore itself is fronted by an extensive coastal reef and patches of shallow water. At LW, the sea lies a considerable distance from the town; farther S, however, the reef narrows and on the W side of Pulau Asutubun (3.154), a continuation of the peninsula on which Saumlaki stands, there is no coastal reef.

Tidal streams are negligible in the bay.

Climatic table. See 1.159 and 1.169

Major light:

Saumlaki Light (white framework tower, 6 m in height) (7°59′S, 131°18′E); the light is displayed from the root of the commercial pier.

Directions

3.164

1 From S, the track leads NNE passing between Pulau Matakus (8°04′S, 131°13′E) and Pulau Asutubun. Thence to a position 4 cables ESE of Pulau Nustual, a small wooded islet, lying on the coastal reef at the SW entrance to Teluk Dalam, and between this islet and a 6 m coral patch 1 mile E. The fairway of the entrance channel here continues NNE between the reef-fringed sides of the bay.

On passing the light (starboard hand) situated on a coral patch 2 cables SW of the commercial pierhead, anchorage may be found W of the pier.

2 **Useful marks:**

Pertamina Oil Jetty Light (white beacon) (7°59′·7S, 131°17′·4E) which is displayed from the root of the jetty.

Zinc roof of the Roman Catholic mission house which stands close S of the town, is prominent.

Berths

3.165

1 **Anchorage** may be obtained in depths of 27 to 31 m, coral, rock and sand, W of the commercial pierhead.

Alongside berths. A stone commercial pier extends nearly 3 cables W from the shore and over the fringing reef; the T-shaped pierhead has a length of 50 m and depth of 6 m at MLWS. This berth accepts the ferries and smaller cargo vessels; larger vessels usually anchor off the pier.

2 **Oil Jetty.** The L-shaped Pertamina Oil Jetty lies 1 mile S of the town; it extends over the fringing reef 1¼ cables WNW from the shore. There are depths of 5 m at MLWS, alongside. The berth handles clean oil products.

Port services

3.166

1 **Facilities** are limited; medical assistance.

Supplies: limited quantities of supplies and foodstuffs; fresh water can be obtained from the stone commercial pier.

Communications. There is an airport at Saumlaki, about 1 mile E of the town. There are regular flights to Ambon, where connecting flights to other parts of the archipelago can be arranged.

Minor harbours

Ritabel

3.167

1 **General information.** Ritabel (7°09′S, 131°43′E), a small town and port, sometimes referred to as Larat, lies at the W end of Pulau Larat. The port is a collection point for the exportation of copra and timber products to such ports as Tanjungperak and Ambon. It is also on the ferry service linked with Saumlaki and other ports in the area.

The limits of the roadstead are defined by a line drawn from Pulau Watmomal, a prominent rocky islet close off the NE point of Pulau Lutur, a flat island, situated 3½ cables W of Pulau Larat, and Tanjung Watidal, a rocky, reef-fringed point on the NW side of Larat, 8 cables NNE. A light (red metal framework tower, 10 m in height) is displayed from the edge of the reef 4 cables N of the Tanjung Watidal.

2 **Directions.** The approach to Ritabel is from N, passing E of Karang Metirotan (Metirottan) (7°06′S, 131°41′E), a large drying reef. The harbour is then entered through a deep water indentation lying between the reef-fringed coasts of

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Pulau Larat and Pulau Lutur. On passing the light (3.167) N of Tanjung Watidal, the track leads S, with Ritabel Light (white metal framework tower, 9 m in height) displayed from the pierhead at the port, bearing 180°, thence between the lit channel beacons marking the reefs either side of the channel close N of the pier. A light (green beacon) is displayed from the edge of the reef 4 cables N of Pulau Watmomal.

3 The narrow passage lying between Pulau Larat and the N end of Yamdena, whose N end is entered at Ritabel, is only suitable for small craft; depths in this passage are reported to be about 1 m (3 ft) at LW.

Berths. Anchorage may be obtained W of the pier in depths of 15 m (50 ft), mud, or SW of the pier in depths of 26 m (14 fm), mud. There is no swell here except with strong N winds.

The pier at Ritabel extends a short distance NW from the shore; there are depths of 5 m alongside the pierhead.

Adaut

3.168

1 Pelabuhan Adaut (8°08′S, 131°07′E), on the N side of Pulau Selaru, affords a safe anchorage at all times in depths of 12 m (39 ft), close off the stone pier which lies on the E side of the inlet near the entrance. The town of Adaut is linked by ferry with Saumlaki on mainland Yamdena.

The entrance to the inlet is open and there are no dangers; a bank over which there are depths of 9 m extends NE from the NW side of the inlet. The best channel lies closer to the SE side of the reef-fringed inlet.

A shed with a zinc roof at the head of the pier at Adaut forms a good mark.

Anchorages

Teluk Loka

3.169

1 Anchorage for small vessels may be obtained, during the NW monsoon, in Teluk Loka, which indents the E side of Pulau Molu (3.149). The bay is entered between Tanjung Habamuri (6°45′S, 131°35′E), a rocky, reef-fringed point, and a similar point nearly 2 miles NNE. The bay should be entered with the benefit of local knowledge. However, by keeping close to the coastal reef on the N side of the bay there is a navigable deep water channel, with a least width of 2 cables, leading NW to a sheltered anchorage. Extending N from the S side, about 1 mile within the bay, there is a narrow tongue of coral over which there is a least depth of 3 m (10 ft).

2 The best time to enter is when the reefs on the N side, marked by discoloration, can be plainly seen, thence on passing the coral tongue, vessels may find an anchorage in depths of between 20 and 40 m (11 and 22 fm).

Two villages stand on the N side of the bay. There are several coconut plantations; copra is exported to nearby Ritabel for shipment to the larger ports.

Adodo

3.170

1 Anchorage may be obtained off the village of Adodo (6°42′S, 131°34′E) situated on the NW coast of Pulau Molu (3.149). The best berth lies 5½ cables NW of the village, and a distance of at least 7 cables off the shore, in depths of 40 m (22 fm). A depth of 17 m (9 fm) lies about 1 mile W of the village.

Off Pulau Maru

3.171

1 Anchorage may be obtained everywhere off the reef-fringed E coast of Pulau Maru (6°53′S, 131°29′E) (3.149) in depths of about 44 m (24 fm), except off the coconut plantations on the SE point of the island.

Off Pulau Laibobar

3.172

1 Anchorage may be obtained on the S side of Pulau Laibobar (3.152), in a bay (7°13′S, 131°24′E) in which the coastal reef is marked by discoloration. There is no difficulty in entering the bay or in passing through the channel between Pulau Ungar and Pulau Laibobar in which there is a least depth of 8 m (26 ft).

Off Pulau Fordate

3.173

1 Anchorage may be obtained almost anywhere off the E and W coasts of Pulau Fordate (3.148) in depths of about 49 m (27 fm), except off the rocky parts S of the villages of Adodu (7°00′S, 131°58′E) and Sofianin, 2 miles SW, in the middle of the W coast.

2 Local knowledge, however, is desirable.

Off Pulau Yamdena

3.174

1 Anchorage may be obtained during the NW monsoon off several of the villages on the E coast of Pulau Yamdena (3.148), between the village of Watmuri (7°26′S, 131°42′E), which stands on a prominent point about 18 miles SW of the SE extremity of Pulau Larat, and the village of Tumbur 33 miles farther SSW. General depths are between 30 and 50 m (16 and 27 fm) close off the coast. In the N part, once the outer line of reefs (3.154) has been negotiated, the only danger is Karang Saritumbur (7°22′S, 131°42′E), a drying reef, which should be given a wide berth; vessels should have little difficulty finding a suitable anchorage.

Off Pulau Selaru

3.175

1 Anchorage may be obtained during the SE monsoon in Labuhan Lemian (Labuan Lemian) (8°11′S, 130°53′E), an open reef-fringed bay, which is situated on the NW coast of Pulau Selaru (3.148). The anchorage has depths of between 30 and 50 m. However, a 4 m patch lies in the middle of the bay and 2 miles offshore from the head of the bay. Without local knowledge, it is advisable to keep at least 2 miles off both sides of the bay and at least 3 miles from its head.

Small craft channels and anchorages

North of Pulau Molu

3.176

1 The channel between the N coast of Pulau Molu (6°44′S, 131°33′E) and Pulau Kalbur, an uninhabited island, 1 mile N, on which stands a light (3.152), is clear of dangers but there is sometimes a heavy sea in this passage.

Off the north-west coast of Pulau Yamdena

3.177

1 Pulau Namwaan (7°07′S, 131°27′E) and Pulau Itain, close N, lie 4½ miles NW of the NW coast of Yamdena. Their appearance undergoes constant change due to the gradual clearance of coconut groves. The channel between these islands is clear of dangers in the fairway but should only be used when the reefs on each side are visible.

Pulau Vatvurat, an islet standing on a reef, lies nearly 1 mile E of the E entrance to this channel; two small rocks

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lie off the S end of the islet. Two small dangerous reefs, over which there is a least depth of 1 m (3 ft), lie 1½miles ENE and 2 miles NE, respectively, of Vatvurat.

Off the south-east coast of Pulau Yamdena

3.178

1 An inshore passage suitable only for small craft lies between the entrance to the inlet leading to Sungai Tambrian (7°46′S, 131°27′E) and the village of Tumbur (3.174), 8 miles SW. The navigable channel, with depths of 10 m (33 ft), mud, passes between Pulau Nusmes (Mes) together with Pulau Kore, two islets standing on a coral reef, and the coast of Yamdena. On clearing the detached reef lying close WSW of Nusmes, and a 3 m (10 ft) patch close W of this reef, the best track then leads S for about 1½ miles before turning W towards Tumbur. The least depth on the W track is 4 m (13 ft); a deep water approach to the village leads NW from the open sea several miles farther S.

Pulau Mitak

3.179

1 Pulau Mitak (7°11′S, 131°29′E), on which there is a coconut plantation, lies 1½ miles off the NW side of Pulau Yamdena. The channel between is obstructed by rocks, but with local knowledge, passage can be made by boats through it. A landing stage is situated on the S side of Pulau Mitak.

Pulau Bolu, a reef-fringed islet covered with vegetation, lies 1½ miles S of Mitak.

Teluk Salwasa

3.180

1 Teluk Salwasa (Salwassa) (7°40′S, 131°08′E) is a muddy inlet extending into the W side of Pulau Yamdena opposite the NE part of Pulau Seira (3.149). The bay, which has not been closely examined, extends about 6½ miles inland to the entrance to Sungai Salwasa (Kali Salwassa) at its head. Depths vary between 3 and 9 m. Several villages stand on the S mud-fronted side of the bay.

Entry to the bay lies 5 cables E of the NE end of Pulau Seira, thence following a mid-channel course to the entrance to the river where there is a bar with depths of 2·5 m over it.

Labuhan Olendir

3.181

1 Labuhan Olendir (Labuan Olendir) (8°07′S, 130°58′E), an open inlet fringed by extensive reefs on either side, lies on the NW side of Pulau Selaru (3.148). The inlet affords a convenient anchorage for small craft. With SW and W winds, sheltered anchorage may be obtained off the village of Namtabung on the S side of the inlet. Although the coastal reefs fronting both sides of the inlet extend about 3 miles inland, they are well marked by discoloration. The inlet should initially be approached from N in deep water until within the outer reefs, thence SW towards the village.

2 Tanjung Wadatutu (8°07′S, 130°56′E), the NW point of Pulau Selaru, is the only suitable point for taking bearings.

ISLANDS OF ARAFURA SEA

GENERAL INFORMATION

Charts 942B, 3246 (see 1.34)

Scope of the section

3.182

1 In this section are described the islands forming Pulau-pulau Aru, the only group of Indonesian islands lying within Arafura Sea. Also described are the passages, harbours and anchorages associated with these islands.

Dobo (5°46′S, 134°13′E), the only port of importance within the islands, stands on the N coast of Pulau Wamar.

Topography

3.183

1 Pulau-pulau Aru (6°00′S, 134°30′E), lying about 65 miles E of Pulau-pulau Kai (3.71), comprise a number of large and small uplifted coral and limestone islands which consist mainly of mangrove swamps and palm forests. They are geologically considered to be part of Irian Jaya.

Off the E and S coasts there are a number of offshore islands and off-lying dangers. Mangrove swamps ring the islands and many of the salt water channels within the islands are obstructed by them.

Tidal streams

3.184

1 Both N and S of Pulau-pulau Aru, in the open sea, the tidal streams generally set E with the rising tide and W with the falling tide.

Along the N coast the stream sets about 125° with the rising tide E of Pulau-pulau Jedan (5°23′S, 134°41′E), curves to about SSE and then maintains the direction of the E coast as far as Pulau Mariri (6°09′S, 134°52′E) off Kobroor. The stream setting between E and ENE to the S of the group curves N to the E of Pulau-pulau Jin (6°51′S, 134°38′E). These two streams meet off Pulau Mariri and turn towards the coast. Thus between the parallels of 6°10′S and 6°20′S, circular streams are formed which, with the rising tide, set mainly on the coast and with the falling tide set away from it.

2 From the zone referred to above, when there is a W-going stream N and S of Pulau-pulau Aru, the streams off the E coast set in different directions. To the N of the parallel of 6°10′S, the stream sets between NNE and N until abreast Pulau-pulau Jedan, and thence N mainly between NNW and NW by N. To the S of the parallel of 6°10′S, the stream sets S, but sometimes takes a more E direction off the entrances to the channels between the main islands. South of Pulau-pulau Jin, off the SE side of Pulau Trangan, the stream sets WSW.

3 There is a maximum rate of about 2 kn off the N and S coasts, with both the E and W-going streams. Close off the N end the rate is sometimes as much as 2½kn, and attains 3 kn close off the S end; the directions here are irregular. At the full strength of the streams, strong tide-rips, caused by the irregular depths and having the appearance of dangerous shoals, are experienced near both the N and S coasts.

Along the W coast the stream sets S parallel to the coast when it is setting E along the N and S coasts, and in the reverse direction when it is setting W along those coasts; a rate of more than 1½kn has not been observed along the W coast.

4 In the entrances to the channels between the main islands there is frequently a strong out-going stream, which is only interrupted by a strong in-going stream during a few hours with the rising tide, and there may be a short period of slack water.

General directions

3.185

1 Through routes in the area lie N and S of Pulau-pulau Aru and are described between 3.21 and 3.24. The only port

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of importance within the group is Dobo (5°46′S, 134°13′E) situated on Pulau Wamar, which is frequently visited by local vessels only. There is little or no coastal traffic around these islands.

PULAU-PULAU ARU

General information

Chart 3246

General description

3.186

1 Pulau-pulau Aru (6°00′S, 134°30′E) comprise a group of six sparsely populated, low-lying islands and numerous smaller islands; the elevation seldom exceeding 70 m. From N to S the main islands consist of Kola, Wokam, Kobroor, Maikoor, Koba and Trangan. These larger islands are divided from each other by narrow straits, giving the appearance of one big island. All the islands are surrounded by mangrove swamps and the interior is covered by a dense deciduous rainforest. Off the E and S coasts there is a band of small islands and off-lying dangers; much of this area has not been fully surveyed.

2 The channels through the islands form unimportant waterways except for local traffic; only some are briefly described within the text. Others can only be navigated by small craft. The islands experience a great deal of rainfall particularly between December and April.

Dobo (5°46′S, 134°13′E) (3.198), the only port of significance, lies on Pulau Wamar on the NW coast of the group. It is a collecting point within the Arus for local exports which include copra and timber.

Topography — North and eastern side

3.187

1 There are few good landmarks on the E side of Pulau-pulau Aru; the entire coast appears as a uniform stretch of land and the off-lying islands are difficult to identify at a distance. Pulau Warilau (5°22′S, 134°33′E) is the most N of the islands; it is wooded with tall trees and, like the islands near it, is uninhabited; it is reported to make a good radar target. A grass-covered islet lies on a reef, which extends up to 4 miles from the coast, about 1 mile N of the N extremity of Pulau Warilau. Pulau-pulau Jedan, a group of low wooded islets, lies close off the SE side of Warilau; Pulau Ngoba and Pulau Toba, both wooded islets, lie off the W side of Warilau. Sungai Kolawatu (Kola Watu) (3.195) separates Warilau from Pulau Kola.

2 The E coast of Pulau Kola is mostly rocky and thickly covered with vegetation. The off-lying coral reefs and dangers extend up to 8 miles from the coast here. Sungai Sisirwatu (Sisir Watu) (3.208) separates Kola from Pulau Wokam.

The E coast of Pulau Wokam is rocky and covered with vegetation. There are numerous islets lying off this stretch of coast, with narrow channels separating them. The coastal dangers extend up to 10 miles offshore. Sungai Manumbai (3.196) separates Wokam from Pulau Kobroor.

3 Pulau Kobroor, one of the larger islands, is similar to Wokam except that the channels leading into the interior are obstructed by mangroves preventing even small craft from entering. Pulau-pulau Mariri, consisting of Pulau Mariri (6°09′S, 134°52′E) and Leer with several smaller islets, lie up to 8 miles E of Kobroor. Pulau Penambulai (6°23′S, 134°50′E) and Pulau Barakan, close S of it, lie at the edge of the coastal bank SE of the SE entrance to Sungai Workai (3.197), the river separating Kobroor from Pulau Maikoor and Pulau Koba.

4 Pulau Koba, low-lying and covered with mangroves, lies due S of Pulau Kobroor. It is separated from Pulau Trangan by Sungai Maikoor (3.214).

The E coast of Pulau Trangan, the S-most main island of the group, is low and covered extensively with mangrove swamps. The offshore dangers S of Pulau Trangan extend a considerable distance from the coast. Pulau Enu (7°04′S, 134°29′E), uninhabited and thickly covered with vegetation, lies 15 miles SE of Pulau Trangan.

Topography — Western side

3.188

1 The W side of Pulau-pulau Aru is a monotonous stretch of thickly wooded land except for the S part of Pulau Trangan, which is hilly with fairly steep sides. Again, there are few good landmarks. Towards the N end of the W side, Pulau Wasir (5°30′S, 134°15′E) is higher at its N end than at its S end and does make a good mark. Selat Wasir (3.213) separates Wasir from Pulau Ujir (3.213), close S, but is not deep throughout.

The S side of Pulau Ujir lies close N of a peninsula extending W from Pulau Wokam; S of this peninsula, and separated from it by a similar narrow channel, lies Pulau Wamar on which stands the main port of the whole area.

2 Pulau Wamar is low and thickly wooded. Between the S coast of the island and Tanjung Fatujuring (6°00′S, 134°08′E), the N extremity of Pulau Maikoor, 11 miles S, there is an open indentation in the coast leading to the W entrances to several rivers including Sungai Manumbai (3.196) and Sungai Workai (3.197). Pulau Babi (5°55′S, 134°09′E), an islet lying on a reef, stands in the middle of this open indentation with navigable water N and S of it.

3 Pulau Maikoor, which lies between Pulau Kobroor and Trangan and separated on its S side from Pulau Koba by a river, is low and covered with vegetation.

The W coast of Pulau Trangan is fronted by numerous reefs and dangers, in particular Karang Batavia (6°18′S, 134°02′E). Off the S coast, Gosong Blackburn (Blackburn Bank), with depths of less than 3 m over it, lies 7 miles WSW off the SW coast of Trangan.

Marine reserve

3.189

1 An area on the E side of Pulau-pulau Aru has been designated a marine and conservation reserve.

The area consists of the waters surrounding the islands of Penambulai (6°23′S, 134°50′E), Baun and Workai.

For details on marine reserves within Indonesian waters, see 1.67.

Natural conditions

3.190

1 **Local magnetic anomaly.** An area of magnetic anomaly lies 6 miles W of the S extremity of Pulau Wasir (5°30′S, 134°15′E).

2 **Tidal streams.** See 3.184. Tidal streams set into both entrances to Sungai Manumbai with the rising tide, setting out with the falling tide and may attain a rate of 1½ to 2½kn in the entrances. In the E approaches to Sungai Manumbai there are strong tidal streams on the N and E sides of Pulau Batukapal (3.196), and in the N channel tidal streams set S with the rising tide and ENE with the falling tide. In the approaches to the SE entrance to Sungai Workai, S of Pulau Lola (6°13′S, 134°51′E), there is sometimes a rate of 3 kn setting offshore with the falling tide and S with the rising tide. In most cases the streams attain a rate of

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between 1½ and 2½kn in the other rivers traversing this island group.

Principal marks

3.191

1 **Landmarks on the north and east coast:**

Tanjung Watuleijuring (5°20′S, 134°34′E), the N extremity of Pulau Warilau, on the N coast, is prominent; it is also reported to be a good radar target.

Two prominent trees standing on Tanjung Leitin (5°31′S, 134°41′E), on the E coast of Pulau Kola. The villages of Marlassi (5°30′S, 134°39′E) and Masidan, 3 miles SE, which stand in the vicinity of the point appear as red patches from a distance seawards.

2 Pulau Karaweira Besar (5°57′S, 134°51′E), the highest land on the E side of Pulau-pulau Aru, makes a good landmark from seaward; it is a very prominent island from E and NE. Pulau Sabir, a low islet, lies 7 cables E of the island and on the same reef.

Tanjung Uafu Fenjuring (6°19′S, 134°53′E), on which stand some high trees, is prominent from seawards; it is reported to be radar conspicuous.

3 **Major light:**

Tanjung Watuleijuring Light (white metal framework tower, 28 m in height) (5°20′S, 134°34′E).

3.192

1 **Landmarks on the west coast:**

Prominent rock standing close off the NW side of Pulau Wasir (5°30′S, 134°15′E); this large, high rock can be seen from a good distance.

Bain (6°50′S, 134°07′E), a hill standing 2¾ miles NE of Tanjung Bain, forms a distinctive landmark.

Other aid to navigation

3.193

1 **Racon:**

Tanjung Watuleijuring Light (5°20′S, 134°34′E).

For details see *Admiralty List of Radio Signals Volume 2*.

Directions

General

3.194

1 In all cases, vessels navigating along, or approaching, the coasts of Pulau-pulau Aru should, on account of the many reefs, shoals and isolated dangers in the area, keep to a minimum distance of 10 miles offshore unless having prior local knowledge. The exception to this rule is off the SW coast of Pulau Trangan where the distance should be increased to 15 miles offshore.

Local knowledge. The navigable waterways described below should only be used with the benefit of local knowledge and are given for general guidance only.

Sungai Kolawatu

3.195

1 Sungai Kolawatu, the waterway separating Pulau Warilau from Pulau Kola to the S, is bordered by reefs in places, but these are usually marked by discoloration. The channel is fairly deep, with no dangers in the fairway; least depth 7 m (23 ft).

From E the track leads along the S side of Pulau-pulau Jedan, through the outlet of the deep channel which separates the submarine plateau on which the group lies from Pulau Warilau and the islands SE of it. The N part of this channel has not been fully surveyed.

2 When approaching the E entrance, soundings should be taken continuously, and having identified Pulau Surat (5°25′S, 134°41′E), a bare patch of sand on a reef, the track passes S of Pulau Belading, 1¾ miles W, and between it and Pulau Tapasur (5°25′E, 134°38′E). Thence W and SW, rounding the reef extending N from Pulau Tapasur, and into the river passing between Pulau Lafusa (5°25′E, 134°36′E) and the mainland of Pulau Kola.

From W, the entrance is easy to navigate and Pulau Tiga (5°25′S, 134°33′E), three islets on the S side of the passage, form a good landmark.

Sungai Manumbai

3.196

1 Sungai Manumbai, which separates Pulau Wokam from Pulau Kobroor, is about 28 miles long and has a least depth of 5·5 m (18 ft), though much of the river has depths in excess of 10 m (33 ft). The E entrance is harder to negotiate from seawards than when entering the river from W, on account of the numerous off-lying reefs and twisting channels. Pulau-pulau Karaweira, which consists of 13 uninhabited islands including Pulau Karaweira Mariri (6°01′S, 134°51′E), front the E entrance. Local knowledge is therefore essential for the complete passage from either direction; see also 3.190.

2 From W, the initial track leads E passing S of Pulau Babi (5°55′S, 134°09′E) (3.188), thence S, approaching the river entrance off Tanjung Belingaratu at a position 5½ miles S of Tanjung Toardefete (5°55′S, 134°17′E). Manumbai, a village, lies on the S side of the river entrance. Once in the river, vessels should keep to mid-channel for about 3 miles thence keep to the N bank until past the entrance to Sungai Maruremar (Marirremaar), 4½ miles within the entrance; thence resuming a mid-channel track until the entrance to Sungai Apiapi (Api Api), situated on the E side of the river, is reached. The track then passes N of a drying rock 1½ miles W of the entrance to Sungai Dosi (5°57′S, 134°34′E) and maintains the N bank until crossing to the S shore between the drying mudbanks. The track then passes S of Pulau Batukapal (6°04′S, 134°50′E), a fairly high prominent rock, and N of a detached reef lying 2 miles E of the islet.

3 **Caution.** The channel from N leading to the entrance to Sungai Manumbai, and which passes SE of Pulau Jursian (5°55′S, 134°46′E), has a least depth of 0·5 m (2 ft) and is only suitable for small craft.

Sungai Workai

3.197

1 Sungai Workai, the channel separating Pulau Kobroor from Pulau Maikoor and Pulau Koba, and about 32 miles in length, has a least depth of 5 m (16 ft) situated close E of Pulau Fles (6°16′S, 134°24′E) at about the halfway point of the river. The narrowest part of the river lies at Ajerbungaraja (Ajer Bunga Raja) (6°14′S, 134°22′E).

From W, the track passes S of Pulau Babi (5°55′S, 134°09′E), thence SE to the W entrance at Tanjung Turajera (6°03′S, 134°16′E), thence following a mid-channel position until the entrance to Sungai Fatubilar, the river which separates Pulau Maikoor from Pulau Koba, is reached.

2 From E, the channel initially leads SSW, with the W entrance point of Sungai Kangurma (6°16′S, 134°51′E) at the N end of Pulau Penambulai bearing 210°, until the alignment (344°) of Pulau Seja (6°12′S, 134°52′E) with the SW tangent of Pulau Mariri is reached. This track clears a 2·5 m (8 ft) patch on the S side of the channel. The track then leads WSW between Pulau Lola (6°13′S, 134°51′E) and Pulau Penambulai, 3 miles S, thence SW towards the SE

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entrance to the river. The deepest water here lies close to the S shore of Pulau Koba. About 4½miles inside the entrance, the deeper water lies close to the N bank before adopting a mid-channel course. In the E portion of the river there are several islets and rocks, emphasizing the importance of having local knowledge and up-dated charts.

Dobo

General information

3.198

1 **Position.** Dobo (5°46′S, 134°13′E), an anchorage port, and the only port of importance within this island group, lies at the NE extremity of Pulau Wamar. It is also the headquarters of the government official.

Function. Dobo is a collecting point for copra and timber products for the islands, which is then exported to the larger ports of Dili or Ambon. The farming of Aru pearls is highly prized here. Dobo is also a port of call on the inter-island ferry service linking Irian Jaya with Tual and Ambon; an oil jetty lies 3½ miles S of the town,

In 1997 the population of the town of Dobo was 3500.

2 **Port limits.** A line drawn 045° from Tanjung Ular (5°45′S, 134°11′E), thence including the coasts on either side of the channel, to a line 225° drawn from Tanjung Merukujuring (5°45′S, 134°15′E).

Approach and entry. Dobo is approached from Arafura Sea on the W side of Pulau-pulau Aru and entered through a marked channel, passing N or S of Pulau Wamar.

Port Authority. Kakanpel Dobo, Jalan Kapitang Malitoni, Dobo. Wamar. Maluku.

Limiting conditions

3.199

1 **Tidal levels.** See *Admiralty Tide Tables.* Mean maximum range about 1·7 m, mean minimum range about 0·9 m.

Maximum size of vessel: one of 10 000 dwt at an anchorage.

Local weather. The town experiences rainfall throughout the year and during December and January when the heaviest rainfalls occur, the visibility is greatly reduced, especially in the forenoon.

Arrival information

3.200

1 **Port operations.** The port should only be approached and departed from during daylight hours.

Port radio. Vessels may communicate with the port (Harbour Master) using the coast radio station at Ambon in the first instance; for details see *Admiralty List of Radio Signals Volume 1(2).* Unconfirmed reports suggest that the port has a radio service operated from the Harbour Master's office, which is situated close S of the pier (3.203).

Pilotage is unavailable.

Tugs: none.

Harbour

3.201

1 **General layout.** Whilst the main harbour area lies adjacent to Dobo, the port also includes the running of the anchorage area between Dobo and the Pertamina oil berth 3½miles S of the town. Operational use of the oil berth is solely the responsibility of Pertamina.

Tidal streams. Off the entrances to Dobo the stream sets S with the rising tide and N with a falling tide. During the SE monsoon the in-going stream is weak but the out-going stream attains a rate of 1½ kn and is sometimes much stronger off Dobo. Streams are semi-diurnal here.

Directions for entry

3.202

1 The main approach to Dobo is usually N of Pulau Wamar where there is a marked deep water fairway. From a position 1 mile N of Tanjung Ular the track leads ESE to the port; if required to anchor, vessels may find a suitable anchorage anywhere along the N coast of Wamar, in the roadstead, or proceed farther E where there is a sheltered berth SE of the town. Depths vary between 15 m (49 ft) and 34 m (19 fm) in the roadstead to between 10 m (33 ft) and 42 m (23 fm) SE of the town, sand and coral. The channel N of Pulau Wamar is marked by beacons (port and starboard).

Off the oil berth, a 2 m (7 ft) patch is marked by a buoy (isolated danger).

2 **Useful mark:**

Tanjung Ular Light (white metal framework tower, 6 m in height) displayed from the pierhead at Dobo.

If entering the harbour from S, the track leads E and midway between the S shore of Wamar and Pulau Babi, 5 miles S, thence NNE when the light (white beacon) at the oil berth (3.203) bears 000°. The marked track here passes E of two 3 m (10 ft) patches; the depths in this channel are considerably less than the N channel, as a 6 m (20 ft) patch lies 1½ miles SE of the light and in the fairway.

Alongside berths

3.203

1 A T-headed pier extends 70 m from the shore at Dobo; the berth at the head is 45 m in length with a depth of 4 m alongside at MLWS.

An L-shaped jetty at Tanjung Karkeli (5°49′S, 134°14′E) has a length of 65 m at its head and a depth of 5 m, MLWS, alongside. Clean oil products are handled here from 1000 dwt vessels.

A beacon (green cone topmark) stands on the point.

Port services

3.204

1 **Facilities**: medical assistance; hospital.

Supplies: limited fresh water and provisions.

Communications. There is an airport on Pulau Wamar with connecting flights to Ambon.

Sungai Serwatu

General information

3.205

1 **Position.** Sungai Serwatu, a river whose entrance lies on the W coast of Pulau Trangan, is entered between Tanjung Derehi (6°27′S, 134°06′E) and Tanjung Faturei, 1¾ miles N.

Function. The river is a collecting point for timber products and copra, brought by small craft from various places on the river as far inland as the large village of Doka (6°39′S, 134°15′E).

2 **Directions.** The approach to Sungai Serwatu is through a marked channel (port and starboard light-buoys) which initially leads SSE, thence SE into the river from seawards. The channel is about 2 cables wide and passes over a bar, with a least depth of 5 m (16 ft) over it, 2½ miles from its entrance.

Once inside the river, depths are about 10 m (33 ft), mud, providing a sheltered and safe anchorage.

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Anchorages

Off the east coast

3.206

1 Anchorage may be obtained S of Pulau Batukapal (6°04′S, 134°50′E) in a depth of 10 m (33 ft), mud and sand, in the entrance to the channel leading to the SE entrance to Sungai Manumbai. Small vessels can approach this anchorage from E; larger vessels should use the deep water channel from the NE. See also directions for Sungai Manumbai given at 3.196.

2 Anchorage may be obtained about 2 miles S of the village of Lola, which is situated at the S end of Pulau Lola (6°13′S, 134°51′E), in depths of between 6 and 10 m (20 and 33 ft), sand, mud and coral. Small vessels may find an anchorage closer to Pulau Lola in a depth of 4 m (13 ft). Vessels using this anchorage should approach from NNE as described at 3.197 for the track leading to the SE entrance to Sungai Workai.

3 Anchorage may be obtained in a roadstead 3 miles S of Pulau Kultubai Utara (6°42′S, 134°46′E), consisting of two islets on a drying reef, on which stand clumps of trees. There are depths of 7 to 10 m (23 to 33 ft), mud and sand, in the roadstead. A beacon stands on the N edge of a drying reef 6 miles SSW of Pulau Kultubai; the trees on the islets are difficult to see from S but from N they are plainly visible.

4 Anchorage may be obtained off the W side of Pulau Jeudin (6°52′S, 134°36′E), the W island of Pulau-pulau Jin, where there is an indentation through the reefs bordering the S coast of Pulau-pulau Aru. Pulau Mar (6°55′S, 134°31′E) and Pulau Jeh, 2¼ miles farther WSW, low and uninhabited islets densely covered with vegetation, lie on the W side of the indentation. There are depths of 9 to 16 m (30 to 53 ft), sand and coral, inside the indentation, or depths of 12 m (39 ft) outside.

5 There is ample swinging room but the anchorage, which is best approached from S, is open and prone to the SE monsoon. Vessels approaching from E may pass about 2 miles off the S sides of Pulau Kultubai (6°52′S, 134°44′E) and Pulau Marjinjin (Maarjinjin), the E islands of Pulau-pulau Jin, in a least depth of 7 m (23 ft). This track leads between these islands and a 5 m (16 ft) coral patch situated 3½ miles S of Pulau Marjinjin. Vessels passing farther S should give a wide berth to a 3·4 m (11 ft) coral patch situated 3½ miles NE of Pulau Karang (7°01′S, 134°39′E), a low, uninhabited island, thickly covered with vegetation.

Off the west coast

3.207

1 Anchorage may be obtained in depths over 9 m (30 ft), sand and mud, everywhere off the W coast of Pulau-pulau Aru. However, local knowledge is essential for some of the lesser known places, though soundings provide a good guide, even in the S part where the depths are irregular.

2 Anchorage may be obtained in a bay E of Tanjung Fatujuring (6°00′S, 134°08′E) on the N coast of Pulau Maikoor. The best berth lies in a depth of 20 m (11 fm), 7 cables E of the jetty on the W side of the bay and about 1 mile E of the point. The bay should be entered with the E end of Pulau Babi (5°55′S, 134°09′E) bearing 000°, astern; the track then leads S with a rock at the head of the bay bearing 180°. When the white house on the jetty bears 258°, steer for it on that bearing and anchor when Tanjung Fatujuring bears 323°.

Small craft harbours and passages

Sungai Sisirwatu

3.208

1 Sungai Sisirwatu (Sisir Watu) is the river passage separating Pulau Kola (3.187) and Pulau Wokam (3.187). On the E coast, the channels N and S of Pulau Ararkula (Arar Kula) (5°35′S, 134°46′E), a coral and mud bank on a drying reef, with some low trees, are used by small craft making the passage between the E and W coasts. There is a least depth of 3·5 m (11 ft) in both channels. The W entrance to the river is tortuous and narrow and the tidal streams are sometimes strong.

Pulau Aduar and Pulau Kumul

3.209

1 Pulau Aduar (5°45′S, 134°46′E), 5 cables S of Pulau Mamen (Manien), is the highest island of Pulau-pulau Watulai, a group of islands lying off the E coast of Pulau Wokam which include Watulai, Menlau and Mentai. There are several villages on Pulau Aduar; access to them is through a narrow channel in the fronting reef, in which there is a least depth of 3 m (10 ft), suitable only for small craft. Another small craft channel leads SW along the fronting reef and gives access to the village of Kumul on Pulau Kumul and the village of Watulai on Pulau Watulai. Pulau Tabar, close W of Watulai, is thickly covered with vegetation.

2 **Tidal streams** in both channels sometimes run with great strength at springs, especially on the out-going stream.

Off Pulau Mariri

3.210

1 Anchorage may be obtained off the E side of Pulau Mariri (6°09′S, 134°52′E) (3.187) and about 2 cables offshore in a depth of 7 m (23 ft). The village of Mariri stands on an islet close SE of Pulau Mariri.

Sungai Warloi

3.211

1 Sungai Warloi, the mouth of which lies 4¼ miles S of Tanjung Balatanjuring (6°05′S, 134°46′E), the NE point of Pulau Kobroor (3.187), can be entered by small craft. The river entrance is fronted by Pulau Leliling. The village of Warloi stands on the E side of this island. South of the river entrance, and between it and the entrance to Sungai Workai, has not been fully surveyed.

Sungai Laelaemar

3.212

1 Sungai Laelaemar is entered close N of Tanjung Goljuring (6°49′S, 134°22′E), on the SE coast of Pulau Trangan (3.187), and is used by small craft to reach the village of Sia. There are two approaches to this river which pass either side of two reefs situated 2 miles SE of the point. The W channel lies close to the coast of Trangan and has a least depth of 5·5 m (18 ft); the E channel, with similar depths but wider, lies 4 miles farther E. The E channel should be entered only at half tide when the reefs are visible. North of Sungai Laelaemar lies the village of Biltubur and farther N the villages of Krei Lama (Krei Tua) and Krei Baru, which can only be visited by boats. Pulau Kumnaar, an islet standing on the coastal reef, lies 1 mile S of Krei Baru.

2 Penjuring, an inner group of low islets with rocky sides and covered with mangroves, can be accessed by boats via a narrow, but deep, channel, the W entrance to which lies 3½miles NNE of Tanjung Goljuring. Pulau Karwai, a rocky islet, stands off the W entrance. Tidal streams here are sometimes strong and do not always set in the direction of the channel, being affected by openings in the drying reef.

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Selat Wasir

3.213

1 Selat Wasir, the open strait separating Pulau Wasir (5°30′S, 134°15′E) (3.188) from Pulau Ujir, 2½ miles SE, is only used by local craft. The S entrance between Tanjung Tutupano (5°37′S, 134°14′E), the N point of the broad SW end of Pulau Ujir, and the S extremity of Wasir, is clear of dangers in the fairway. The N entrance, however, has several shoal patches running across it which make the passage difficult without local knowledge. A 5 m (16 ft) patch lies near the fairway 1 mile N of the N coast of Ujir.

The passage between Ujir and Wokam is dangerous and not recommended. If used, it should only be with local knowledge, and at LW when the reefs are clearly marked.

Sungai Maikoor

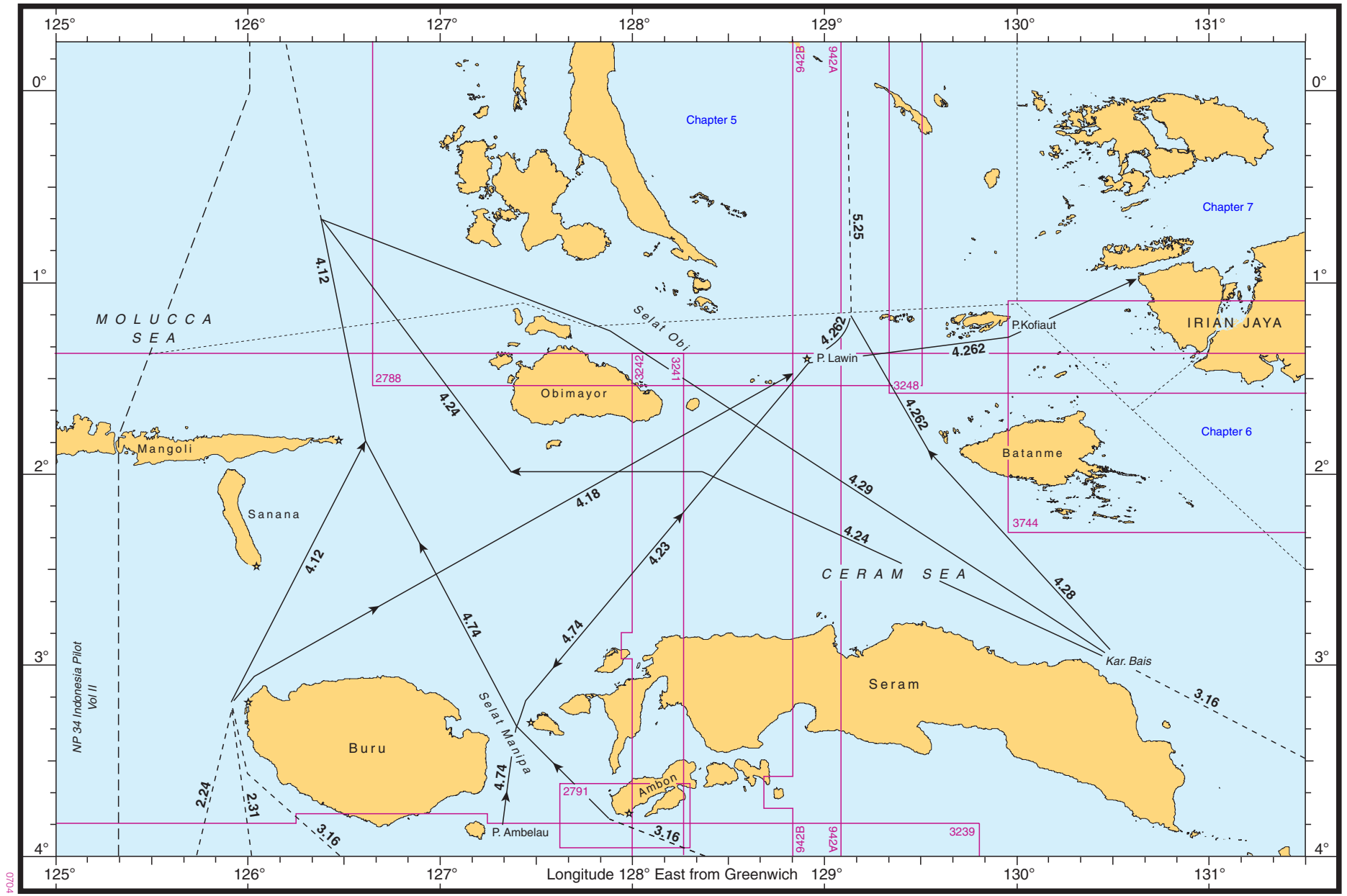
3.214

1 Sungai Maikoor is entered on the W side of Pulau Maikoor (3.188) between the village of Maikoor (6°08′S, 134°07′E) and Tanjung Ngoni, 3 miles SW, the N extremity of Pulau Trangan. Although wide and deep at the entrance, the strait narrows considerably and is only suitable for small craft for most of its distance.

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Chapter 4 - Ceram Sea and adjacent islands including Buru and Seram



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CHAPTER 4

CERAM SEA AND ADJACENT ISLANDS INCLUDING THE WHOLE OF BURU AND SERAM TOGETHER WITH AMBON, OBIMAYOR AND THE EASTERN PART OF PULAU-PULAU SULA

GENERAL INFORMATION

Chart 4603

Scope of the chapter

4.1

1 In this chapter are described the islands and offshore dangers encircling Ceram Sea (1.3), including the whole of Pulau Buru and Pulau Seram, whose S coasts together with Pulau Ambon fringe the N part of Banda Sea.

Also included are the harbours, anchorages and waterways associated with these islands.

Ambon (3°42′S, 128°10′E), the main port for the area and indeed the capital of the province of Maluku, is situated on the S side of Teluk Ambon at the W end of Pulau Ambon.

Routes

4.2

1 **Through routes.** The two recommended routes (*Ocean Passages for the World*) through the area confined by the limits of this chapter, continue in a general S-N direction. The main sea-lane route passes W of Pulau Buru (3°25′S, 126°35′E) and E of Pulau Lifumatola (1°49′S, 126°25′E), thence W of Halmahera. The lesser route, on passing W of Pulau Buru, leads N of this island thence E of Pulau Obimayor and E of Halmahera.

On the alternative inner route (*Ocean Passages for the World)* leading from Torres Strait to Ceram Sea, as described at 3.24, and which passes N of Pulau Seram, a route leads NW, from the NE extremity of Seram, thence N into Halmahera Sea passing W of Pulau Batanme (1°52′S, 130°05′E).

2 **Other N-S routes.** Selat Manipa, the passage between the E coast of Pulau Buru and Pulau Manipa, is described at 4.78; Selat Capalulu, the strait separating Pulau Taliabu (*Indonesia Pilot Volume II)* and Pulau Mangoli, is described at 4.222.

Archipelagic Sea Lanes have been designated within certain of the waters described in this chapter. For further information see Appendix II.

Topography

4.3

1 The larger islands described within this chapter are mainly rugged and mountainous, densely wooded, but not volcanic. Parts of these same islands are, however, heavily indented along their coastlines and additionally, Seram in particular, have spreading lowlands and swamps. The highest point of the group, Gunung Binaiya (4.143), rising to over 3000 m (10 000 ft), is situated in central Seram.

Some of the smaller islands have low-lying ground, edged with coconut palms and fronted with steep-to reefs. Inland, many have spice plantations consisting of nutmeg and cloves.

Shoals

4.4

1 There are numerous shoals situated off some of the islands within this chapter, in particular around Pulau Batanme lying off the NW coast of Irian Jaya. Many are reported but unsurveyed. Several isolated shoals have been reported well offshore, mainly S of Pulau Buru; see 3.4.

Whilst the chart is the best guide, mariners are advised to take the usual precautions when proceeding through areas where shoals are known to exist. Information on changes in depths and the nature of the bottom may be found in *The Mariner's Handbook*.

Natural conditions

Volcanic activity

4.5

1 Since 1824, incidences of volcanic activity have not been recorded in the area governed by the limits of this chapter, and on that last occasion it occurred on the W side of Pulau Ambon. Volcanic sand has been found on some of the coasts around Ambon and again around a small coastal oilfield (4.190) situated on Seram's NE coast. There are, however, occasional earthquakes which may be felt in the vicinity of Ambon.

Flow

4.6

1 **Current** in the more open waters of the area is influenced by wind direction; monsoon drifts prevail. In the vicinity of Karang Bais (2°55′S, 130°26′E), off the NE coast of Seram, a constant E-going current has been observed.

Tidal streams closer to shore, are weak or non-existent, except in the straits and narrows.

Local weather

4.7

1 The wet season in the N part of central Maluku differs to the rest of the Indonesian archipelago. Everywhere else the wet season is from October to April; in central Maluku it is from April to July. In Ambon the two worst months for rainfall are June and July. During this period the sea is rougher. Between September and April the weather is more settled. In general, the monsoons in Ceram Sea are not quite so well developed here as in the areas to the W and S.

2 The E monsoon especially, is of short duration, and only moderately developed. In January the prevailing winds are from NW, and in May from SE. The high ground on both Buru and Seram can cause differing weather on their respective N and S coasts. Heavy rain on one side may be accompanied by drier weather on the other and vice-versa. Strong katabatic offshore winds, which last for a few hours in the vicinity, are not unknown; then the mountain peaks take on a stormy appearance, are completely covered by low cloud, and the sea becomes rough.

General directions

4.8

1 Vessels bound to or from the Indian Ocean or Timor Sea pass W of Pulau Buru (3°25′S, 126°35′E); to or from Torres Strait the recommended through route passes S and W of Pulau Buru. From W of Buru the route lies either W of Pulau Obimayor leading to Molucca Sea, or E of Pulau Obimayor leading to Halmahera Sea.

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Other through routes lie between Buru and Seram using Selat Manipa, or the alternative passage NE of Seram leading from Torres Strait and continuing to Molucca Sea. This latter route passes either side of Pulau Obimayor, or N into Halmahera Sea passing W of Pulau Batanme (1°52′S, 130°05′E).

4.9

1 Coastal passages along the N coasts of Buru and Seram are safe and not difficult though mainly of use to local vessels. Similarly the passages on the S side of Seram are all navigable. Selat Seram, at the W end of Pulau Seram, is deep and wide; Selat Kefing (3.55) at the E end, though not difficult, requires local knowledge. Otherwise vessels plying the waters between Ambon and Irian Jaya opt for the clear water passage lying N of Pulau-pulau Gorong, keeping to the S side of this passage on account of currents setting N towards the reefs extending SE from the SE coast of Seram.

PRINCIPAL THROUGH ROUTES

GENERAL INFORMATION

Charts 942A, 942B

Scope of the section

4.10

1 In this section are described the principal routes through Ceram Sea, Molucca Sea and Selat Obi.

General directions

4.11

1 Through routes in the area lie N of Pulau Seram, N and S of Pulau Obi Mayor, and E of Pulau Mangoli. There are several small ports and anchorages on the N coast of Pulau Seram and Pulau Obi Mayor.

WEST COAST OF PULAU BURU TO TERUMBU GORA

General information

Chart 942A, 3241

Route

4.12

1 From a position W of Pulau Fogi (3°17′S, 126°00′E) the track initially leads approximately 100 miles NNE to a position E of Tanjung Dahekolano (Dehekolano) (1°49′S, 126°29′E), and into Molucca Sea; thence between N and NNW for a distance of approximately 122 miles to a position about 25 miles W of Terumbu Gora (0°12′N, 126°55′E), an off-lying danger W of Halmahera.

This route gives the mariner the option of following a track through the Philippine Islands (*see Ocean Passages for the World)* leading to South China Sea, as well as following a track passing E of those islands.

Currents

4.13

1 The area of Molucca Sea through which these routes pass experience wind generated currents in the open sea; again the monsoon drift prevails. During the S to SE monsoon the current sets NNE at a rate not usually exceeding ½ kn but on occasions may attain a rate of 2 kn. During the NW monsoon the current tends to set ESE and may also attain a rate of up to 2 kn.

2 During the SE monsoon (April to September) the currents are generally stronger W of Halmahera, whilst during the NW monsoon (October to March) they are stronger E of the island. Locally, the direction of the wind (and thereby the current) can be much affected by the high ground of Buru and Seram.

Principal marks

4.14

1 **Landmarks:**

Pulau Fogi (3°17′S, 126°00′E) (4.38).

Kapalatmada (3°15′S, 126°14′E) (4.58); rising in the NW part of Buru, it may be seen from a considerable distance.

Tomahu (3°14′S, 126°05′E) (4.58) with two summits; the E peak is the more prominent of the two.

Tanjung Palpetu (3°07′S, 126°06′E) (4.71), the prominent headland of the NW coast of Buru, particularly when viewed from W.

2 Summit (2°24′S, 126°01′E) (4.234) of Pulau Sanana, which rises in the S part of the island.

Tanjung Dahekolano (Dehekolano) (1°49′S, 126°29′E) (4.214), the E extremity of Pulau Lifumatola, is prominent from a considerable distance.

Summit of Pulau Obilatu (Obi Latu) (1°25′S, 127°20′E) (4.247) is easily identified for some distance.

Summits of Pulau Kasiruta (0°24′S, 127°11′E) (5.114).

3 **Major lights:**

Pulau Fogi Light (3°17′S, 126°00′E) (4.41).

Tanjung Waka Light (2°28′S, 126°03′E) (4.234).

Tanjung Dahekolano Light (1°49′S, 126°29′E) (4.219).

Other aid to navigation

4.15

1 **Racon:**

Tanjung Dahekolano Light (1°49′S, 126°29′E).

For details see *Admiralty List of Radio Signals Volume 2.*

Directions

(continued from 2.30, 2.32 or 3.21)

Recommended route

4.16

1 From a position W of Pulau Fogi Light (3°17′S, 126°00′E) the sea-lane track leads about 100 miles NNE to a position E of Tanjung Dahekolano Light (1°49′S, 126°29′E), thence NNW for a distance of approximately 122 miles to a position about 25 miles W of Terumbu Gora (0°12′N, 126°55′E), situated off the W coast of Halmahera.

2 **Useful marks:**

Pulau Limo (1°50′S, 126°29′E), a prominent rocky islet lying 1 mile SW of Tanjung Dahekolano, shows up well against a remarkable limestone cliff.

Dufa Dufa (0°27′S, 127°09′E) (5.114), the S peak of Pulau Kasiruta, easily identified from SW.

Buku Kabau (0°21′S, 127°10′E) (5.114), the N peak of Pulau Kasiruta.

Pulau Sarangburung Light (0°15′S, 127°01′E) (5.183).

3 **Caution.** Strong tides-rips may be encountered on the more N of the tracks approximately 20 miles WNW of Pulau

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Obilatu (1°25′S, 127°20′E). Caused by monsoon wind and current circulations within Molucca Sea contradicting each other, coupled with the current flow from Halmahera Sea via the passage N of Pulau Obimayor; seas may be heavy at times.

(Directions continue N at 5.16 or for Celebes Sea at 5.22)

Alternative route

4.17

1 Vessels using the passage through Selat Manipa, the directions for which are given at 4.78, may on passing Pulau Suanggi (3°18′S, 127°28′E) from where a light (4.77) is displayed, proceed direct to the position E of Tanjung Dahekolano previously mentioned; the track transiting Ceram Sea leads NNW for a distance of about 95 miles, thence continues as described at 4.16 through Molucca Sea.

Whilst the peaks on the E coast of Buru are often obscured, the summits of Pulau Manipa, Kelang and Boano provide good recognition points.

WEST COAST OF PULAU BURU TOWARDS HALMAHERA SEA

General information

Charts 942A, 3241, 2788

Route

4.18

1 From a position W of Pulau Fogi Light (3°17′S, 126°00′E) the track leading towards a passage transiting Halmahera Sea initially rounds the NW coast of Pulau Buru; thence leads ENE, for a distance of about 216 miles, to a position SSE of Pulau Laliola (1°31′S, 128°45′E). The track then leads N into Halmahera Sea.

This route (*see Ocean Passages for the World)* leading to the North Pacific passes a considerable distance E of the Philippine Islands.

Topography

4.19

1 The N coast of Buru like that of Seram is very mountainous and the high peaks on both islands may be too obscured to be useful marks. However the high ground of the S part of Pulau Sanana, and that of the S coast of Pulau Obimayor and the high adjacent, but smaller, islands situated at the S entrance to Halmahera Sea, offer better landmarks.

Flow

4.20

1 **Current.** In the open waters of Ceram Sea the monsoon drift prevails, the direction of the current being governed by the direction of the wind. In the W part, N of Buru, the currents generally set E or W at rate of up to 2½ kn. In the open water N and E of Seram, currents tend to set WNW-NW or ESE and SE at about ½ kn, though tidal streams are strong within the 200 m (100 fm) depth contour off each coast.

2 **Tidal streams.** On the N side of the sea area, off Batanme, the tidal streams are strong over the irregular depths on the S side of the island. In-going streams in this location set W and out-going streams set E at a rate of about 2½kn in each direction.

Principal marks

4.21

1 **Landmarks:**

Tomahu (3°14′S, 126°05′E) (4.58).

Kapalatmada (3°15′S, 126°14′E) (4.58).

Peak (3°08′S, 126°38′E), 911 m (2987 ft) high, is easily distinguished because of its dark colour.

Summit (2°24′S, 126°01′E) (4.234) of Pulau Sanana, which rises near the S end of the island.

Summit of Pulau Boano (2°58′S, 127°55′E) (4.164).

East face of the summit of Pulau Tobalai (1°38′S, 128°20′E) (4.247).

Summit of Pulau Kekek (Kekik) (1°30′S, 128°38′E) (4.265).

Summit of Pulau Lawin (1°31′S, 128°44′E) (4.265).

2 **Major lights:**

Pulau Fogi Light (3°17′S, 126°00′E) (4.41).

Pulau Laliola Light (1°31′S, 128°45′E) (4.265).

Pulau Niene Light (2°55′S, 127°54′E) (4.166); visible on the alternative route only.

Tanjung Waka Light (2°28′S, 126°03′E) (4.234).

Directions

(continued from 2.30, 2.32 or 3.21)

4.22

1 From a position W of Pulau Fogi Light (3°17′S, 126°00′E) the track leads round the NW coast of Buru, thence ENE to a position SSE of Pulau Laliola Light (1°31′S, 128°45′E), passing:

SSE of Tanjung Waka (2°28′S, 126°03′E), the S extremity of Pulau Sanana, from where a light (4.234) is displayed, thence:

SSE of Pulau Gomumu (1°50′S, 127°36′E) (4.245), thence:

SSE of Tanjung Wooi Kecil (1°44′S, 128°01′E), the steep rocky SE extremity of Pulau Obimayor, thence:

SSE of Pulau Tobalai (1°38′S, 128°20′E), thence:

SSE of Pulau Laliola (1°31′S, 128°45′E), from where a light (4.265) is displayed.

4.23

1 **Alternative route.** Vessels using Selat Manipa, as at 4.17, may on passing Pulau Suanggi (3°18′S, 127°28′E), from where a light (4.77) is displayed, proceed direct NE to the position SSE of Pulau Laliola previously mentioned.

Caution. Heavy tide-rips may be encountered on this track NW of Pulau Boano (2°58′S, 127°55′E).

(Directions continue for the approaches to Halmahera Sea at 4.267 and for the approaches to Selat Sagewin at 4.269)

ROUTES EITHER SIDE OF PULAU OBIMAYOR

Passage south of Pulau Obimayor

Charts 3241, 3242

General description

4.24

1 Vessels using the route from Torres Strait to Molucca Sea, or vice versa, which passes N of Pulau Seram have the option of passing N or S of Pulau Obimayor. Both passages have deep water and, excepting charted dangers, are clear; the passage S of the island is described at 4.27.

Selat Obi, the N passage, provides the shorter distance to the open waters of Molucca Sea and is described at 4.32.

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Currents

4.25

1 To the S of Pulau Obimayor currents are stronger than that experienced when passing N, tending to set E-W in the open water N of Pulau Buru and Seram, whilst N-S sets prevail between Pulau Obimayor and the E extremity of Pulau-pulau Sula. Sea state is invariably rough except during the transitional monsoon periods but there is often a considerable swell in the area.

Principal marks

4.26

1 **Landmarks:**

East face of the summit of Pulau Tobalai (1°38′S, 128°20′E) (4.247).

Summit of Pulau Obilatu (1°25′S, 127°20′E) (4.247).

Major light:

Tanjung Dahekolano Light (1°49′S, 126°29′E) (4.219).

Directions

(continued from 3.24)

4.27

1 From a position NE of Karang Bais (2°55′S, 130°26′E), between Pulau Seram and mainland Irian Jaya, on the alternative route from Torres Strait to Molucca Sea, the track leads WNW to a position S of Pulau Tobalai (1°38′S, 128°20′E), thence W, passing:

S of Pulau Gomumu (1°50′S, 127°36′E) (4.245).

2 On rounding the SW coast of Obimayor, the track then leads NW passing:

SW of Tanjung Akelamo (Ake Lamo) (1°40′S, 127°24′E) (4.259), the SW extremity of Pulau Obimayor, thence:

SW of Pulau Obilatu (Obi Latu) (1°25′S, 127°20′E).

The track then leads NNW to the position W of Terumbu Gora (0°12′N, 126°55′E) as described for the recommended route at 4.16.

(Directions continue N at 5.16 or 5.22)

Torres Strait to Halmahera Sea

4.28

1 Vessels following the directions given at 3.24 which lead N of Pulau Seram may on passing NE of Karang Bais (2°55′S, 130°26′E) (4.177), situated off the NW coast of this island, proceed to a position W of Pulau Batanme (1°52′S, 130°05′E), taking into consideration the many reported shoals lying SW of the W extremity of Pulau Batanme. Briefly, the track then generally leads NNW into Halmahera Sea.

2 The chart is the best guide through this area.

(*Directions continue to Halmahera Sea at 4.270*)

Selat Obi

Charts 3242, 2788 (see 1.34)

General description

4.29

1 Selat Obi, the deep expanse of navigable water lying between the N coast of Pulau Obimayor, on the S side, and the islands lying off the S coast of Bacan and Halmahera, on the N side, is regularly used by all sizes of vessel. Coastal traffic may use the strait between Pulau Bisa (1°14′S, 127°34′E) and the N coast of Obimayor where the water is often calmer. The only ports of significance are situated at Laiwui (4.250), on the N coast of Obimayor, and Labuha (5.149), on the SW coast of Pulau Bacan.

2 Selat Obi is linked with the port of Ternate (0°47′N, 127°23′E) by Selat Patientie, the navigable strait lying between Halmahera and Pulau Bacan, the directions for which are given at 5.119. Vessels of 70 000 dwt have used the latter strait without any difficulty.

Anchorages that lie on the N side of the strait are given at 5.163, 5.166 and 5.167.

Current

4.30

1 On the N side of Pulau Obimayor there are no reports of strong currents; in the open water of Selat Obi currents tend to adopt the directions of monsoonal wind drifts which may, on occasions, be affected by the out-going current from Halmahera Sea or locally by land breezes from the surrounding islands.

Principal marks

4.31

1 **Landmarks:**

East face of the summit of Pulau Tobalai (1°38′S, 128°20′E) (4.247).

Summit of Pulau Kekek (1°30′S, 128°38′E) (4.265).

Summit of Pulau Lawin (1°31′S, 128°44′E) (4.265).

Bukit Tumpul (1°34′S, 127°59′E) (4.247), a hill, on Pulau Obimayor.

2 Pulau Jerum (1°14′S, 127°42′E), an islet on which there is prominent tree, standing close off the NE coast of Pulau Bisa; Pulau Santare (4.247), a similar islet, 3½ miles S, is also prominent.

Bibinoi (0°46′S, 127°43′E) (5.118), rising on Pulau Bacan (5.114).

Major light:

Pulau Laliola Light (1°31′S, 128°45′E) (4.265).

Directions

(continued from 3.24)

4.32

1 From a position NE of Karang Bais (2°55′S, 130°26′E), on the alternative route between Torres Strait and Molucca Sea, the track initially leads NW to a position at the SE entrance to Selat Obi between Pulau Tobalai (1°38′S, 128°20′E) and Pulau Kekek (Kekik), 17½ miles ENE, passing:

SW of a group of reported shoals (2°08′S, 129°31′E) situated off the SW coast of Pulau Batanme, over which there is a least depth of 40 m (22 fm), coral.

2 From a position NE of Pulau Tobalai, the track continues NW, passing:

SW of the islands (5.113) lying off the S extremity of Halmahera, thence:

Clear of Karang Kurier (1°13′S, 127°49′E), a coral shoal, over which there is a least depth of 1·8 m (6 ft), and the only offshore charted danger in the strait which should be given a wide berth, thence:

NE of Pulau Jerum (1°14′S, 127°42′E) (4.31), an islet situated close off the NE coast of Pulau Bisa.

3 The track then leads WNW, as best shown on chart 942A, passing SSW of Pulau Mandioli (0°43′S, 127°14′E) (5.114), until it joins the N-S sea-lane passing W of Halmahera, at a position approximately 60 miles S of the position W of Terumbu Gora (0°12′N, 126°55′E), distant 25 miles, as described at 4.16.

(Directions continue at 5.16 or 5.22)

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PULAU BURU

GENERAL INFORMATION

Chart 3241 (see 1.34)

Scope of the section

4.33

1 In this section are described the N and S coasts of Buru together with the straits and islands between the E coast of Buru and the W coast of Pulau Seram.

Also described are the passages, harbours and anchorages associated with Pulau Buru.

Namlea (3°17′S, 127°06′E), the only port and town of importance on Buru, lies on the N side of Teluk Kayeli, a bay on the NE side of the island.

General description

4.34

1 Pulau Buru, the third largest island of Maluku, lies on the S side of Ceram Sea with Tanjung Palpetu (3°07′S, 126°06′E) its NW extremity, 38 miles S of Sanana, the SE part of Pulau-pulau Sula. It is very mountainous, but the peaks are frequently obscured by clouds. At the E end of the island, Namlea, an extensive plain, extends to the NE coast; the main port and town, having the same name, is situated within a large bay on this coast.

The island is fringed by a reef in many places, but there are depths of over 200 m (100 fm) close to the coast nearly everywhere.

Natural conditions

4.35

1 **Flow.** In the open waters N and S of the island, monsoonal wind drifts prevail, generating a current setting E-W north of the island, and N-S west of the island, with a rate not exceeding 2½ kn. Tidal streams set parallel to the SW and SE coasts and are strong. Eddies are experienced at the SE end of Buru, particularly in the passage between the mainland and Pulau Ambelau; these are caused by the E-going stream meeting the S-going stream from Selat Manipa. During the NW monsoon, there is sometimes a strong drift setting E in the passage, and setting W during the SE monsoon.

2 **Local weather.** The weather conditions on the N and S sides of Buru differ widely. On the N coast the NW monsoon brings rain while the SE monsoon is accompanied by a dry spell. On the S coast the reverse is true. During the latter part of the transitional monsoon periods, and during December and January, strong W or S winds and rain storms may spring up suddenly, but they last only a few hours; they also cause a heavy sea. On the S coast a heavy swell may be experienced. The best months to visit the island tend to be August and September.

3 In the open sea showery weather occurs frequently during most of the year but less often from August to November. Haze is observed through all the seasons, but is more pronounced between August and October.

General directions

4.36

1 The major sea-lanes lie W of Pulau Buru; the alternative passage E of Buru through Selat Manipa is described at 4.78.

Through traffic from Selat Makasar to Ambon via Alur Pelayaran Buton (*Indonesia Pilot Volume II)* passes SSE of Pulau Ambelau (3°52′S, 127°12′E). Several small harbours on the S coast are linked with Namlea (3°17′S, 127°06′E) on the E coast by local traffic using the strait between Pulau Ambelau and the mainland.

SOUTH-WEST AND SOUTH-EAST COASTS OF PULAU BURU INCLUDING PULAU AMBELAU

General information

Chart 3241 (see 1.34)

General description

4.37

1 Most of the short W-facing coast together with the longer stretch of SW-facing coast of Buru is mountainous, but from Tanjung Walwawat (3°37′S, 126°12′E) to Tanjung Watina, the island's S extremity, the mountains are decidedly higher. East of Tanjung Watina, the inland mountain ranges of the SE-facing coast are even higher as far as Tanjung Kayuputih (3°23′S, 127°16′E), the island's E extremity.

There are several small harbours and anchorages including Namrole (3°51′S, 126°42′E) and Wamsasi (3°33′S, 126°10′E), a logging port, that may be used depending on size of vessel and the monsoonal situation prevailing at the time.

Topography

4.38

1 **South-west coast.** From Tanjung Waflia (3°10′S, 126°01′E), the low NW point of Buru, covered with coconut trees, S towards Tanjung Watina (3°52′S, 126°41′E), the low S extremity of the island, the coastline is generally rocky, interspersed with sandy beaches, and backed by mountains. Several rivers enter the sea through gulleys in the high ground along this coast. Pulau-pulau Tomahu, comprising the hilly islands of Tomahu and Tengah, lie 2 miles S of Tanjung Waflia; there are navigable passages round the islands and between them and the mainland. Pulau Fogi (3°17′S, 126°00′E), a hilly island forming a good landmark on the short W-facing coast, lies 2 miles S of Pulau Tengah, the S of the Tomahu islands.

2 Farther S between Tanjung Walwawat (3°37′S, 126°12′E), a low point, and Teluk Leksula (4.53), 21 miles SE, the most remarkable feature is Mala, a plain extending some distance inland. Tanjung Batutulis, a rocky point 7 miles ESE of Teluk Leksula, is most prominent.

4.39

1 **South-east coast.** Between Tanjung Watina and Tanjung Batupekat, 3 miles E, the coast is indented by Teluk Namrole (4.44). Between Tanjung Batupekat and Tanjung Liboli, 30 miles ENE, the coast is bordered by an almost unbroken sandy beach fronting low wooded plains. Off this coast there are several dangerous shoals; Pulau Oki (3°49′S, 126°51′E), an islet covered with vegetation, lies 1 mile offshore and 7 miles ENE of Tanjung Batupekat. Inland a massive ridge of high mountains runs parallel with the coast extending to the E extremity of the island at Tanjung Kayuputih (3°23′S, 127°16′E); Batakbual (Batak Bual), the summit, 1731 m (5677 ft) high, rises near the E end of the ridge but is flanked from seaward by Masbait, another high mountain, making it difficult to see even in clear weather.

2 Pulau Ambelau (3°52′S, 127°12′E), a wooded island lying 8 miles S of Tanjung Liboli, rises nearly vertically from the sea on all sides. Baula, its prominent summit, rises in the SW part of the island; only from E is it difficult to see. The only flat area lies near the S coast where there is a small inlet.

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Flow

4.40

1 See 4.35. Tidal streams inside Pulau-pulau Tomahu (4.38) are weak; the streams set across the three entrance channels but a vessel approaching from outside is soon clear. Tidal streams along the SE coast and the short E-facing coast within Selat Manipa are strong; a maximum rate of 3 kn has been observed after the new moon with the stream setting N and NW, and 1 kn with the stream setting S and SW; the latter stream being of shorter duration than that N-going.

Principal marks

4.41

1 **Landmarks:**

On the SW coast the following landmarks are prominent:

Pulau Fogi (3°17′S, 126°00′E) (4.38).

Sanane (3°43′S, 126°23′E), a hill, due to its isolated position, standing close inside Tanjung Acu, at the W entrance point to Teluk Tifu (4.52).

Mefa (3°45′S, 126°29′E), a hill, near the coast, is easily identifiable against the higher mountains inland.

Miten, 4 miles E of Mefa, and conically shaped, is similarly prominent.

Tefdula (Tef Dula) (3°47′S, 126°36′E), a hill against the higher mountains.

2 On the SE coast there are no prominent landmarks that can be readily identified except perhaps a peak, 617 m (2022 ft) high, rising 2 miles NNW of Tanjung Salia (3°46′S, 126°58′E), a low point; charted high peaks generally suffer from obscurity through low cloud.

Major light:

Pulau Fogi Light (white metal framework structure, 40 m in height) (3°17′S, 126°00′E); visible on the SW and W coasts only.

Directions

4.42

1 As with the general directions given at 4.36, the main sea-lanes pass some distance off Buru or through the fairway of Selat Manipa, E of the island. In two places the narrow reef fringed coastal bank extends to a distance of 2 miles offshore; within this wider area there are numerous shoals and dangers. With local knowledge, vessels coasting along the S coasts of Buru can safely sail closer inshore,though most vessels normally keep well offshore along this coast.

2 Excepting the light on Pulau Fogi, mentioned previously, the light (4.53) displayed from Teluk Leksula is the only light visible for navigational purposes on the whole of this S stretch of coastline and even then it is restricted by high ground on each side of the entrance to this bay.

Minor harbours

Wamsasi

4.43

1 **General information.** Wamsasi (3°33′S, 126°10′E), a village and logging port on the SW coast of Buru, has a logging camp about 1 mile SSE with some fuel tanks close S of it. Forest products are loaded at an anchorage open S and SW.

The logging camp maintains radio communications with Ambon.

2 **Directions.** The anchorage may be approached with the fuel tanks bearing 086°; the recommended berth, in a depth of 15 m (49 ft), fine black sand, with good holding ground, is with the tanks on this bearing distant 3 cables.

During August strong SE winds from about 1000 until sunset may hamper loading and make boatwork difficult. This anchorage is the only one between Fogi and Tanjung Walwawat that is free from swell.

Facilities are limited; medical assistance is available.

Namrole

4.44

1 **General information.** Teluk Namrole, a bay on the S coast of Pulau Buru, is entered between Tanjung Watina (3°52′S, 126°41′E) (4.38) and Tanjung Batupekat, a point consisting of grey rocky cliffs, 3 miles E. The bay forms the small harbour and port of Namrole, a large village, situated on the NW side of the bay. Pulau Klasi, an islet, is separated from Tanjung Batupekat by a narrow but deep channel.

A local ferry service connects Namrole, where there is pier, with Ambon on a regular basis.

2 **Directions.** Vessels should approach the bay on the alignment (000°) of the village of Namrole with the summit of a range of hills close inland. If the summit is obscured a useful alternative mark, on the same alignment, is a large round-topped tree which, on near approach, is seen between two houses in the village. Vessels should pass W of Karang Loktonal, a white coral bank which partly dries, lying in the middle of the entrance to the bay.

Useful mark:

White patch on the hillside N of the village and close W of the approach alignment.

3 **Anchorage** may be obtained in a depth of 29 m (16 fm), sand and coral, in the bay, between Karang Loktonal and Namrole.

Anchorages

General

4.45

1 All the anchorages described below require some local knowledge and/or the benefit of local charts. Masters may find that an anchorage within Teluk Bara (4.71) on the NW coast is preferred, when sailing on the W side of Buru, except during the NW monsoon when the bay experiences rough seas and swell.

Off the S coast of Buru it should be noted that there are no anchorages around Pulau Ambelau.

Off Pulau Tengah

4.46

1 Anchorage may be obtained, in smooth water, in depths of between 17 and 30 m (56 ft to 16 fm), mud, between Pulau Tengah (3°14′S, 126°00′E), (4.38) and the W coast of Pulau Buru. Entry to the anchorage is via the channel passing N of Pulau Tengah and between it and Pulau Tomahu (3°12′S, 126°00′E), (4.38). This is the preferred channel for larger vessels when the reefs show distinctly; the initial approach should be made on the bearing 114° of the hill immediately S of the most N peak on Pulau Tengah before turning NE into the channel.

2 The channel passing S of Pulau Tengah may be used, but the fairway is restricted by the fringing reefs on each side; there are also two 1 m (3 ft) shoal patches situated S of Pulau Tengah. This entrance should be approached on the bearing 108° of the village of Ternate, ahead, until the S extremity of Tengah is reached, thence N; this track passes S and E of the shoals.

Off Pulau Fogi

4.47

1 Anchorage for small vessels may be obtained in a depth of 27 m (15 fm), mud and sand, off the village of Fogi

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(3°20′S, 126°01′E), 2¼ miles S of Pulau Fogi (4.38), when the reefs are plainly visible. The track generally leads E into the anchorage to a position between the village and the opening to Wai Sukit, a river 3 cables N; this track passes between the coastal reefs S and a detached reef 2 cables N.

Off south-west Buru

4.48

1 Anchorage may be obtained anywhere off this coast between Tanjung Walwawat (3°37′S, 126°12′E) (4.38) and Teluk Leksula (4.53) when conditions are favourable. Depths are better S of the point with the bottom a mixture of mud and sand; farther S the water is deeper and there are more offshore dangers to be avoided.

Off Pulau Oki

4.49

1 Anchorage off the SE coast of Buru may be obtained over a sandy bottom E or W of Pulau Oki (3°49′S, 126°51′E) (4.39), depending on the monsoon season. General depths of about 50 m (27 fm) lie within 1 mile of the island; on the N side the depths are less but a 5 m (16 ft) reef lying 3 cables N of the islet restricts the swinging room here. On the W side there is an 8 m (26 ft) patch 3 cables SW of the islet. The S side of the islet is deeper but with a rocky bottom. The anchorages should be approached from S, thereby avoiding offshore dangers lying E and SW respectively of the islet.

Off south-east Buru

4.50

1 Anchorage may be obtained in a depth of 42 m (23 fm), during the NW monsoon, in a bight off the village of Wamsisi (3°45′S, 126°57′E), close N of Tanjung Salia.

Anchorage may also be obtained, in depths of about 55 m (30 fm), off Tanjung Polisini, a low point, 10 miles ENE of Tanjung Salia, and close W of the entrance to Wai Lumara, a small river.

Small craft harbours and anchorages

Pulutengah

4.51

1 Pulutengah (3°13′S, 126°00′E), a village lying on the NE side of Pulau Tengah (4.38), offers sheltered anchorage to small craft. Landing may be effected on a sandy beach here.

Teluk Tifu

4.52

1 Teluk Tifu, a long narrow indentation in the coastline, is entered 5 cables E of Tanjung Acu (3°43′S, 126°23′E), a distinctive rocky headland which rises up to Sanane (4.41).

The bay is free from swell and tidal streams, but an anchorage at its inner end is confined and is only suitable for small craft or one small vessel with the benefit of local knowledge. At Tifu, a village situated on the S side of the inner part of the bay, there is a T-head pier about 150 m long extending NW from the shore. Depths at the pierhead vary between 1 and 2 m, mud.

2 During the SE monsoon it is difficult to enter the bay due to its narrow entrance and the tidal stream which sets across it; during this monsoon it is best to enter in the early morning as the wind increases during the day.

Caution. For small vessels wishing to enter, a red flag hoisted at a flagstaff standing 4 cables within the entrance on the E side indicates that a vessel is already in the anchorage and that it is inadvisable to proceed further.

Teluk Leksula

4.53

1 Teluk Leksula is entered SE of Tanjung Kabatroit (3°47′S, 126°30′E), a reef-fringed rocky point which is backed by high ground, and between it and Tanjung Kabatha, a similar point 7 cables SE. Both points make good local landmarks. A number of small islets and shoals extend SE and NW, respectively, from each point.

Leksula, a village, is approached through an opening in the coastal reef where a landing may be effected; a pier extends SE over the reef from the shore 2 cables W of the village. A light (white metal framework tower, 6 m in height) is displayed from the head of the bay close SE of the village.

2 An anchorage which is suitable for small craft or small vessels with the benefit of local knowledge may be obtained in the centre of the bay in depths of between 20 and 33 m (11 and 18 fm). However, the anchorage is restricted at its entrance by a number of islets and detached reefs and swinging room is limited; entry should be made with the light bearing 038° which leads NE and between these dangers.

Pelabuhan Oki

4.54

1 Anchorage may be obtained for small craft, except during the SE monsoon, off Oki (3°47′S, 126°51′E), an important coastal village situated nearly 10 miles ENE of Namrole. Within Pelabuhan Oki there are depths of 3 m (10 ft) close inshore; landing may be effected at the village in good conditions. The anchorage may be approached from E between Tanjung Wayio, a low point 2½ miles E of Oki, and Karang Wayio, a group of offshore coral shoals over which there is a least depth of 4 m (13 ft), up to 2 miles S. From S the track leads N to the anchorage passing E of Pulau Oki (4.39), with a prominent mosque ahead. From W, craft following the coast inshore of several offshore shoals may pass N of Pulau Oki and clear of a 5 m (16 ft) shoal, 4 cables N of it.

NORTH COAST OF PULAU BURU INCLUDING TELUK KAYELI

General information

Chart 3241 (see 1.34)

General description

4.55

1 The N coast of Buru is mountainous in the W part with a range of peaks rising to nearly 2500 m (over 8000 ft), with isolated peaks extending E gradually lessening in elevation to the E coast. In the E part of the island, the Namlea Plain extends a considerable distance inland from Teluk Kayeli.

The N coast of Buru is rarely used by shipping except when local vessels call at Wapoti (3°05′S, 126°41′E), a timber-loading port.

Namlea (3°17′S, 127°06′E) (4.60), the main town and port of the island, lies within Teluk Kayeli on the NE coast.

Topography

4.56

1 The highest summit of the island (4.58) rises in a range of high mountains extending over 30 miles E from the W coast to near the centre of the island. Part of this range turns NE, when well inland, towards the N coast at Tanjung Batunuhan (3°03′S, 126°42′E). Individual mountain peaks are then situated along the N coast as far as Teluk Kayeli but none are prominent.

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2 In the W part, the N coast consists of unbroken sandy beaches behind which a coastal plain rises to hilly land, covered with reeds, and thence to the mountain range previously mentioned. The E part of the N coast is similar, interspersed with indentations and small bays; the area is backed by higher ground which descends S to Namlea Plain (4.60). Teluk Kayeli (4.60), which occupies much of the NE-facing coast, has high entrance points rising to hills but the head of the bay is low-lying.

3 There are numerous villages situated along this whole stretch of coast and several rivers flow out to the sea, the longest of them being Wai Nibe (3°04′S, 126°36′E) which flows down from high ground near the centre of the island.

Natural conditions

4.57

1 See 4.35. The W-setting tidal stream when flowing along the coast is inclined to enter Teluk Bara on the NW coast.

Landmarks

4.58

1 Kapalatmada (3°15′S, 126°14′E), the highest summit of the island, rises in a desolate high range of mountains extending from the W coast to near the centre of the island. The summit has a fairly sharp peak amongst some remarkable peaks in this range and when not obscured by cloud may be seen from a considerable distance.

Tomahu, another high mountain in this range, rising near the coast and 10 miles W of Kapalatmada, has a double peak; the higher E peak, which resembles a sharp horn, may when not obscured be seen from a considerable distance.

Directions

4.59

1 Navigation along the whole of the N coast is safe but is little used except by local vessels, as the main routes from W or E pass well N of Buru. Outside of the 20 m (10 fm) depth contour which lies close to the N coast there are no isolated dangers. Entering Teluk Kayeli on the NE side should present no difficulty; entering from both N or S, vessels should maintain a distance of 1 mile off the entrance points before making for an anchorage at Namlea or berthing at the oil jetty.

(Directions for Namlea are given at 4.64)

Namlea

General information

4.60

1 **Position.** Namlea (3°17′S, 127°06′E), the most important town and port on Pulau Buru, is situated within Teluk Kayeli, a large NE-facing open bay on the E side of the island.

Function. Mainly an anchorage port, the main export being forestry products, there is also an oil terminal farther N of the town. In 1997, Namlea had a population of about 10 000 with a similar figure residing in the villages around the town.

2 **Topography.** Teluk Kayeli, a large bay, is entered between Tanjung Karbau (3°17′S, 127°07′E) and Tanjung Waät, 4½ miles SSE. Both entrance points are high, rising to hills. Along the coasts of the bay are numerous bays and several islets; at its head the land is low-lying. Namlea Plain, a large area of flat ground surrounded on all sides by high mountains, extends inland from the bay.

Approach and entry. Namlea is approached from Selat Manipa and entered from Teluk Kayeli.

Traffic. In 2003 the port was used by 20 vessels with a total of 90 639 dwt.

Port Authority. Kakanpel Namlea, Jalan Kampung Pohondurian, Namlea, Buru. Maluku.

Limiting conditions

4.61

1 **Tidal levels.** Mean maximum range about 1·0 m, mean minimum range about 0·5 m. See *Admiralty Tide Tables* under Teluk Kayeli.

Local weather: heavy rainfall between January and March may restrict visibility considerably.

Arrival information

4.62

1 **Port operations.** Berthing and unberthing is during daylight hours only.

Port radio. The port has a direct link with Ambon by telephone; communications may be made through the coast radio station at Ambon. For communications details see *Admiralty List of Radio Signals Volume 1(2).*

2 **Outer anchorage.** Anchorage may be obtained in the wide hollow in the coastal reef on the S coast of Teluk Kayeli. This anchorage is well protected and sheltered and there is ample swinging room. The best berth lies off the village of Kayeli in depths of about 60 m (33 fm), mud and sand, N of a prominent mosque standing in the village and at least 1 mile offshore.

Pilotage is available for the oil terminal but is not compulsory.

Harbour

4.63

1 **General layout.** Namlea lies in a small bay close within the N coast of Teluk Kayeli. The town has a pier which is used by small craft plying between shore and a vessel at anchor loading timber products and/or logs. The roadstead has several shoals which require local knowledge to pass through to the pier. Vessels of any size usually anchor farther offshore. An oil terminal, with oil tanks, lies farther N along the coast; a marked channel leads to its berth (4.67).

2 **Tidal streams** in the bay are negligible. The bay usually experiences calm conditions.

Landmark:

Prominent hill, 195 m (637 ft) high, situated 3 miles NW of Namlea.

Directions

4.64

1 The entrance points to the bay should be given a wide berth, but the bay may be entered without difficulty.

Useful mark.

Tanjung Karbau Light (3°16′S, 127°07E).

Berths

4.65

1 **Anchorage** may be found when Namlea Light (white metal mast, 9 m in height), standing near the root of the pier (4.66), can be identified. The best berth lies SW of the light in depths of 29 m (16 fm), mud, and 5 cables offshore. Farther N, and towards the shore E, anchorage is hampered by unmarked shoals.

4.66

1 **Alongside berths.** The T-head pier berth at Namlea is about 60 m in length with a depth 3 m at its head. It is used by the inter-island ferry and barges unloading and loading cargo from offshore anchored vessels. The channels leading from the anchorage to the pier are unmarked.

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4.67

1 **Oil terminal** consisting of an L-shaped jetty, with dolphins, extending SW from the shore, is situated 5 cables N of Namlea. The berth here can accommodate a vessel of 1000 dwt, having a length of 70 m, in a depth of 5 m at MLWS. The channel from the anchorage to the berth is marked by beacons (lateral) but local knowledge is necessary.

4.68

1 **Other berths.** There are small craft berths at Kayeli, on the S coast of the bay; off the entrance to Wai Apu, a river whose entrance lies close to the head of the bay. Wai Apu, with a least depth of 3 m (10 ft), gives boats access to several villages where farming and logging operations are known to exist.

Port services

4.69

1 **Facilities** are limited; hospital.

Supplies: Provisions; fresh water in limited quantities at the oil jetty and ferry berth.

Communications: There is an airport at Namlea with connections to Ambon.

Wapoti

4.70

1 **General information.** Wapoti, a small timber/plywood export port, is situated on the N coast of Buru, 6 cables S of Tanjung Wapoti (3°04′S, 126°41′E). Wai Poti, a small river, enters the sea close W of the village where there is a plywood factory. Some of the timber products are loaded onto vessels off the port and on some occasions it is transported by road to Namlea.

Anchorages

Teluk Bara

4.71

1 Teluk Bara is entered between Tanjung Palpetu (3°07′S, 126°06′E), a distinctive sloping point, at the NW extremity of Pulau Buru, and Tanjung Bara, 8 miles E. The village of Bara lies close S of Tanjung Bara.

The surrounding area is extremely fertile, producing various types of good quality timber.

2 Anchorage may be obtained anywhere in the bay, except perhaps in the NW monsoon, when the sea and swell can be unsettled. Near the head of the bay there are depths of 50 m (27 fm), sand and coral, and in places less, offering a sheltered berth. With NW winds, the high Palpetu headland does offer some protection though the depths here are greater than at the head of the bay.

Teluk Waeplau

4.72

1 On the NE coast of Buru anchorage may be obtained, out of the tidal streams, in Teluk Waeplau (Wa Eplau), a small bay situated 8 miles SE of Tanjung Hatawanu (3°03′S, 126°46′E). Although the depths are generally deep, there are depths of 26 m (14 fm), sand, in the centre of the bay, and 7 cables from the shore.

During the SE monsoon the anchorage may become unsafe.

Jikumerasa

4.73

1 Anchorage may be obtained off the village of Jikumerasa (Jiku Merasa) (3°10′S, 127°02′E) which lies at the head of a small bay 9 miles ESE of Teluk Waeplau. Whilst the depths off the village are about 25 m (14 fm), sand, two shoal patches with a least depth of 5·5 m (18 ft) over them, and which virtually encircle the anchorage from both sides of the bay, need to be crossed first; so this anchorage is only suitable for small vessels. Deeper-draught vessels should anchor to seaward of the shoals in a depth of 18 m (59 ft). During the SE monsoon the anchorage may become unsafe.

2 A mosque, standing on the W entrance point to a river passing through the village, makes a useful mark when approaching the bay.

Jikumerasa is connected by road with Namlea.

STRAITS AND ISLANDS BETWEEN THE EAST COAST OF PULAU BURU AND THE WEST COAST OF PULAU SERAM

General information

Chart 3241 (see 1.34)

General description

4.74

1 Between the E coast of Buru and the W coast of Seram there are several waterways separated by islands which can be negotiated on passage between Banda Sea and Ceram Sea. The main waterway, and the one most commonly used, is Selat Manipa lying between Buru and Pulau Manipa, 14½miles E, which has navigational aids. Selat Kelang, the strait E of Pulau Manipa and between it and Pulau Kelang, is deep but only 4 miles wide. The two passages E of Pulau Kelang (4.82) are narrow and require local knowledge.

Topography

4.75

1 The E coast of Buru between the entrance to Teluk Kayeli and Tanjung Liboli (3°41′S, 127°11′E) is mountainous and desolate, dominated by Batakbual and Masbait (4.39). This short E-facing coast has several mountain spurs reaching the coast and in between the land is gently sloping, with sandy beaches. Tanjung Kayuputih (3°23′S, 127°16′E), the E extremity of Buru, is low-lying.

2 The forested W side of Semenanjung Hoalmoal (Hoalmoal Peninsula) which forms the W coast of Seram between Tanjung Haya (3°10′S, 127°50′E) (4.82) and Tanjung Sial (4.91), the SW extremity of the island, 25 miles S, by comparision, is not as high as Buru. A ridge of mountains which extends the entire length of the peninsula has no distinctive peaks

3 The W coast of Pulau Ambon is similar to the adjacent coast of Seram. Pulau Manipa (3°19′S, 127°33′E) is mountainous; the twin peaks of Kalahuhun (Kala Huhun), 632 m (2071 ft) high, form the summit of the island. Pulau Suanggi, a high islet, lies 1 mile W of the W extremity of Manipa with a navigable channel between. Pulau Kelang is also mountainous; the summit is higher than that on Manipa but less noticeable; the island is also sparsely populated.

Tidal streams

4.76

1 Tidal streams set strongly through Selat Manipa and the other channels between Buru and Seram. When proceeding from N to S during the SE monsoon it is advisable to keep to the Buru side and during the NW monsoon to the Manipa side. Tidal streams set strongly along the E coast of Buru; a maximum rate of 3 kn has been observed when setting N and NW and 1 kn with the stream setting S and SW, with the latter stream being of shorter duration than the former. Off the W coast of Seram, tidal streams are strong around Tanjung Sial (3°34′S, 127°55′E); between Tanjung Hatualuta, 5 miles NW of Tanjung Sial, and a point on the S coast of

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Pulau Kelang, 5 miles W of Tanjung Lalola (3°15′S, 127°47′E), the streams are weak.

2 In the strength of the monsoon a high sea may be running in Selat Manipa and preference should be given to Selat Kelang (4.81), even though tidal streams in this strait have been known to reach a rate of 5 to 6 kn especially in the vicinity of Tanjung Samala (3°22′S, 127°39′E), the SE extremity of Pulau Manipa.

Tidal streams are also strong through the two channels either side of Pulau Babi (3°10′S, 127°48′E) (4.82).

Principal marks

4.77

1 **Landmarks:**

Summit of Pulau Ambelau (3°52′S, 127°12′E) (4.39).

Summit of Pulau Manipa (3°19′S, 127°33′E) (4.75).

Major lights:

Pulau Suanggi Light (white metal framework tower, 21 m in height) (3°18′S, 127°28′E), when using Selat Manipa.

2 Tanjung Nusanive Light (3°47′S, 128°05′E) (4.113); visible when entering Selat Manipa coming from SE.

Tanjung Bartutui Light (3°54′S, 127°13′E) (3.20).

Pulau Niene Light (2°55′S, 127°54′E) (4.166), when entering Selat Manipa from NE.

Directions for the straits

Selat Manipa

4.78

1 Selat Manipa, the deep and clear passage lying between Buru and Pulau Manipa, may be entered from several directions.

From S, the route leads N into the strait passing (with positions from Tanjung Liboli (3°41′S, 127°11′E)):

Clear of a reported shoal (29 miles SSE) (3.4), position approximate, thence:

2 E of Tanjung Bartutui (3.21), the S extremity of Pulau Ambelau (13½ miles S) (4.39), from where a light (3.20) is displayed, thence:

E of Tanjung Liboli, the SE extremity of Buru, thence:

E of Tanjung Kayuputih (18 miles NNE) (4.75), the E extremity of Buru, thence:

W of Pulau Suanggi (28 miles NE), from where a light (4.77) is displayed.

3 **Useful mark:**

Kukusan (3°25′S, 127°10′E), a mountain on the Buru side with two cone-shaped peaks, when clear and visible; the S peak of the two is the higher.

4.79

1 From SE, the track leads NW to a position W of Pulau Suanggi Light (3°18′S, 127°28′E) passing:

SW of Tanjung Nusanive (3°47′S, 128°05′E), the S extremity of Semenanjung Laitimor of Ambon, from where a light (4.113) is displayed, thence:

SW of Tanjung Lia (3°46′S, 127°56′E), the SW extremity of Semenanjung Hitu of Ambon, thence:

SW of Pulau-pulau Nusatelu (3°40′S, 127°54′E), a small group of islands lying off the NW coast of Ambon; a light (4.97) is displayed from Pulau Ela, the N-most island of the group, thence:

2 SW and W of Pulau Suanggi Light.

The track then leads NNW for a distance of about 96 miles to a position E of Tanjung Dahekolano (Dehekolano) Light (1°49′S, 126°29′E) at the entrance to Molucca Sea.

4.80

1 From NE, the track leads SW to a position NW of Pulau Suanggi Light (3°18′S, 127°28′E), passing (with positions from Tanjung Saniani (3°13′S, 127°38′E)):

NW of Pulau Niene (25 miles NE), an islet, lying close W of the NW extremity of Pulau Boano, from where a light (4.166) is displayed, thence:

NW of Tanjung Hatualang (16 miles NE), the SW extremity of Boano, thence:

2 NW of Tanjung Saniani, the W extremity of Pulau Kelang, thence:

NW of Tanjung Hakuluane (Hakaluane) (7 miles WSW), the hilly NW extremity of Pulau Manipa, thence:

NW and W of Pulau Suanggi Light.

Vessels continuing S or SE should follow the directions at 4.78 or 4.79, respectively.

Selat Kelang

4.81

1 Selat Kelang, the deep but narrow strait separating Pulau Manipa from Pulau Kelang, is the alternative passage to Selat Manipa for vessels moving between Banda Sea and Ceram Sea and vice versa. The strait is safe and clear but there are strong tidal streams especially off its entrances; see 4.76. Vessels should maintain the fairway in the middle of the strait.

The passage is frequently used by small vessels and local inter-island vessels; in clear weather it can also be transited at night.

Channels between Pulau Kelang and Seram

4.82

1 Lobang Sole (3°10′S, 127°47′E), the channel which separates Kelang from Pulau Babi, close E, is not recommended on account of it being narrow and having strong tidal streams running through it.

2 Lobang Haya, the channel separating Pulau Babi, a hilly island, from Seram, is narrow and almost straight. Although there are sometimes strong streams, up to 6 kn at the height of the monsoon season, it can be navigated with local knowledge by vessels having a length of 60 m and draught of 3·5 m. When approaching from S, the track leads NNE, with Tanjung Haya (3°10′S, 127°50′E), the W extremity of Pulau Seram, bearing 015° ahead, so as to pass W of two shoals with depths of 3 m (10 ft) over them, lying in the S entrance, 7 cables S of the point; thence on the bearing 357° of the W extremity of Pulau Boano which leads N through the channel. This track should pass W of Tanjung Haya at a distance of at least ½cable.

Anchorages

Off the east coast of Pulau Buru

4.83

1 With local knowledge, anchorage may be obtained off the village of Ilat (3°35′S, 127°15′E), on the E coast of Buru, in depths of about 60 m (33 fm). The best berth here is approached from E with a hut standing close N of the village bearing 270°, thence anchoring on the bearing 007° of Tanjung Kayuputih (4.75), 11 miles farther N. This anchorage places a vessel out of the strength of the tidal streams. In calm conditions vessels may anchor farther S, nearer to the village in depths of 38 m (21 fm).

2 Anchorage may also be obtained off the village of Batujungko (3°26′S, 127°15′E), situated 2½ miles S of Tanjung Kayuputih, in a depth of 20 m (11 fm) about 1 cable NE of detached rocks which lie close N of the village.

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Off Pulau Manipa

4.84

1 Anchorage may be obtained off the S coast of Manipa in depths of 40 m (22 fm) between Tanjung Nuru (3°20′S, 127°30′E) and Pulau Tuban, an islet 5 miles ESE. Vessels should anchor at least 1½miles W of the islet on account of reefs extending W of it.

2 Anchorage may also be obtained off the NW coast of the island within Pelabuhan Hayasa, a bay SW of Tanjung Hakuluane (Hakaluane) (3°16′S, 127°31′E) (4.80), the low-lying NW extremity of Pulau Manipa. The bay offers shelter during the SE monsoon, in depths of 14 to 34 m (46 ft to 19 fm), sand and coral, and is the best anchorage off this island. The head of the bay is obstructed by rocks and shoals.

Off Pulau Kelang

4.85

1 Anchorage may be obtained, except in the strength of the NW monsoon, off the N coast of Pulau Kelang (4.75) and W of Tanjung Batugoso (3°09′S, 127°45′E), the N extremity of the island where there is a slight indentation in the coast. There are depths of 32 m (18 fm) close up to the shore.

Anchorage may also be obtained off Pamariki, a village on the S coast, 2½ miles W of Tanjung Lalola (3°15′S, 127°47′E), the SE extremity of the island.

Small craft channels

Off Pulau Manipa

4.86

1 On the S side of Pulau Manipa (4.75) there is a navigable channel used by small craft which lies between Manipa and Pulau Tuban (3°21′S, 127°35′E) (4.84). Between the fringing reefs of this narrow channel there are depths of 16 m (53 ft).

Farther N the deep passage between Pulau Suanggi (3°18′S, 127°28′E) (4.75) and Manipa is navigable by small craft.

PULAU SERAM WITH PULAU AMBON AND ADJACENT ISLANDS

GENERAL INFORMATION

Charts 3241, 3242 (see 1.34)

Scope of the section

4.87

1 In this section are described:

- Pulau Seram, excepting the islands lying off the SE extremity which are described at 3.49.
- Pulau Ambon, together with the Lease Islands lying E of Ambon.
- The navigable waterways and channels, harbours and anchorages associated with these islands.
- The port of Ambon, which is the most important port of Maluku Islands.

Topography

4.88

1 The whole of this area comprises mainly densely wooded, mountainous and/or hilly islands. The islands are also heavily indented by numerous bays. Pulau Seram, sometimes referred to as Nusaina (Nusa Ina), is the largest island in Maluku, only slightly larger in area than Halmahera, and is not volcanic; it stretches 340 km E-W and most of the island is densely wooded. Many of the high central mountains of the island are of irregular formation but provide little or no recognition points, as they are frequently shrouded in mist or low-lying clouds.

2 The E part of Seram is less mountainous and is mainly dominated by spreading lowlands and swamps. The summit of Gunung Binaiya (3°10′S, 129°27′E) (4.143), and centrally placed, is the highest point of Seram.

Deep water exists close off many of the coastlines mentioned within this section.

Natural conditions

4.89

1 **Flow.** Offshore currents tend to follow the seasonal wind drift directions of the monsoons. Tidal streams, except in the straits and narrows, are weak; streams, except off the S coast of Seram where there is little or no movement, tend to follow the direction of the coasts.

2 **Local weather.** Except in Teluk Piru and parts of Semenanjung Hoalmoal in the W part of Seram, the conditions on the N coast of this island differ to that on the S coast. On the N coast and Semenanjung Hoalmoal, like the weather conditions on Buru, there is rain during the NW monsoon and it is relatively dry during the SE monsoon. The reverse is true for the S coast, except that the W side of Teluk Piru is subject to the same monsoonal conditions as the N coast because the high mountains on Ambon absorb the moisture carried by the SE monsoon.

3 Land and sea breezes will be experienced on both N and S coasts of Seram.

General directions

4.90

1 Through route traffic generally passes to the W and E of Seram using Selat Manipa or the wider expanse of water between Seram and Batanme respectively.

Local traffic to and from Ambon (3°42′S, 128°10′E) is frequent along the S and NE coasts of Seram where there are several minor ports of call; there is also regular inter-island traffic from other parts of the archipelago.

SOUTH COAST OF PULAU SERAM-TANJUNG SIAL TO TANJUNG LATU

General information

Charts 3241, 3242 (see 1.34)

General description

4.91

1 Between Tanjung Sial (3°34′S, 127°55′E), the sharp steep SW extremity of Seram, and Tanjung Latu, 48 miles E, at the W entrance to Teluk Elpaputih, the coast is heavily indented by Teluk Piru; its W side is dominated by Semenanjung Hoalmoal (4.75). Most of the 200 000 population on Seram live in this W part of the island.

Seram is an important trade centre; its main export is timber and timber products.

Topography

4.92

1 Teluk Piru, a wide open bay, lies on the E side of Semenanjung Hoalmoal (4.75). Fronting the bay is Pulau Ambon. Entered between Tanjung Hatamata (3°34′S, 127°56′E) and Tanjung Makaisimang, 32 miles ENE, the bay, except the area lying at its head, is fronted by a narrow coastal bank over which there is deep water. Pulau Kasa (3°18′S, 128°09′E) (4.98) lies in the middle of the bay.

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2 The inner part of Teluk Piru, N of Pulau Babi (3°13′S, 128°10′E), is narrow and the land is backed by some fairly high mountains especially on its E side. Huhula, which rises 4 miles NNE of Pulau Babi, and Henhuhui, 2½ miles N of the same island, are particularly prominent with conical summits. The E shore N of Tanjung Tutunaten (3°08′S, 128°10′E), unlike the W shore abreast it, is bordered by a wide plain. Tetu (3°12′S, 128°07′E) (4.98) and Sasadu, both reefs, lie in the middle of the entrance to the inner part of the bay.

3 The E side of the outer part of Teluk Piru is also mountainous, particularly around the S coast of the broad headland between this bay and Teluk Elpaputih, 17 miles E.

Former mined area

4.93

1 Attention is drawn to an area bordering the E entrance of Teluk Piru and the W part of Selat Seram which is dangerous on account of mines. See 1.7 and Appendix I.

Nature reserve

4.94

1 A nature reserve has been established encompassing the whole of Pulau Kasa (3°18′S, 128°09′E); see 1.67.

Flow

4.95

1 **Current.** In Selat Seram there is usually a moderate W-going current.

Tidal streams. Within Teluk Piru the stream sets in the same direction on both sides of Pulau Kasa (3°18′S, 128°09′E). However, this is probably not a tidal stream but a current which enters the bay on one side and sets out on the other, its direction being dependent on the wind. During the month of February a continual stream, with a rate of nearly 1 kn, was observed to set out of the bay; the wind was constant NW increasing suddenly to force 6 at times.

Landmarks

4.96

1 Salahutu (3°33′S, 128°15′E) (4.113); rising in the NE part of Ambon.

Setan (3°32′S, 128°13′E) (4.113), on the NE coast of Ambon.

Huruano (3°35′S, 128°30′E) (4.109), the summit of Pulau Haruku.

Toplana (3°23′S, 128°29′E), conical summit rising on the broad headland on the N side of Selat Seram, is prominent.

Totaniwel, rising 1½ miles SE of Toplana, is also prominent and its conical summit is easy to recognize.

Directions

General

4.97

1 Between the SW extremity of Seram and the NW coast of Ambon, the waterway is deep and clear of dangers; the passage leading to Selat Seram follows the N coast of Ambon. Vessels pass N of Pulau Ela (3°39′S, 127°54′E), the high N islet of Pulau-pulau Nusatelu (Nusa Telu), a group of small islands lying off the NW coast of Semenanjung Hitu. Passing S of the islet and between it and the mainland is not recommended on account of strong tidal streams.

2 **Useful marks:**

Pulau Ela Light (white beacon) (3°39′S, 127°54′E).

Pulau Hatala, a high islet lying 1 mile S of Ela, and Pulau Lain, a similar islet lying close S of Hatala, are good landmarks when approaching the stretch of water between the W parts of Ambon and Seram from either E or W.

Approaches to the inner part of Teluk Piru

4.98

1 From a position between Tanjung Sial (3°34′S, 127°55′E) and Pulau Ela (4.97), 5 miles S, the track initially leads NE to a position SE of Tanjung Lauma (3°31′S, 127°58′E); thence NNE to a position W of Pulau Kasa (3°18′S, 128°09′E), a low flat islet covered with vegetation, from where a light (white beacon) is displayed, passing:

ESE of Tanjung Batukapal (Batu Kapal) (3°22′S, 128°02′E), a steep point which may be identified by an isolated rock lying close off it.

2 From Pulau Kasa, and a position between it and the mainland, the track then leads N into the inner part of Teluk Piru, charted as Teluk Latira, passing W of Tetu (3°12′S, 128°07′E), a reef, with shoals lying in close proximity; thence either side of Sasadu, another reef marked by a beacon (spherical topmark) lying 1½ miles NNW of Tetu; keeping clear of an isolated patch with a depth of 10·6 m (35 ft) over it, lying 2 miles E of the beacon; thence NE to a position at the head of the bay off the village of Piru (3°04′S, 128°11′E) (4.101).

4.99

1 Vessels approaching the inner part of Teluk Piru from Selat Seram may pass E of Pulau Kasa. The track passes between the islet and the reefs extending S from Pulau Babi (3°13′S, 128°10′E), 2½ miles N, thence as described at 4.98.

With the benefit of local knowledge a track passing E of Tetu may be taken, with the W edge of Pulau Kasa bearing 180°, astern.

2 **Useful mark:**

Kairatu Light (white mast, 6 m in height) (3°21′S, 128°22′E).

(Directions for Piru are given at 4.101)

Selat Seram

4.100

1 Selat Seram, which separates the S coast of Seram E of Teluk Piru from the islands of Haruku and Saparua (4.109) to the S, is clear of dangers in the fairway. On the N side of the strait the mountains lie close to the coast; the narrow coastal strip and the points are, however, low.

In clear conditions the strait is safe to navigate at night; lights are displayed from the N coast of Pulau Haruku.

Current. See 4.95.

Piru

4.101

1 **General information.** Piru (3°04′S, 128°11′E), a small coastal town, port and anchorage, lies in an opening in the coastal reef at the head of Teluk Piru. The town is connected by road with Amahai (4.147). A pier extends a short distance SSW from the shore; depths alongside the head of the pier range between 2 and 5 m.

Current. In the first part of February a constant S set with a maximum rate of ½ kn was experienced in the anchorage.

2 **Directions.** The approach to the pier lies between two reefs which extend from the shore on each side. Vessels should pass W of a reef, marked by a beacon (spherical topmark), which lies 8½ cables SSW of the pierhead; a 9 m (30 ft) patch lies 2 cables W of the reef.

Anchorage. Small vessels may obtain an anchorage off the pier in a depth of 14 m (13 ft); the fairway leads NNE between the reefs. The reefs, however, are unmarked, so the best time to anchor inside is at or near LW when the reefs

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can clearly be seen. Larger vessels should anchor outside of the opening in a depth of 29 m (16 fm), mud.

Facilities: medical assistance available.

Anchorages

Within Teluk Piru

4.102

1 Anchorage may be obtained off the village of Loki (3°18′S, 128°03′E), situated on the W side of the bay, in a depth of about 24 m (13 fm). This anchorage lies in an opening in the coastal reef S of the village in which a church stands on the beach. A reef, which is marked by a beacon (port hand), lies in the middle of the opening and the S entrance point is marked by a beacon. Vessels entering the roads should pass N of the beacon in the middle of the opening. Larger vessels can still obtain an anchorage to seaward of the opening in depths of about 40 m (22 fm).

Off the north coast of Pulau Ambon

4.103

1 Anchorage may be obtained off the village of Said (3°35′S, 128°02′E) on the N coast of Pulau Ambon; see 4.129.

Small craft

Iha

4.104

1 Iha (3°23′S, 127°59′E), a village standing on the W side of Teluk Piru, has a pier with a depth of 4·9 m alongside at its head. The village may be identified by a mosque with a conical roof, which should not be confused with the mosque in the nearby village of Luhu, close N, which has a dome-shaped zinc roof.

Kaibobo

4.105

1 A small craft channel and anchorage lies off Kaibobo (3°13′S, 128°10′E) between Pulau Babi (3°13′S, 128°10′E) and the mainland of Seram.

Off the east side of Teluk Piru

4.106

1 There are several villages lying on this side of the bay that are used by small craft. The principal villages are Waisumu (3°16′S, 128°18′E); Hatusua, 2½ miles S; Kairatu from where a light (4.99) is displayed, 3 miles farther S; and Seruawan (3°26′S, 128°24′E), standing on the S side of the entrance to Wai Ira, a small river.

A ferry service links Kairatu with Liang (4.140) on the N coast of Ambon and with Amahai (4.147) on Seram.

PULAU AMBON AND THE LEASE ISLANDS

General information

Charts 2791, 3241, 3242 (see 1.34)

General description

4.107

1 Ambon, and the Lease Islands (4.109), collectively consisting of Haruku, Saparua and Nusalaut, lie separated from the S side of the W end of Pulau Seram by Selat Seram (4.100). These islands are mountainous and earthquakes occur, although no volcanic eruptions are known. The most recent earthquake occurred in 1950; the previous one in 1898 caused great devastation in Ambon.

The port of Ambon (3°42′S, 128°10′E) is the most important harbour within the Maluku group.

Topography

4.108

1 **Pulau Ambon.** Pulau Ambon (3°40′S, 128°10′E) is wooded and mountainous and is an island divided into two parts, Semenanjung Hitu (Hitu Peninsula), the NW part being separated by Teluk Ambon from Semenanjung Laitimor, the SE part. The two parts are joined together by a narrow spit barely 1 mile wide. The coastal area is indented with small bays and sandy beaches.

2 Within Semenanjung Hitu there are two distinct groups of mountains which are separated by a traversing NW-SE ravine through which a road links Ambon with the N coast; Salahutu (4.113), the highest mountain on the island, lies within the NE group.

Within Semenanjung Laitimor the high ground lies on its SE side, rising to Horiel (3°43′S, 128°14′E), its highest summit; the upper part is fairly flat with a small distinctive wood on it.

3 Teluk Ambon, which separates the two peninsulas, forms a deep indentation into the island from SW; its inner part is entered through a narrow navigable passage. The bay is entered between Tanjung Alang (3°47′S, 128°00′E) and Tanjung Nusanive, 5¾ miles E; both points are steep and easily recognized. Most of the island's population live on each side of the bay; Ambon, the capital of Maluku province, lies on the S side of the bay.

4.109

1 **Lease Islands** pronounced Lay-ah-say, formerly the Uliasers, consist of Haruku (Horuku), Saparua and Nusalaut. All are mountainous or hilly to some degree and most of the coastlines are reef-fringed. Huruano (3°35′S, 128°30′E) (4.113), the central peak of Huruku, is its highest point. Saparua is heavily indented by deep bays; it also has a remarkable depression in its narrowest part. Nusalaut (Nusa Laut), the smallest island, is separated from Saparua by a deep channel 2¼ miles wide.

Nature reserve

4.110

1 Pulau Pombo (3°32′S, 128°22′E) (4.115), situated 1 mile off the NE end of Semenanjung Hitu, is a nature reserve; see 1.67.

Natural conditions

4.111

1 **Tidal streams.** On the SW and W coasts of Pulau Ambon strong tidal streams may be experienced offshore; there is no shelter here in either monsoon season. Likewise on the N coast of the island similar strong tidal streams may be encountered.

2 Tidal streams within Teluk Ambon seldom exceed 1 kn, being dependent on the wind; the streams usually set NE or SW. During the NW monsoon there is usually a moderate N set off Tanjung Alang (3°47′S, 128°00′E) which follows the coast and trends N into the bay; during the SE monsoon however, because of the heavy rain flowing out from the numerous small rivers, there is no in-going stream; the coastal stream is then deflected across the entrance width of the bay.

3 In Selat Haruku the streams set N-S at a maximum rate of 1½ kn. They are strongest around the SW extremity of Pulau Haruku where tide-rips occur and on both sides of Pulau Pombo (3°32′S, 128°22′E). In Selat Saparua the streams set NW and SE and may attain a rate of 3 kn; tide-rips occur NW of the narrowest part of the strait.

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4.112

1 **Local weather.** The hot season generally extends from July to October, but rain often occurs. The heaviest rain falls between May and August. During the transition months March to May heavy rain accompanied by thunder occurs. Locally, rain falls over land during the afternoon and over the sea during the morning. There is usually a great deal of cloud cover throughout the year. Visibility is generally good except in heavy rain, and fog has been known to occur in May.

During the SE monsoon the SE coast of Ambon is almost inaccessible.

Principal marks

4.113

1 **Landmarks:**

Salahutu (3°33′S, 128°15′E), with twin summits, is the highest and most prominent mountain of Ambon, with several spurs radiating down from its summits.

Setan, standing 2 miles NW of Salahutu, is the most prominent of the spurs; it appears conical from WSW and ENE and forms an excellent landmark.

Suwal (3°45′S, 128°08′E), a hill standing at the S end of Semenanjung Laitimor, is prominent from E or W.

Huruano (3°35′S, 128°30′E), the summit of Pulau Haruku, is prominent from E and SE, from which directions it has a rounded shape; from NW and N it has a conical shape.

Lawakano (3°40′S, 128°47′E), the commanding summit of Pulau Nusalaut which, though in the E part of the area, can be seen in clear weather from a considerable distance.

2 **Major light:**

Tanjung Nusanive Light (white metal framework tower, 30 m in height) (3°47′S, 128°05′E); visible between 254°–094° (200°) and in the bay 094°–195° (101°). The light is displayed from a position 5 cables within the point.

Directions

General

4.114

1 Ambon is the major harbour for the whole area and a great number of vessels, large and small, use the port. The majority of traffic using Ambon from the N enters the port from Selat Manipa; otherwise from W, S and E the port is approached directly from other parts of the archipelago. Local traffic uses Selat Haruku or Selat Saparua when plying between the S coast of Seram and Ambon.

(Directions for entering Teluk Ambon are given at 4.123)

Selat Haruku

4.115

1 Selat Haruku (Horuku), separating Ambon from Haruku (4.109), has a least width of about 2¾ miles; but the navigable channel is reduced to a width of 1 mile or 1½miles at its N end by a reef-fringed atoll on which Pulau Pombo (3°32′S, 128°22′E), a low islet, lies and also by a detached drying mudflat which lies 1¾ miles ENE of the islet.

2 The strait, which is entered from S between Tanjung Meriam (3°38′S, 128°21′E), on Ambon, and Tanjung Batukapal, 2¾ miles E, on Haruku, both prominent points, is easy to navigate, even at night, in good visibility as there are good navigational aids. Although Pulau Pombo may be passed on either side the preferred track, particularly at night, lies between Ambon and Pombo.

3 **Useful marks:**

Pulau Batukapal, an islet lying close off Tanjung Batukapal, is particularly prominent when entering the strait from S.

Pulau Batulompa (3°36′S, 128°21′E), an above-water rock, 2 miles N of Tanjung Meriam.

Tulehu Light (white metal framework structure, 6 m in height) (3°35′S, 128°20′E).

Kailolo Light (white beacon) (3°31′S, 128°25′E); this light should not be confused with Pelauw Light, a similar light displayed from an islet 1¾ miles NE.

White minaret surmounting the mosque at Kailolo (3°31′S, 128°25′E).

Pulau Batudua (3°32′S, 128°21′E), a group of above-water rocks, 3 miles N of Batulompa.

Selat Saparua

4.116

1 Selat Saparua, with a least width of 5 cables, separates Pulau Haruku from Pulau Saparua close E of it. The fairway is clear of dangers. Reefs extending from each side in the narrow part of the strait are usually well marked by discoloration.

From N, the track leads SE with the hill standing on the S entrance point to Teluk Haria (3°35′S, 128°37′E) (4.141) bearing 137°. Vessels should maintain a mid-channel position in the narrows. Navigation at night in this strait is not recommended.

2 From S, vessels may pass either side of Pulau Molana (3°38′S, 128°36′E), an uninhabited, high and steep, island lying in the S approaches to the strait.

Useful mark:

Booi, a prominent hill rising close within Tanjung Booi (3°38′S, 128°39′E), a broad headland forming the S end of Pulau Saparua.

Other channels

4.117

1 If proceeding through the channel between Pulau Saparua and Pulau Nusalaut (3°40′S, 128°47′E), the former should be passed at a distance of at least 3¼ cables and the latter at a distance of at least 5½ cables.

Ambon

Chart 2791 plans of Approaches to Ambon, Ambon

General information

4.118

1 **Position.** Ambon (3°42′S, 128°10′E), sometimes known as Amboina, situated on Pulau Ambon, is the main port and harbour of Maluku; it lies on the SE side of Teluk Ambon.

Function. Ambon handles a great number of general cargo vessels both from an anchorage position or at several alongside berths; an oil terminal lies at Nipa (3°40′S, 128°10′E) on the NW shore of Teluk Ambon. The main exports are spice products, copra and forest products; imports include rice and bagged cement, timber (collecting point for export), machinery and petroleum products.

In 1997, the city of Ambon, capital of Maluku province, had a population of 275 000.

2 **Topography.** The city stands on the verdant growth-clad slopes of Nona (4.122), overlooking the bay, between two small rivers the Wai Batumerah (NE) and Wai Batugajah (SW).

Wai Tomu, another small river, flows out to sea through the city; all three rivers are spanned by bridges.

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Port limits. A line drawn 236° from Tanjung Batumerah (3°40′·6S, 128°10′·3E) to the meridian of 128°09′·6E.

3 **Approach and entry.** The port is approached from the open waters of Banda Sea and entered from Teluk Ambon.

Traffic. In 2003 the port was used by 131 vessels with a total of 614 027 dwt. The port also handles a considerable amount of local traffic including ferries.

Port Authority. The port is controlled by a Port Administrator: Adpel Ambon, Jalan Yos Sudarso, Ambon. Maluku.

Website: www.portina4.go.id/ambon.htm.

There is a resident Harbour Master whose office lies at the SW end of Yos Sudarso Quay.

Oil Terminals: Pertamina, PKK UPPDN VIII Ca. Ambon, Jalan Dr. Siwabessy, Ambon.

Limiting conditions

4.119

1 **Controlling depth.** In the narrow marked channel between the outer and inner parts of Teluk Ambon there is a least depth of 10·0 m in the fairway.

Tidal levels. See *Admiralty Tide Tables.* Mean maximum range about 1·4 m, mean minimum range about 0·5 m.

2 **Maximum size of vessel handled.** Ambon: about 40 000 dwt, 200 m in length, 35 m beam and up to 10 m draught when berthing alongside; no restrictions on anchoring.

Nipa (Wayame): 35 000 dwt; 200 m in length and up to 12 m draught.

Wainitu: 5000 dwt; 100 m in length; 5 m draught.

Tawiri (Desa Tawir) (4.126): about 5000 dwt tankers.

3 **Local weather:** between May and August visibility may be severely restricted owing to heavy rain; as there is always considerable small vessel traffic around Ambon, this potential danger should be given due consideration when calling at the port during this period.

Arrival information

4.120

1 **Port operations.** Vessels may enter and depart the port throughout the 24-hour period; however, berthing and unberthing can only be undertaken during daylight hours.

Port radio. There is a coastal radio service at Ambon but initial communications should be made through Jakarta Radio; for details see *Admiralty List of Radio Signals Volume 1(2).* There is also a port radio service which is operated from the Harbour Master's Office (4.118); for further details see *Admiralty List of Radio Signals Volume 6(4).*

2 **Notice of ETA.** Masters should forward their ETAs at the pilot station (3°42′S, 128°09′E) to the local agents and/or Harbour Master 10, 3, 2 days and 1 day prior to arrival stating last port of call, cargo details at Ambon and arrival draught.

Outer anchorages. There are two areas of anchorage within Teluk Ambon. The main anchorage lies adjacent to Ambon; a second anchorage area, used by local vessels, lies at the inner end of the bay to which access is gained through a narrow channel; in the case of the former, the best anchorage may be obtained off Wainitu, 8 cables SW of Ambon, in a depth of about 50 m.

3 **Submarine cable.** A submarine cable lies across the narrows connecting the outer and inner parts of Teluk Ambon; the landing points are marked by beacons (special) on each side.

Pilotage is compulsory for all vessels over 88 grt; pilotage for the oil terminals on both sides of Teluk Ambon is provided from Ambon. Requests for a pilot should be forwarded to the Port Authorities and/or agents at least 6 hours prior to arrival and 3 hours prior to departure. On arrival, flag hoist 'G' should be flown until the pilot has boarded, the position for which lies 1¼ miles W of Ambon as shown on the chart.

Tugs are available.

4 **Regulations concerning entry.** Vessels calling at Ambon as a first port of call within Indonesian waters should be aware of the port procedures and customs regulations; details of which are given in Chapter 1.

Harbour

4.121

1 **General layout.** The city has mostly been rebuilt since World War II (1939–45), when it was almost completely destroyed by bombing. The harbour commands a fine outlook over the water to the wooded slopes of the mountains of Semenanjung Hitu on the opposite shore. The main berths front the city; at Wainitu, 8 cables SW of the city, there are further berths for oil imports and small craft. On the opposite shore at Nipa (3°40′S, 128°10′E) there are three oil berths.

2 Two miles NE of Ambon, at the NE end of the narrows between the inner and outer parts of Teluk Ambon, there is a ferry terminal at Galala which is linked with a terminal at the village of Poka on the opposite shore. Within the inner bay there are naval berths at Halong (4.126), 8 cables ENE of Galala, and a local coastal berth at Katekate (3°38′S, 128°11′E) (4.126); two mooring buoys lie up to 5 cables N of Poka. There is ample anchorage nearly everywhere in the inner bay in depths of between 20 and 32 m, mud and sand.

3 **Tidal streams** in the roads off Ambon set NE and SW. Direction and rate, which seldom exceed 1 kn, is dependent on the wind. There is sometimes an eddy off the berths at Ambon so that the direction of the stream off the roadstead is not always an indication of that likely to be met when approaching them.

Tidal signals are displayed from the flagstaff at Yos Sudarso Quay. For details see 1.72.

Climatic table at 1.159 and 1.166

4.122

1 **Landmarks:**

White cross (3°45′S, 128°01′E), situated on the NW shore of Teluk Ambon, is prominent.

Kapal (3°46′S, 128°06′E), a prominent hill, light green in colour, standing on the SE side of Teluk Ambon.

Radio mast (red and white bands) standing on the N slope of Nona (3°44′S, 128°10′E), a hill SSW of Ambon, is prominent.

Mosque, with cupola, standing 2½ cables SE of Yos Sudarso Quay, is prominent but not visible in all directions.

Mosque, standing in Batumerah, a suburb close N of Ambon, is prominent.

Radio mast, standing on the slopes rising E of Ambon.

Directions

4.123

1 **Approaches to Teluk Ambon.** In the rainy season (4.119) visibility is much reduced and the features of the bay are difficult to identify. If from W, the high land near Tanjung Alang (3°47′S, 128°00′E) will first be distinguished. If from S, or just E of the meridian of Tanjung Nusanive, 5¾ miles E of Tanjung Alang, Kapal (4.122), a hill, will appear as an islet fronting the high land within the NW shore of the bay.

2 **Approaches to the pilot station at Ambon.** On entering Teluk Ambon the track leads NE, passing:

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NW of Tanjung Nusanive (4.108) from where a light (4.113) is displayed, thence:

SE of Tanjung Sikula (3°43′S, 128°05′E), a low wooded point, from where a light (white metal framework tower, 12 m in height) is displayed, thence:

NW of Tanjung Tuhameten (3°42′S, 128°09′E), another low wooded point on the SE side of the bay, thence:

3 NW of Tanjung Wainitu (3°42′S, 128°09′E) on which there are a number of oil tanks and from where a light (white metal framework tower, 8 m in height) is displayed. Wainitu Oil Terminal (4.125), containing a single berth, lies on the N side of Tanjung Wainitu, thence:

To the pilot boarding position.

Useful marks:

Light (white wooden mast, 5 m in height) displayed from Yos Sudarso Quay at Ambon.

Light (white beacon) displayed from a point 2 cables N of Batumerah as shown on the chart.

4.124

1 Vessels required to proceed to the inner part of the bay should continue NE until the entrance to the narrows is reached, thence the track leads NE in the fairway, passing:

NW of a light (green beacon, 5 m in height) standing W of Galala (4.121) at the S entrance, thence:

SE of Tanjung Martafons (3°39′·6S, 128°11′·3E) from where a light (red beacon, 5 m in height) is displayed at the N entrance.

Berths

4.125

1 **Anchorage** for vessels not exceeding 75 m in length may be obtained in depths of 46 m, off Fort New Victoria (3°41′·5S, 128°09′·9E), adjacent to small craft piers, fronting the centre of Ambon.

Alongside berths. Yos Sudarso Quay, the main berthing area, lies on the SW side of the city. Through reclamation it has a usable berthing face of about 500 m in length and depths of between 7·5 to 10 m alongside; the quay can accommodate the largest vessel (4.119) alongside its NE end.

2 Wainitu Oil Terminal, previously a coaling berth, situated 8 cables SW of Ambon, consists of a concrete and timbered wharf 65 m in length with a depth of 7 m (MLWS) alongside. Between Ambon and this terminal there are two wooden piers for local fishing craft.

3 Wayame (Waiame) Oil Terminal, at Nipa, on the NW shore of the bay, consists of three T-head jetties; a number of oil tanks are prominent on the shore. The NE jetties, with two tandom berths, have an overall facing length of 200 m with a depth of up to 15 m (MLWS) alongside; the SW jetty has a facing length of 42 m with a depth of 8 m (MLWS) alongside. The largest vessel (4.119) is accommodated at the two NE berths. A dangerous wreck, marked by light-buoys (N and S cardinal), lies 1 cable SSW of the SW jetty.

4.126

1 **Other berths.** Irian Wharf, a T-headed concrete berth, lies in the inner portion of Teluk Ambon at Halong situated on the SE shore 2¾ miles NE of Ambon. The wharf, 152 m in length with a depth of 11 m alongside, is used by Indonesian naval vessels. Aru Wharf, a naval berth, also T-headed and constructed of concrete, lies 3 cables E of Irian Wharf; depths are about 10 m alongside.

2 Ferry terminals lie at Galala Quay, 2 miles NE of Ambon, and at Poka Quay on the NW shore of the inner bay; there are depths of 5 m alongside both quays. A fish quay is reported to exist near the ferry berth at Galala.

Tawiri (Desa Tawir) Wharf (3°42′S, 128°06′E), is an oil berth for coastal tankers up to 5000 dwt.

Katekate (3°38′S, 128°11′E), a T-head jetty with a depth of 6 m alongside, on the NW shore of the inner bay, is only used by local vessels.

Port services

4.127

1 **Facilities** include: floating dock situated at Nipa (4.125); slipway for small vessels at Ambon; minor repair services, floating crane of 50-tonne capacity; deratting certificates and deratting exemption certificates issued; hospital.

Supplies: Fresh water, limited fuel and limited provisions.

Communications: Pattimura Airport lies on the NW shore of Teluk Ambon at Laha, 37 km from Ambon; there are connections with Makassar (Ujungpandang) *(Indonesia Pilot Volume II)*, thence Jakarta and also with other parts of the province.

There are regular ferry sailings between Ambon and Bitung (*Indonesia Pilot Volume II)* and between Ambon and Dili (2.162).

Saparua

Chart 3242

4.128

1 **General information.** Saparua (3°34′S, 128°39′E), a town and small port, lies at the head of a bay situated on the S side of Pulau Saparua. It is connected by road with Haria (4.141) from whence a ferry service connects with Ambon.

Mainly an anchorage port, it provides sheltered anchorage with little or no current; there is a pier which extends SW from the shore from where a light (white metal framework tower, 6 m in height) is displayed.

2 **Directions.** The bay is entered from S between Pulau Pombo (3°38′S, 128°39′E), an islet, and Tanjung Ouw, a rocky and steep point, 4¼ miles E. On passing E of Tanjung Paperu (3°35′S, 128°40′E) the track leads NW to an anchorage, with a prominent white monument (batunisan), lying S of the town, ahead. The best berth lies 3 cables S of the pier in a depth of about 20 m (11 fm), coral and sand.

A 2·2 m (7 ft) patch lies 5 cables NW of Tanjung Paperu and there are depths of 8 m (26 ft) 5 cables N of the point.

Facilities: Hospital.

Anchorages

North coast of Ambon

4.129

1 Anchorage may be obtained in depths of 40 m (22 fm), sand and stones, off the village of Said (3°35′S, 128°02′E) during both monsoons.

To the E of the village the coastal reef is marked by discoloration.

South-east coast of Ambon

4.130

1 Anchorage may be obtained during the NW monsoon in Teluk Baguala which is entered between Tanjung Hutumuri (3°42′S, 128°18′E) and Tanjung Meriam, 5 miles NE. A 2·3 m (8 ft) shoal patch lies in the middle of the entrance. On entering, vessels may pass either side of the shoal patch and find a suitable berth about 2½ miles from the head of the bay in a depth of 20 m (11 fm). Deeper water lies SW of the shoal patch, between it and the coast, and is the best approach. For small craft details within this bay, see 4.138.

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East coast of Ambon
4.131

1 Anchorage may be obtained off the village of Waai (3°34′S, 128°19′E). The best berth lies with the boat shed in the village bearing 263°, and Pulau Pombo (4.115) bearing 058°, in a depth of 38 m (21 fm). Waai is difficult to identify but the light-beacon at Tulehu (4.115) is a useful mark.

West coast of Pulau Haruku
4.132

1 Anchorage may be obtained, in a depth of about 50 m (27 fm), off the village of Haruku (3°36′S, 128°25′E), lying on the W side of Pulau Haruku. The best berth lies on the bearing 100° of the high roof of the village church. Anchorage may also be obtained off the edge of the detached reef fronting the village of Kabau, lying 3¼miles farther N; usual depths here are similar. These two anchorages are suitable during both monsoons.

South coast of Pulau Haruku
4.133

1 Anchorage may be obtained, within Teluk Aboru, on the S coast of Pulau Haruku. The best berth lies in a depth of 40 m (22 fm) on the bearing 332° of a white-walled house in the village of Aboru (3°36′S, 128°30′E), situated at the head of the bay.

North coast of Pulau Saparua
4.134

1 Anchorage may be obtained in Teluk Tuhaha, situated on the N coast of Pulau Saparua. The best berth lies S of the village of Nolot which lies on Tanjung Nolot (3°29′S, 128°42′E), the E entrance point to the bay. Farther N there is inconvenience from the strong stream which constantly changes direction.

North coast of Pulau Nusalaut
4.135

1 Anchorage may be obtained in Teluk Nalahia which is situated on the N coast of Pulau Nusalaut. The anchorage should be approached with a cleft in the hills at the head of the bay bearing 196° and anchor when a depth of about 66 m (36 fm) is obtained abreast Tanjung Namula, a point about 40 m (131 ft) high, on the W side of the bay within which the village of Nalahia (3°39′S, 128°47′E) stands.

Vessels lie quietly here during both monsoons.

Small craft

Chart 2791

Channel from Teluk Ambon to Paso
4.136

1 At the head of the inner part of Teluk Ambon, a channel for boats connects the bay with the town of Paso (3°38′S, 128°15′E), situated on the narrow low-lying strip of land joining Semenanjung Laitimor with Semenanjung Hitu overlooking Teluk Baguala (4.130).

Teluk Seri
4.137

1 Teluk Seri is entered between Tanjung Hatiari (3°46′S, 128°09′E) and Tanjung Hauisa, 2½ miles ENE. Boats can anchor on the sandbank which fronts the village of Seri at the head of the bay in depths of 4 to 5 m (13 to 16 ft). Elsewhere in the bay the depths are too deep for anchoring.

Landing may be effected at the village by entering a channel, situated between the sandbank and the shore, from N. The W side of the bay has several reefs close offshore.

Chart 3242

Teluk Baguala
4.138

1 Teluk Baguala, on the SE coast of Pulau Ambon, gives access for small craft to reach the town of Paso (3°38′S, 128°15′E), near the head of the bay, from SE. Anchorage may be obtained off the town in depths of 3 to 5 m (10 to 16 ft).

Tulehu
4.139

1 Tulehu (3°35′S, 128°20′E), a village situated on the E coast of Pulau Ambon, has a small harbour which accommodates local craft. Landing may be effected at the village. A light (4.115) is displayed from the village.

Liang
4.140

1 Liang (3°30′S, 128°20′E), a village on the N coast of Pulau Ambon, is linked with Kairatu (3°21′S, 128°22′E) on the E side of Teluk Piru on Pulau Seram.

Porto-Haria
4.141

1 The village of Porto (3°35′S, 128°37′E) lies midway along the N side of Teluk Haria, a narrow indentation on the W side of Pulau Saparua. Haria, another village, lies at the head of the indentation. The latter village is the ferry terminal for Saparua which connects with Ambon. Both villages are frequently visited by small craft.

SOUTH COAST OF PULAU SERAM — TANJUNG LATU TO PULAU SERAMREI

General information

Chart 3242 (see 1.34)

General description
4.142

1 This section covers the S coast of Seram between Tanjung Latu (3°25′S, 128°42′E) and Pulau Seramrei (3.55), 132 miles ESE. The coastal area E of Tanjung Latu, a low point, consists of two large indentations in the coast which are backed by a series of mountain ranges which gradually decrease in elevation towards the E coast. In some E parts the land is quite low-lying. Throughout the length of the S coast, which is steep and rocky and fronted by a narrow coastal bank, a coastal road links a number of towns and villages with Amahai together with Masohi (3°20′S, 128°55′E) (4.147), the most important town and port on Seram. This S coast, compared to other parts of the island, is densely populated.

Topography
4.143

1 The S coast of Seram is heavily indented by Teluk Elpaputih and Teluk Taluti, farther E. The whole area is backed by several mountain ranges which are forested throughout; Pegunungan Manusela, the highest range and centrally placed, forms the E spur of the conical-shaped Gunung Binaiya (3°10′S, 129°27′E), 3055 m (10 021 ft) high, the highest peak on the island and of Maluku province. Many of the lower peaks are difficult to identify especially those N of the E part of Teluk Taluti.

A number of rivers flow into the sea along this coast; some are navigable for a short distance inland.

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Natural conditions

4.144

1 **Seismic Activity.** Although the island is not volcanic, earth tremours may be felt when close inshore along the whole of this stretch of S coast; portions of the foreshore have been known to break away when a tremour occurs.

Flow. Inside the 200 m (100 fm) depth contour there is little or no current movement along this coast; otherwise outside and across the entrance to the two main bays the currents flow in the direction of the prevailing monsoon. On occasions the direction of the current has been known to run in opposition to the direction of the monsoonal winds.

2 In Teluk Elpaputih, together with Teluk Amahai, the tidal streams are less noticeable and the waters generally calm during the NW monsoon. During the SE monsoon the sea state is rough and there is a prominent swell. See also 4.89 on local weather.

3 Between Teluk Elpaputih and Teluk Taluti, 40 miles farther E, no tidal stream has been observed; currents farther offshore appear weaker than in Banda Sea. During the SE monsoon there is a constant heavy surf onto the coast. Conditions in Teluk Taluti are similar to that experienced in Teluk Elpaputih; however, after a prolonged period of heavy rain the out-going flow of water from the numerous rivers in this bay can produce localized turbulence.

Landmarks

4.145

1 Pohonbatu (3°16′S, 128°45′E), a hill with a prominent tree on its summit, standing on the W side of Teluk Elpaputih.

Hatumani (3°10′S, 128°46′E), a table-topped mountain with a remarkable summit.

Wele (3°20′S, 128°59′E), a hill whose summit is prominent when approaching Teluk Elpaputih from SE.

2 Gunung Binaiya (3°10′S, 129°27′E) (4.143); when clear can be seen from a considerable distance S.

Oson (3°29′S, 130°17′E), a mountain with a prominent double-peaked summit; Watulus, a lower peak, 2½miles S of Oson, has a remarkable summit best viewed from SE.

Teri (3°47′S, 130°43′E), a prominent dome-shaped mountain with partly barren sides rising in the E part of the S coast; it is visible from a great distance. Suru, another mountain, rises 3½miles ENE of Teri; Tunlean rises 3 miles E of Teri. Both Suru and Tunlean are easy to identify as both are covered with vegetation, whereas Teri is not.

Directions

4.146

1 Only local inter-island vessels use the waters off this coastline; vessels calling at Amahai from Ceram Sea use Selat Manipa and Selat Seram, or pass through Selat Haruku and Selat Seram when bound to the same port from Ambon.

Between Amahai and the passage through Selat Kefing (3°53′S, 130°53′E) off the SE extremity of Pulau Seram, vessels should keep to seaward of the 200 m (100 fm) depth contour throughout, on account of a number of coral shoals lying close within the coastal bank at several locations; in particular Karang Haumua (3°27′S, 129°27′E) and Karang Pekelo (3°29′S, 129°32′E), two reefs off the W entrance to Teluk Taluti (4.155).

Amahai — Masohi

General information

4.147

1 **Position.** Amahai (3°20′S, 128°55′E), sometimes referred to as Masohi, is a small port and harbour which lies at the head of Teluk Amahai, which is itself situated close within the SE entrance to Teluk Elpaputih on the S coast of Pulau Seram. Masohi is a separate town lying close to Amahai.

2 **Function.** The port is the most important on the island. Mainly an anchorage port, its main export is forest products; it is also a collecting point for forest products. Oil imports are received at a berth at Masohi, 3 miles NE of the town.

In 1997 the town of Masohi, which is also the administrative capital for central Maluku, together with Amahai, had a population of 40 000.

3 **Topography.** Teluk Amahai, a small inlet, is entered NE of Tanjung Kuako (3°19′S, 128°55′E), a low point which lies at the end of a narrow tongue of land, forming the W side of the bay; it is covered with reeds and is inconspicuous from W. The E side is reef-fringed and rocky backed by wooded ground on a low plain; a short spit of coral extends from the E side into the bay. Kerai (4.150), rises 1½miles NE of the town.

Approach and entry. Amahai is approached from Teluk Elpaputih and entered through a marked channel within Teluk Amahai.

4 **Traffic.** In 2003 the port was used by 1 vessel with a total of 2 472 dwt. The port also handles considerable local traffic including ferries.

5 **Port Authority.** Kasatker Amahai, Komp. Pelabuhan Amahai. Amahai. Seram.

Limiting conditions

4.148

1 **Maximum size of vessel handled:** At Amahai, no length restriction; maximum draught 9 m (30 ft) in the anchorage; at the oil berth, 1000 dwt and 6 m draught.

Arrival information

4.149

1 **Port operations.** Berthing and unberthing is during daylight hours at the oil berth.

Port radio. There is a port radio service at Amahai, for long range communications vessels should use Ambon coast radio service. For details see *Admiralty List of Radio Signals Volumes 1(2)* and *6(4)*.

Pilotage is available for the oil berth but is not compulsory. Requests for a pilot on arrival should be made well in advance; for departure at least 3 hours notice is required.

Directions

4.150

1 On rounding Tanjung Kuako from S or SW the track leads SE into the bay and an anchorage; the deeper water lies close to the W side. A coral spit, over which there are depths of less than 1 m (3 ft), extends from the E shore and is marked on its outer edge by a beacon (port hand). On passing the beacon, anchorage may be obtained in a depth of between 11 and 31 m (36 ft and 17 fm), coral, approximately 3 cables WNW of the pier at Amahai, from where a light (white beacon, 9 m in height) is displayed. If the harbour is crowded, an anchorage may be obtained farther seaward.

2 During the NW monsoon heavy squalls from N may occur in the afternoon but otherwise a vessel will lie quietly here.

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Vessels making for the oil berth at Masohi, after rounding Tanjung Kuako, the track leads NE to a position about 5 cables NW of the berth.

3 **Useful marks:**

Kerai (3°19′S, 128°56′E), a prominent hill, is easily recognized when approaching Teluk Elpaputih from SE inbound for Amahai.

Light, (3°17′·6S, 128°57′·2E) displayed close N of the root of the pier at Masohi (4.151).

Alongside berths

4.151

1 At Amahai there is a quay, having a length of 42 m and a depth of 4 m alongside at MLWS.

At Masohi (3°18′S, 128°57′E), the oil berth consists of an L-shaped jetty, 116 m in length, which extends NW from the shore over the fringing reef; there are depths of 6 m alongside.

Port services

4.152

1 **Facilities** are limited; hospital.

Supplies are limited; fuel and fresh water unobtainable.

Communication: There is an airport at Amahai with connections to Ambon. Amahai is well serviced by ferries to local parts of the area.

Anchorages

Teluk Meruru

4.153

1 Anchorage may be obtained in Teluk Meruru, about 2 miles NW of Tanjung Latu (3°25′S, 128°42′E), in a depth of 40 m (22 fm). The coastal bank is narrow here but the anchorage is safe during both monsoon periods.

Makariki

4.154

1 Anchorage may be obtained off the village of Makariki (3°15′S, 128°58′E) in a depth of 45 m (25 fm).

The coastal bank here is about 1½ miles wide.

Teluk Taluti

4.155

1 Anchorage may be obtained close offshore in several places in Teluk Taluti, which is entered between Tanjung Seitu (3°27′S, 129°34′E), a low point, and Tanjung Mataia, 24½ miles E. However, during the SE monsoon the coast is inaccessible except off the village of Tehoru (3°23′S, 129°33′E) on its W side, which is protected from S by a low reef-fringed headland. The roadstead here is a good one, especially during the NW monsoon but less so during the SE monsoon.

2 The best berth lies in a depth of 20 m (11 fm), sand and mud, with Tehoru Light (white wooden mast, 6 m in height) (3°22′·5S, 129°32′·5E), in the village, bearing 140° distant about 1½ cables; larger vessels should anchor farther offshore in a depth of 40 m (22 fm). For small craft details, see 4.161.

Kisalaut

4.156

1 Anchorage may be obtained off the village of Kisalaut (3°36′S, 130°19′E) in a depth of 16 m (54 ft), sand, and about 4 cables offshore. The village lies close N of Tanjung Kisalaut, a reef-fringed point.

The coastal bank here is about 8 cables wide.

Selor

4.157

1 Anchorage may be obtained off the village of Selor (3°40′S, 130°27′E) and between Selor and Tanjung Kilmuri, 2½ miles SE. Off Selor, the anchorage should be approached from W with the village ahead, passing N of a shoal over which there are depths of less than 2 m (7 ft), until a position SW of the village is reached in a depth of 20 m (11 fm), and about 5 cables offshore. On departure, vessels should leave on the same track in reverse.

2 Between Selor and Tanjung Kilmuri, anchorage may be obtained in a depth of 30 m (16 fm), sand, to seaward of some detached reefs, with Selor bearing N and at a distance of about 1 mile offshore; a drying reef surrounded by shoal water lies in the vicinity 1 mile NW of the point.

Undur

4.158

1 Anchorage may be obtained off the village of Undur (3°46′S, 130°36′E) in depths of about 35 m (19 fm), coral. A 7 m (23 ft) coral patch lies 1¼ miles NW of the village.

Off Pulau Gofa

4.159

1 Anchorage may be obtained E of Pulau Gofa (3°50′S, 130°43′E), a reef-fringed, low islet covered with coconut trees, in depths of 22 m (12 fm), sand and mud. A shoal over which there is a least depth of 7 m (23 ft) lies 1½ miles ESE of the islet. During the SE monsoon a vessel may experience an unsettled swell at this anchorage; smaller vessels may anchor farther E and N of the 7 m shoal previously mentioned, where the effects of the swell during the SE monsoon are less felt.

The coastal reef here is marked by discoloration and can be seen from a short distance.

Small craft

Teluk Elpaputih

4.160

1 Anchorage for small craft may be obtained anywhere in Teluk Elpaputih during the NW monsoon and at many of the coastal villages landing can be effected.

Teluk Taluti

4.161

1 Small craft frequently visit Tehoru (3°23′S, 129°33′E) (4.155) situated on the W side of Teluk Taluti. Landing can be effected at the village, which is protected from both monsoons.

Small craft can enter several rivers in the bay during the NW monsoon but they are navigable for only short distances and require local knowledge. In the SE monsoon the entrances cannot be accessed. Amongst the main rivers flowing into the bay only Wai Lau (3°20′S, 129°46′E), Wai Kaba, 5 miles E, and Wai Bobot, 8 miles farther E, offer an access for boats.

Guliguli

4.162

1 Guliguli (3°51′S, 130°47′E), a village situated on the S side of the SE extremity of Seram at the head of a narrow channel leading N between the coastal reefs, may be reached by small craft. The village can be identified by a prominent mosque.

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NORTH-WEST COAST OF PULAU SERAM INCLUDING PULAU BOANO

General information

Charts 3241, 3242 (see 1.34)

General description

4.163

1 The NW coastline of Pulau Seram consists of the land situated between Tanjung Haya (3°10′S, 127°50′E) (4.82), the W extremity of the island, and Tanjung Tanduru Besar, the NW extremity, 26½miles NW. The coastline is heavily indented and there are numerous off-lying shoals and reefs. The land within Seram is mountainous but without any outstanding peaks. Between the mountains and the coast there are ranges of hills which slope down to the sea in several places.

2 The coast is sparsely populated; Asaudi (4.172) in the S and Kawa (4.169) in the N are the only towns of interest on this coast.

Pulau Boano (4.164), a large island consisting of both mountainous and flat land, fronts the coast which is separated from it by Selat Boano.

Topography

4.164

1 Between Tanjung Haya (3°10′S, 127°50′E) and Tanjung Tanduru Besar, the prominent, high, steep NW point of Seram, the coast is hilly and wooded with the land rising inland to mountainous terrain. As previously mentioned the coast is heavily indented by small bays and inlets consisting of marshy and mangrove-covered ground and there are numerous off-lying dangers.

2 Pulau Boano (2°58′S, 127°55′E), lying about 5 miles NW of the Seram coast and separated from it by Selat Boano, described later, is mountainous and wooded in its SW part and consists of a low plateau in its NE part; it is sparsely populated. The highest point on the island is Kagel, a conspicuous conical peak rising near the W coast. Around the island there are several off-lying islets and dangers.

3 Pulau Pua, a hilly and wooded island 403 m (1320 ft) high, lies close to the NW coast of Boano and is separated from it by a narrow restricted passage. Fronting Pulau Pua there are several small low islets lying on a reef extending WSW from the NW extremity of Pulau Boano. They are separated from Pulau Pua by another restricted narrow waterway; Pulau Niene, charted as Nine, is the most important of these islets.

Flow

4.165

1 **Tidal streams.** Off Tanjung Tanduru Besar (2°52′S, 128°10′E), streams set strongly through Selat Boano.

At the extremity of a bank extending NE from the NE extremity of Pulau Boano, there are strong tide-rips.

Current. Farther offshore and to seaward of Pulau Boano, monsoon drifts prevail setting in the direction of the wind.

Principal marks

4.166

1 **Landmarks:**

Summit of Pulau Boano (2°58′S, 127°55′E) (4.164).

Tanjung Tandur Besar (2°52′S, 128°10′E) (4.164).

Major light:

Pulau Niene (Nine) Light (2°55′S, 127°54′E).

Directions for Selat Boano

General

4.167

1 Selat Boano, leading NE-SW between Pulau Boano and the coast of Seram, is about 5 miles wide and clear of dangers. At its SW end the navigable channel is reduced to a width of 3 miles by several islets and shoals which extend from the NW side of Semenanjung Hoalmoal.

Approaches

4.168

1 If from N, on passing NW of Tanjung Tanduru Besar (2°52′S, 128°10′E), and outside of the 200 m (100 fm) depth contour, the track leads SW passing:

SE of Tanjung Pamali (2°56′S, 128°00′E), the low NE point of Boano off which there is a 3 m (10 ft) patch, thence:

SE of Tanjung Henaputih, the steep SE point of Pulau Boano, 8 miles SW.

The track lies in deep water throughout and vessels should maintain the NW side of the strait.

2 From S and a position N of Pulau Kelang the track initially leads ENE in deep water until the position SW of Tanjung Henaputih is reached, then, as described above, in reverse.

Useful mark:

Tanjung Hatualang (3°02′S, 127°50′E), the SW extremity of Pulau Boano, is rocky and prominent.

Anchorages

Kawa

4.169

1 Anchorage may be obtained off Kawa (2°56′S, 128°08′E), a large village standing in an inlet on the SE side of Selat Boano, in a depth of 29 m (16 fm), mud, stones and sand, during the SE monsoon. The best berth lies with Sirih, a rocky islet 2 miles NNW of the village, bearing 347°. Elsewhere in the inlet there is good holding in any depth required, but in depths less than 9 m (30 ft) the bottom slopes steeply to the sandy beach.

Kawa is regularly visited by local inter-island vessels.

Off Pulau Marsegu

4.170

1 Anchorage may be obtained in a large inlet E of Pulau Marsegu (3°00′S, 128°03′E), a reef-fringed islet, lying off the W coast of Seram. The shores of the inlet are muddy and covered with mangroves. It affords better anchorage than within Teluk Kotania, S of it. The best berths lie off the N edge of the drying reef which extends W from Tanjung Lalansoai (3°01′S, 128°05′E) in depths of about 47 m (26 fm) or within the NE cove of the inlet, in a depth of 37 m (20 fm), off the mouth of Wai Tosu, a small river.

2 If entering the inlet from N, the drying reef which fronts Tanjung Wantebu, the N entrance point, should be given a wide berth.

Teluk Kotania

4.171

1 Teluk Kotania is entered between Tanjung Tapi (3°04′S, 128°00′E) and the NW edge of the reef extending from Tanjung Lalansoai (4.170). The bay is obstructed with many reefs. The village of Kotania lies at the head of the bay and can be reached by small vessels.

Anchorage may be obtained in depths of about 45 m (25 fm), sand, in the outer part of the bay W of the alignment (021°) of the E end of Pulau Marsegu with Tanjung Wantebu.

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2 Shallow-draught vessels can approach this anchorage from N by passing between Pulau Marsegu and the drying reef extending from Tanjung Lalansoai, where there is a least depth of 6 m (20 ft) in the fairway. From W, the initial track leads E with Buntal, a prominent islet lying 2 miles W of Kotania, bearing 090°, passing S of a 5 m (16 ft) patch which lies in the middle of the entrance to the bay; when the E point of Pulau Tikus, a low islet lying close off the S side of the bay, 5½ miles W of Kotania, is reached, the track leads NE for about 1 mile, to the anchorage.

Asaudi

4.172

1 Anchorage may be obtained off Asaudi (3°08′S, 127°57′E), a large village situated at the head of a small indentation on the W coast of Seram. The best berth lies 7 cables WSW of Pulau Asaudi, an islet lying 7 cables NNW of the village, in a depth of 38 m (21 fm), mud and sand.

Asaudi is regularly visited by local inter-island vessels.

NORTH COAST OF PULAU SERAM — TANJUNG TANDURU BESAR TO TANJUNG LAMA

General information

Chart 3242 (see 1.34)

General description

4.173

1 The N coast of Pulau Seram is divided into two parts separated by Teluk Seleman, a large bay and the only large indentation in this coast. The W part is dominated by mountains rising up from the coast, part of the central range which traverses the island from one end to the other; the E coastline is lower, but hilly, and in places uniformly covered with vegetation with the higher peaks of the central range well inland to the S.

2 The main port is Wahai (2°48′S, 129°30′E); there are several logging villages and numerous coconut plantations situated at locations along the coast. Although navigation along this N coast and between the islands forming Pulau-pulau Tujuh is relatively clear of dangers, excepting calls at Wahai, most of the through traffic passes well N of the island.

Topography

4.174

1 Between Tanjung Tanduru Besar (2°52′S, 128°10′E) and Tanjung Namaa, the low W entrance point to Teluk Seleman, 54 miles E, the forested mountains approach the coast in many places with low valleys between where rivers flow out to the sea. Most of the coastal hills and mountains can be identified. Pulau-pulau Tujuh, a small group of six low islands planted with coconut palms, extends N from the W entrance point of Teluk Seleman; Pulau Besar, is the largest and most N island.

2 Teluk Seleman, the only large indentation on the coast, is entered between Tanjung Namaa (2°48′S, 129°03′E) and Tanjung Pamali, another low point, 19 miles E. Both sides of the bay are hilly and wooded; at its broad head lie two small bays, Teluk Sawai (4.183) and Teluk Besi (4.184), with the land behind rising inland to the twin peaks of Putih (4.176). Fronting the E shore at the head of the bay there are several reefs and shoals.

3 Between Tanjung Pamali (2°48′S, 129°22′E) and Tanjung Lama, 60 miles ESE, the coast is backed by hilly ground gradually rising inland to the S; it is fronted by thick vegetation making points difficult to identify. Teluk Wahai (4.178) and Teluk Hatiling (4.179), two small indentations in the coast 8 miles E of Tanjung Pamali, are separated from each other by a broad reef extending N from the shore. Wahai (4.178), the only port of significance, lies at the head of Teluk Wahai.

4 The W part of the N coast is fronted by a narrow coastal bank, which widens at the W entrance to Teluk Seleman to enclose Pulau-pulau Tujuh, previously mentioned. Along the E part, the continuing coastal bank extends a little farther offshore as far as Tanjung Lama.

Natural conditions

4.175

1 **Flow.** Tidal streams off the N coast are generally moderate or weak; in places the streams are strong particularly between Tanjung Hewal (2°46′S, 129°31′E) and Tanjung Lama. Countercurrents prevail close inshore during the SE monsoon. Within Teluk Seleman there is no reported stream or current movement in the bay.

Currents outside of the 200 m (100 fm) depth contour seasonal monsoon drifts are generated; in June a constant E-going current with a rate of 1 kn has been observed off the NE extremity of Seram.

2 **Local weather**. The rainy season along this coast lasts between December and May; the worst months for rainfall are March and April. The best months are between August and October.

Landmarks

4.176

1 Batulasa (Batu Lasa) (2°54′S, 128°18′E), a prominent peak rising in the W part of the coast.

Dromedaris Besar (2°52′S, 128°32′E) with Dromedaris Kecil, 2 miles E, two prominent peaks within Pegunungan Cecilia, a coastal range, resembling the humps of a camel; the former peak being noticeably higher than the latter.

Putih (3°00′S, 129°10′E) with twin prominent peaks, the highest nearly 2000 m (6500 ft) high, rising at the head of Teluk Seleman.

2 Gunung Binaiya (3°10′S, 129°27′E) (4.143), prominent when clear even though the peak rises well inland.

Tomo (2°53′S, 129°28′E), a prominent hill.

Talirin (3°01′S, 130°23′E), a double-peaked hill, situated in the E part of the coast, with the S peak the higher of the two.

Balimaklam (3°12′S, 130°05′E), with a prominent sharp conical peak standing inland on a mountain range in the E part.

Directions

4.177

1 Navigation along the N coast of Seram is clear of dangers except in the vicinity of Pulau-pulau Tujuh; Karang Telegraaf, 6½ miles W of Tanjung Namaa (2°48′S, 129°03′E), has a least depth of 2·7 m (9 ft) over it and is well marked by discoloration. Karang Lasi, a drying coral and mud bank, also marked by discoloration, lies 2½miles W of Tanjung Namaa.

On clearing Karang Telegraaf, and passing N of Lasi, the most suitable passage through Pulau-pulau Tujuh is that between a reef on which Pulau Air (2°45′S, 129°01′E), an islet, stands on its N end and Pulau Alai, a smaller islet, stands near its S end, and Pulau Tengah, an islet lying 2¼ miles SSE.

2 From W, Pulau-pulau Tujuh are difficult to see at night against the high coast of Seram; Karang Telegraaf should be taken into account. In poor visibility it is recommended that

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a track N of Pulau Besar, the most N island of the group, be taken. From E, the islands can safely be approached on a clear night.

In the E part, coastal traffic passes between the coast and Karang Bais (2°55′S, 130°26′E), shown as Leeuwarden Reef on chart 942B, a horseshoe-shaped drying reef with steep-to sides, marked by discoloration, lying 6 miles ENE of Tanjung Lama.

Minor harbours

Wahai

4.178

1 **General information.** The town of Wahai (2°48′S, 129°30′E) lies at the head of Teluk Wahai, which is entered 8 miles E of Tanjung Pamali. The bay is formed by the W of two gaps in the coastal reef; the E gap leads to Teluk Hatiling (4.179). The port is frequently visited by local vessels; the main export from both bays consists of forest products.

In 1999 the port was used by 2 vessels with a total of 9000 dwt.

2 **Directions.** From E or W, Tanjung Hewal (2°46′S, 129°31′E), a low point covered with mangroves, is easily recognized. The port of Wahai is approached on the alignment (154°) of two beacons (conical topmarks) situated at the edge of the reef close N of the town. The outer part of the coastal reef gap is marked by beacons on each side of the channel.

3 **Berths.** Anchorage may be obtained in the inner portion of the bay, between the reefs, in a depth of 40 m (22 fm), mud. Smaller vessels can anchor closer to the town; the channel here is also marked by beacons.

A pier extends NE from the town and across the fringing reef; vessels 50 m in length with a draught of 3 m can berth alongside. A light (white metal structure, 6 m in height) is displayed from the pierhead.

Facilities are limited; the nearest airport is situated at Amahai which is connected to Wahai by a good road.

Teluk Hatiling

4.179

1 **General information.** Teluk Hatiling lies directly W of Tanjung Hewal (2°46′S, 129°31′E) on the E side of the broad reef shared with Teluk Wahai on the W side. Larger vessels are able to secure a better anchorage here to load forest products, logs in particular, than in Teluk Wahai.

A light (green beacon) is displayed from the edge of the reef at the W entrance to Teluk Hatiling; another light (red beacon) is displayed from a small reef situated in the middle of the bay and 6 cables from its head.

2 **Directions.** The best track to enter the bay is from N, passing through the gap in the coastal reef W of Tanjung Hewal; a 7 m (23 ft) detached shoal patch lies near this entrance, 5 cables W of the point. On passing the light marking the W entrance point to the bay (4.179), the track leads SSE towards the marked reef situated in the middle of the bay.

Anchorage may be obtained N or S of the reef in the middle of the bay; if passing to the S anchorage the preferred channel, with best water, lies W of the reef.

Anchorages

General

4.180

1 Between Tanjung Tanduru Besar (2°52′S, 128°10′E) and Teluk Seleman, anchorage may be obtained off the entrances to rivers which enter the sea between about 6 and 12 miles E of Tanjung Tanduru Besar. However, the depths are great here and any anchorage should be of a temporary nature. Better anchorage, in lesser depths of about 30 to 55 m (16 to 30 fm), sand, may be found farther E between Tanjung Makina (2°51′S, 128°46′E) and Tanjung Sapola, 13 miles E.

2 Within Teluk Seleman there are safe and sheltered anchorages, as described below (4.181), should the need arise.

East of Teluk Seleman, the best anchorages lie off the following villages positioned from Tanjung Hewal (2°46′S, 129°31′E):

Pasahari, 7½ miles ESE.
Seliha, at the head of a bay, 19 miles ESE.
Bengoi, at the head of a bight, 42 miles ESE.

However, like the other open coastal anchorages they are prone to the NW monsoonal weather conditions.

Teluk Seleman

4.181

1 Anchorage may be obtained at several locations within Teluk Seleman (4.174). In the safe roadstead at Paoni (2°52′S, 129°04′E), a village which is fronted by a coastal reef, situated on the W side of the bay, there are depths of 25 m (14 fm), coral and sand, about 3 cables off the fringing reef at the village where vessels can safely lie. Vessels should not, however, approach the coast in this vicinity less than 3 cables, on account of several detached reefs lying close off the coastal reef; see also 4.185.

The approach to the roadstead is clear of dangers from the N.

4.182

1 Anchorage may also be obtained off Seleman (2°58′S, 129°07′E), a village near the head of the bay, in a depth of about 40 m (22 fm), rocky, and 5 cables offshore. The best approach to this berth is on a bearing of 206° of a large prominent mosque in the village. This track leads SSW between a 5 m (16 ft) shoal about 2 miles N and a 9 m (30 ft) shoal about 2¼ miles NE; Lusiala, a pyramid-shaped hill, overlooks the village and is a useful mark.

4.183

1 Anchorage may be obtained in Teluk Sawai (2°57′S, 129°10′E) which lies on the W side of a peninsula extending N from the coast at the head of Teluk Seleman. The bay is sheltered, especially on its N side, by an extensive drying reef on which stand the islets of Pulau Raja (2°55′S, 129°10′E) and Pulau Sawai, close E, both thickly covered with mangroves. Depths in the bay vary between 40 and 70 m (22 and 38 fm). The village of Sawai, in which there is a prominent mosque, stands near the head of the bay. Approach should be made as for Seleman (4.182) until the N edge of Raja bears 076°, then enter the bay passing close to Tanjung Hatusupun, its S entrance point, until a convenient berth is found.

4.184

1 Anchorage may be obtained within Teluk Besi (2°56′S, 129°13′E), a bay situated on the E side of the same peninsula that is shared with Teluk Sawai. A number of drying reefs and Lusaolat, a low islet covered with coconut trees, lie at the E end fronting the bay. Small vessels may find an anchorage within a horseshoe-shaped bay at the head of Teluk Besi in depths of 25 m (14 fm), mud, off the village of Besi which may be identified by a prominent mosque. Larger vessels should keep to seaward of the bay in depths of 45 m (25 fm), mud and sand.

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2 Teluk Besi is best approached from NE by passing E of Lusaolat and maintaining a track SW between the reefs and the mainland.

Temporary anchorage may be obtained in depths of about 40 m (22 fm) in the bight S of Tanjung Pamali (2°48′S, 129°22′E), 12 miles NE, and about 5 cables offshore.

Small craft

Wai Salah
4.185

1 Wai Salah, a small river which enters the sea 1 mile N of Paoni (2°52′S, 129°04′E), gives access to boats; landing may be effected here.

Hatuolo
4.186

1 Landing may be effected at Hatuolo (2°48′S, 129°31′E), a village lying at the head of Teluk Hatiling. A sandy beach fronts the village; a river, which flows out into the bay and which is spanned by a bridge, lies 2 cables E of the village.

Wai Matakabo
4.187

1 Wai Matakabo, a river situated 1 mile W of Tanjung Matakabo (2°59′S, 130°10′E), gives access to small craft; it is the only river on this part of the coast which may be entered from the sea.

EAST COAST OF PULAU SERAM — TANJUNG LAMA TO PULAU SERAMREI

General information

Chart 3242 (see 1.34)

General description
4.188

1 This section covers the E coast of Seram between Tanjung Lama (2°58′S, 130°21′E) and Pulau Seramrei (3.55), 62 miles SSE. The E coast of Pulau Seram is generally low and distinctive with steep-to coastal banks of mud and sand. It is also indented by several bays of which Teluk Waru is the largest; the whole area is bordered by a plain through which Wai Masiwang, the largest river on the E coast, flows out to sea at Tanjung Masiwang (4.189). The plain is alternately wide and narrow, rising eventually to hilly land within which is an occasional salient peak. Other rivers flow out from the coast but they are of no importance to shipping.

2 The only port of importance on this coast is Bula (3°06′S, 130°30′E) (4.194), which exports oil cargoes, and the only off-lying dangers are the islands of Parang (3°19′S, 130°47′E) and Madorang, 26 miles SE.

For a description of the straits and islands SE of the SE extremity of Seram see 3.49.

Topography
4.189

1 Whilst the whole of the E coast is generally low, it is also covered with mangroves interspersed with coconut plantations. There are several prominent peaks near the coast but Pegunungan Waelila, a range of inland mountains, also has two prominent peaks (4.192) which can be seen from seaward.

Teluk Waru, the largest bay, is entered between Tanjung Meer (3°17′S, 130°38′E) and Tanjung Ilor, a low point with some casuarina trees, 13 miles SE. The bay is fronted by Pulau Parang (3°19′S, 130°47′E), a high and wooded island surrounded by a fringing reef with some dangerous rocks on its W side.

2 Along the coast S of Teluk Waru, foul ground lies within 2 miles of the shore between Tanjung Masiwang (3°27′S, 130°49′E) and Tanjung Danama, 8½ miles SSE. The SE extremity of Seram lies at the end of a low, marshy, peninsula intersected by creeks and fringed by a reef.

Pulau Madorang (3°39′S, 131°04′E), a low islet, on which stands a light (4.193), is covered with trees, and lies on the SW side of a steep-to drying reef 11 miles ESE of the mainland.

Marine exploitation
4.190

1 An area NE of Tanjung Lama (2°58′S, 130°21′E) has been designated an oil exploitation area. Mariners are advised to maintain a good lookout when passing through the area and may encounter oil rigs, platforms and attendant craft.

For further details on oil rigs, platforms and general information on oil exploration see *The Mariner's Handbook.*

Flow
4.191

1 In the open waters E of Seram little information is known on the circulation of currents; suffice to say that offshore currents tend to follow the directions of the monsoon drifts.

Tidal streams off the E coast of Seram set N or NW with a rising tide, or S and SW with the falling tide.

Landmarks
4.192

1 Bula (3°09′S, 130°29′E), a prominent hill.

Sarawantufa (Serawantufa), a hill, rising 6½miles W of Bula, has a conical summit and is very prominent from NE.

Hill, with a prominent water tank on it, lying 7¾miles SSE of Bula.

Peak (3°19′S, 130°36′E), 149 m (487 ft) high, is prominent.

2 SE peak of Pegunungan Waelila (3°21′S, 130°30′E) is prominent and more noticeable than the higher NW peak of this mountain.

Kelibadir (Keli Badir) (3°28′S, 130°44′E) presents a prominent steep, conical-shaped peak, rising in the midst of inconspicuous hills; however, it is itself inconspicuous from SE.

Fairly prominent peak, 516 m (1691 ft) high, standing 3 miles WSW of Tanjung Danama (3°35′S, 130°53′E).

Selagor (3°42′S, 130°48′E), a prominent mountain, standing about 9 miles SSW of Tanjung Danama; from E it resembles a cheese cover with the highest part in the middle. Peaks S of it are described at 4.145 with the S coast of Seram.

Directions
4.193

1 The main through routes lie well offshore in this area; the coastal track passes between Karang Bais (2°55′S, 130°26′E) (4.177) and the mainland, to seaward of Pulau Parang (3°19′S, 130°47′E) (4.189) and either side of Pulau Madorang (3°39′S, 131°04′E) (4.189) depending on destination.

The whole coast is clear of dangers outside of the 200 m (100 fm) depth contour.

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2 **Useful marks:**
Light displayed from Bula (3°06′S, 130°30′E) (4.197).
Pulau Akat (3°31′S, 130°52′E), whilst low, is a distinctive islet covered with coconut trees and is a useful mark when proceeding between Pulau Madorang and the mainland, bound to or from the passages situated off the SE end of Seram.
Pulau Madorang Light (white beacon), (3°39′S, 131°04′E).

Bula

General information
4.194

1 **Position.** Bula (3°06′S, 130°30′E) is a small town and port situated at the head of Teluk Bula on the NE coast of Seram.

Function. The port is primarily used for the loading and discharging of petroleum products from alongside a deep water jetty with attendant mooring buoys. It was reported (2002) that a new jetty was under construction, for the export of fuel oil and naptha, which will be able to handle vessels up to 85 000 dwt.

2 **Topography.** Teluk Bula, a narrow indentation in the coast, is entered S of Tanjung Waelola (3°05′S, 130°29′E), a low wooded point. Wai Lola Besar, a river, enters the sea close S of the point; Wai Bula Kecil flows through Bula out to sea.

Traffic. In 2003 the port was used by 1 vessel with a total of 17 998 dwt.

Port Authority. Pertamina, Jalan Dr. Siwabessy, Ambon.

Limiting conditions
4.195

1 **Tidal levels.** See *Admiralty Tide Tables.* Mean maximum range about 1·2 m, mean minimum range about 0·6 m.

Maximum size of vessel handled: 20 000 dwt, having a length of 165 m and draught of 10 m.

Arrival information
4.196

1 **Berthing** during daylight hours only; unberthing at any time.

Radio facilities. The port operates a VHF radio service.

Pilotage is not compulsory but a berthing master is available; request for assistance should be forwarded to the local agent at Bula, via Ambon, as soon as practicable.

Directions
4.197

1 The approach to the main berth (AAR), which is well fendered, is relatively straightforward as there is deep water throughout. If from E or S the track leads WSW into the bay with Sarawantufa (4.192) ahead until the jetties are identified, then as required. The larger tankers approach this berth heading E; smaller tankers usually berth at the Pertamina Jetty, a short distance E, heading W.

2 **Useful marks:**
Light (white beacon) displayed from Bula (3°06′S, 130°30′E) and a radio mast surmounted by a red light, standing close W.

Berths
4.198

1 Anchorage may be obtained in a depth of about 22 m (12 fm), soft mud, with the main jetty bearing 174° distant 2 cables.

There are two alongside berths at Bula for tankers ranging between 1000 and 20 000 dwt. The main oil jetty (AAR), of trestle and concrete construction with four attendant mooring buoys, extends a short distance NNE from the shore; it has a depth of 12 m, MLWS, alongside and can accommodate the larger vessels. The smaller jetty, of stone and concrete construction, extends a short distance N from the shore; it has a depth of 3 m, MLWS, alongside and can accommodate vessels of 65 m in length having a draught of up to 3 m.

Port services
4.199

1 **Facilities** are limited; hospital.

Supplies are limited; fresh water at the jetties.

Communications. There is an airfield with connections to Amahai and Ambon. Bula is only linked by road with other E coast villages.

Anchorages

Off Hoti
4.200

1 Sheltered anchorage during the SE monsoon may be obtained off the village of Hoti (2°59′S, 130°22′E) which lies at the head of a small bay directly E of Tanjung Lama, the NE extremity of Seram. The best berth lies NNE of the mosque in the village, in a depth of 8 m (26 ft), mud.

Teluk Ingelas
4.201

1 Anchorage may be obtained in Teluk Ingelas, a bay which is entered S of Tanjung Tufa (3°02′S, 130°26′E). The shores of the bay are low but rise close within and are bordered by a narrow steep-to bank of mud and sand. During the SE monsoon the sea is calm and during the NW monsoon the bay is more sheltered than Teluk Bula (4.194) in which there may be a high sea.

2 The best berth lies in a depth of 12 m (40 ft) off the village of Ingelas; approach should initially be made with Sarawantufa (4.192) bearing 220° until a position W of the village is reached; thence on this track to the anchorage, taking care to avoid a mud and sand spit which extends 1½cables NW from Tanjung Sisal, the S entrance point.

Off Waru
4.202

1 Anchorage may be obtained within Teluk Waru and off the town of Waru (3°24′S, 130°40′E), which lies at the head of the bay. The best berth, which is approached from N, lies at least 4 cables N of the pier, which extends a short distance N of the town, in a depth of 25 m (14 fm), mud, and approximately 2½ cables off the mudbank fronting the W shore. See also 4.204.

Off Arnanan
4.203

1 Temporary anchorage may be obtained, during both monsoons and out of the influence of the streams, in the bight off Arnanan (3°50′S, 130°49′E), a village lying near the SE extremity of Seram. Anchorage should be made in depths of about 28 to 50 m (15 to 27 fm) at a distance of not less than 5 cables offshore, as there is a steep-to fringing reef and depths of less than 3 m (10 ft) in places close to the reef.

Small craft anchorages and landing

Waru
4.204

1 There is a small pier at Waru (3°24′S, 130°40′E) which local small craft use when there is sufficient water to come

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alongside. When the pier cannot be reached because of insufficient water, boats are able to take the ground on the drying beach which consists of a mixture of sand and mud.

Airkasar

4.205

1 There is a pier at Airkasar (Air Kasar) (3°33′S, 130°51′E), a village, situated 2½ miles N of Tanjung Danama. The village is fronted by numerous off-lying reefs and local knowledge is required for the approach channels.

Anchorage in a depth of 8 m (26 ft) is available off the pier, where a landing may be effected.

Distinctive mosques are situated at Anglu, 1½ miles NW of Airkasar, and at the villages of Kilbad and Kilmui, lying on the coast from 5 cables to 1 mile SE of Airkasar.

Kilgah

4.206

1 Sheltered anchorage for small craft may be obtained inside a spur of drying coastal reef extending SW from Kilgah (3°37′S, 130°52′E), a village, 2¾ miles S of Tanjung Danama.

Landing

4.207

1 On the stretch of coast between Kilgah (3°37′S, 130°52′E) and Tanjung Kopengwatu, 9½ miles S, there is no coastal reef, but in places landing may be effected onto a sloping sandy beach in favourable conditions.

EASTERN PART OF PULAU-PULAU SULA

GENERAL INFORMATION

Chart 3241

Scope of the section

4.208

1 In this section are described the islands of Mangoli, Lifamatola and Sanana together with the harbours, passages and anchorages associated with these islands.

General description

4.209

1 Pulau Mangoli and Pulau Sanana, together with Pulau Lifamatola, comprise the E part of Pulau-pulau Sula, a large group of islands lying E of Sulawesi. Selat Capalulu, a navigable strait, separates the E part of the group from the W part; for details and a description of the W part see *Indonesia Pilot Volume II.*

2 The islands are generally wooded, part mountainous, or hilly. Only a few villages lie along the S coast of Pulau Mangoli and population is sparse, whereas on Pulau Sanana the island is well populated and there are roads linking each village. Sanana (2°03′S, 125°59′E), the main town of the area, lies on the E coast of Pulau Sanana, near its N end. Most of the trade, however, is carried out locally with other parts of the province.

Tidal streams

4.210

1 **General.** Tidal streams in Selat Capalulu and Selat Mangoli, the two main straits in the area, as shown below, are extremely strong.. Selat Lifumatola, the strait separating Pulau Mangoli and Pulau Lifumatola, is not recommended (4.224) because stream rotations within the strait are difficult to determine. There are whirlpools and eddies over the banks and shoals and, during the SE monsoon, there is a troublesome sea. Slack water period in the strait is brief.

2 Along the N and S coasts of Pulau Mangoli the streams are strong, setting E and W on both sides. Around the E extremity of Pulau Lifumatola the streams are strong but setting N or S about 1 mile off the coast; between the coast and the 200 m (100 fm) depth contour rolling surf may be in evidence. Farther offshore the streams are less strong.

Along both coasts of Pulau Sanana the streams set strongly N and S and are fairly strong.

4.211

1 **Selat Capalulu.** Tidal streams in Selat Capalulu are of mixed character but semi-diurnal streams predominate.

The maximum rates occur at springs near the solstices in June and December. The N-going stream may then attain a rate of 9½ kn and the S-going stream a rate of about 6 kn. At equinoctial springs the corresponding rates are 6 and 4 kn respectively. At neaps, throughout the year, the maximum rate in either direction will not much exceed 3 kn.

2 Slack water is sometimes of short duration; the greater the rate at the full strength of the streams the shorter its duration. The stream changes direction simultaneously in the middle of the strait and under the shores.

The irregular bottom in the middle and S parts of the strait causes heavy whirlpools and ripples when the tidal streams are strong, often seriously affecting the steering of a vessel. They do not occur in the N part of the strait.

4.212

1 **Selat Mangoli.** Tidal streams in Selat Mangoli may attain rates of 3 to 4 kn and there may be eddies near, and especially S of, the 7 m (23 ft) patch S of Tanjung Botu (1°56′S, 125°55′E). The stream sometimes sets onto the reef extending from the NE side of Pulau Sanana causing tide-rips.

General directions

4.213

1 The main S-N through routes pass S of Pulau Sanana, between this island and Pulau Buru; and E of Pulau Lifumatola, between this island and Pulau Obimayor; for directions see 4.16. With local knowledge the passage through Selat Capalulu is an alternative route between the Banda and Molucca Seas; for directions see 4.222.

PULAU MANGOLI

General information

Chart 3241 (see 1.34)

General description

4.214

1 Pulau Mangoli is 62 miles in length but comparatively narrow. It is densely wooded and mountainous with two mountain ranges separated by a conspicuous depression between them. Its highest peak, 1147 m (3761 ft) high, rises in Pegunungan Loku, its E range.

2 Pulau Lifumatola (1°49′S, 126°25′E), the small hilly E island of Pulau-pulau Sula, is separated from Pulau Mangoli by Selat Lifumatola (4.224). Although lower in elevation than its neighbour almost the entire surrounding area rises steeply from the sea. Tanjung Dahekolano (Dehekolano), its

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E extremity, consists of white limestone rocks which can be seen from some distance seaward. Strong currents off its E end and along both coasts prohibit any safe anchorage.

The timber industry dominates the island's economy.

Topography

4.215

1 The S coast of Pulau Mangoli is heavily indented at its W end by Teluk Vesuvius, a large bay fronting Selat Capalulu; within this bay lie Pulau Pasi Ipah and Pulau Kena, two small hilly reef-fringed islands. East of Tanjung Batukapitan (Batu Kapitan) (1°57′S, 125°25′E), the high, rocky, prominent SW extremity of Mangoli, the land as far as Selat Mangoli is densely wooded.

2 Pegunungan Buya, the W range of the two ranges stretching across the island, consists of peaks up to 1051 m (3446 ft) high. Pegunungan Auponhia, a smaller range, and part of Pegunungan Buya, lies close to the S coast. Between the two ranges the land forms a depression and is noticeably lower.

East of the strait the S coast is dominated by the slopes of Pegunungan Loku (4.214), the E range of the two ranges stretching across the island, and to a lesser extent by a range of hills near the E extremity of the island.

4.216

1 The N coast of Pulau Mangoli from Selat Capalulu to Pulau-pulau Tabulu (1°46′S, 125°32′E), a small group of low islands thickly covered with vegetation, is low and heavily indented. Farther E, however, any further indentations become decidedly less noticeable. The whole area is densely wooded by deep jungle. The whole of the N coast is fronted by a coastal bank extending up to 5 miles seaward in places, on which there are several islets and shoals. Although separated by a depression in the terrain, the W part of this coast is less mountainous than its E counterpart.

Former mined areas

4.217

1 Areas considered dangerous due to World War II mines are situated within Teluk Vesuvius (1°53′S, 125°22′E), on the S coast, and around Pulau-pulau Tabulu (1°46′S, 125°32′E), on the N coast; see 1.7 and Appendix I.

Natural conditions

4.218

1 **Tidal streams.** See 4.210 to 4.212.

Local weather. During a survey, a calmer sea was experienced off the N coast during the height of the SE monsoon than off the S coast during the NW monsoon. During the latter there was a troublesome sea for small vessels off the N coast.

Principal marks

4.219

1 **Landmarks:**

The only landmarks of any significance lie on the S coast of the island and can only be viewed from off this coast; the high peaks of Pegunungan Loku on the N coast are not easy to identify:

Tanjung Batukapitan (1°57′S, 125°25′E) (4.215), especially when approaching Selat Capalulu; a prominent pillar-shaped rock also lies on the narrow coastal reef close off this point.

2 Peaks of Pegunungan Auponhia (4.215), 622 and 654 m (2038 and 2143 ft) high, rising about 7 miles ENE of Tanjung Batukapitan, are both prominent.

Summit of Pegunungan Buya (1°54′S, 125°38′E) (4.215).

Major light:

Tanjung Dahekolano Light (Dehekolano) (white metal framework structure, 40 m in height) (1°49′S, 126°29′E).

Other aid to navigation

4.220

1 **Racon:**

Tanjung Dahekolano Light (1°49′S, 126°29′E).

For details see *Admiralty List of Radio Signals Volume 2.*

Directions

(continued from Indonesia Pilot Volume II)

Selat Bote to Selat Mangoli

4.221

1 From a position E of Pulau Buangbuang Light (2°04′S, 123°55′E) at the S entrance to Selat Bote (*Indonesia Pilot Volume II)*, a coastwise passage leads E thence ENE to Selat Mangoli, which is described in *Indonesia Pilot Volume II*

For the approach directions to Selat Mangoli see 4.223.

Selat Capalulu

4.222

1 Selat Capalulu, between Pulau Taliabu (*Indonesia Pilot Volume II*) and Pulau Mangoli, is forested on both shores down to the water's edge. It is a deep passage but 1 mile within the S entrance there is a navigable width of only 2 cables between dangers and the least charted depth in the fairway is 19 m (10 fm) at the S entrance. However, near its mid-point there is a bank that extends S from Tanjung Gina (1°50′S, 125°20′E), which lies close to the fairway with depths of 11 to 15 m (36 to 49 ft) over it. With local knowledge, the strait is navigable by large vessels with suitable draught although the tidal streams are strong (4.211). Low powered vessels should not use this strait.

2 **Entry from south.** The approach track leads N towards Tanjung Batugossok (Batu Gossok) (1°52′·5S, 125°20′·0E), a prominent rocky point on the Mangoli side, passing (positions from the rocky point):

About 3 cables E of Tanjung Ndoluselagi (7 cables SW), a point on the Taliabu shore, thence:

About 3 cables W of Tanjung Batugossok.

3 The track at this point places a vessel in the fairway of the narrows. The track then leads NNW towards a bluff point on the Taliabu shore, distant 2½ miles, passing parallel with that shore. When the strait opens from SW of Tanjung Gina (2½ miles N), the track leads NNE passing about 1½cables E of the bluff point and between it and Tanjung Gina, thence:

ESE of Tanjung Fatukombu (1°47′S, 125°19′E) a point on the Taliabu shore.

4 **Entry from north.** The reddish rocky Tanjung Fatukombu is easily identified; open the strait and follow in reverse the directions already given.

Selat Mangoli

4.223

1 Selat Mangoli separates the S side of Pulau Mangoli, near Tanjung Botu (1°56′S, 125°55′E), a low sandy point, from the N side of Pulau Sanana, an island lying 2 miles S. It is deep in the fairway except for a 7 m (23 ft) patch lying 8 cables SSW of Tanjung Botu.

2 If approaching the strait from W, the bearing 270°, astern, of Pulau Sambiki (1°56′S, 125°47′E), a high, steep, prominent, reef-fringed islet, passes N of a 0·5 m (2 ft) shoal, not marked by discoloration, lying 2½miles ESE of the

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islet. The track then passes about 4 cables S of Tanjung Botu thence N of the reef extending from the NE side of Sanana. See also 4.212.

This strait should not be used without local knowledge or by low-powered vessels.

Selat Lifumatola

4.224

1 Selat Lifumatola (1°49′S, 126°21′E), the strait separating the E end of Pulau Mangoli and Pulau Lifumatola, is obstructed by islets and dangers and is not recommended as a navigable passage. The tidal streams are also strong.

However, with local knowledge, and if conditions are suitable, vessels can transit the strait by keeping to the Mangoli coast and passing W of Pulau Pagama (1°50′S, 126°20′E), a low islet covered with vegetation, lying on a reef, and W and N of Pulau Nini (1°49′S, 126°21′E), an islet lying in the middle of the strait; thence E of a prominent islet with sharply defined sides close E of Tanjung Pandara, the E extremity of Pulau Mangoli.

Minor harbours

Mangoli

4.225

1 **General information.** Mangoli (1°56′S, 125°56′E), a small town with a pier, is situated on the S coast of Pulau Mangoli and near the E entrance to Selat Mangoli. It is a port of call for local trading craft. Timber products are the main export.

Communications may be made through Mangoli Coast Radio; for details see *Admiralty List of Radio Signals Volume 1(2).*

Mangoli is connected by road with Capalulu (4.230).

Berth. The pier, which has a single berth, has a depth of 6 m at MLWS, alongside. Vessels loading logs, do so from an anchorage off the port.

Falabisahaya

4.226

1 **General information.** Falabisahaya (1°48′S, 125°28′E), a town and small port, lies on the N coast of Mangoli and on the W side of a bay entered directly E of Tanjung Falabisahaya, 1½ miles NE of the town. There is a timber processing plant at Falabisahaya and timber products are the main export.

Vessels also anchor off the port to load logs. In 1999 the port was used by 7 vessels with a total of 30 264 dwt.

2 **Anchorage.** Anchorage may be obtained in the bay between the town and Tanjung Falabisahaya, in depths of 20 m (11 fm), mud. Off the E side of the bay and in the vicinity of Pulau-pulau Tabulu, lying off its E entrance, this area should be avoided; see 4.217.

Communications. An airfield lies near the town with connections to Ambon.

Anchorages

Within Selat Capalulu

4.227

1 Within Selat Capalulu, anchorage may be obtained at the S end of the strait, for vessels awaiting a favourable opportunity to pass through it out of the tidal stream, NW of Tanjung Sakomata (1°53′S, 125°21′E) in a depth of 17 m (56 ft) and about 3 cables off the fringing coastal reef.

2 At the N end of the strait and on its E side, anchorage may be obtained in Teluk Dofa (1°48′S, 125°22′E), a bay, in depths of 40 m (22 fm). The shores of the bay are covered with mangroves; local vessels also use an anchorage off the village of Dofa, situated on the N side of the bay at its W entrance point, in depths of 4 m (13 ft) to load timber products.

3 On the W side of the N entrance to the strait, anchorage may be obtained in sheltered conditions during both monsoons in Teluk Jikosamuya (Jiko Samuya) (1°47′S, 125°17′E), a small bay, in a depth of 23 m (13 fm) approximately 1¼ miles inside its entrance.

Off the south coast

4.228

1 Anchorage may be obtained anywhere between Tanjung Batukapitan (1°57′S, 125°25′E) and Pulau Sambiki (4.223), 21½miles E, during the NW monsoon, except off the steep rocky points. During the SE monsoon it is inadvisable. With local knowledge, a vessel may proceed with safety through the channel between Pulau Sambiki and Tanjung Kedafoda, 5 cables N; however, a depth of 6 m (20 ft) is known to exist about 1 mile W of the W side of the islet. Approaching from W, Tanjung Kedafoda appears as an island. Depths are generally deep throughout this stretch of coast but come within the range 40 to 50 m (22 to 27 fm) towards Pulau Sambiki.

2 Anchorage may also be obtained in two small bays W of Tanjung Kedafoda in depths of between 35 and 40 m (16 and 22 fm).

Between Pulau Sambiki and Selat Mangoli the coast recedes to form a large bay at the head of which anchorage may be obtained close to the shore in depths of from 40 to 60 m (22 to 33 fm), sand. Vessels using this bay should be advised that a shoal patch with a depth of less than 4 m (13 ft) lies 2 miles ENE of Pulau Sambiki. With the 0·5 m (2 ft) shoal patch (4.223) lying in the approaches to Selat Mangoli, these are the only dangers entering this bay.

3 Between Selat Mangoli and Selat Lifumatola, 25 miles E, anchoring may be obtained anywhere close to the coast in depths of between 20 and 40 m (11 to 22 fm), sand.

Off the north coast

4.229

1 Anchorage may be obtained by vessels of shallow draught at the head of a bay between Pulau Liku (1°46′S, 125°25′E), a low wooded islet 4 miles E of the N entrance to Selat Capalulu, and Tanjung Fatupira, 2 miles ESE, on the mainland. The best berth lies in a depth of 7 m (23 ft) and SE of two islets covered with vegetation. Local knowledge is needed but there is sufficient room to swing. The village of Liku lies 7 cables within the bay on its W side.

2 Anchorage may be obtained during the SE monsoon and the transition periods, anywhere between Pulau-pulau Tabulu and Tanjung Lampau (1°48′S, 125°47′E), a low point, 15 miles E, in depths of from 10 to 20 m (33 ft to 11 fm), mud and sand. The coast is rocky and the headlands steep on this stretch of coast and there are some offshore dangers which need to be taken into account should an anchorage be chosen here. Pulau Koro, a reef-fringed, wooded islet, lies midway between the two points, and a reef and shoal in close proximity, lie 2½miles WSW of Pulau Koro. Several low, thickly covered, islets lie close to the coast; Pulau Menceri lies 9½ miles W of Tanjung Lampau, Pulau Pui, 2 miles W, and Pulau Dodoku, 8 cables E of the point.

3 Between Tanjung Lampau and Tanjung Pandara (1°49′S, 126°21′E), the low, E extremity of Pulau Mangoli, anchorage may be obtained anywhere along this coast but should be to seaward of the 20 m (11 fm) depth contour, as any dangers lie inside this depth.

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Small craft

Off the south coast

4.230

1 Capalulu (1°55′S, 125°53′E), a village with a pier, situated in the bay near the W approaches to Selat Mangoli, and Ulfola, another village at which there is a pier, 1½miles SE, regularly receive local trading craft. There are coconut palm plantations nearby.

Anchorage for small craft may be obtained off these villages, and landings may also be effected.

PULAU SANANA

General information

Chart 3241 (see 1.34)

General description

4.231

1 Pulau Sanana, the most S island of Pulau-pulau Sula, extends about 31 miles S from a position abreast the middle of Pulau Mangoli and separated from it by Selat Mangoli (1°57′S, 125°55′E).

From E and W the island appears as a single mountain range with a number of conspicuous peaks; the highest peak rising towards the S end. In general the coasts are low with sandy beaches with coconut palms, interrupted in places by rocky formations. The whole island is fronted by a narrow coastal bank with few places to secure an anchorage.

The only port of importance is Sanana (2°03′S, 125°59′E) which lies on the E coast and towards its N end.

Topography

4.232

1 The E coast of Pulau Sanana between Tanjung Sakita (1°58′S, 125°56′E) and Teluk Sanana, 6 miles SSE, consists of a low marshy coast, covered with mangroves, fronted by a coastal reef. South of Teluk Sanana, the coast as far as Tanjung Waka (2°28′S, 126°03′E), the S extremity of the island, is fronted by a narrow bank. Inland the coast is backed by the rising hills of the island's central chain. There are numerous villages along this coast.

2 The W coast of Sanana has a similar fronting bank but between Selat Mangoli and Tanjung Patahoy (2°13′S, 125°53′E), 14½ miles S, the bank extends farther offshore although there is a chain of offshore shoals on it. Inland the coast is backed by a narrow plain, on which there are coconut plantations, before rising to the central hills.

The N coast of the island is muddy, bordered with mangroves and fringed by a reef. Except for the N coast and part of the N end of the W coast, vessels can navigate close to the island.

Tidal streams

4.233

1 Tidal streams around the island are fairly strong; see also 4.210.

Principal marks

4.234

1 **Landmarks:**

Summit of Pulau Sanana (2°24′S, 126°01′E), 678 m (2222 ft) high, rises about 5 miles from the S extremity of the island and is prominent.

Peak (2°07′S, 125°56′E).

Two peaks, 533 and 391 m (1746 and 1281 ft), respectively, rise 3 miles S of Tanjung Sakita (1°58′S, 125°56′E) near the N end of the island.

Major light:

Tanjung Waka Light (white tower) (2°28′S, 126°03′E).

Directions

4.235

1 Directions for Selat Mangoli are given at 4.223. There is little traffic movement along either side of Pulau Sanana other than local craft using Sanana (2°03′S, 125°59′E) on the E coast. Through route traffic usually passes well S of Tanjung Waka (2°28′S, 126°03′E).

Minor harbours

Sanana Oil Terminal

4.236

1 **General information.** Sanana Oil Terminal (1°59′S, 125°57′E) lies at the head of a narrow bay situated 1 mile SE of Tanjung Sakita, on the NE coast of Pulau Sanana. The terminal is approached from NE, thence through a channel in the coastal reef, which is marked by beacons (port and starboard hand). A light is displayed from the terminal. Entry and departure can only be made during daylight hours. Pilotage is unavailable. Arrival messages should be directed through Ambon Coast Radio; for details see *Admiralty List of Radio Signals Volume 1(2)*. The terminal is reported to have a port radio service.

2 **Berth.** An L-shaped jetty, with dolphins, extends a short distance from the head of the bay. There are depths of 6 m alongside at MLWS. This single berth can accommodate small product tankers of 1200 dwt, having a length of 70 m, or 2500 dwt having a length of 100 m.

3 **Facilities** are limited but small quantities of provisions and fresh water can be obtained. There is an airport at Sanana.

Sanana

4.237

1 **General information.** Sanana (2°03′S, 125°59′E), a small anchorage port and the main town for the island, lies at the head of Teluk Sanana, an open bay, on its E coast. The port handles the loading and discharging of forest products. It is reported that a quay 57 m in length with a depth of 5 m at LW exists near the town; a light (white metal framework structure, 6 m in height) is displayed from the quay.

The bay, which is entered between Tanjung Kabau, its N entrance point, and Tanjung Bega, about 5 cables SSW, is heavily reef-fringed at both entrances allowing a navigable passage of only 2 cables in which to enter. Without local knowledge, entry and departure should only be made during daylight hours.

2 **Local weather.** See climatic table at 1.159 and 1.164

Directions. Strong tidal streams set across the entrance so a vessel should enter with plenty of way, keeping a shore beacon (conical topmark) standing at the head of the bay on a bearing of 285°. This track into the harbour passes between a light-beacon (port hand) on the S side and a light-beacon (starboard hand) on the N side, at the entrance, and is the preferred channel.

3 **Anchorage** may be obtained when about 2 cables off the shore beacon in a depth of 15 m (49 ft), mud and sand.

On arrival, if there is insufficient room in Teluk Sanana, anchorage may be obtained in a small bay 1 mile S of Tanjung Bega in a depth of 60 m (33 fm) and about 1½cables off the coastal reef; or about 6 cables farther S in depths of about 35 m (19 fm). Both these anchorages however are unsuitable during the SE monsoon.

Facilities are limited but fresh water and provisions can be obtained in small quantities at the anchorage. An airport

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lies close W of the town with connections to Ambon and Ternate.

4 **Small craft.** A pier, with depths of less than 1 m alongside, extends a short distance S from the shore about 2½cables N of Sanana at the N end of the bay.

Anchorages

4.238

1 Excepting Sanana on the E coast, previously mentioned, the only other anchorages around Sanana lie off the W coast; however, local knowledge is necessary to use them.

Temporary anchorage may be obtained SW of the opening in the drying reef, about 3 cables outside it, in a depth of 11 m (36 ft) with the flagstaff in Molbufa (2°01′S, 125°53′E) (4.240), a village, bearing about 111° and the point abreast Fokalik, another village 3 miles SSW, bearing 194°.

2 Anchorage may be obtained within 5 cables N of a lagoon entrance off the village of Kabau (2°11′S, 125°53′E) in a depth of 13 m (43 ft), taking care to avoid a chain of reefs, which are not marked by discoloration, extending 6 miles NNW from Tanjung Patahoy (2°13′S, 125°53′E) (4.232).

Small craft

Pohea

4.239

1 At Pohea (2°00′S, 125°58′E), a village on the NE coast of Sanana, an inlet, with a narrow channel between the coastal reef, gives access to a jetty for small craft. A 3 m (10 ft) patch lies in the middle of the entrance channel, otherwise depths are deep within the inlet. A prominent mosque on posts stands near the village at the head of the inlet.

Molbufa

4.240

1 An opening in the coastal reef on the W coast of Sanana gives access for small craft to Molbufa (2°01′S, 125°53′E), a village. Landing can be effected at a pier at the village which lies at the head of the opening.

PULAU-PULAU OBI AND PULAU BATANME

GENERAL INFORMATION

Charts 942A, 942B

Scope of the section

4.241

1 In this section are described the islands forming Pulau-pulau Obi, the islands and dangers situated between Pulau-pulau Obi and Pulau Batanme, all lying on the N side of Ceram Sea.

The description also includes the passages, excepting the through routes, the harbours and the anchorages associated with these islands.

General description

4.242

1 Pulau-pulau Obi (1°30′S, 127°40′E), a small group of islands, lie on the N side of Ceram Sea about 55 miles ENE of Pulau Lifumatola, the E island of Pulau-pulau Sula. Pulau-pulau Obi comprises Pulau Obimayor (Obi Mayor) and seven smaller islands. Between the Obi group of islands and Pulau Batanme, 93 miles ESE, there are a number of smaller groups of islands and several detached shoals, the most N of these being Takat Sapa (1°08′S, 129°03′E) (4.267). Most of the islands are high except those within Pulau-pulau Boo, situated 75 miles ENE of Pulau Obimayor, which are low and of atoll formation.

2 Pulau Batanme (4.278), only 34 miles off Irian Jaya at its closest point and part of the province of Irian Jaya, stands at the W end of an extensive coastal bank extending SW from the latter's NW coast. The island is low in its N part and high in the S. The islands lying off its N coast are low whilst those off the E and SE coasts are high.

Natural conditions

4.243

1 **Flow.** See 4.20. Strong tidal streams set between the islands situated between Pulau Obimayor and Pulau Batanme, in particular around Pulau Kofiau (1°12′S, 129°50′E). Off the N and S coasts of Batanme the streams set E and W at a maximum rate of 2 kn; in the narrow channels between the islets off the NW extremity the streams are sometimes stronger and may be irregular. In the open waters of Ceram Sea, seasonal monsoonal wind drift prevails following the direction of the winds.

2 **Local weather.** From June to September the E and S coasts of Pulau Obimayor are inaccessible due to heavy seas; similar conditions prevail on the W coast of the island during December to February. Sea communication is thus confined to Laiwui (1°20′S, 127°38′E) (4.250) on the N coast.

General directions

4.244

1 The through route track lying to the S of Pulau-pulau Obi is described at 4.27; Selat Obi to the N is described at 4.32.

The through routes leading from W or E of Pulau Buru to the approaches to Halmahera Sea are decribed at 4.22 or 4.23 respectively. Continuation of these routes within Halmahera Sea are given at 4.267.

Both Pulau Obimayor and Pulau Batanme are only visited by local inter-island vessels.

PULAU OBIMAYOR AND OFF-LYING ISLANDS

General information

Charts 3241, 3242, 2788 (see 1.34)

Topography

4.245

1 Pulau Obimayor (Obi Mayor) rises to its highest point 1611 m (5283 ft) high, about 16 miles ESE of Tanjung Leleobasso (Leleo Basso) (1°25′S, 127°26′E), its NW point. There are several prominent peaks. Along the N coast, which is heavily indented, it is fronted by a coastal bank which joins the S coast of Pulau Bisa, the largest of the off-lying islands, 2½ miles N. Contained on this bank are numerous shoals and dangers; Karang Kurier (1°13′S, 127°49′E) (4.32) lies 7½ miles E of the E side of Pulau Bisa and is the outermost danger off this N coast.

2 The N coast of Pulau Obimayor is backed by hilly ground eventually rising to higher ground towards the centre of the island; it is sparsely covered with vegetation. Pulau Bisa is wooded to the water's edge with coconut plantations; a hilly ridge lies near its NW end. Pulau Tapat, a hilly island

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with prominent peaks, lies 2½ miles W of Pulau Bisa. The S coast is fronted by a narrow coastal bank and at each end of the island there is flat ground. Pulau Gomumu, which lies 5½ miles S of the S coast, is hilly throughout; Pasir Raja (4.248), a shoal, lies 4 miles NW of Gomumu.

3 Off the SE coast lies Pulau Tobalai, densely forested to the coast, with a flat tableland which slopes gradually on its SW side; it is rocky in places. Depths are deep up to the coast on all sides. On the NW side of Pulau Obimayor lies Pulau Obilatu (Obi Latu), a hilly island, heavily indented on its N side.

Natural conditions

4.246

1 **Tidal streams.** Not a great deal is known about the tidal streams that set around Pulau Obimayor other than to say that strong streams have never been reported through the various navigable channels. Within the bays on the N coast there are no reports of tidal streams having been observed.

Local weather. On the N coasts of Pulau Obilatu and Obimayor strong squalls descend from the mountains into the inlets, but farther out it is calmer. Seas can sometimes be rough. The passage S of Pulau Obimayor is usually calm.

Principal marks

4.247

1 **Landmarks:**

Summit of Pulau Obilatu (1°25′S, 127°20′E) which rises near its E extremity; it resembles a sharp cone from SW and is easily identifed.

Peak (1°29′S, 127°36′E), 1290 m (4230 ft) high, rising detached from the main range at the W end of Pulau Obimayor, it has a perfect conical shape and is visible at some distance N.

Pulau Santare (1°17′S, 127°42′E), a forested islet lying close off the SE extremity of Pulau Bisa, is prominent and can be seen from a good distance.

2 Bukit Tumpul (1°34′S, 127°59′E), a prominent hill formed by the steep slope, 818 m (2681 ft) high, of the higher peak SW of it, standing 3 miles S of the village of Sesepe (Cesepe) on the NE coast of Pulau Obimayor. The slope is visible for some distance seaward particularly from N and S.

East face of the summit of Pulau Tobalai (1°38′S, 128°20′E) is prominent from N and S.

3 **Major light:**

Tanjung Woka Light (white beacon, 17 m in height) (1°28′S, 127°54′E); the light is displayed from a position on high ground about 1 mile from the coast.

Directions

General

4.248

1 The passages between these islands are deep in the fairway and clear of dangers except between Pulau Gomumu and the S side of Pulau Obimayor and between Pulau Bisa and the N side of Pulau Obimayor.

On the S side between Pulau Gomumu and the mainland, Pasir Raja (1°47′S, 127°32′E), a shoal patch over which there is a least depth of 8 m (26 ft), situated on a detached bank with greater depths surrounding it, and which is not marked by discoloration, may be passed on either side when proceeding E or W through the passage.

2 On the N side of Pulau Obimayor and between it and Pulau Bisa, the safest passage, 1 mile wide, lies near the Bisa coast where there is clear water. To the S of this passage there are numerous detached shoals with depths of less than 10 m (30 ft) over them. Unless bound for Laiwui (1°20′S, 127°38′E) and having the benefit of local knowledge, the N coast of Obimayor should be avoided.

3 Off the W side of Pulau Obimayor, the strait separating that island from Pulau Obilatu, 1½ miles W, is deep and clear of dangers. The track leads SW-NE, and the shores on either side are high and well defined. Pulau Kadera (1°24′S, 127°31′E) an islet covered with vegetation, and Pulau Kerka (1°26′S, 127°28′E), a similar islet, lying close to the mainland, are prominent marks at some distance when approaching the strait from N. If entering the strait from S, Pulau Pasituri (Pasi Turi) (1°32′S, 127°21′E), an islet fringed by a reef, may be passed on either side.

Selat Tobalai

4.249

1 Selat Tobalai, deep and clear of dangers, separates the E end of Pulau Obimayor from the uninhabited island of Tobalai (1°38′S, 128°20′E) (4.245), 8 miles E. Both islands have coastal banks, consisting of sand and coral, that extend to within 2 miles of each other at the centre.

Laiwui

4.250

1 **General information.** Laiwui (1°20′S, 127°38′E) occasionally known as Labuhan, a village, small harbour and anchorage, is situated on the N coast of Pulau Obimayor and is the only harbour of importance on the island. It is regularly visited by local inter-island vessels; the main trade is copra and forest products. There is a pier at the village with a working length of 23 m and reported depths of 4 m, at MLWS, alongside; charted depths are considerably less.

2 There are no tidal streams in the roadstead fronting the village. The approaches to the village are obstructed by a number of detached reefs; arrival should be preferably made during daylight hours.

4.251

1 **Directions.** From W or E, the approach track passes close to the S shore of Pulau Bisa; when the buildings at Laiwui, consisting of some large sheds and zinc roofs, bear 180° the track then leads S on that bearing to the roadstead.

From E, the SE point of Pulau Bisa should be passed at a distance of 3½ cables or less.

Useful marks:

2 Laiwui Light (white tripod, 6 m in height) is displayed from the village.

From E, the alignment (276°) of the SE point of Bisa with Tanjung Bobanehuda (Bobane Huda) (1°17′S, 127°29′E), its SW extremity, presents a useful mark on the E approach.

Pulau Sambiki (1°20′S, 127°42′E), a small sandy islet covered with coconut palms, situated E of the village, is a useful mark when approaching the roadstead.

4.252

1 **Anchorage** may be obtained in the roadstead off Laiwui, in a depth of 20 m (11 fm), on the alignment (091°) of the first headland E of the village with Pulau Sambiki, and at least 3 cables off the shore.

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Anchorages

Off Pulau Obilatu

4.253

1 Anchorage may be obtained in the inlets on the N side of Pulau Obilatu (4.245) in depths of about 61 m (33 fm), sand and coral; the rocky peninsulas between them are bare and reddish in colour, as is Pulau Tusa (1°23′S, 127°23′E), an islet about 5 cables E of the E peninsula.

Vessels considering the E-most inlet should approach the entrance from N, passing between Pulau Tusa and the mainland; entry from E, passing S of Pulau Tusa, is restricted by a dangerous rock lying in the middle of the channel.

Off Pulau Belangbelang

4.254

1 Anchorage may be obtained in a depth of 53 m (29 fm) with the NE point of Pulau Belangbelang (1°19′S, 127°24′E), a low island, bearing 340° distant 2¾ cables. The N coast of Belangbelang is sandy and steep; its S coast and Pulau Telor, an islet close off its SW side, are muddy and covered with mangroves.

Off the W coast there are detached shoals with depths of less than 3 m (10 ft) over them. However, the channel between Pulau Telor and Pulau Obilatu, 2 miles S, is deep and clear of dangers, though the best water lies closer to Obilatu.

Caution. See 4.246.

Pulau Woka

4.255

1 Sheltered anchorage may be obtained close off the NE coast of Pulau Obimayor, at all times, in a bay SE of Pulau Woka (1°26′S, 127°51′E), an islet light in colour contrasting well with the land behind it. There are coconut plantations and dwellings on the N and S sides of the islet. Depths are about 24 m (13 m), sand and coral; the best anchorage lies in the middle of the channel between the islet and the mainland.

2 Vessels may approach the anchorage from between N and NE. From N, the track passes E of Pulau Getatimur (Geta Timur), an islet sparsely covered with shrubs and sand patches with casuarina trees, standing at the SE end of an elongated reef, 2 miles N of Pulau Woka; thence rounding the NE end of this island. From NE, vessels round the steep and rocky headland of Tanjung Woka, close E of Pulau Woka, before entering the channel, which is about 5 cables wide leading to the anchorage which opens up to about 7 cables.

3 With local knowledge, suitable vessels may depart passing S of the islet, maintaining a distance of 3 cables off its NW side to the open sea; however, the gap between the S end of the islet and the mainland is much narrower than at its N end.

Within the barrier reef on the north-east coast of Obimayor

4.256

1 Within the barrier reef on the NE coast of Pulau Obimayor which lies between Tanjung Salamburung (Salam Burung) (1°27′S, 127°56′E), a rocky point, and Tanjung Parigi, 12 miles farther S, anchorage may be obtained anywhere along this stretch of coast. The best berths lie:

E of Pulau Kelo, an islet 3 miles SE of Tanjung Salamburung, in depths of 48 m (26 fm). The approach to the anchorage should be made from SE, having crossed the 200 m (100 fm) depth contour from E with the S extremity of the island bearing 270° over a least depth of 11 m (36 ft).

2 NE of Sesepe (1°31′S, 127°59′E) (4.247), in depths of 35 m (19 fm). The anchorage is approached using the same W track as above, thence SE along the E shore of Pulau Songara lying N of the village.

NW of Pulau Marosa, an islet 5½ miles ESE of Sesepe, in a depth of 20 m (11 fm). The anchorage is approached N of the island in depths of 11 m (36 ft); S of the island is foul ground.

Local knowledge is necessary to use any of these anchorages.

South coast of Pulau Obimayor

4.257

1 Anchorage may be obtained during the NW monsoon, and out of the tidal streams, off Wailower (Wai Lower) (1°44′S, 127°36′E), a village on the S coast of the island. Depths are about 39 m (21 fm), sand and coral. Wai Lower, a river, flows out to the sea close NE of the village.

Pulau Gomumu

4.258

1 Anchorage for small vessels may be obtained in an inlet between the coastal reef on the S coast of Pulau Gomumu, but local knowledge is necessary. The narrow outer entrance leads across a bar over which there is a least depth of 7 m (23 ft). Within the entrance there is a basin with depths of 18 to 29 m (59 ft to 16 fm). Farther in, a narrow channel, with a least known depth of 7 m (23 ft) between the reefs on each side, leads to an inner basin with depths of 9 to 18 m (30 to 59 ft). All the reefs are readily distinguished.

West coast of Pulau Obimayor

4.259

1 Anchorage may be obtained N of Tanjung Akelamo (Ake Lamo) (1°40′S, 127°24′E), a round low point covered with mangroves, during the SE monsoon. Depths vary between 20 and 30 m (11 and 16 fm), sand and coral; closer inshore there are depths of 10 m (33 ft), mud. There are no offshore dangers or shoals in this vicinity.

Anchorage in Teluk Jikosaligi (Jiko Saligi), directly S of the point, is not recommended.

Small craft

Passage east of Pulau Malamala

4.260

1 A deep passage lies between Pulau Malamala (1°30′S, 127°23′E), a hilly and wooded island, and the W coast of Pulau Obimayor. There are several villages situated on either side of the passage.

The ruins of a fort lie 2 miles S of the S entrance to the passage.

Pasirputih

4.261

1 Pasirputih (Pasir Putih) (1°50′S, 127°38′E), a village lying on the NE coast of Pulau Gomumu, is frequently visited by small craft, having the benefit of local knowledge. Pulau Paniki, an islet close E of the village, is separated from the mainland by a deep, but narrow, channel. Because of strong tidal streams off this coast, this channel should only be attempted when the fringing reefs are clearly visible. There are shoals, with depths of less than 1 m (3 ft) over them, lying NE and E of the village.

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ISLANDS BETWEEN PULAU OBIMAYOR AND PULAU BATANME — THROUGH ROUTE APPROACHES TO HALMAHERA SEA

General information

Charts 2788, 3248, 3744 (see 1.34)

General description

4.262

1 Several small groups of islands lie between Pulau Obimayor and Pulau Batanme, 94 miles E. Amongst the more important of these islands are Pulau Laliola (1°31′S, 128°45′E) and Pulau Boo Besar (1°10′S, 129°18′E) as both these islands carry good lights; the former island light is a principal mark for Selat Obi, and the S approaches to Halmahera Sea from SW; the latter a principal mark for entering Halmahera Sea.

2 A number of shoals and reported shoals lie in the area; Takat Sapa (1°08′S, 129°03′E) (4.267) is the most N of these.

Pulau Tobalai is described at 4.245; the islands off the S extremity of Halmahera are described at 5.113.

Topography

4.263

1 Most of the islands are steep-to from the sea, high and wooded. Pulau-pulau Boo (1°11′S, 129°22′E), consisting of three islands and several islets, are generally low, or flat, and covered with mangroves along their coasts; they are all uninhabited. Pulau Boo Besar, the W and largest of the islands is in effect two islands barely divided by a narrow passage; the islands are high and flat with the N coasts rocky, interspersed with sandy beaches, and the S coasts covered with mangroves. Pulau Boo Kecil, 5 miles E, and adjacent islets, are low and of atoll formation, the edges of the coral being covered with vegetation. Dona Carmalita (4.264), a shoal, lies 6 miles S of Pulau Boo Kecil.

2 Pulau Kofiau (1°10′S, 129°50′E), the largest island, has two prominent hills on its N side; elsewhere the island is low. The island is thickly covered with vegetation, as are the islets lying off its N and SW coasts. At Tanjung Soos, the E extremity of the island, there are mangrove swamps lying close behind the beaches.

Pulau Eftorobi (Ef Torobi), a low island edged by mangroves, lies close W of Pulau Kofiau; several small islands lie S of Pulau Eftorobi.

Flow

4.264

1 **Currents.** In the open waters of the area, monsoon drifts prevail. Currents at the N end of Halmahera Sea are generated to an extent from the South Equatorial Current in the Pacific, which flows SW or WSW down towards Banda Sea particularly during the SE monsoon. During the NW monsoon, the current sets E, off Halmahera, and S and ESE from Halmahera Sea into Ceram Sea attaining a rate of ½kn and occasionally 2 kn.

2 **Tidal streams.** Around the islands in general the tidal streams are strong; around the N-most islands of Pulau-pulau Boo and Pulau Kofiau the streams attain a rate of 2½ to 3 kn. Over Dona Carmalita (1°18′S, 129°27′E), a shoal lying 6 miles S of Pulau Boo Kecil with a least depth of 6 m (19 ft) over it, the streams set N and S at a rate of about 2 kn, causing breakers on the shoal when opposed to the wind.

Principal marks

4.265

1 **Landmarks:**

Pulau Kekek (Kekik) (1°30′S, 128°38′E), high, and shaped like a truncated cone, lying 17 miles NE of Pulau Tobalai, is prominent in the approaches to Selat Obi. Pulau Tema, a high and rocky islet covered with shrubs, lies 2 miles NE of Pulau Kekek and is also prominent.

Pulau Lawin (1°31′S, 128°44′E), high and prominent, consisting of a round hill with a notched appearance; the middle island of three islands with Pulau Watinger close W and Pulau Laliola, with high trees, 1 mile E.

2 Pulau Pisang (1°23′S, 128°55′E), very steep and prominent, with two peaks. Pulau Batuanyur Kecil (Batu Anyur Kecil), two rocks, lie 3 cables off the NW side of Pisang; Pulau Batuanyur Besar (Batu Anyur Besar), a large rock, lies 4 cables off the SE side of Pisang.

Mata (1°10′S, 129°50′E), the highest peak, on Pulau Kofiau, which is dome-shaped when seen from N or S and conical from E. The peak is prominent in the approaches to Selat Sagewin (7.54), or entering Halmahera Sea from ports on Pulau Batanme.

3 **Major lights:**

Pulau Laliola Light (white metal framework structure, 30 m in height) (1°31′S, 128°45′E).

Pulau Boo Besar Light (concrete tower, 30 m in height) (1°10′S, 129°18′E).

Tanjung Soos (Soo) Light (1°10′S, 129°58′E).

Other aid to navigation

4.266

1 **Racon:**

Tanjung Soos Light (1°10′S, 129°58′E).

For further details, see *Admiralty List of Radio Signals Volume 2.*

Directions

(continued from 4.23)

Through route approaches to Halmahera Sea from south-west

4.267

1 From a position SSE of Pulau Laliola (1°31′S, 128°45′E) the track towards Halmahera Sea leads NE for a distance of about 37 miles, passing:

SE of Pulau Laliola, thence:

SE of Pulau Batuanyur Besar (4.265), close SE of Pulau Pisang (1°23′S, 128°55′E) (4.265), thence:

W of the W extremity of Pulau Boo Besar (1°10′S, 129°18′E) (4.263) from where a light (4.265) is displayed, and between it and Takat Sapa, a shoal area on a coral bank, over which there is a least depth of 9 m (30 ft) and marked by discoloration, 15 miles WNW.

2 **Caution.** In 1961 a 13 m (42 ft) shoal was reported to exist 4 miles WNW of the W extremity of Pulau Boo Besar.

(Directions continue to Selat Jailolo at 5.28)

Alternative route to Halmahera Sea from south-west

4.268

1 From the position SSE of Pulau Laliola, a route leads directly NNE to the position W of the W extremity of Pulau Boo Besar, but lies outside of the range of Pulau Boo Besar Light, passing:

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WNW of Pulau Pisang (1°23′S, 128°55′E) (4.265) off which lies Pulau Batuanyur Kecil (Batu Anyur Kecil) (4.265), thence:
WNW of Takat Sapa (1°08′S, 129°03′E), previously described, thence:
W of the W extremity of Pulau Boo Besar.
(Directions continue to Selat Jailolo at 5.28)

Continuation of the through route from south-west to the approaches to Selat Sagewin

4.269

1 For vessels bound for Selat Sagewin (7.54) from SW, passing S of Pulau Kofiau (4.263), the track continues ENE from the position SSE of Pulau Laliola (1°31′S, 128°45′E), from where a light (4.265) is displayed, for a distance of about 115 miles. The track passes SSE of Dona Carmelita (1°18′S, 129°27′E) (4.264) and Pulau Kofiau until a position SSE of Tanjung Soos Light (4.265), displayed from the E extremity of the island, is reached, thence NE to the approaches to the strait.

(Directions continue for Selat Sagewin at 7.62)

Through route approaches from south-east

(continued from 4.28)

4.270

1 From a position 10 miles W of Tanjung Fetdom (Fet Dom) (1°53′S, 129°43′E), the W extremity of Pulau Batanme, the track leads NNW for a distance of about 48 miles to a position W of the W extremity of Pulau Boo Besar (1°10′S, 129°18′E), passing:
WSW of a group of islands lying up to 9 miles NW of Tanjung Fetdom. A light (4.282) is displayed from Pulau Nampale (1°47′S, 129°37′), the NW island of this group, thence:
WSW of Dona Carmalita (1°18′S, 129°27′E) (4.264), a shoal, thence:
WSW of Pulau Boo Besar on which stands a light (4.265).
(Directions continue to Selat Jailolo at 5.28)

Other channels

4.271

1 Several navigable channels exist through the islands of Pulau-pulau Boo but local knowledge is essential. Vessels should not approach the S side of the islands within a distance of 3 miles. Within these islands, the water is usually very clear to the bottom in depths of 16 m (53 ft) during the monsoon transitional periods.

Anchorages

Off Pulau Pisang

4.272

1 Good anchorage may be obtained off the N and SE sides of Pulau Pisang (1°23′S, 128°55′E) (4.265) but local knowledge would be advisable. There are depths of 60 m (33 fm) on the N coast where there is a slight indentation; the N rock of Pulau Batuanyur Kecil (4.265), lying off the NW coast, bearing 270°, makes a useful mark when anchoring off the indentation at a distance of about 2 cables.

2 On the SE coast there are depths of 30 to 50 m (16 to 27 fm) about 2 cables offshore; farther N off the E coast, there are less depths of between 20 and 45 m (11 and 25 fm) about 2 cables offshore. In both anchorages, Pulau Batuanyur Besar (4.265), lying off the SE coast, makes a useful mark.

The passage between Pulau Batuanyur Besar and Pulau Pisang is not advisable due to strong tidal streams that tend to set through it.

Off Pulau Kofiau

4.273

1 Good anchorage may be obtained in depths of 15 to 26 m (49 ft to 14 fm) during the NW monsoon, in the N end of the channel between Pulau Kofiau (4.263) and Pulau Eftorobi (4.263), close W. The anchorage is approached from N by passing between Pulau Jailolo (1°10′S, 129°46′E), an islet, and the E end of Pulau Eftorobi.

4.274

1 With local knowledge, excellent anchorage for small vessels may also be obtained in depths of 11 to 18 m (36 to 59 ft) in the channel between the N side of Pulau Kofiau and Pulau Deer (1°09′S, 129°51′E), an islet. The channel is 1½cables wide S of the village of Deer situated on the S side of the islet. The W entrance is narrowed by the coastal reef. A vessel lies quietly here in all conditions of weather.

4.275

1 Good anchorage may be obtained among the islets off the S coast of Pulau Kofiau; the best berth lies towards the W end and is approached by a deep channel between Pulau Tabek (1°17′S, 129°43′E) and a group of islets 1¼ miles W. Depths of 20 to 27 m (11 to 15 fm), sand and coral, exist N and S of Pulau Efkalabas, an islet, 2¼ miles NNW of Tabek.

4.276

1 Anchorage may be obtained in Teluk Wambong Besar (1°13′S, 129°55′E) situated at the E end of the S coast of Pulau Kofiau. Although narrow, and fringed by mangroves on its NW shore and a reef with mangroves behind on the SE shore, the bay is deep and affords shelter for small vessels in mid-stream, in all weathers except SW winds. There are depths of 27 m (15 fm), sand, near the head of the bay.

Small craft

Pulau Boo Kecil

4.277

1 A basin situated on the W coast of Pulau Boo Kecil (1°11′S, 129°28′E) (4.263) is visited by local craft; the E part of this basin is deep and clear of dangers. Approach to the basin is made from N or NE of Pulau Taudore, an islet lying 7 cables N of Pulau Boo Kecil.

PULAU BATANME TOGETHER WITH OFF-LYING ISLANDS AND DANGERS

General information

Charts 3242, 3744 (see 1.34)

General description

4.278

1 Pulau Batanme, previously known as Misool, lies with Tanjung Yamtu (1°40′S, 130°20′E), its low N extremity, about 37 miles SE of Pulau Kofiau, and at the outer end of an extensive bank of soundings extending W from Irian Jaya. The island is low in its N part and high in its S part. The islands lying within 10 miles of its N coast are low but are too numerous for detailed description and there may be further uncharted dangers amongst them; those off its E and SE part are high and steep-to.

2 Off-lying islands N of Pulau Batanme consist of Pulau-pulau Nusela, 12 miles NNW of Tanjung Yamtu, a group of islands covering a wide area; Pulau Babi (1°27′S, 130°14′E) the largest island, is low, reef fringed and wooded. Karang Hesketh (1°28′S, 130°22′E), over which there is a least depth of 5 m (16 ft), is the outermost danger E of this group.

3 Off-lying islands to the S include Pulau Daram (2°09′S, 130°55′E), wooded, the S island of Pulau-pulau Daram; at

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27 miles it is the most distant of the islands lying ESE of Pulau Batanme.

Waigama (1°50′S, 129°50′E), standing on the N coast of Pulau Batanme, is the only port of importance on the island.

Pulau-pulau Penyu, 16 miles NNE of Tanjung Yamtu, are described at 7.57.

Topography

4.279

1 Pulau Batanme is very heavily indented on its SE coast, particularly by Teluk Tamulol (4.288) situated on the N side of a two-pronged rocky and hilly peninsula extending E from the coast, with two heavily indented islands Pulau Kaunutklolo and Pulau Masemta (Mesemta) lying off its NE end, and Pulau Yabatano lying off the SE prong. Teluk Lilinta (4.290), a similar bay, lies on the S side of the peninsula. Numerous offshore islands extend up to 27 miles ESE of this peninsula. The E coast is low but rises inland to high ground from Tanjung Openta (1°50′S, 130°27′E); S of the point the coast rises vertically from the sea. The S coast has a range of mountains rising up from the sea but without peaks of prominence. The N coast is low throughout, only rising to hilly ground at its NE end.

2 The island is forested with coconut trees, and mangrove swamps exist near the coasts in many places. Many of the island's rivers flow out to sea from the N and E coasts.

Off the W end of the N coast, Masmas Ulit, a shoal, and the outermost danger on this stretch of coast, lies 13 miles N of Tanjung Fetdom (Fet Dom), the W extremity of Batanme. A group of islands lying 4½ miles NW of the same point consists of the main islands of Kanari, the hilly S island, and Nampale (1°47′S, 129°37′E), the low NW island, with several islands and islets in between.

3 Off the E end of the N coast, Pulau-pulau Kalies, an extensive group of islands and detached shoals, lies 2 miles N of Tanjung Yamtu, the N extremity of Batanme; Pulau Lawat (1°37′S, 130°18′E), reef-fringed, is the largest island of the group.

Depths

4.280

1 A considerable number of reported depths exist off the N and S coasts of Pulau Batanme. Many of these reported depths lie outside the 200 m (100 fm) depth contour bordering these coasts. Mariners should be aware that although the chart is the best guide there may be other such dangers not yet reported, in particular the area covering the potential sounding limits over the bank extending SW from the W extremity of Pulau Batanme.

Masters are advised to adhere strictly to the directions for this area. False discoloration is often seen.

Tidal streams

4.281

1 Off the N coast of Pulau Batanme tidal streams set W with the rising tide and E with a falling tide, at a maximum rate of 2 kn in the open sea and 3 kn in the passages through the islands.

Off the SE coast the tidal streams are strong and irregular.

Off the S coast the streams set E and W at a maximum rate of 2 kn; rather less than that off the N coast. In the narrow channels streams are sometimes stronger and may be irregular.

Principal marks

4.282

1 **Landmarks:**

Liem (1°55′S, 129°50′E), a distinctive peak, on the SW coast of Pulau Batanme; best seen from offshore N or farther E along both the N and S coasts. From W the peak is cone-shaped.

Ful (1°57′S, 129°54′E), a prominent peak, and the highest on the SW coast; best viewed from offshore N or from farther E on both N and S coasts.

2 Elban (2°00′S, 130°02′E), a coastal peak, is readily identifiable on the S coast of Pulau Batanme; Yadata, another peak, 1¼ miles E, is similarly recognizable.

Pelana (1°49′S, 130°21′E) with Kubah, slightly lower, 1 mile SE, are both prominent peaks on the E coast of Pulau Batanme.

Bayampop (1°59′S, 130°27′E), standing on the S side of Masemta (4.279), is a remarkable, prominent cone-shaped hill on the SE coast of Pulau Batanme.

3 **Major light:**

Pulau Nampale Light (1°47′S, 129°37′E).

Directions

General

4.283

1 The through route in this area passes about 10 miles W of Tanjung Fetdom (1°53′S, 129°43′E), the W extremity of Pulau Batanme. Directions leading NNW to Halmahera Sea from this point are given at 4.270; directions leading SE within Ceram Sea are given at 4.28.

For the approaches to Waigama (1°50′S, 129°50′E) from N between the islands and along the N coast of Batanme, the directions are given at 4.287.

Directions for the swept channel passing between the islands lying NE of Pulau Batanme, and those off the NW coast of Irian Jaya at Salawati are given at 6.166.

Side channel

4.284

1 A safe passage, suitable for vessels having a length of 60 m and draught 5 m (16 ft), lies between Pulau Wayilbatan (2°13′S, 130°26′E) and Pulau Walib, close E. The passage which is about 4 cables in length and about 1 cable wide has a least depth of 20 m in the fairway. Shelter may be obtained on the N side of Pulau Wayilbatan during the SE monsoon.

Caution. The passage leading E-W between Pulau Wayaban (2°09′S, 130°28′E) and Pulau Olobiepale (Olobie Pale), 1 mile SE, is not recommended.

Clearing marks

4.285

1 With the benefit of local knowledge, vessels taking passage between the E coast of Pulau Batanme and its S coast may find the following clearing marks through the islands off the SE coast useful:

The alignment (272°) of a wooded islet (2°14′S, 130°31′E) with the summit of Pulau Kasyanlu, 6 miles W, passes S of a 5 m (16 ft patch), 1 mile NNE of the E extremity of Pulau Warakaraket (2°15′S, 130°36′E), a hilly island. The passage between Pulau Batbitiem, an island with a distinctive summit, close W of Warakaraket, and the wooded islet is deep and clear of dangers.

2 The alignment (345°) of the E extremity of Pulau Kanim (2°11′S, 130°38′E) with the summit of Pulau Lenkafal (Len Kafal), 11½ miles NNW, passes E of

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a reported 7 m (23 ft) patch situated 1½ miles ESE of Warakaraket.

The alignment (012°) of the summit of Pulau-pulau Jal (2°06′S, 130°35′E) with a gap in the hilly ground on the W part of Pulau Tweeling (2°00′S, 130°36′E), passes E of a 7 m (23 ft) patch lying 2¾ miles SSW of Pulau-pulau Jal.

3 The alignment (338°) of a gap between the conspicuous W islets of Pulau-pulau Balbileget (2°05′S, 130°30′E) with a gap on the W side of Bayampop (4.282), 6¾ miles NNW, passes W of a 7 m (23 ft) patch lying 1½ miles E of Tanjung Kaliskaleo (Kalishaleo), the E extremity of Pulau Efmo (Ef Mo) (2°08′S, 130°28′E).

Waigama

4.286

1 **General information.** Waigama (1°50′S, 129°50′E), a town, and the only port of importance on Pulau Batanme, lies 7 miles ENE of Tanjung Fetdom, on its N coast. Situated on the W side of the entrance to Sungai Fageo, the town may be recognized by a prominent mosque and a building on which there is a flagstaff. An anchorage port, vessels lie at anchor 4 cables N of the town in a depth of 20 m (11 fm), mud. To approach Waigama local knowledge is essential.

4.287

1 **Directions.** Approaching Waigama from W, the track passes between Tanjung Fetdom (1°53′S, 129°43′E) and Pulau Kanari, 4½ miles NW, thence 2¾ cables N of Pulau Pial, an islet which lies on the coastal reef 6 cables WNW of Waigama; or passes more than 1 mile N of Pial and approaches the anchorage on the alignment (002°), astern, of the W extremities of Pulau Pian, 5 miles N, and Pulau Muslat, 7 miles N, respectively, of Waigama. This track leads S between a 7·5 m (25 ft) patch W of the alignment and a 4·5 m (15 ft) patch E of it.

2 Approaching from N, the track passes about 2 miles W of Pulau Yeflie (Yef Lie) (1°36′S, 130°00′E), thereby avoiding a 4 m (13 ft) patch 8 cables E; thence on the alignment (198°) of the W side of Pulau Yefkanyin, (1°43′·1S, 129°56′·6E), and the E peak of Adola (1°55′S, 129°52′E), 12¾miles SSW of Pulau Yefkanyin.

3 Approaching from E along the N coast of Pulau Batanme the track initially leads W between Tanjung Yamtu (1°40′S, 130°20′E) and Pulau-pulau Kalies, the best water here lying close to the mainland shore, continuing W to pass 1 mile N of a small detached reef lying 2 miles NNE of Tanjung Haokep, 14½ miles W of Tanjung Yamtu. The track then leads SW to pass S of Pulau Laitot and Pulau Haowat (1°42′S, 130°03′E), two islets lying close together; thence W again to pass between Pulau Bellisdarat (Bellis Darat) (1°42′S, 130°00′E) and Pulau Mutmafela, 6 cables S; thence on the alignment (068°), astern, of the NW extremity of Pulau Mutmafela with the SE extremity of Pulau Haitlal (1°41′S, 130°03′E) until the alignment (192°) of the inconspicuous rocky point W of Sungai Bano, about 2 miles E of Waigama, with Liem (4.282) is reached. The track then leads SSW on that alignment until the alignment (252°) of the N extremity of Pulau Pial and the N extremity of Pulau Kapcan Kecil, 3½ miles WSW, is reached. The track then leads WSW on that alignment to the anchorage; anchor when the W headland to Sungai Fageo bears 180°.

Anchorages

Teluk Tamulol

4.288

1 **General information.** Teluk Tamulol indents the E coast of Pulau Batanme between Tanjung Openta (1°50′S, 130°27′E), a low and rocky point, and the NE point of Pulau Masemta (4.279), 8 miles SSE. Tamulol, a village, lies at the head of the bay but can only be reached by small craft.

The bay, in general, is obstructed by numerous reefs. Pulau Mustika, an island lying at the W end of an extensive reef fronts the entrance to the bay.

2 **Anchorage.** Anchorage may be obtained in the bay in a depth of 31 m (17 fm) about 7 cables SW of Pulau Mustika and between this island and a detached reef 1 mile SW, over which there is a least depth of 2 m (7 ft).

3 **Directions.** The anchorage should be approached from E, passing about 1 mile S of Pulau-pulau Kasya (Ef Kasya) (1°59′S, 130°48′E), consisting of several islets standing on two reefs, with Masmasbus, a shoal over which there is a least depth of 2 m (7 ft), lying 1 mile NW. The track then leads W with Bayampop (4.282) bearing 272° until the E extremity of Pulau Wagmab, an island lying about 10 miles WSW of Pulau-pulau Kasya, is reached, bearing 180°.

4 The track then leads WNW, with the SW extremity of Pulau Mustika, bearing about 295°, passing SSW of a 6 m (3 fm) shoal lying 13 miles W of Pulau-pulau Kasya. When Bayampop bears 235° the track leads W until a small rocky islet, 1¼ miles NW of the W extremity of Pulau Mustika, bears 321°, thence the track lies on this bearing to the anchorage.

5 **Other passages.** From S, the passage leading N-S between Pulau-pulau Efpian (Ef Pian) (2°02′S, 130°46′E) and Pulau-pulau Sagof, a collection of islets and shoals 1½miles W, is clear of dangers in the fairway. The track then leads W into the bay as described above from S of Pulau-pulau Kasya.

Pulau Daram

4.289

1 Anchorage may be obtained during the SE monsoon off the N side of Pulau Daram (2°09′S, 130°55′E); there are depths of 53 m (29 fm) close off the coast. The passage immediately N of the island, between it and several islets of the Daram group 3 miles N, is clear of dangers.

Teluk Lilinta

4.290

1 **General information.** Teluk Lilinta, indenting the SE coast, is entered between Tanjung Wafani (2°03′S, 130°16′E) and Pulau-pulau Langkissiel, a group of islets standing on a reef extending SW from Pulau Yabatano, 5½miles E. The bay is sheltered during the NW monsoon but is difficult to approach during the SE monsoon because of high seas. The bay can be approached from W without difficulty but the reefs are not well marked by discoloration except around Pulau Fagomgenan, a reef 3 miles SSW of Tanjung Wafani.

2 **Anchorage,** which is calm, may be obtained during the NW monsoon off Lilinta (2°03′S, 130°16′E), a village, close N of Tanjung Wafani. There are depths of 30 m (16 fm) 1 mile offshore and well clear of the fringing reef.

4.291

1 **Directions.** On approaching this anchorage from SW the alignment (052°) of Pulau Kecitot (2°03′S, 130°17′E), an islet, with Pulau Tapalol, another islet 2½miles farther NE, passes SE of the reef, only slightly marked by discoloration, extending from Tanjung Wafani and a 5·5 m (18 ft) patch, not discoloured, which lies off this reef.

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2 From S the best channel lies E of the islets lying off the E end of Pulau Pelee (Yef Pelee), an island 7½ miles S of Tanjung Wafani, thence E of Pulau Kaunutsollon (2°10′S, 130°20′E), a prominent rock; another above-water rock lies 4 cables E and a 6·5 m (21 ft) patch (reported 1997) lies a similar distance farther E. The track then leads N to a passage between Pulau Batu (2°08′S, 130°21′E) consisting of several detached rocks, and Pulau Mata (Mate), 8 cables E. Vessels should pass 2 cables W of a rock close W of Pulau Mata; this track passes E of a 7 m (23 ft) patch on the W side of the passage in a least depth of 11 m (36 ft). The track then leads NW to the anchorage passing SW of an 8 m (28 ft) sand and coral patch lying 3 miles ESE of Tanjung Wafani.

3 The easiest approach from E, is N of Pulau Boo (2°13′S, 130°36′E), an island rising vertically from the sea 17 miles E of Pulau Pelee, thence passing N of the chain of islands leading WNW towards Pulau Kaunutsollon. The track then follows the directions from S mentioned above.

Caution. The passages between Pulau Yaganan (2°03′S, 130°24′E) and Pulau Yapale, NW of it, and between Pulau Yapale and the mainland of Batanme, and between Pulau Gag (2°03′S, 130°25′E) and Pulau Ginyamato, SE of it, are not recommended because of strong tidal streams.

Off the south coast of Pulau Batanme

4.292

1 Anchorage may be obtained during the NW monsoon between Pulau Yu (2°02′S, 130°03′E), a hilly and wooded islet, lying 4 cables S of the entrance to Teluk Wagom (4.294) on the mainland, in a depth of 29 m (16 fm). Vessels should approach this anchorage by passing between Pulau Tiga (2°02′S, 130°01′E), the E islet of several islets on a reef, and Pulau Omba, an islet, nearly 2 miles E.

Small craft passages

Tamulol

4.293

1 Tamulol (1°55′S, 130°21′E), a village, lies at the head of Teluk Tamulol (4.288); with local knowledge the village can be reached through a succession of channels leading W from Pulau Mustika, passing N of a group of detached shoals over which there are depths of less than 1 m (3 ft), thence SW along the coast to an anchorage off the village where there are depths of 2 m (7 ft) between the fringing reefs close inshore. The track along the S side of the bay is obstructed by numerous dangers and is not recommended.

Teluk Wagom

4.294

1 Teluk Wagom (2°01′S, 130°03′E) is a small, narrow, inlet on the S coast of Pulau Batanme. A small settlement with a store lies at the head of the inlet. Visited by small craft, the inlet is entered between Pulau Tiga and Pulau Omba, two of several islets lying off its S entrance, which is the direct approach or by the passage N of Pulau Tiga although here the fringing reefs are not well marked by discoloration.

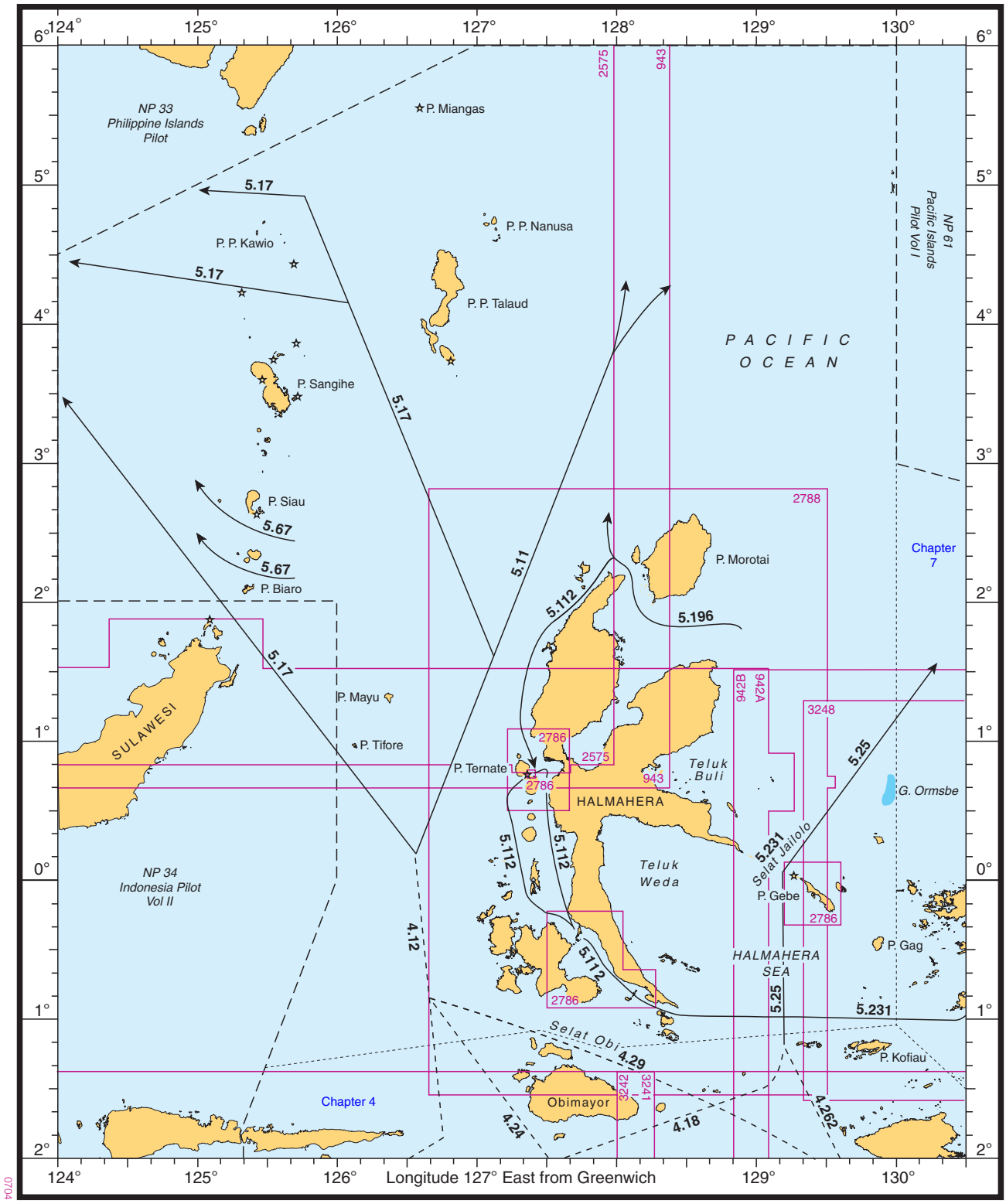
From E, the passage lying N of Pulau Yu, at the S entrance to the inlet, the passages N and S of Pulau Bie (Yefbi) (2°04′S, 130°09′E), are safe and easy to navigate by small craft.

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NOTES

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Chapter 5 - Islands between Mindanao and Sulawesi including Halmahara



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CHAPTER 5

ISLANDS BETWEEN MINDANAO AND NORTH-EAST SULAWESI, THE WHOLE OF HALMAHERA, HALMAHERA SEA AND ADJACENT ISLANDS EXCEPT OBIMAYOR

GENERAL INFORMATION

Chart 4507

Scope of the chapter

5.1

1 Within this chapter are described the islands lying between Mindanao (*Philippine Islands Pilot)* and NE Sulawesi including Pulau Miangas, Pulau-pulau Kawio, Pulau-pulau Nanusa, Pulau-pulau Talaud and Pulau-pulau Sangihe; the whole of Pulau Halmahera and the main part of Halmahera Sea E of that island, including their adjacent and off-lying islands except Pulau Obimayor which is described in Chapter 4.

Main routes

5.2

1 **Through routes from south-west**. Two recommended routes (*Ocean Passages for the World*) which pass through the area confined by the limits of this chapter continue in a general N-S direction. The main sea-lane from S, which passes E of Pulau Lifumatola (1°49′S, 126°25′E), passes W of Pulau Halmahera (1°00′N, 128°00′E) and E of Pulau-pulau Talaud (4°08′N, 126°46′E) thence into the open waters of the North Pacific Ocean; an offshoot from this route passes between Pulau-pulau Sangihe (3°30′N, 125°30′E) and Pulau-pulau Talaud leading NNW thence W into Celebes Sea, passing N of the former islands towards the navigable passages of Sulu Archipelago (see *Philippine Islands Pilot).*

2 The second, but lesser route from S, passes E of Pulau Halmahera.

Through routes from south-east. The route leading between Torres Strait and Molucca Sea which passes through Selat Obi joins the main sea-lane W of Pulau Halmahera.

The route between Torres Strait and Halmahera Sea which passes W of Pulau Batanme (1°52′S, 130°05′E) and is initially described at 4.270 leads NNW into Halmahera Sea passing E of Pulau Halmahera.

Archipelagic Sea Lanes have been designated within certain of the waters described in this chapter. For further information see Appendix II.

Topography

5.3

1 In general, collectively the small groups of N islands, including Pulau-pulau Talaud, are of volcanic origin being hilly and thickly wooded; many are inhabited. Pulau Miangas and Pulau-pulau Nanusa are, however, of raised limestone origin. Some of the detached islands are high, steep and rocky, providing prominent landmarks which may be seen from some distance.

2 Pulau Halmahera and Pulau Morotai, a short distance E of the N point of the island, are both mountainous; the E sides predominantly lower and wooded although the NE arm of Halmahera is mountainous throughout. Pulau Halmahera interestingly consists of both volcanic and non-volcanic orography. In keeping with the rest of Maluku, this island arc is split geologically. The outer arc, having begun in the W from Timor, continues counter-clockwise through Halmahera with the E side of the island being formed from limestone, old volcanic rock and ultrabasic sediments; the W part being volcanic; see 5.4.

3 The islands off the SW part of Halmahera including Pulau Bacan are also of volcanic origin, mountainous and forested.

To the E of Halmahera, within the central part of Halmahera Sea, the small groups of islands are generally low lying and wooded; many of the islets are of coral formation. Some of the islands are inhabited; all are non-volcanic, though see the caution at 5.234.

Natural conditions

Volcanic activity

5.4

1 The inner arc of the geological split (see 1.110) follows volcanic origins, continuing counter-clockwise from Pulau Wetar. Within the confines of this chapter these origins are predominant on the W side of Halmahera and the islands lying off its SW coast, and also the chain of islands lying between Sulawesi and the Philippine Islands, except those of Pulau-pulau Nanusa and Pulau Miangas, previously mentioned, which are of raised limestone origin.

Some of the more prominent areas of activity, which are described in more detail within the text, are briefly described below.

2 Of particular interest are the volcanoes situated on Ternate, Tidore and Makian which lie close W of Halmahera. Gamalama (5.118), the central active peak of Pulau Ternate (0°49′N, 127°20′E), last erupted in 1990. Pulau Tidore, 1 mile SE, is dominated by Kiematubu (5.118), its central volcanic summit which last seriously erupted in 1968. Makian, 15 miles S of Tidore, was nearly split in two in 1988 by a violent explosion followed by a massive lava flow. Earthquakes are frequently felt; in 1994 a severe earthquake caused serious loss of life near Kao, a coastal town, in N Halmahera.

3 Gunungapi (5.70), situated on Pulau Siau (2°47′N, 125°25′E), last seriously erupted in 1966 and again in 1974; the volcano situated on Pulau Ruang, 20 miles farther S, has often caused great damage.

Flow

5.5

1 **Currents** in the open waters of the area covered by this chapter are dependent on the winds. During the SE monsoon they tend to set NNE at a rate of about ½kn but can on occasions attain 2 kn. During the NW monsoon they set ESE and may also attain a rate of 2 kn, but generally the rate is about ¾kn.

Tidal streams are only experienced in coastal waters and in the various straits they are strong, caused by the build up of waters at their respective entrances. Further details are given with the descriptions of the coasts and islands in the text.

Local weather

5.6

1 Generally, N of the equator the NE winds bring good weather from December to March before the rains set in with the arrival of the SE monsoon from May to September.

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South of the equator from November to March, N coastal areas suffer unsettled weather when winds shift direction from W to NW. From May to September E to SE winds bring good weather, September being the best month.

2 The monsoons blow more steadily and with greater strength in Molucca Passage, that area of water between Sulawesi and Halmahera, than in Celebes Sea. High winds and squalls are not common. Very rarely a tropical cyclone will pass N of the area causing strong winds and swells in the passage.

East of Halmahera, the NW monsoon reaches its greatest strength in February and March and even during the SE monsoon a heavy swell will be experienced at any time of the year over Halmahera Sea.

General directions

5.7

1 The main sea-lanes to and from the Pacific Ocean or Celebes Sea, as described briefly at 5.2, lie W of Pulau Halmahera and between it and the outlying islands of Pulau Mayu (1°19′N, 126°23′E) and Pulau Tifore, 23 miles SW of it. To the NE of Mayu the tracks diverge. The E track continues NNE to the open waters of the Pacific Ocean; the W track continues NNW passing E and N of Pulau-pulau Sangihe.

2 Alternative sea-lanes pass E of Halmahera leading to the open waters of the Pacific Ocean via Selat Jailolo (0°06′N, 129°10′E) (5.238) and are a continuation of the through route from S, passing W and N of Pulau Buru, or from the SE, passing W of Pulau Batanme and W of Pulau-pulau Boo.

5.8

1 Other routes include a passage between Terumbu Gora (0°12′N, 126°55′E) and Bangka Passage, passing either side of Pulau Tifore (0°58′N, 126°08′E), which is described at 5.24; Selat Patientie (0°25′S, 127°43′E) (5.119), which is frequently used by vessels plying between Ternate and Arafura Sea; and Selat Sagewin (1°04′S, 130°38′E) (7.54) which links Ternate with Sorong, a port standing at the NW end of Irian Jaya.

Coastal routes are described within the confines of the text.

PRINCIPAL THROUGH ROUTES

GENERAL INFORMATION

Charts 942A, 942B, 943

Scope of the section

5.9

1 In this section are described the principal through routes in Molucca Sea and Halmahera Sea.

General directions

5.10

1 Through routes in the area lie to the E and W of Halmahera. There are several small ports and anchorages on Halmahera and the off lying islands.

WEST OF HALMAHERA — TERUMBU GORA TO THE OPEN WATERS OF THE PACIFIC OCEAN

General information

Charts 942A, 943, 4507

Route

5.11

1 From a position about 25 miles W of Terumbu Gora (0°12′N, 126°55′E) (5.112), situated off the W coast of Halmahera, the main sea-lane from S continues NNE passing farther to seaward of the coast of Halmahera than the coastal passage described at 5.124 and E of the islands forming Pulau-pulau Talaud and Pulau-pulau Nanusa.

This track eventually passes, depending on destination, farther off the coast of the Philippine Islands if bound for Japan.

Topography

5.12

1 Excepting the peaks of Ternate (0°49′N, 127°20′E) and Tidore, close SE, described at 5.118 and which can be seen from a considerable distance, the mountainous ground on the mainland of Halmahera may be obscured by a combination of range, visibility and weather conditions onshore. The high prominent peak of Gamkonora (1°23′N, 127°32′E) (5.118), shown as Gam Konora on chart 2788, rising near the W coast of the N portion of Halmahera, may be an exception.

2 Both Pulau Mayu (Mayo) (1°19′N, 126°23′E) and Pulau Tifore, situated in the central Molucca Passage, are steep-to and radar conspicuous. The islands of Pulau-pulau Talaud and Pulau-pulau Nanusa farther N are low and distant.

Natural conditions

5.13

1 See 5.4.

Principal marks

5.14

1 **Landmarks:**

Summit of Tidore (0°40′N, 127°24′E) (5.118).
Summit of Ternate (0°49′N, 127°20′E) (5.118).
Summit of Pulau Tifore (0°58′N, 126°08′E) (5.108).
Summit of Pulau Mayu (1°19′N, 126°23′E) (5.109).
Summit of Gamkonora (1°23′N, 127°32′E) (5.118).

2 **Major lights:**

Pulau Mayu Light (1°19′N, 126°21′E) (5.110); this light is displayed from the W side of the island; vessels passing E of the island will only be aided from S.
Tanjung Mayu Light (1°20′N, 126°25′E) (5.110).
Tanjung Pallo Light (3°44′N, 126°49′E) (5.48) situated at the S extremity of Pulau Kaburuang.

Other aid to navigation

5.15

1 **Racon:**

Pulau Talisei Light (1°53′N, 125°06′E) (*Indonesia Pilot Volume II).*

For further details see *Admiralty List of Radio Signals Volume 2.*

Directions

(continued from 4.16, 4.27 or 4.32)

5.16

1 From a position about 25 miles W of Terumbu Gora (0°12′N, 126°55′E) (5.112), the main sea-lane leads NNE for a distance of about 210 miles to the open waters of the Pacific Ocean ESE of Pulau-pulau Talaud, passing:

ESE of Pulau Tifore (0°58′N, 126°08′E) (5.108), a prominent island, thence:

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ESE of Pulau Mayu (1°19′N, 126°23′E) (5.109), prominent and higher than Pulau Tifore. Lights (5.110) are displayed from the E and W sides of the island.

2 WNW of Pulau-pulau Loloda Utara (2°10′N, 127°46′E) (5.116), a group of islands lying close W off the N end of Halmahera. thence:

ESE of Pulau Saaru (Napu Mbalu) (3°38′N, 126°52′E) (5.50), the SE danger extending from Pulau-pulau Talaud, on which there is a conspicuous wreck.

The track then passes E of Pulau-pulau Nanusa (4°42′N, 127°09′E) (5.42), a group of low-lying islands and islets.

Caution. In 2000, less depths were reported on this track in an area SE of Pulau-pulau Nanusa; the charts are the best guide.

WEST OF HALMAHERA — TERUMBU GORA TO CELEBES SEA (FOR PASSAGES LEADING TO SULU SEA)

General information

Charts 942A, 943, 2575

Route

5.17

1 From a position about 25 miles W of Terumbu Gora (0°12′N, 126°55′E) (5.112), the main sea-lane initially leads NNE, as described at 5.16, for a distance of about 92 miles, thence diverges NE of Pulau Mayu (1°19′N, 126°23′E) in a NNW direction to a position ENE of Pulau Buang (3°52′N, 125°44′E) (5.68). The track then leads WNW through the islands comprising Pulau-pulau Kawio, thence into Celebes Sea.

Selected passages through Sulu Archipelago leading into Sulu Sea are described in *Philippine Islands Pilot.*

Topography

5.18

1 The track generally leads midway between the two groups of islands of Pulau-pulau Talaud and Pulau-pulau Sangihe until those islands forming Pulau-pulau Kawio, at the N end, are reached, making topographical details difficult to discern except for the highest peaks in fine weather. However, in general, the islands of Pulau-pulau Talaud are mountainous or hilly and forested. Prominent details only become apparent when closer in. The islands of Pulau-pulau Sangihe are similar though on the main islands the peaks are higher. Several of the islets lying off the NE coast of Pulau Sangihe are prominent, as are the detached islets of the Pulau-pulau Kawio group through which the sea-lanes pass.

Flow

5.19

1 **Currents.** During October and November a SSW current will be experienced in the vicinity of the passages through the islands of Pulau-pulau Kawio; the rate varying between ½ to 2½kn.

Tidal streams are reported to be strong around the islands of Pulau-pulau Kawio, and on occasions produce turbulent seas in the vicinity of shoal water, as most of the islands are surrounded by fringing reefs.

Principal marks

5.20

1 **Landmarks:**

Summit of Tidore (0°40′N, 127°24′E) (5.118).

Summit of Ternate (0°49′N, 127°20′E) (5.118).

Summit of Pulau Tifore (0°58′N, 126°08′E) (5.108).

2 Summit of Pulau Mayu (1°19′N, 126°23′E) (5.109).

Summit of Pulau Kaburuang (3°48′N, 126°48′E) (5.48).

Summit (3°42′N, 125°27′E) of Pulau Sangihe, which rises in the N part of the island; conically prominent, it is an active volcano.

Pulau Kawalusu (4°14′N, 125°19′E) (5.62), high and prominent; visible when passing through Pulau-pulau Kawio.

3 **Major lights:**

Pulau Mayu Light (1°19′N, 126°21′E) (5.110); this light is displayed from the W side of the island and will only be of use to vessels passing W of it from S. Its prime use is for vessels crossing E-W and vice versa between Celebes Sea and the SE part of Molucca Sea using Bangka Passage (5.75).

Tanjung Mayu Light (1°19′·6N, 126°24′·9E) (5.110), displayed from the E extremity of Pulau Mayu (5.109).

4 Tanjung Pallo Light (3°44′N, 126°49′E) (5.48) situated at the S extremity of Pulau Kaburuang.

Pulau Buang Light (3°52′N, 125°43′E) (5.73).

Tanjung Ambora Light (4°33′N, 126°45′E) (5.48) situated at the N end of Pulau Karakelong (5.45).

Pulau Matutuang Light (4°27′N, 125°41′E) (5.64).

Pulau Kawalusu Light (4°14′N, 125°19′E) (5.64).

Pulau Marore Light (4°44′N, 125°29′E) (5.64) particularly if passing N of this island.

Pulau Dumarehe Light (4°14′N, 125°42′E) (5.64).

Pulau Kemboling Light (4°39′N, 125°26′E) (5.64).

Other aid to navigation

5.21

1 **Racon:**

Pulau Marore Light (4°44′N, 125°29′E); when passing N of Pulau-pulau Kawio.

For further details see *Admiralty List of Radio Signals Volume 2.*

Directions

(continued from 4.16, 4.27 or 4.32)

Recommended route

5.22

1 From a position about 25 miles W of Terumbu Gora (0°12′N, 126°55′E) (5.112), the sea-lane initially leads NNE for a distance of about 92 miles until NE of Pulau Mayu, thence NNW towards the islands forming Pulau-pulau Kawio, passing:

ESE of Pulau Tifore (0°58′N, 126°08′E) (5.108), thence:

ESE and ENE of Pulau Mayu (1°19′N, 126°23′E) (5.109); a light is displayed from the E side of the island, thence:

2 WSW of Pulau Saaru (Napu Mbalu) (3°38′N, 126°52′E) (5.50), the SE danger of Pulau-pulau Talaud, thence:

ENE of a group of islets lying off the NE coast of Pulau Sangihe; Pulau Buang, from where a light (5.73) is displayed, is the N-most of the islets.

3 The track then initially leads WNW through the islands of Pulau-pulau Kawio passing either side of Pulau Dumarehe (4°14′N, 125°42′E), an unmarked, inhospitable rock 44 m (145 ft) high, covered with vegetation; thence clear of Pulau Kawalusu (4°14′N, 125°19′E) (5.62) from where a light (5.64) is displayed; thence NW into Celebes Sea and/or as required for a selected passage through Sulu Archipelago (*Philippine Islands Pilot).*

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4 **Caution.** A shoal, over which there is a least depth of 10 m (33 ft), lies 10 miles SSE of Pulau Dumarehe; a 19 m (10 fm) rocky patch lies 6 miles SSE of the rock. Both these dangers lie well within the ranges of Pulau Matutuang and Pulau Buang Lights.

Useful mark:

Pulau Matutuang (4°27′N, 125°41′E) (5.61); when passing N of Pulau Dumarehe during daylight.

5.23

1 The Indonesian routeing system allows the passage N of Pulau Marore (4°44′N, 125°29′E) (5.62), the most N island of the Kawio group, to be made; thence depending on destination, joining the sea-lane as described at 5.22. Likewise the passage closer to Pulau Buang, the N-most island of the Pulau-pulau Sangihe, may be preferable, passing N of Pulau Lipang (3°55′N, 125°23′E) and clear of Batu Dalam (4°03′N, 125°21′E) (5.62).

Alternative route

5.24

1 From a position about 25 miles W of Terumbu Gora (0°12′N, 126°55′E) a passage leads NW, for a distance of about 150 miles, towards Celebes Sea using Bangka Passage, that stretch of water lying between the N coast of Pulau Talisei (1°50′N, 125°03′E) (*Indonesia Pilot Volume II*) and Pulau Biaro (2°06′N, 125°22′E), the prominent S-most island of Pulau-pulau Sangihe. The track passes either side of Pulau Tifore (0°58′N, 126°08′E); passing N of this island.

2 From a position NE of Pulau Talisei the track either leads WNW, for a distance of 370 miles, to the entrance to Sibutu Passage (*Philippine Islands Pilot*) or NW, for a distance of about 330 miles, to the entrance to Basilan Strait (*Philippine Islands Pilot*).

EAST OF HALMAHERA — PULAU BOO BESAR TO THE OPEN WATERS OF THE PACIFIC OCEAN

General information

Charts 2788, 924B, 3248

Routes

5.25

1 From a position W of the W extremity of Pulau Boo Besar (1°10′S, 129°18′E) (4.263) the continuing through route, from either the SW or SE, to the open waters of the Pacific via Selat Jailolo (5.238) (see *Ocean Passages for the World),* initially leads N for a distance of 73 miles to a position W of Tanjung Sofa (0°03′N, 129°17′E) (5.238) the NW extremity of Pulau Gebe, thence NNE to pass either side of Gosong Aurora (Aurora Bank) (0°44′N, 129°32′E) (5.28).

Caution. See 5.234.

Natural conditions

5.26

1 **Currents.** Monsoonal currents are felt in the deep and open waters of Selat Jailolo. Generally flowing SSW or NNE at a maximum rate of 1 kn. On occasions, the S currents may set further W across the strait from the Pacific and this should be taken into account if proceeding closer to the islands lying off the E coast of Halmahera.

Tide-rips are very much in evidence close off the NW coast of Pulau Gebe.

Local weather. See 5.6.

Principal marks

5.27

1 **Landmarks:**

Twin peaks of El Fanum (0°03′S, 129°24′E) (5.281).

Peak (0°12′S, 129°32′E) (5.237) (Chart 2786).

Goeba (0°15′N, 128°51′E) (5.237), prominent on the E coast of Halmahera.

Major lights:

Pulau Boo Besar Light (1°10′S, 129°18′E) (4.265).

Tanjung Sofa Light (0°03′N, 129°17′E) (5.277).

Directions

(continued from 4.267, 4.268 or 4.270)

5.28

1 From a position W of the W extremity of Pulau Boo Besar (1°10′S, 129°18′E) the route through Halmahera Sea to the open waters of the Pacific Ocean initially leads N to a position W of Tanjung Sofa (0°03′N, 129°17′E), the NW extremity of Pulau Gebe, on which there is a light (5.277), passing:

Between the W extremity of Pulau Boo Besar and Takat Sapa (4.267), 12 miles W, and:

Clear of a reported 13 m (42 ft) patch situated 4 miles WNW of the W extremity of Pulau Boo Besar.

2 The track then leads NNE through Selat Jailolo (5.238) passing:

ESE of the 200 m (100 fm) depth contour of a large coral bank, over which there is a least depth of 16 m (52 ft) in its E part. Two islets stand on this bank; Pulau Yiew (Yiw) (0°44′N, 129°08′E), thickly covered with vegetation, is situated near its NE extremity, and Pulau Togoplun (7½miles SW), devoid of vegetation, is more centrally placed. Canton Packet, a dangerous rock, lies near the SW extremity of the bank 13 miles WSW of Yiew. Thence:

3 Either side of Gosong Aurora (Aurora Bank) (0°44′N, 129°32′E), comprising sand and coral, over which there is a least depth of 14 m (46 ft), thence to open water.

See caution at 5.234.

(Directions for Selat Jailolo are given in more detail at 5.238)

ISLANDS BETWEEN MINDANAO AND SULAWESI

GENERAL INFORMATION

Charts 943, 2575

Scope of the section

5.29

1 In this section are described the islands, islets and dangers lying between Mindanao (*Philippine Islands Pilot)* and Sulawesi (*Indonesia Pilot Volume II)* and include Pulau Miangas, the most N island of the archipelago. All these islands are part of the province of North Sulawesi.

Included in the description are the passages, harbours and anchorages associated with the islands.

The main port for the area, Tahuna (3°37′N, 125°30′E), is situated on the W coast of Pulau Sangihe.

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General description
5.30

1 The islands in this area, mainly of volcanic origin, consist of a number of widely detached groups; Pulau-pulau Kawio, the NW group, lies 38 miles S of the nearest Philippine Islands. Pulau-pulau Sangihe, a considerably larger group, lies between Pulau-pulau Kawio and the NE coast of North Sulawesi. Pulau-pulau Nanusa, the non-volcanic NE group, lies 17 miles NE of the larger group of islands forming Pulau-pulau Talaud. Pulau Miangas, also non-volcanic, lies 54 miles NNW of Pulau-pulau Nanusa.

2 Pulau Karakelong, the largest island of all, lies in Pulau-pulau Talaud; however, the main port Tahuna lies on Pulau Sangihe in the group of the same name.

Much of the area is engaged in commercial fishing activities and many of the islands support coconut cultivation; copra and timber are the main exports particularly from the larger islands.

Marine farms
5.31

1 Fish havens are known to exist 20 miles W of Pulau Sangihe (3°33′N, 125°33′E) extending up to 35 miles W and up to 70 miles in a N and S direction.

Ferry services
5.32

1 Regular ferry services are known to exist between all the islands in this area. They also link the ports of Tahuna (3°37′N, 125°30′E) and Lirung (3°56′N, 126°42′E) with the ports of Bitung (1°26′N, 125°11′E) (*Indonesia Pilot Volume II),* Ternate (0°49′N, 127°20′E) and Ambon (3°42′S, 128°10′E) farther S. The vessels used on the long haul routes tend to be large, modern, passenger ships of between 10 000 – 16 000 dwt.

Flow
5.33

1 **Currents.** Throughout the area monsoonal drifts prevail; however, a steady S-going current has been observed S of Pulau-pulau Nanusa, and during October and November a SSW current was observed, with little directional variation, through the islands of Pulau-pulau Kawio. In general, currents are strong near the islands as they can be affected by the tidal streams with rates up to 3 kn; N of Pulau-pulau Kawio the rate is about ½ to 2½ kn; E of Pulau-pulau Sangihe it is about 2 kn; E of Pulau-pulau Talaud it is about 1 kn. Currents are also strong through the various open straits; E-going rates of 1½ to 2½ kn have been reported in Bangka Passage, Alur Pelayaran Ruang, Alur Pelayaran Siau and in the passage N of Pulau Siau.

2 **Tidal streams,** both diurnal and semi-diurnal, are in evidence around the larger islands especially those within Pulau-pulau Talaud and Sangihe, where rates can reach about 2 to 3 kn in places; however, semi-diurnal streams predominate. Along the coasts of Pulau Karakelong and Pulau Sangihe the streams tend to run parallel with them and are strong.

Tide-rips. All the islands are reef-fringed and tide-rips may be encountered on their respective extremities but particularly on the N sides of all the islands

General directions
5.34

1 The recommended through routes N follow the sea-lanes described at 5.16 and 5.22 which pass, respectively, E or W of Pulau-pulau Talaud. However there are safe and navigable passages leading between Celebes Sea and Molucca Sea, or vice versa, which pass through Pulau-pulau Sangihe.

2 The main passage in the S of the area leads through Bangka Passage (5.75) which lies between Pulau Bangka (*Indonesia Pilot Volume II)* and Pulau Biaro (2°06′N, 125°22′E); it is well lit and there are numerous landmarks. Moving farther N, Alur Pelayaran Ruang (5.76), which lies between Pulau Biaro and Pulau Ruang, 10 miles N, and Alur Pelayaran Siau (5.77), which lies between Pulau Tahulandang (2°21′N, 125°25′E) and Pulau Siau, 15 miles N, are also used; particularly the latter strait which is well lit and has good landmarks. Passage N of Pulau Siau and between it and Pulau Sanggeluhang, 8 miles NNE, is also safe and frequently used during daylight hours.

PULAU MIANGAS, PULAU-PULAU NANUSA AND PULAU-PULAU TALAUD

General information

Chart 2575 (see 1.34)

General description
5.35

1 All the islands are hilly, in some cases mountainous and wooded, except Pulau Miangas (5°34′N, 126°35′E) in the N. There are a number of useful landmarks and many of the islands carry long-range lights. Many are steep and rocky and are generally reef-fringed. Some of the islands have coconut cultivations as, collectively, their main export is copra. Vessels exiting Basilan Strait (*Philippine Islands Pilot)* regularly use the E-W channel linking Celebes Sea with Philippine Sea, which passes between these N islands of the Indonesian Archipelago and the mainland of Mindanao and, depending on destination, pass either side of Pulau Miangas.

2 A recommended route from S passing from Molucca Sea to Celebes Sea, or vice versa, lies farther S and is described at 5.22.

Flow
5.36

1 See 5.33.

Pulau Miangas

General information
5.37

1 **General description.** Pulau Miangas (5°34′N, 126°35′E), formerly known as Palmas Island, is one of the most N islands of the Indonesian Archipelago. Situated 48 miles SSE of Cape San Agustin (*Philippine Islands Pilot)* it is for the most part low and covered with coconut palms. The NE part rises to Gunungbatu, a conical hill 111 m (364 ft) high; the coast here is a sheer vertical cliff, 46 m (151 ft) high. The island is fringed by a coral reef extending up to 2 cables from the N and E sides; the edge of the reef is very steep-to, except on the SE side. The village of Miangas, with a coral and sand beach, is situated off a break in the reef on the SW side of the island; it is the best and practically the only place to land.

2 Pulau Baronto, 13 m (42 ft) high and covered with coconut palms, lies on the fringing reef 1 cable SE of the S extremity of Pulau Miangas.

5.38

1 **Current.** A strong S-going current divides on the bank which extends more than 1 mile from the N end of Pulau Miangas, causing violent tide-rips in that vicinity; occasionally there are eddies in evidence.

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5.39

1 **Major light:**

Pulau Miangas Light (white metal framework structure, 30 m in height) (5°34′N, 126°36′E); the structure is situated on the summit of Gunungbatu (5.37).

Other aid to navigation

5.40

1 **Racon:**

Pulau Miangas Light (5°34′N, 126°36′E).

For further details see *Admiralty List of Radio Signals Volume 2.*

5.41

1 **Anchorage** may be obtained in the small open bay at the SE side of the island, with the N extremity of Pulau Baronto bearing 248°, and the E extremity of Pulau Miangas bearing 023°. This berth is clear of the strong current, but farther out the current rate is about 3 kn. When anchored in depths of less than 29 m (16 fm), the berth is clear of the current but is subject to swirls and tide-rips.

2 Anchorage may be obtained off Miangas (5°33′N, 126°35′E) on the coastal bank and out of the heavy NE swell but it is difficult to prevent dragging off the bank into deeper water and is therefore not recommended.

Pulau-pulau Nanusa

General information

5.42

1 **General description.** Pulau-pulau Nanusa lies 112 miles ESE of the S end of Mindanao (*Philippine Islands Pilot)* and 18 miles NE of Pulau Karakelong, the nearest island within Pulau-pulau Talaud. This small group consists of seven islands, all of which are reef-fringed, hilly and wooded. The only bare spot is the summit of Pulau Marampit (4°45′N, 127°08′E), the largest and highest island of the group. Three islands, Pulau Marampit, Pulau Karatung, which lies 1¼ miles W of Marampit, and Pulau Kakarutan, lying 6½ miles S of Marampit, are inhabited. The main village, Karatung (4°43′N, 127°05′E), lies on the SE coast of the island with the same name. Pulau Garat, an islet, lies 4 miles NW of Pulau Marampit and is the most N of the group; Pulau Malo, a low islet, 7 miles S of Pulau Marampit is the most S.

5.43

1 **Directions.** The passage between Pulau Marampit and Pulau Intata, an islet lying close N of Pulau Kakarutan and standing on the same reef, is navigable and safe; Pulau Magupung, a low islet which lies midway between Pulau Marampit and Pulau Intata, may be passed on either side.

If choosing the passage S of Pulau Magupung, due regard should be given to Napu Arampua (4°39′N, 127°05′E), a shoal over which there is a least depth of 3 m (10 ft), lying 5 miles W of Pulau Intata.

2 The passage between Pulau Marampit and Pulau Karatung is also navigable and safe. The only danger, Napu Mamone, a 9 m (30 ft) shoal patch, lies 8 cables off the N coast of Pulau Karatung.

Caution. The passage between Pulau Kakarutan and Pulau Malo is navigable but not recommended as it is fringed with shoals.

Useful marks:

Karatung Light (white beacon) is displayed from the N coast of Pulau Karatung.

3 Conical summit of Pulau Kakarutan (4°37′N, 127°10′E).

Ondengbui, a flat rocky islet, bare except for some rocks covered with vegetation on its W side, lying on the outer edge of the fringing reef extending E from Pulau Intata.

5.44

1 **Anchorage** during the NW monsoon may be obtained, with local knowledge, S and SE of Karatung village. During the SE monsoon, anchorage may be obtained off the N coast of Pulau Karatung (5.42).

Anchorage may also be obtained off the SW extremity of Pulau Marampit (5.42) in depths of about 50 m (27 fm) and within 3 cables of the steep-to shore. Outside of this distance the depths are too great for holding.

2 Better anchorage may be obtained, with local knowledge, in depths of 47 m (26 fm) N of the reefs extending W from Pulau Intata (4°38′N, 127°09′E). During the NW monsoon vessels lie better S of the passage between Pulau Kakarukan (4°37′N, 127°10′E) and Pulau Malo, in 38 m (21 fm), sand and rock, or S of Pulau Malo, in 50 m (27 fm), rock.

Pulau-pulau Talaud

General information

5.45

1 **General description.** The islands forming Pulau-pulau Talaud lie 18 miles SW of Pulau-pulau Nanusa and consist of Pulau Karakelong, Pulau Salebabu and Pulau Kaburuang, the three main islands, and several islets. All are thickly wooded and inhabited. The coasts are for the most part steep and rocky with some small sandy beaches or marshy flats. All the villages lie on the coast, supporting an agricultural existence of coconut crops for export together with some timber produce. Lirung (3°56′N, 126°42′E) (5.51), the main port of the group, lies on the NE side of Pulau Salebabu.

5.46

1 **Topography.** Pulau Karakelong, the principal island, is mountainous; the mountains are divided into two parts by a gulley which is clearly visible. In the N part, a ridge runs N-S with Gunung Duata (5.48), its highest peak, rising at its S end, 15 miles SSE of Tanjung Ambora (4°33′N, 126°45′E), the N point of the island. The whole island, excepting the S coast, is fronted by a narrow coastal bank barely a mile wide.

2 Pulau Salebabu is the SW island of the group and is hilly. Reef-fringed, it is separated from Pulau Karakelong by Selat Lirung (5.49). Lirung (3°56′N, 126°42′E), the main town and port, lies on the NE-facing side of the island. Pulau Saraa Kecil and Pulau Saraa Besar, two detached islets lying at the S end of the strait, are separated from Salebabu by a clear deep channel 5 cables wide.

3 Pulau Kaburuang, which is hilly, is separated from the SE end of Pulau Salebabu by Selat Kaburuang (5.50), and has two prominent peaks (5.48). The coast is mostly rocky, interspersed with small sandy beaches. Tanjung Pallo (3°44′N, 126°50′E) is the low S point of the island.

5.47

1 **Tidal streams** set parallel with the coast of the main islands at rates up to 3 kn. There is usually a disturbed sea N of the entrance to Selat Lirung even when it is calm elsewhere. A strong stream sets through Selat Kaburuang.

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5.48

1 **Landmarks:**

Berawang (4°26′N, 126°48′E), 479 m (1573 ft) high, rising in the N part of Pulau Karakelong.

Gunung Duata (4°18′N, 126°50′E), the summit of Pulau Karakelong.

Ayambanna (3°56′N, 126°41′E), 366 m (1202 ft) high, the summit of Pulau Salebabu. It is the most prominent peak on a ridge.

Gunung Padian (3°48′N, 126°48′E) rising in the N of Pulau Kaburuang is prominent.

Gunung Towoa, 1¼ miles S of Gunung Padian, the summit of Pulau Kaburuang, is also prominent.

2 **Major lights:**

Tanjung Ambora Light (4°33′N, 126°45′E).

Tanjung Pallo Light (white beacon, 40 m in height) (3°44′N, 126°49′E).

5.49

1 **Directions.** Selat Lirung, which separates Pulau Salebabu from Pulau Karakelong, is safe and navigable; the best passage through the strait follows the Salebabu coast, thence passing between the islets of Pulau Saraa Besar and Pulau Saraa Kecil and the NE shore of Pulau Salebabu. A 10 m (33 ft) shoal, however, lies 1¼ miles WNW of Pulau Saraa Kecil and is the nearest danger. The passage between Pulau Saraa Kecil and Pulau Karakelong has numerous shoals with depths of less than 10 m (33 ft) for which local knowledge is essential.

2 **Useful marks:**

Light (white beacon) displayed from Tanjung Salonggaka (4°03′N, 126°37′E), the N point of Pulau Salebabu, and the light displayed from Lirung (5.51) are useful marks for this strait.

5.50

1 Selat Kaburuang, which separates Pulau Kaburuang and Pulau Salebabu, is safe, but a 4 m (13 ft) shoal lying 8 cables off the NW-facing coast of Pulau Kaburuang should be given a wide berth. Vessels approaching the strait from SE should give Pulau Saaru (Napu Mbalu) (3°38′N, 126°52′E), an unmarked small grassy bank of coral, about 1·5 m (5 ft) high and surrounded by rocks, a wide berth. Tanjung Lalawang (3°48′N, 126°42′E), the S extremity of Pulau Salebabu, can be rounded closely as there is deep water to the coast.

5.51

1 **Berths.** Lirung (3°56′N, 126°42′E) is the best harbour in the group and the most important. It is connected by ferry service with other parts of the archipelago and by local ferry to the neighbouring islands; a quay, 50 m in length, with a depth of 4 m at MLWS, fronts the town. A light (white beacon) is displayed from the quay and there is a prominent flagstaff behind. Cargo vessels anchor off the town in depths of between 20 and 30 m (11 and 16 fm), sand and coral.

2 Beo (4°14′N, 126°47′E), which lies within Teluk Beo, on the W side of Pulau Karakelong, is an open anchorage harbour. Vessels anchor NW of the town in depths of 15 m (49 ft), sand and mud, or farther offshore in depths of 70 m (38 fm). A stone jetty 130 m long, which nearly dries at its head, extends NW from the shore. A light (white metal post, 10 m in height) is displayed from a position 1 cable E of the root of the jetty. A stranded wreck lies off the jetty.

5.52

1 **Supplies.** Provisions are available at Lirung and Beo.

Communications. In 2000 the only airport servicing the islands was situated at Melonguane on the S coast of Pulau Karakelong.

Anchorages

General

5.53

1 Except in Selat Lirung (5.49) there is no safe anchorage throughout the year.

Off Pulau Karakelong

5.54

1 Anchorage for small vessels may be obtained in Mamahan, a small cove E of Tanjung Ambora (4°33′N, 126°45′E) (5.46) on the N coast of Pulau Karakelong (5.45). On the W coast of this island, anchorage may also be obtained in a depth of 14 m (46 ft), sand, in Teluk Bambung which lies 2½ miles E of Tanjung Ambora; local knowledge is necessary. Good anchorage may be obtained in a depth of 46 m (25 fm) in Teluk Esang (4°28′N, 126°43′E), which is entered between Tanjung Papetu, a rocky point 4½ miles SSW of Tanjung Ambora, and Tanjung Bualo, 1¼ miles farther S; the shores of the bay are low, and Esang, a village, lies at the head of the bay. Vessels should not anchor too close to Esang, as the bottom here is steep and a strong stream flows out from Sungai Esang, a river, N of the village. Anchorage may be obtained in Teluk Batumbaranggo (4°23′N, 126°42′E) in a depth of about 31 m (17 fm). Anchorage may also be obtained, in a depth of 25 m (13 fm), between Nusadolong (Nusa Dolong) (4°17′N, 126°42′E), an islet, and the W coast of Pulau Karakelong; this anchorage may be approached from seaward by passing either side of the islet.

2 On the E coast of Pulau Karakelong, anchorage may be obtained in Teluk Arangkaa, which is entered N of Tanjung Anderuwo (4°29′N, 126°51′E); there are depths of 12 m (36 ft) close in. The best anchorage lies in Teluk Rainis (4°14′N, 126°52′E) which combines two bays separated by Napu Limu, a rocky extension E from the coast. North of Napu Limu the depths range from 9 to 40 m (30 ft to 22 fm), 1½ cables from the shore; S they range between 7 to 16 m (23 to 53 ft), 4 cables off the shore.

Off Pulau Salebabu

5.55

1 Around Pulau Salebabu (5.45), the best anchorage lies in the waters of Selat Lirung (5.49), as previously mentioned, the best berth lying N of Pulau Saraa Kecil (5.46) in depths of 30 to 50 m (16 to 27 fm); local knowledge is required but the best approach from S or E is to use the channel passing S of Pulau Saraa Besar, thence rounding Pulau Saraa Kecil and exiting by the same route. From N, the track follows the Salebabu coast, as described at 5.49, until W of the W extremity of Pulau Saraa Kecil, thence rounding this island to the N as before.

2 Once anchored, there is plenty of room to swing. The only other anchorage, which can be exposed on occasions, is off the village of Kalongan which lies on the W side of Pulau Salebabu 1¼ miles SSE of Tanjung Salonggaka (4°03′N, 126°37′E), the rocky, reef-fringed N point of the island from where a light (5.49) is displayed. There are depths of 30 m (16 fm) about 2 cables off the shore; a 5 m (16 ft) rocky shoal which lies 3 cables W of the village should be given a wide berth.

Off Pulau Kaburuang

5.56

1 Around Pulau Kaburuang (5.45) there are no suitable anchorages, but in calm weather a vessel may anchor in depths of over 80 m (44 fm) at a distance of more than

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½cable from the edge of the coastal reef. An anchor should be lowered well into the water prior to arrival.

Small craft landings

On Pulau Karakelong

5.57

1 A small bay, which is entered 1½ miles SSE of Tanjung Masareh (4°34′N, 126°48′E), the NE point of Pulau Karakelong (5.45), is used by local craft; Gemeh, a village, lies at the head of the bay and affords a landing place.

Small craft landing exists at Kiama (4°00′N, 126°43′E) on the S coast of Pulau Karakelong; a local ferry service links Kiama with Lirung (5.51).

On Pulau Salebabu

5.58

1 Small craft landing can be effected at Salebabu (3°52′N, 126°41′E), a village which lies at the head of Teluk Salebabu, situated on the E coast of Pulau Salebabu (5.45). A pier projects from the shore abreast the village.

Landing may be effected at Sereh (3°56′N, 126°40′E), a village lying on the NW side of Teluk Sereh, a sheltered bay on the W coast of the island. The bay has great depths up to 1½cables off the shore on all sides.

PULAU-PULAU KAWIO AND PULAU-PULAU SANGIHE

General information

Chart 2575 (see 1.34)

General description

5.59

1 Most of the islands are hilly and wooded, but in the case of Pulau-pulau Sangihe they are more mountainous than hilly. There are a number of useful landmarks and many of the islands carry long-range lights. Many are steep and rocky and are generally reef-fringed. Some of the islands have coconut cultivations and, like the other islands in this area, their main export is copra. Pulau-pulau Kawio is the most N group lying closest to the Philippine Islands. Shipping exiting Basilan Strait (*Philippine Islands Pilot)* regularly passes N of these islands plying between Celebes Sea and Philippine Sea. The recommended route between Pulau-pulau Kawio and Pulau-pulau Sangihe farther S is described at 5.22.

Natural conditions

5.60

1 **Flow.** See 5.33. During November and December, a S-going stream with a rate of from 1 to 2½kn was observed between, and E of, the islands of Pulau-pulau Toade (5.69); in some places the direction was variable.

2 **Local weather.** During the NW monsoon, W squalls known as ‘barat’ can set in suddenly. They are not dangerous for a vessel but raise much surf on beaches, even at Tahuna (3°37′N, 125°30′E) (5.78) on the W coast of Sangihe. In general, throughout the region rainfalls are not high, with the highest precipitation occurring in January. The wet season lasts between November and June, and thunder often occurs; the dry season lasts between June and October. Visibility is usually exceptionally good, though in rain the range may deteriorate to less than 5 km.

Pulau-pulau Kawio

General information

5.61

1 **General description.** Pulau-pulau Kawio (4°40′N, 125°35′E) lie about 60 miles W of Pulau-pulau Talaud and comprise seven islands and nearby dangers. All these islands are high and mostly rocky. Pulau Marore, Pulau Kawio, Pulau Kemboling and Pulau Kawalusu are all inhabited; fishing and agriculture are the main industries. Pulau Memanuk, Pulau Matutuang and Pulau Dumarehe (5.22) are visited for copra. All the islands are described in more detail below.

5.62

1 **Topography.** Pulau Marore (4°44′N, 125°29′E), the N-most island, has a prominent peak on its N side. When seen from a distance E the island appears as two islets. Pulau Batuawaikang (Batu Bawaikang), close N of Marore, consists of four rocks. Pulau Kawio (4°40′N, 125°26′E) and Pulau Kemboling, S of it and higher, are connected by a drying reef. Batu Marie (4°39′N, 125°36′E), sometimes known as Ehise, a coral reef on which there is a patch of sand, lies 10 miles E of Pulau Kemboling. The size and height of the sand patch changes constantly according to the wind and stream. Some rocks lie on the NW side of the reef.

2 Pulau Memanuk (4°25′N, 125°38′E), covered in palm trees, lies 12 miles ESE of Pulau Kemboling on a reef which extends about 4½ miles S and SE. Some houses stand at the SW end of the island. Pulau Matutuang (4°27′N, 125°41′E), similar in height to Pulau Memanuk, and fringed by a reef, lies 10 miles SSE of that island; two rocks lie off the NW point of Matutuang and outside the coastal reef.

3 Pulau Kawalusu (4°14′N, 125°19′E), high and prominent, lying 28 miles SW of Pulau Memanuk, is the most SW island of this group; Batu Dalam (Lusu), 11 miles S of Kawalusu, and the most S danger, is a coral reef over which there is a least depth of 11 m (36 ft). Pulau Dumarehe (4°14′N, 125°42′E), a rock, lying 22 miles E of Pulau Kawalusu, is described at 5.22.

5.63

1 **Tidal streams.** All the islands in this group experience strong or troublesome tidal streams due to irregular depths around them. There are particularly strong streams in the vicinity of Batu Dalam (4°03′N, 125°21′E) (5.62); the reef should be given a wide berth.

5.64

1 **Major lights:**

Pulau Marore Light (white beacon, 40 m in height) (4°44′N, 125°29′E).

Pulau Kemboling Light (white metal framework structure, 10 m in height) (4°39′N, 125°26′E).

Pulau Matutuang Light (white structure) (4°27′N, 125°41′E).

Pulau Kawalusu Light (white beacon) (4°14′N, 125°19′E).

Pulau Dumarehe Light (white metal framework structure, 10 m in height) (4°14′N, 125°42′E).

Other aid to navigation

5.65

1 **Racon:**

Pulau Marore Light (4°44′N, 125°29′E) (5.21).

For further details see *Admiralty List of Radio Signals Volume 2.*

5.66

1 **Directions.** As previously mentioned, the recommended routes between Molucca Sea and Celebes Sea from S pass through Pulau-pulau Kawio for on-going routes to the

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passages of Sulu Archipelago (*Philippine Islands Pilot),* passing either side of Pulau Dumarehe, and are described at 5.22.

For passages closer to the Philippine islands when passing N of this island group see *Philippine Islands Pilot.*

Pulau-pulau Sangihe

General information

5.67

1 **General description.** Pulau-pulau Sangihe is a group of islands lying between 2°N and 4°N and between 125°E and 126°E. The islands comprise Pulau Sangihe (3°30′N, 125°35′E), the largest, lying 65 miles WSW of Pulau-pulau Talaud, Pulau Lipang (3°55′N, 125°23′E), Pulau-pulau Toade situated NE of Sangihe, and all the islands as far as and including Pulau Biaro, about 75 miles S of Pulau Sangihe.

2 All the islands are thickly wooded and hilly or mountainous, but low and flat at places on the coast. They are described in more detail below. Tahuna (5.78), situated on Pulau Sangihe, is the principal town and port.

5.68

1 **Topography.** Islands and dangers off the N part of Pulau-pulau Sangihe include Pulau Lipang (3°55′N, 125°23′E), 11 miles NNW of Tanjung Salimar, the N point of Pulau Sangihe, which has a conical summit covered with coconut trees and is prominent. Pulau Buang (3°52′N, 125°43′E), low and covered with coconut trees, lies 20 miles E of Pulau Lipang; rocks extend NW from the island. Batu Bowone, a coral shoal, over which there is a least depth of 4 m (13 ft), lies 1½ miles W of Buang. Pulau Melihang, 3 miles SSE of Buang, and Pulau Mekohahe, 8 cables farther S, are barren rocks; an extensive reef extends S from the latter rock. Pulau Balontohe, 2¼ miles SSE of Mekohahe, with Pulau Inis, 2½ miles farther SSW, are both steep rocks.

5.69

1 Between these islands and mainland Sangihe lie the coconut tree-covered islands forming Pulau-pulau Toade, namely Pulau Manipa (3°46′N, 125°34′E), Pulau Bukide, 6 cables NE of Buang, Pulau Liang and Pulau Poa, two islets lying 1¼ miles NW of Bukide.

Pulau Sangihe, the largest island of the Pulau-pulau Sangihe group, is mountainous. The N part of the island is dominated by Gunung Awu (3°41′N, 125°27′E), an active volcano and its highest point. The coast, which is heavily indented throughout, is alternately steep, rocky, low, and marshy in places.

5.70

1 To the S of Pulau Sangihe, a series of islands separated by navigable straits extend about 75 miles to Pulau Biaro (2°06′N, 125°23′E), the S-most island of the group, with a prominent summit. Directly S of Pulau Sangihe, and between it and Pulau Siau, there are several islands and off-lying dangers of which Pulau Kalama (3°14′N, 125°27′E), with Pulau Kahakitang, lying 3¾ miles SE, Pulau Mahengetang, 5 miles S of Pulau Kalama, and Pulau Para, 4 miles S of Pulau Kahakitang, are all inhabited. Pulau-pulau Nenung, 18 miles SE of Pulau Kalama, comprise an islet with some rocks lying N and S of it: the rocks are often marked by breakers and tide-rips.

2 Pulau Siau (2°45′N, 125°25′E), lying mid-way between Pulau Sangihe and Pulau Biaro, is conspicuous by a remarkable range of volcanic cones. Gunungapi (Gunung Api), the largest and most prominent cone, is the highest point of Pulau Siau, rising at the N end. Pulau Siau is densely populated.

5.71

1 **Tidal streams** around the islands are generally strong and semi-diurnal round Pulau Sangihe where they tend to follow a parallel track along the coasts. On the E coast the SE-going stream attains a rate of up to 3 kn, whilst the NW-going stream is negligible. In the passage between Pulau Bengdarat (3°28′N, 125°42′E) (5.86) and the E coast of Pulau Sangihe the rising tide sets N whilst the stronger falling tide sets S; a 14 m (46 ft) shoal which lies in the middle of the passage is marked by whirlpools.

5.72

1 **Local weather.** Within Teluk Tahuna (5.78), on the W coast of Pulau Sangihe, during the N monsoon W winds can last from 1 to 4 days. At other times of the year W winds, and often strong SW winds, are of shorter duration, but can make working cargo difficult. Squalls can also descend from the peaks on the S side of the bay.

See also climatic table at 1.159 and 1.160

5.73

1 **Major lights:**

Pulau Buang Light (white beacon) (3°52′N, 125°43′E) displayed from the E side of the island; covers the passages between Pulau Dumarehe and the N coast of Sangihe.

Pulau Manipa Light (white beacon, 30 m in height) (3°46′N, 125°34′E) displayed from the SW extremity of the island; covers the N and E coasts of Sangihe.

Pulau Benglaut Light (white GRP beacon, 10 m in height) (3°29′N, 125°44′E); covers the E and SE coasts of Sangihe.

2 Tanjung Bunakeng Light (white metal framework tower, 30 m in height (3°36′N, 125°29′E), displayed from the S entrance to Teluk Tahuna on the W coast of Sangihe.

Tahuna Light (white metal building, 9 m in height) (3°37′N, 125°30′E), displayed from the root of the pier at Tahuna.

Pulau Mahoro Light (white beacon) (2°39′N, 125°29′E); covers the E approaches to the passages N and S of Pulau Siau.

Pulau Talisei Light (1°53′N, 125°06′E) (*Indonesia Pilot Volume II).*

Other aid to navigation

5.74

1 **Racon:**

Pulau Talisei Light (1°53′N, 125°06′E) (*Indonesia Pilot Volume II).*

For further details see *Admiralty List of Radio Signals Volume 2.*

5.75

1 **Directions for Bangka Passage.** The passage lies between Pulau Biaro (2°06′N, 125°23′E) and Pulau Bangka (*Indonesia Pilot Volume II)*, 18 miles SW. It is deep and clear of dangers and is well marked by landmarks and a major light.

5.76

1 **Directions for Alur Pelayaran Ruang.** Alur Pelayaran Ruang lies between the S side of Pulau Ruang (2°19′N, 125°22′E), an island on which there is an active prominent volcano, close SW of Pulau Tahulandang, and the N coast of Pulau Biaro (5.70), 9½ miles S. It is also deep and clear of dangers, with sufficient landmarks for safe navigation.

5.77

1 **Directions for Alur Pelayaran Siau.** Alur Pelayaran Siau lies between the mountainous island of Pulau Tahulandang

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(2°21′N, 125°25′E), of volcanic origins with steep sides, and the S side of Pulau Siau, 15 miles N. The strait is deep throughout and well marked by landmarks and lights. As an alternative to Alur Pelayaran Siau, vessels often pass N of Pulau Siau (5.70) and between this island and Pulau Sanggeluhang (2°57′N, 125°28′E), an islet 8 miles N, and Pulau Bowondeke, an islet 1½ miles W of Pulau Sanggeluhang, when on passage between Celebes Sea and the N coasts of Halmahera. Whether passing N or S of Pulau Siau, Pulau Makalehi, a hilly island 11½ miles W of Siau, is a useful mark when approaching from W.

5.78

1 **Berths.** Tahuna (3°37′N, 125°30′E), the main port for the islands of Pulau-pulau Sangihe, lies within Teluk Tahuna on the W coast of Pulau Sangihe (5.69); in 2003 the port was used by 40 vessels with a total of 25 553 dwt.

There is a coast and port radio station at Tahuna; for details see *Admiralty List of Radio Signals Volumes 1(2)* and *6(4).*

2 The bay, which is entered N of Tanjung Bunakeng (3°36′N, 125°29′E), the S entrance point, is easy to navigate; the S side is reef-fringed. At the head of the bay, the mosque at Tidore is a useful mark. The town of Tahuna stands on the N side of the bay where there is a concrete-constructed pier projecting from the shore to deep water; vessels about 70 m in length can berth alongside in depths of 5 m (MLWS). Large vessels usually anchor about 2 to 3 cables off the town in depths of 35 to 45 m (19 to 25 fm), sand and mud, and work cargo into barges.

3 On the S side of the bay and near the head of the bay there are two oil jetties, operated by Pertamina. A number of oil tanks onshore are prominent. The main berth, on the seaward jetty, has mooring buoys on each side where vessels of 3500 dwt having a length of 80 m can berth in depths of 10 m at MLWS. The inner jetty, with a lesser depth, is for small coastal product tankers.

5.79

1 **Facilities** at Tahuna are limited but medical assistance is available; limited provisions and supplies can be obtained but fresh water is unavailable. The nearest airport is situated at Naha, 20 km distant from Tahuna, with connections to Manado, N Sulawesi.

Anchorages

General

5.80

1 There are a great number of anchorages throughout these islands, many are open and do not provide suitable shelter for any length of time due to squalls or swell. There are a number of small ports offering a nearby anchorage facility but these are only used by vessels having the benefit of local knowledge and are not described here in detail. The E coast of Pulau Sangihe (5.69), perhaps, may provide more protection but the water is deep. Only some anchorages are suitable for large vessels, particularly around Pulau Sangihe; most of the less open are only suitable for small vessels. The following list of anchorages should be taken as a brief guide to those considered safe.

Pulau-pulau Kawio

5.81

1 Anchorage may be obtained off a village on the S side of Pulau Marore (4°44′N, 125°29′E) (5.61) in depths of about 50 m (27 fm) but the tidal streams are troublesome.

2 Anchorage may be obtained on the E side of Pulau Kawio (5.61) and Pulau Kemboling (5.61) in a depth of about 55 m (30 fm), with the N point of Kemboling (4°40′N, 125°26′E) bearing 281° distant about 3½ cables.

3 Anchorage may also be obtained off the W side of the islands in a depth of 37 m (20 fm), coral, with the N point of Pulau Kemboling bearing 073°, distant about 5 cables, and in a depth of 27 m (15 fm), coral and sand, with the same point bearing 082°, distant 4 cables.

4 Anchorage may be obtained close off the E side of Pulau Matutuang (4°27′N, 125°41′E) (5.61) in a depth of 46 m (25 fm); between the fringing reef and deep water, however, there is barely 3 cables of room in which to anchor.

Around Pulau Sangihe

5.82

1 Anchorage may be obtained off Pulau Manipa (3°46′N, 125°34′E) (5.69), one of the Pulau-pulau Toade group of islands off the NE coast of Pulau Sangihe (5.69). The best berth, though in deep water, lies off the village of Manipa on the S side of the island in a depth of 80 m (44 fm) with the SE end of the island bearing 061°, distant 3 cables, and clear of the coastal reef.

5.83

1 Anchorage may be obtained within Teluk Tamako, an open bay, on the W coast of Pulau Sangihe. The best berth lies off the village of Tamako (3°28′N, 125°30′E) in a depth of 60 m (33 fm) with the flagstaff in the village bearing 080°. The roadstead is more exposed to S winds than Tahuna and there is a similar inconvenience with squalls. A light (red beacon) is displayed from the village. Tamako is often used by inter-island vessels for the export of copra.

5.84

1 Anchorage for small vessels may be obtained in Teluk Dago, on the S coast of Pulau Sangihe, which is entered between Tanjung Toademanandu (3°25′N, 125°32′E), from where a light (white beacon) is displayed, and Tanjung Selo, the SW point of Pulau Mahumu, 2 miles SE. A small craft channel (5.93) separates this island from the mainland.

2 The best berth lies in mid-channel off a cemetery in which stands a prominent tomb, close SW of the village of Dago (5.93), in a depth of 47 m (26 fm) where there is at least 1½ cables radius of swinging room.

5.85

1 Anchorage may be obtained off Tabukanlama (3°41′N, 125°33′E), a village situated on the NE coast of Pulau Sangihe, in depths of about 30 m (16 fm). The best berth here lies with the flagstaff in the village bearing 236° and about 4 cables offshore.

5.86

1 Anchorage may be obtained off the village of Salurang (3°29′N, 125°40′E), on the E coast of Pulau Sangihe (5.69), in a depth of about 55 m (30 fm) with some white rocks N of Pulau Benglaut bearing 124°. This anchorage may be approached from NE passing NW of the rocks extending from Pulau Benglaut and Pulau Bengdarat, both hilly and wooded islands, or from SSE by passing between Pulau Bengdarat and Pulau Sangihe. On the latter passage, the alignment (346°) of the edge of the Sangihe headland, 3 miles N of the passage, with the E extremity of Pulau Batuwingkong (Batu Wingkong) (3°32′N, 125°39′E) leads NNW in the fairway passing ENE of Pulau Dane, a steep rocky islet lying 2½ miles SSW of Pulau Bengdarat; a 14 m (46 ft) patch lies E of the fairway and is the only danger for large vessels. See tidal streams at 5.71.

5.87

1 Anchorage may be obtained in Teluk Ngalipung (Ngalipaeng), which indents the SE coast of Pulau Sangihe and is the only deep water anchorage on this portion of the

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S coast of the island. The village of Ngalipung (3°24′N, 125°37′E) lies at the head of the bay situated on the W side of a rocky headland. In the NW monsoon, the best berth lies in depths of 86 m (47 fm) close inside the bay.

Anchorages around the islands south of Pulau Sangihe

5.88

1 In good conditions, temporary anchorage may be obtained off a village, in which stands a flagstaff, on the S coast of Pulau Mahengetang (3°09′N, 125°27′E) (5.70) in a depth of 37 m (20 fm), with a vegetation-covered islet on the reef-fringed W side of the island bearing 339°, distant 3 cables, and about 2 cables offshore. The coastal bank, consisting of coral and sand, which surrounds the island, is barely 5 cables wide falling off steeply from the shore to deep water; preparation for anchoring should be made well in advance of arrival.

2 Tide-rips and eddies occur off the S and W sides of the island. In 1919 it was reported that, off the W side of the island, there was an underwater volcanic eruption resulting in the creation of a shallow bank about 2 cables in length with depths of less than 10 m (33 ft) over it, and that a column of water was sometimes thrown up from the sea here.

5.89

1 Anchorage may be obtained off the SW coast of Pulau Para (5.69) about 2 cables offshore from the village of Para (3°04′N, 125°30′E). The best berth lies in a depth of 69 m (38 fm), on the alignment of a vegetation-covered rock situated close off the W coast of the island and the summit of Pulau Salangkere (5.98), and with a rocky point S of the village bearing 112°. The channel between Pulau Para and Pulau Nitu, an islet 7 cables W of the village, is deep and clear; the tidal stream which sets within this channel usually passes W of the anchorage.

5.90

1 Anchorage may be obtained within Teluk Ulu, a bay situated on the E side of Pulau Siau (5.69). In good weather, the best berth lies in a depth of 80 m (44 fm), about 1½cables off the village of Ulu (2°44′N, 125°24′E) at the N end of the bay. A light (white post) is displayed from the head of a pier at the village; see 5.99. The village should be approached from E. During heavy squalls a good berth may be obtained in a depth of 47 m (26 fm) with a white pillar standing 3 cables NE of the pierhead light bearing 010°, distant 2 cables. Ulu is regularly visited by the larger passenger ships from North Sulawesi.

2 From January to mid-April however, winds between NE and E make this roadstead unsafe so that it is better, during this period, to anchor off the village of Sawang, which lies 3 miles SSW of Ulu and where the bottom is not so steep.

The passage between Pulau Pahepa, a high island with a conical summit, and Pulau Siau, at the S end of the bay, is deep and clear of dangers in the fairway although a strong stream can be present. Pulau Mahoro, a steep, rocky and uninhabited island from where a light (5.73) is displayed, lies 5 cables E of the E point of Pahepa; the passage between Mahoro and Pahepa is not recommended.

5.91

1 Anchorage may be obtained within Teluk Minangan on the N coast of Pulau Tahulandang (5.77) during the SE monsoon and transitional periods. The best berth lies off the village of Minangan (2°22′N, 125°25′E) in a depth of 60 m (33 fm), but depths in general are great farther offshore. The coast can be closely approached as there is little or no coastal reef and squalls do not occur here. In the NW monsoon anchorage may be obtained off the village of Haas (2°19′N, 125°26′E), distant 2 cables, which lies close E of the S extremity of the island.

2 **Caution.** The passage between Pulau Tahulandang and Pulau Ruang, 5 cables SW, is not recommended nor is the passage between reef-fringed Pulau Pasige (2°21′N, 126°18′E) and the reef-fringed W coast of Tahulandang.

3 Temporary anchorage may be obtained in a bay on the N side of Pulau Biaro (2°06′N, 125°23′E) (5.70). Depths are better on the W side of the bay where the best berth lies in a depth of 32 m (17 fm); the E side is too deep. At the head of the bay there are dangerous shoals.

Small craft harbours and landing places

Teluk Manganitu

5.92

1 Teluk Manganitu, entered S of Tanjung Kalehangeng (3°35′N, 125°29′E), a steep, rocky point, on the W coast of Pulau Sangihe (5.69), is used by small craft who visit several coastal villages within the bay. A 2·5 m (8 ft) patch, which is marked by discoloration, lies 8 cables SSE of Tanjung Kalehangeng; there is a 7·8 m (25 ft) patch within 2½cables S of the point. Between these dangers there is clear and deep water.

Dago

5.93

1 Dago (3°27′N, 125°34′E), a village situated near the head of Teluk Dago (5.84) on the W coast of Pulau Sangihe, has a stone pier which extends over the fringing reef from the shore, alongside which local craft are able to land. Landing at HW can be effected at a village close SW of Dago and at another village at the head of the bay, 5 cables E of Dago, which is reached by a narrow channel.

2 Mahumu Channel, which separates Pulau Mahumu from the shore of Pulau Sangihe, gives access for small craft to Teluk Dago and the villages from S thereby avoiding the lengthy passage outside of Pulau Mahumu.

Teluk Peta

5.94

1 Teluk Peta (3°39′N, 125°34′E), a small indentation in the E coast of Pulau Sangihe (5.69), gives access for local craft to the village of Peta at the head of the bay. Peta is the main settlement on the E coast of the island and is frequently used as an anchoring port by national vessels; barges ply between ship and shore. Landing can be effected at the pier at the village; a light (mast, 6 m in height) is displayed from the pier. The alignment (222°) of leading beacons (cross topmarks) leads in the fairway to the village.

Teluk Kuma

5.95

1 Teluk Kuma, a bay, with the village of Kuma (3°35′N, 125°35′E) at its head, is entered close SE of Teluk Miulu, a narrow indentation in the E coast of Pulau Sangihe. Both these bays are used by small craft.

Teluk Menalu

5.96

1 Teluk Menalu is a large bay situated on the E coast of Pulau Sangihe which gradually decreases in width to a narrow indentation in the coast. Pulau Tehang (3°33′N, 125°39′E), a wooded island, stands in the entrance to the bay. Passage by local small craft lies either side of Pulau Tehang giving access to several villages; an islet on a reef lies in the middle of the bay. Passage E of Pulau Tehang is considered the best as there is a least depth of 9 m (30 ft) in the fairway; the passage should be approached from NE.

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Teluk Behongang
5.97

1 Landing may be effected at the village of Behongang (3°15′N, 125°28′E), situated within Teluk Behongang, on the N side of Pulau Kalama (5.70). At the village there is a stone mole with steps, alongside which small craft can berth.

Pulau Siha and Pulau Salangkere
5.98

1 The channels between Pulau Siha (3°06′N, 125°29′E) and Pulau Salangkere, an island with a prominent summit, close E, and between Pulau Salangkere and Pulau Para (5.70), close S of the latter, are only navigable by small craft. Local knowledge is needed.

Ulu
5.99

1 Landing may be effected at Ulu (2°44′N, 125°24′E) on the E coast of Pulau Siau (5.70), where there is a pier; this small harbour is frequently used by small local craft.

Buhias
5.100

1 Buhias (2°20′N, 125°23′E), a village situated within Teluk Buhias, on the SW coast of Pulau Tahulandang (5.77), is a small harbour for local craft. An indentation in the coast here allows small craft to effect a landing. A light (white metal column, 12 m in height) is displayed from a white limestone rock close S of the village.

The passage between Pulau Tahulandang and Pulau Ruang in this vicinity is navigable by small craft only but the Ruang side is deeper, as there are depths of less than 2 m (7 ft) near the Tahulandang shore.

Teluk Mundung
5.101

1 Teluk Mundung (2°07′N, 125°21′E), a small but heavily indented bay situated on the W coast of Pulau Biaro (5.70), gives access to small craft visiting villages well within the bay. The whole area is reef-fringed but the bay itself offers good shelter. Providing a fairway approach from W is taken at LW when the reefs are uncovered, the bay may be entered without difficulty. Anchoring may be obtained at the head of all the inlets.

PULAU HALMAHERA AND ADJACENT ISLANDS

GENERAL INFORMATION

Chart 2788

Scope of the section
5.102

1 In this section are described Halmahera and the adjacent islands including Bacan to the S and Morotai to the N, and the smaller off-lying islands of Mayu and Tifore to the W.

Also described are the islands and dangers of the central part of Halmahera Sea including Pulau Gebe and Gosong Aurora.

Through routes either side of Halmahera are described from 5.11 to 5.28; other routes and passages are described in the text together with harbours and anchorages.

Ternate (0°49′N, 127°20′E), lying off the W coast of Halmahera, is the main port for the area.

General description
5.103

1 Halmahera, centred on about 0°30′N, 128°00′E, consists of four long narrow peninsulas with deep intervening extensive bays. These peninsulas are reminders that the island was once two separate islands which over an aeon of time slowly came together. The island is mountainous and densely forested; the peninsulas are mainly composed of mountain ranges of varying elevations; some of the peaks are hard to identify from a distance. The highest point of the island, the summit of Gamkonora (Gam Konora) (1°23′N, 127°32′E) (5.118), is situated in Pegunungan Sahu, a high mountain range rising near the W coast of the island. Only the N peninsula is volcanic but many of the offshore islands along the W coast of Halmahera are volcanic in structure and, in some cases, still active.

2 Most of the islands E and W of Halmahera are inter-connected by sea or air, with most of the commercial activity taking place on Ternate (5.125), the main port, situated on the island of the same name off the W coast of Halmahera. Most of the population of the region live on the coasts of Halmahera and are somewhat scattered; the main livelihoods are coconut culture, forest products and fishing with the latter being carried out in the rivers.

3 Pulau Morotai (5.197), a large island, lies about 9 miles NE of the N extremity of Halmahera and is separated from it by Selat Morotai (5.196).

Ferries
5.104

1 A great number of ferry services ply between the islands described in this area. Most of the Indonesian large long-haul vessels link Ternate (0°49′N, 127°20′E) and Ambon (3°42′S, 128°10′E) (4.118) with Bitung (*Indonesia Pilot Volume II)* and other major ports within the archipelago.

Smaller ferries link the islands around Halmahera with ports in Irian Jaya in the E and Pulau Obimayor in the S.

It is important that a good look-out is maintained when traversing the area.

Volcanic activity
5.105

1 Much of the volcanic activity occurs off the W side of Halmahera although there have been reports of underwater activity within parts of Halmahera Sea. The NW coast of the N part of Halmahera has several active volcanoes lying a short distance inland but the main activity of recent times has occurred in the islands S of, and including, Pulau Ternate. The last major occurrence here took place in 1988 on the island of Makian; in 1994 hot ash was sprayed several hundred metres above the crater on Ternate. (See 5.118). In 2003, Gunung Dukono (5.202) which lies in the N part of Halmahera erupted, spewing dust out to 38 miles.

Flow
5.106

1 **Currents.** The currents near the islands of Molucca Sea, that body of water between Sulawesi and Halmahera, are dependent on the winds. During the SE monsoon they set NNE and as a rule do not exceed ½ kn but may on occasions reach 2 kn. During the NW monsoon they set ESE and may attain a rate of 2 kn. To the W of Pulau Mayu (1°19′N, 126°23′E) the currents are stronger during the SE

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monsoon, and stronger E of it during the NW monsoon. The predominant current off the W coast of Halmahera sets S during the NW monsoon at a rate of about 1½ kn, however, a constant N-going current was reported to exist, during the month of September, SW of Pulau Mandioli. Tidal streams are only experienced in coastal waters and the numerous bays off Halmahera.

2 Currents in Halmahera Sea are not strong and depend on the force and direction of the wind.

5.107

1 **Tidal streams.** At HW along the W coast of Halmahera, in the vicinity of Pulau Ternate and Pulau Tidore, there is a N-going stream; at LW there is a S-going stream. Rates are about 1½ kn in each direction. Streams tend to be both semi-diurnal and diurnal along this coast, and through Pulau-pulau Bacan the streams do not usually exceed 2 kn. Strong streams may be experienced at the N and S extremities of Halmahera.

2 Along the E coast tidal streams within Teluk Buli are weak and are not felt during the SE monsoon outside the bay. Farther seaward, however, a current sets NNW attaining a rate of 2 kn. Off both entrance points (5.257) there are strong tide-rips.

In Teluk Weda, tidal streams along the N shore are W-going with the rising tide and E-going with the falling tide; streams along the W shore are weak in the N part but stronger in the S part and near Pulau-pulau Widi setting N with the rising tide and S with the falling tide.

Islands between Halmahera and Sulawesi

Chart 2575 (see 1.34)

Pulau Tifore

5.108

1 Pulau Tifore (0°58′N, 126°08′E), 23 miles SW of Pulau Mayu, stands on a narrow coastal bank. The island is high with rocky coasts but the E side is indented and heavily reef-fringed. Pulau Gureda, an islet which stands on the outer edge of the reef-fringed NE side, is high and prominent. Two small reef patches, each with a depth of 2·5 m (8 ft) over them, and marked by discoloration, lie about 2 cables off the middle of the SW side of the island.

Balibi, the only village on the island, lies on the NE coast.

Pulau Mayu

5.109

1 **General description.** Pulau Mayu (1°19′N, 126°23′E), an island lying midway between the coasts of Sulawesi and Halmahera, is situated about 75 miles SE of Pulau Biaro (5.70) and 60 miles W of Halmahera. The island, which is radar conspicuous, is high in the centre and slopes gradually to the coast which is steep-to. It is surrounded by a narrow coastal bank. The main village, Pasirputih, is situated at Tanjung Lelew, the W extremity, from where a light is displayed; a further light stands on Tanjung Mayu, the E extremity of the island.

5.110

1 **Major lights:**

Pulau Mayu Light (white metal framework structure, 40 m in height) (1°19′N, 126°21′E), displayed from Tanjung Lelew.

Tanjung Mayu Light (white metal framework structure, 20 m in height) (1°20′N, 126°25′E).

5.111

1 **Anchorage** may be obtained during the SE monsoon off the N side of the island in a depth of 40 m (22 fm). The best landing place is about 2 cables E of Pasirputih (5.109).

WEST COAST OF HALMAHERA INCLUDING PULAU TERNATE AND PULAU BACAN

General information

Chart 2788 (see 1.34)

Routes

5.112

1 The main sea-lanes lie well offshore from the W coast of Halmahera, but many of the passages between the islands lying off this coast are deep and navigable and present no problem to shipping. Selat Patientie, at the S end, or Selat Morotai at the N end of Halmahera, are the usual passages for vessels bound for the port of Ternate from points E of the island.

The outermost danger off the W coast, Terumbu Gora (0°12′N, 126°55′E), which dries at exceptionally LW, is steep-to, and marked by breakers; it lies 12 miles WNW of Pulau Siko (0°08′N, 127°07′E) (5.184), the NW islet of Pulau-pulau Goraici.

2 **Caution.** In 1993, it was reported that Terumbu Gora appeared to consist of two shallow coral patches with a least depth of 40 m (22 fm) over them, separated by deep water, and that there was no evidence of breakers in the area. A third coral patch, marked by strong tide-rips, with a least depth of 13 m (43 ft) over it, was also reported in the same year to lie 5 miles S of Terumbu Gora.

Topography

5.113

1 Between Tanjung Libobo (0°55′S, 128°27′E) (5.232), the S extremity of Halmahera, and Tanjung Bobo (1°03′N, 127°23′E) its W extremity, the coast is indented by several low-lying bays; the largest being Teluk Dodinga which is entered between Tanjung Oba (0°44′N, 127°33′E) and the reefs S of Sidangoli (5.190), 8 miles NNW.

The land on the SW side of the S-extending peninsula is not as high as that farther N.

2 Off the S extremity of Halmahera lies a small group of islands which include Pulau Damar (1°00′S, 128°22′E), Pulau Joronga, close S, and Pulau Woka, all forested and hilly. Pulau Gumutu, close SW, and Pulau Kramat, close S of Joronga, directly face Selat Obi. Karang Batuanyer (Batu Anyer), a steep-to rock, and the remains of an old crater, lying 10 miles SE of Pulau Damar, is the most E danger of this group.

Pulau-pulau Loleojaha, 9½ miles W of Pulau Damar, comprises a number of low islets, covered with vegetation, standing on reefs.

5.114

1 Off the SW side of Halmahera lie several groups of mountainous islands in close proximity to each other. Pulau-pulau Bacan, lying farther N of Pulau Damar, consists of Pulau-pulau Latalata, Pulau Kasiruta (0°24′S, 127°12′E), Pulau Mandioli and Pulau Bacan, the largest island. The two prominent peaks of Kasiruta, Buku Dufa Dufa (0°27′S, 127°09′E), together with Bukucukur (Chuker), in the S part and Buku Kabau (0°21′S, 127°10′E) in the N part may be seen from some distance seawards.

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2 Pulau-pulau Goraici, comprising a group of wooded islands and islets, lies from 7 to 26 miles N of Pulau Kasiruta and from 8 to 19 miles W of Pulau Kayoa (0°02′N, 127°26′E), the largest island of Pulau-pulau Kayoa, another group which lies between Pulau-pulau Goraici and mainland Halmahera.

5.115

1 Between Pulau Kayoa and Pulau Ternate (0°49′N, 127°20′E) (5.127), about 37 miles N, lie a string of active volcanic islands. Pulau Makian (0°19′N, 127°24′E), on which there is a prominent central volcano (5.118), is the S-most, lying 8½ miles N of Tanjung Buku (Madoyama), the N extremity of Pulau Kayoa. Pulau Tidore, a similar island to Ternate, close NW, is dominated by its volcano Kiematubu (5.118). Pulau Ternate (0°49′N, 127°20′E), consists almost entirely of Gunung Ternate (5.118), its high volcanic peak; Pulau Hiri (5.127) lies 1 mile off the N coast of Ternate.

5.116

1 Pulau-pulau Loloda Selatan, off the W coast of Halmahera, consists of Pulau Kahatola (1°42′N, 127°31′E), the largest island of the group, Pulau Sidanga, close W of the S extremity of Kahatola, and Pulau Adui, close SE of the same island; this group of islands lie 28 miles SSW of Pulau-pulau Loloda Utara.

The N part of the W side of the island, between Tanjung Bobo (1°03′N, 127°23′E) and Tanjung Bisoa (2°13′N, 127°57′E), its N extremity, is generally inhospitable, being steep, high and generally densely wooded.

2 Pulau-pulau Loloda Utara, a group of islands lying 8 miles W of Tanjung Bisoa, consist of four main islands. Pulau Doi, is the N-most and largest of these islands; Pulau Tuakara, a small island lies between Doi and Pulau Dagasuli, 2 miles S. Pulau Salangadeke, the S-most island, lies 1½ miles S of Dagasuli.

Tidal streams

5.117

1 In the S part, streams follow the same pattern by following the coast but the semi-diurnal stream dominates. The highest water levels here occur in June and July and again in December and January; the lowest between July and September and between January and March. The maximum rise and fall is about half that experienced farther N.

2 Within the more open waters of Selat Patientie, the strait separating Pulau Bacan from Halmahera, the streams are weak but around Pulau-pulau Kusa, the small group of islands in the middle of the strait, they are strong. Between Pulau Kusa and Pulau Pokal (0°26′S, 127°43′E) streams may attain a rate of 4½ kn at springs and 3 kn at neaps, but only for a short period during the latter.

3 In the N part, streams are both semi-diurnal and diurnal; neither the spring highs nor the spring lows coincide. The highest water level occurs in May and November; the lowest in June or July and in December or January. The maximum rise and fall that can be expected is about 0.7 m above and 0·7 m below MSL respectively.

See also 5.107.

Principal marks

5.118

1 **Landmarks:**

Bibinoi (Buku Bibinoi) (0°46′S, 127°43′E), a prominent peak, rising in the SE part of Pulau Bacan. Visible from Selat Patientie and Selat Obi in the S of the region.

Powate (0°19′N, 127°24′E), the active volcanic summit of Pulau Makian is prominent; a huge gash runs from the central peaks to the sea on its W side. A saddle situated between Powate and the other peaks of the crater-summit is also conspicuous from E. Powate last erupted in 1988 and nearly split the island in two.

Kiematubu (0°40′N, 127°24′E), the prominent dormant volcanic summit of Pulau Tidore, rises in the S part of the island.

2 Gunung Ternate (0°49′N, 127°20′E), the centrally-placed still active volcano dominating Pulau Ternate, is conspicuous from a great distance. Gunung Ternate last erupted in 1994 when hot ash was sprayed 300 m high above the crater.

Jailolo (1°05′N, 127°25′E), a high conical-shaped mountain, is prominent. Visible in the N part of the region.

Sahu (1°12′N, 127°26′E), a conical-shaped mountain and, when clear, the first prominent peak N of Jailolo.

Onu (1°17′N, 127°27′E), a high mountain, appearing conical from W.

3 Gamkonora (Gam Konora) (1°23′N, 127°32′E) is a volcano which is still active; rising from near the coast of the N portion of the island, smoke hangs continually over a distinctive peak close W of the summit. Visible, when clear, from a great distance.

Ibu (1°30′N, 127°37′E), shown as Gunung Ibu, 9 miles SSW of Loloda, has a prominent crater summit visible, when clear, from a great distance.

Loloda (1°38′N, 127°40′E), with a rounded volcanic summit, and a small peak on its S slope, are both conspicuous from any direction.

Posawani (2°06′N, 127°55′E), shown as Gunung Posawani, is particularly prominent at the N end of Halmahera and in the approaches to Selat Morotai.

4 **Major lights:**

Pulau Pokal Light (white beacon) (0°26′S, 127°43′E).

Tanjung Kayumerah Light (0°46′N, 127°22′E) (5.137).

Pulau Hiri Light (white metal framework structure, 30 m in height) (0°54′N, 127°18′E).

Tanjung Bobo Light (white metal framework structure, 40 m in height) (1°02′·5N, 127°24′·5E).

Pulau Makian Light (white metal framework structure, 20 m in height) (0°20′N, 127°21′E).

Pulau Sidanga Light (white metal framework structure, 30 m in height) (1°40′N, 127°29′E).

Directions

Chart 2786 plan of Selat Patientie, 2788

Selat Patientie

5.119

1 **General.** Selat Patientie, which separates Pulau Bacan from the SW side of Halmahera, is the usual route for vessels plying between Irian Jaya and Ternate and vice versa. It is also used by ocean-going vessels proceeding between Torres Strait and the Philippine Islands. Navigation in the N part of the strait is restricted somewhat by Pulau-pulau Kusu (5.120), but vessels of 70 000 dwt have used this passage.

2 To enter the strait, approaching from S and ports within Irian Jaya, vessels have the option of using the passage between Pulau Damar (5.113) and the mainland (when on passage bound to or from Selat Sagewin described at 5.239),

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or the more S route passing S of the islands lying close S of Pulau Joronga (5.113) and S and W of Pulau-pulau Loleojaha (5.113). Approaching from N, vessels should use the following directions in reverse. The passage, best seen on chart 2786, N of the reefs fringing Pulau Daga (0°48′S, 128°09′E), the N islet of a group of islets lying off the Halmahera coast, is deep and clear of dangers but is not the one normally used.

5.120

1 **Entrance from south.** On passing S or at least 5 miles W of Pulau Sori (0°53′S, 128°08′E), a low rock covered with vegetation, the track into the strait passes W of Pulau Doworalamo (Nusa Dowora Lamo) (0°51′S, 128°05′E), the hilly and wooded SW island of a group of islands lying near the S extremity of Halmahera.

2 From a position 1½ to 2 miles W of Pulau Doworalamo the track initially leads NNW towards Tanjung Buobe (0°40′S, 128°00′E), on the mainland, for a distance of about 8 miles, passing:

ENE of Gosong Tengah (0°45′S, 127°57′E), a coral patch over which there is a least depth of 2·2 m, lying close inside the 200 m depth contour off the SE coast of Pulau Bacan (5.114).

3 The track then leads NW for a distance of about 25 miles to a position:

Either side of Pulau Pokal (0°26′S, 127°43′E), an islet covered with vegetation, from where a light (5.118) is displayed, situated within Pulau-pulau Kusu, a string of islands lying between Pulau Bacan and Halmahera at this location.

4 If passing SW of Pulau Pokal and between it and Pulau Kusu, another islet situated close off the coast of Pulau Bacan, reported depths of 19 m and 24 m lie 6 cables SW and 7 cables W, respectively, from Pulau Pokal. The NW passage between Pulau Pokal and Pulau Saleh Kecil, a hilly island 1 mile NNE, is clear and deep. The sides of both passages are steep-to throughout.

5 From a position either side of Pulau Pokal the track continues NW for about 12 miles until a position NE of Pulau Batusombo (Gilalang) (0°18′S, 127°33′E), a low, wooded islet situated close N of the N coast of Pulau Bacan, is reached.

Caution. The passage between the N end of Pulau Saleh Besar (0°22′S, 127°44′E) and the coast of Halmahera is foul, and other passages N of Pulau Saleh Kecil are not recommended.

5.121

1 **Useful marks:**

Tawaigili (0°51′S, 128°16′E), a well defined hill rising near the S end of Halmahera.

Tanjung Bilulu (0°47′S, 127°54′E) and Tanjung Wayatimu, standing 4½ miles N of Tanjung Bilulu, are both easily identifiable headlands on Pulau Bacan (5.114) especially when in the vicinity of Gosong Tengah.

2 Gogosoma is the S and most distinctive peak of a range extending about 7 miles NNW from abreast Tanjung Buobe (0°40′S, 128°00′E) on the coast of Halmahera.

Raroang (0°30′S, 127°36′E), a conical-shaped peak rising on Pulau Bacan, and the highest part of a horseshoe ridge, is prominent in the S part of the strait.

Gorogoro (0°25′S, 127°32′E), rising on Pulau Bacan, is prominent in the N part of the strait.

3 Pasecal (0°18′S, 127°47′E), a high peak, is distinctive from W and SE.

Uwatcain (0°16′S, 127°45′E), rising on Halmahera and the middle of several coastal peaks, is prominent throughout the strait.

(Directions continue for the passages N to Ternate at 5.122 or 5.123; directions for the E-W passage to Selat Sagewin are given at 5.239)

Selat Patientie to Ternate (inside route)

(continued from 5.121)

5.122

1 From a position NE of Pulau Batusombo (0°18′S, 127°33′E), the track passing E of the volcanic islands extending S from Pulau Ternate, leads N passing:

W of Tanjung Tokaka (0°13′S, 127°39′E), a low point, which may be identified by the village of the same name standing close within the point, and by the mouth of a river close N. Thence:

2 E of Ujung Banyak (Tanjung Tawali Besar), the reef fringed extension S of Pulau Wailora Kecil (0°04′S, 127°28′E), an islet, which is itself an extension of Pulau Wailora, close S of Pulau Kayoa (5.114), thence:

E of Tanjung Wotoko (Larumabati) (0°08′N, 127°27′E), rocky, wooded, NE extremity of Pulau Kayoa; Pulau Miskin, an islet, lies close off the N end of the island, thence:

3 W of Takat Lemlem (0°11′N, 127°35′E), a detached dangerous rock, lying in the stretch of water between Halmahera and the volcanic islands extending S from Ternate, thence:

W of Takat Mainmain (Main Main) (0°18′N, 127°37′E), two coral reefs, over which there is a least depth of 4 m (13 ft), lying at the outer edge of Teluk Payahi (5.168), an open bay, and:

4 E of Pulau Makian (0°19′N, 127°24′E) (5.115), with a prominent volcano (5.118), and between this island and Pulau Woda, an islet lying close off the coast of Halmahera, thence:

E of Pulau Moti (0°28′N, 127°24′E), with a conical-shaped active volcanic summit; its sides are covered with vegetation to the summit which is connected to a lower peak NE by a remarkable saddle. Thence:

5 E of Pulau Mare (0°35′N, 127°24′E), and:

W of Tanjung Dobegasi (0°33′N, 127°31′E), a low point, on Halmahera, thence:

Either side of Pasir Raja (0°36′N, 127°28′E), comprising a small cay covered with sand and coral dust and a drying atoll close N. The best water lies between Pulau Mare and the small cay; a track W of the E extremity of Pulau Tidore bearing 000° clears both these dangers. Thence:

6 Either side of Pulau Pilongga (0°43′N, 127°28′E), a rock 41 m (136 ft) high and partly covered with vegetation, which lies 1¼ miles E of the E extremity of Pulau Tidore (5.115). Thence:

E of Tanjung Dehesila (Dehe Sila) (0°45′N, 127°27′E), the NE extremity of Pulau Tidore; thence the track leads WNW towards Ternate.

7 **Useful marks:**

Dufuk (0°07′N, 127°47′E), a very prominent peak, rising 6 miles E of Tanjung Gumele.

Sinopa (0°12′N, 127°46′E), a peak within the coastal range, is prominent from W. Tabrain, another peak,

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but lower, rising nearer the coast 3 miles WSW of Sinopa, is also easily identified.

8 Pulau Joji (0°21′N, 127°37′E), a high islet lying off the mainland at the N end of Teluk Payahi (5.168), provides a good mark.

Light (5.188) displayed from Soasiu (0°39′N, 127°26′E).

Light (5.141) displayed from the wharf at Ternate.

(*Directions for the approaches to Ternate are given at 5.138)*

Selat Patientie to Ternate (outside route)

(continued from 5.121)

5.123

1 From a position NE of Pulau Batusombo (0°18′S, 127°33′E) the track N to Ternate, following the outside route W of the volcanic islands extending S from Pulau Tidore, initially leads WNW thence N, passing:

Between Tanjung Waisamola, the S extremity of Pulau Laluin, an island connected by a reef with Pulau Kayoa at its S end, and Pasirbale (Pasir Bale) (0°14′S, 127°26′E), a steep-to coral reef, thence:

2 Between Pulau Taneti (0°06′S, 127°14′E), the hilly SE island of Pulau-pulau Goraici (5.114), and Tanjung Waisamola, thence:

Between Pulau Laigoma (0°08′N, 127°13′E), the hilly NE islet of Pulau-pulau Goraici, and the N end of Pulau Kayoa, thence:

W of Pulau Makian (0°19′N, 127°24′E) (5.115), from where a light (5.118) is displayed, thence:

3 W of Pulau Moti (0°28′N, 127°24′E), thence:

W of Pulau Mare, which lies between Moti and Pulau Tidore 2½ miles N; there are two villages on its W side. Thence:

W of Pulau Tidore (5.115).

4 **Useful marks:**

Two dome-shaped mountains, the highest at 412 m (1615 ft), rising 3 miles SE of Tanjung Batumangara (0°20′S, 127°19′E), the high NW extremity of Pulau Bacan, are both prominent.

Pulau Tawali Kecil (0°14′S, 127°18′E), a high, steep, island, is easily seen from a distance.

5 Pulau Lilai (0°02′S, 127°15′E), a high islet on which there are coconut trees on its summit.

Pulau Gumorga (Gunange) (0°02′N, 127°13′E), a hilly and wooded islet.

Light (5.142) displayed from the SW coast of Ternate.

(Directions for the S approaches to Ternate through Selat Gamelamo are given at 5.138)

Selat Morotai to Ternate

5.124

1 From a position at the NW entrance to Selat Morotai the coastal route along the W coast to the N entrance to Selat Patientie initially leads SW thence SSW for a distance of about 85 miles, passing:

NW of Tanjung Bisoa (2°13′N, 127°57′E) (5.116), the N extremity of Halmahera, which slopes gradually down to the point from a mountain standing 3½ miles S, thence:

2 Between Pulau-pulau Loloda Utara (5.116) and the mainland, thence:

SE of Pulau Salangadeke (2°07′N, 127°47′E) (5.116), the S-most island of Pulau-pulau Loloda Utara, which stands on a reef extending about 2 miles farther S, thence:

3 NW of Pulau Sulana (Bulana) (1°49′N, 127°37′E), a reef-fringed rock lying off the coast; Pulau Gorolamo, another rock, lies 1¼ miles SW. Thence:

NW of Pulau Kahatola (1°41′N, 127°31′E) (5.116), thence:

4 NW and WNW of Pulau Sidanga (1°40′N, 127°29′E) (5.116), close SW of Kahatola, a light (5.118) stands on the N side of Pulau Sidanga, thence:

WNW of Tanjung Roramadehe (Raraimadehe) (1°12′N, 127°23′E), a steep point, thence:

WNW and W of Tanjung Bobo (1°03′N, 127°23′E), on which stands a light (5.118).

5 The track then leads SSE to a position ENE of Tanjung Tabam (0°50′N, 127°23′E) on the E side of Pulau Ternate, passing WSW of Pasirlamo (Pasir Lamo) (0°53′N, 127°27′E), a steep-to coral patch over which there are depths of less than 5 m (16 ft).

(Directions for the approaches to Ternate are given at 5.139 and for Selat Morotai at 5.203)

Ternate

Chart 2786 plan of Approaches to Ternate and Teluk Dodinga, Ternate

General information

5.125

1 **Position.** The port and town of Ternate (0°47′N, 127°23′E) lies on the SE side of Pulau Ternate, an island off the W coast of Halmahera.

5.126

1 **Function.** Ternate is the administrative capital of North Maluku (Maluku Utara). Frequently used by local and foreign vessels; the main exports, which in many cases have been shipped to the island from other islands and mainland villages, are timber products, copra and cloves. Imports include rice and petroleum products.

In 1998 the town of Ternate had a population of about 50 000.

5.127

1 **Topography.** Pulau Ternate, an island fringed by a narrow coastal reef, lies 7 miles WSW of Manumadehe, an area of low-lying marsh and mangroves and the nearest point to the W coast of Halmahera. The island is dominated by Gunung Ternate (5.118), its centrally placed active volcano; it is covered with thick vegetation until near the summit where it is bare. On the NE side there are gullies running down from the summit to the lava strewn NE coast.

2 Pulau Hiri, barely 1 mile N of Pulau Ternate, appears as a steep cone from a distance. Pulau Maka, an islet, lies close off the N point of Pulau Hiri.

5.128

1 **Port limits** lie within the parallels of 0°46′·6N and 0°47′·7N and the meridian 127°23′·4E and the coast.

5.129

1 **Approach and entry.** Ternate may be approached from N, passing E of the island, or from S passing either side of Pulau Tidore. If from W of Tidore, the harbour is entered from Selat Gamelamo, the strait separating the two islands.

5.130

1 **Traffic.** There is considerable local traffic and ferries frequently call. In 2003 the port was used by 115 vessels with a total of 397 894 dwt.

5.131

1 **Port Authority.** Harbour Master (Adpel), Jalan Jend. A. Yani–1, Ternate.

Website; www.portina4.go.id/ternate.htm.

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Limiting conditions

5.132

1 **Depths** alongside range between 7 m near the S end of the main jetty to 10 m at the N end.

Tidal levels. Mean spring range about 1·0 m, mean neap range about 0·1 m.. For further details see *Admiralty Tide Tables.*

2 **Maximum size of vessel handled:** 16 000 dwt, having a length of 144 m and draught of 6 m may be accommodated alongside the main wharf; vessels with a deeper draught may, on occasions, berth alongside at the discretion of the Harbour Master. Tankers up to 6000 dwt having a length of 120 m may berth at the oil depot at Jambula (5.142).

Arrival information

5.133

1 **Port operations.** On arrival vessels may, initially, be required to anchor (5.140). Berthing is only undertaken in daylight; unberthing can be arranged at any time.

Port radio. There is a port radio which is operated from the office of the Port Authority situated near the main wharf. Ternate also has a coast radio station; For details see *Admiralty List of Radio Signals Volumes 1(2)* and *6(4).*

2 **Notice of ETA required:** 10, 3, 2, and 1 day prior to arrival to local agents. At least 6 hours prior to arrival for a pilot; contact may be made direct to the pilots through the port radio.

3 **Pilotage** is compulsory for vessels over 150 grt berthing at the main wharf at Ternate and at the oil depot at Jambula on the S coast of Pulau Ternate, 8 km distant. The pilots board at the anchorage or off the wharf.

Tug is available to assist at either berth.

Harbour

5.134

1 **General layout.** Ternate harbour area lies on the SE side of the island where a wharf extending a short distance off the shore, over the narrow coastal reef, runs N and S. Two small jetties (5.141) extend from the shore about 1 cable S of the wharf. At Bastiong (5.143), about 1 mile S from the wharf, there is a ferry terminal.

Farther along the S coast, at Jambula, lies the oil depot with a single berth for product tankers.

5.135

1 **Tidal streams** set through the roads off the wharf at a rate of about 1½ kn. At HW there is a N-going stream and at LW a S-going stream.

5.136

1 **Climatic table** see 1.159 and 1.171

5.137

1 **Major light:**

Tanjung Kayumerah Light (white framework structure, 9 m in height) standing at Tanjung Kayumerah (0°46′N, 127°22′E), the SE extremity of the island.

Directions

5.138

1 **Approaches from south.** When passing E of Pulau Tidore, and on clearing Pilongga (0°43′N, 127°28′E) (5.122), the track leads WNW, in deep water, to the pilot boarding station (5.133), rounding the N coast of Tidore.

When passing W of Pulau Tidore, the track leads through Selat Gamelamo, the passage of water separating Tidore from Ternate, passing W and N of Pulau Maitara, a reef-fringed island, conically-shaped and covered with coconut trees, situated close W of the N end of Tidore. The fairway through the strait, which is deep and clear, takes a central track to the pilot station on account of the fringing reef extending 4 cables from the S coast of Ternate.

2 The passage between Maitara and Tidore is not recommended.

Useful marks:

Minaret at Toboko, S of Ternate, is prominent in this vicinity.

Light (white framework tower), displayed from the root of the jetty at the oil depot at Jambula (5.142) on the S coast of Pulau Ternate, is useful when passing W of Tidore.

Light (white post, 6 m in height) is displayed from the root of the Main wharf (5.141).

3 **Caution.** When navigating in this area, satellite-derived positions in this area only offer an approximate relationship with charted datum and corrections need to be applied. For details of these corrections the chart should be consulted.

5.139

1 **Approach from north.** Passage from the N is straightforward when passing E of Pulau Ternate. Excepting Pasirlamo (0°53′N, 127°27′E) (5.124) the passage is clear and deep throughout.

Berths

5.140

1 **Anchorage** may be obtained in the roadstead adjacent to Ternate, the town. The best berth lies in 65 m about 3 cables E of the wharf; vessels should not anchor closer in as the tides may prove most erratic and the coastal reef is difficult to distinguish. From December to April an inconvenient swell may run in the roadstead.

5.141

1 **Main wharf.** Yani Wharf, a concrete and steel constructed wharf, 76 m in length, with a breadth of 3·6 m, running N-S, extends a short distance from the shore at the town. With permission, vessels with a maximum draught of 9·5 m can berth at the N end; lesser draught vessels may berth towards the S end where there is less water.

Fish Quay. A fish quay, from which two jetties extend from the shore, lies close S of Yani Wharf; there are depths of up to 3 m alongside at HW.

5.142

1 **Oil Depot.** A single L-shaped jetty, with depths of 7 m at its head, extends a short distance from the shore at Jambula, a village on the S coast. Dolphins are situated either side of the pierhead and there are two mooring buoys off the berth for securing additional lines.

5.143

1 **Ferry berths:** situated near Bastiong, about 1 mile S of the wharf at Ternate. There are local ferry services connecting Bastiong with Rum (0°44′N, 127°23′E) (5.188), on Pulau Tidore to the S, Dodinga (0°51′N, 127°38′E) (5.189), Sidangoli (0°53′N, 127°30′E) (5.190) and Jailolo (5.157), situated on mainland Halmahera to the NE.

Port services

5.144

1 **Facilities:** minor repairs, hospital.

Supplies: fresh water, provisions.

Communications. Babullah Airport, at Tarau, 6 km N of Ternate, connects the island with Manado (Sulawesi), thence Jakarta or Philippines, and Ambon.

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Minor harbours

Chart 2786 plan of Selat Patientie, 2788 (see 1.34)

Babang

5.145

1 **General description.** Babang (0°38′S, 127°36′E), a small town and port, lies at the head of Teluk Babang which is situated on the E coast of Pulau Bacan (5.114); in 1997 the town had a population of about 5000. Babang is the main port for Pulau Bacan; timber is exported from a nearby sawmill. Imports include oil cargoes, which are handled at an oil depot close E of the town.

2 **Topography.** The area around the port is low-lying, but high ground rises to the N and S of the low land. Sungai Sayoang, a small river, enters the sea at Sayoang, a village 1 mile N of Babang.

5.146

1 **Anchorage** may be obtained off the port in depths of about 50 m (27 fm), mud.

5.147

1 **Directions.** Babang is approached from Selat Patientie (5.119). A coral reef patch, which lies 3 cables offshore at the town, is marked by a beacon (conical topmark). This reef may be passed on the S side where the passage, although narrow, is deep. A light (white beacon) is displayed from the town, and another light (white post) is displayed from the oil depot.

Sindapa, a prominent hill rising 3½ miles NW of the town, is a useful mark in the approaches to the port.

5.148

1 **Berths** include a jetty at the sawmill, close N of the town; vessels at anchor load from barges.

Close E of Babang there is an L-shaped oil jetty and dolphins, with a depth of 3 m alongside. Vessels up to 1200 dwt having a length of 70 m may berth here.

Port services. There are no facilities; medical assistance may be obtained from Labuha on the W side of the island, distant 10 km. Labuha is also the nearest airport with connections to Ternate.

Labuha

5.149

1 **General description.** Labuha (0°37′S, 127°28′E), a small port and town, lies within Teluk Labuha on the W coast of Pulau Bacan (5.114). Although it is the main town on the island, having a population of about 10 000, the port is mainly used by local traffic for the assembling of timber products and local produce, in particular cocoa and copra from nearby plantations.

2 **Topography.** Labuha lies on similar low-lying ground which stretches across the island from Babang on the E coast. Like Babang, the land rises N towards Bukuamasing (0°32′S, 127°29′E), a high peak, and S of the town to Pegunungan Sibela, a range of almost flat-topped high peaks.

5.150

1 **Anchorage** may be obtained in a depth of about 15 m (49 ft), soft mud, SW of the town, distant 2½ cables. If there is too much swell here vessels may find shelter, out of the influence of tidal streams, in Teluk Belangbelang, 3½ miles W of the town. A stranded wreck lies in the N part of the anchorage 1 cable S of Amasing pier (5.152).

5.151

1 **Directions.** Labuha may be approached from S using Selat Bacan which is entered between Tanjung Maregarango (0°50′S, 127°28′E), the SW distinctive extremity of Pulau Bacan (5.114), and Tanjung Mangga, 9 miles WNW. At the N end of the strait, four passages lead between the islands of the Obit group but the three W ones are seldom used.

2 From N, and with local knowledge, Labuha is approached through Selat Ujungmasaran, the narrow, but deep, marked (beacons) NE passage of Selat Bacan, separating Pulau Bacan from Pulau Obit, the hilly E island of a string of islands lying between Pulau Bacan and Pulau Mandioli (5.114). The track passes N of Pulau Nusara, a rocky islet, 3 miles W of Labuha.

5.152

1 **Berths.** For local produce and timber cargoes, vessels use the anchorage (5.150). A pier extends a short distance from the shore at Amasing, a village close NW of Labuha; at the pierhead there are depths of 2 m at HW. A light (white metal framework structure, 9 m in height) is displayed from the root of the pier. There is also a small T-head jetty extending W from the shore S of Labuha; a light (red beacon) is displayed from the root of the jetty.

5.153

1 **Facilities** are limited; hospital.

Supplies and provisions are also limited.

Communications. Labuha Airport lies near the town, with connections to Ternate.

Waisarisa

5.154

1 **General description.** Waisarisa (0°03′S, 127°25′E), a village on the E side of Pulau Laluin (5.123), part of the Kayoa group, is a collecting point and export port for logs and plywood. In 1999 this port was used by 6 vessels with a total of 63 655 dwt.

5.155

1 **Directions.** The port is approached through a wide, deep water, channel between islets off the S extremity of Laluin and an extensive reef extending S from Pulau Kayoa (5.114). Much of the NW portion of the channel is obstructed by a coastal reef. The alignment (336°) of the N edge of Pulau Laluin and a prominent mosque standing at Tanjung Guruapin (0°01′N, 127°24′E), the W point of Pulau Kayoa, leads NNW through the fairway of the channel.

5.156

1 **Berth.** A single berth which extends over the reefs has depths of 10 m alongside.

Charts 2786 plan of Approaches to Ternate and Teluk Dodinga, 2788 (see 1.34)

Jailolo

5.157

1 **General description.** Jailolo (1°04′N, 127°28′E) is a small town and port, situated at the N end of Teluk Jailolo, on the W coast of Halmahera. The bay, which is entered between Tanjung Guai (1°01′N, 127°28′E) and Tanjung Kailupa, 3¼ miles WNW, is reef-fringed throughout. A number of villages line the bay. Both entrance headlands are prominent, being high, rocky and wooded.

The port is used by local vessels where timber and copra are the main exports; Jailolo is also connected with Ternate by a ferry service.

5.158

1 **Directions.** The port is entered from Teluk Jailolo through a deep-water passage between the reefs; beacons mark the W side of the channel. A light (white metal framework tower, 6 m in height) is displayed from the town which is not easily seen from seaward during the day.

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2 There is generally deep water fronting the fringing reefs but vessels arriving from S should pass W of Pulau Babua, a rocky islet, standing on a reef, lying 5 cables NW of Tanjung Guai. The passage E of the islet is not recommended as a 5 m shoal lies between Pulau Babua and Tanjung Matui, a rocky point, 6 cables NNE of Tanjung Guai and on the same headland. Tanjung Gulalo, 1 mile SSE of Tanjung Guai, is the S point of this prominent headland.

5.159

1 **Berths.** Anchorage may be obtained off the entrance to the passage leading to Jailolo in depths of about 32 m, sand. At Jailolo there is a single jetty which extends a short distance SE from the shore. The port only offers limited facilities.

Pulau Doi

5.160

1 Since 1989, manganese ore has been exported from Pulau Doi (2°15′N, 127°47′E) (5.116), a small island off the N coast of Halmahera. The main point of cargo activity lies on the S coast of the island near the villages of Salube and Dama.

Anchorages off the south-western part of Halmahera

Charts 2788, 2786 plan of Selat Patientie

General

5.161

1 In the narrow passages between the islands off the SW part of Halmahera a great deal of local knowledge is required and many of the anchorages are not helpful for the mariner passing a considerable distance offshore. Only those anchorages which have a direct benefit to the mariner through or near the recognized channels of the area are described.

2 During the strength of the monsoons, both outside the groups and within the islands the water is choppy and discoloration over dangers cannot be depended upon anywhere. Tidal streams in the recognized channels do not usually exceed a rate of 2 kn.

Pulau Katinai Besar

5.162

1 Anchorage may be obtained E or W of Pulau Katinai Besar (0°57′S, 128°21′E), an islet, lying close off the N coast of Pulau Damar (5.113). The best berth lies W of the islet, in 37 m (20 fm), and between it and several other islets lying W of it.

South coast of Pulau Bacan

5.163

1 Anchorage may be obtained in Teluk Silang which is entered close N of Tanjung Silang (0°52′S, 127°43′E), a rocky and wooded point, but local knowledge is required here; two 11 m patches lie S of the point. In good weather, a better anchorage may be obtained within Teluk Wayaua, an open bay farther NW, in depths of 80 m about 5 cables S of the village of Wayaua at the head of the bay. Depths are great up to the shore and there is ample room to turn a vessel to lie to onshore winds.

East coast of Pulau Bacan

5.164

1 Anchorage may be obtained in Teluk Lapan, a bay on the E coast of Pulau Bacan (5.114) and situated within the confines of Selat Patientie. The bay, entered S of Tanjung Seremadoppo (0°38′S, 127°38′E), offers sheltered anchorage in depths of 58 m, mud and sand, close offshore and W of the outlet of a small river. Gamuja, an islet lying off the W shore of the bay, is easily identified; passage between the islet and the mainland is deep and safe. Another suitable anchorage lies off the village of Tutupa (0°43′S, 127°50′E) farther E of the bay, in depths of 46 m and 3 cables offshore.

North coast of Pulau Bacan

5.165

1 Anchorage may be obtained within Teluk Loid on the N coast of Pulau Bacan (5.114). The bay is entered SW of Tanjung Seki (Aru) (0°18′S, 127°31′E), the N point of the island. The best berth lies off the village of Geti, 1½miles SW of the point, in a depth of 27 m (15 fm); an 8 m (26 ft) patch lies 2½miles SW of Tanjung Seki.

2 Anchorage may be obtained farther inside the bay, passing E of Pulau Babi (Nusa Babi) (0°21′S, 127°25′E), a hilly and wooded islet; there are depths of 36 m (20 fm), sand, about 1½ miles from the head of the bay.

The passage leading SE, between the W side of Teluk Loid and the islands of Nusaraloid (Nusa Raloid) (0°20′S, 127°24′E) and Pulau Babi, is navigable only with local knowledge.

East coast of Pulau Mandioli

5.166

1 Anchorage may be obtained within Selat Bacan (5.151), though deep in places, anywhere along the E coast of Pulau Mandioli (5.114) with favourable weather conditions. The best berth here may be obtained in the entrance to, or within, Teluk Dong (0°42′S, 127°17′E) situated at the N end of this stretch of coast. Depths in the bay range between 18 and 38 m (59 ft to 21 fm). A narrow coastal bank fronts the sides of the bay, otherwise entry is safe.

South coast of Pulau Mandioli

5.167

1 The only anchorage on this coast is in a depth of about 22 m (12 fm) in Teluk Garunggarung, near the head of the bay, off the village of Garunggarung (0°46′S, 127°14′E). However, this anchorage is dangerous during the SE monsoon.

Anchorages off the west coast of Halmahera

Off Semo, Batula and Lifofa

5.168

1 Anchorage may be obtained in several places along the W-facing coast between Tanjung Tokaka (0°13′S, 127°39′E) (5.122) and Teluk Payahi, 30 miles N. Off Semo, a village 7 miles N of Tanjung Tokaka, there are depths of 38 m (21 fm), close offshore; off Batula, a village 5 miles farther N, there are depths of 29 m (16 fm) close offshore, and off Lifofa (0°05′N, 127°43′E), a village, there is better anchorage on the coastal bank in depths of 29 m (16 fm) about 1 mile offshore.

2 Teluk Payahi, which is entered between Tanjung Safi (0°16′N, 127°42′E) and Tanjung Saselata, 8 miles N, is not recommended for an anchorage on account of numerous shoals in its less open N part. Payahi, a village, with a flagstaff, stands 4 miles E of Tanjung Saselata and may only be reached by vessels with local knowledge.

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Pulau-pulau Woda
5.169

1 Anchorage may be obtained for small vessels inside the islands forming Pulau-pulau Woda (0°23′N, 127°35′E), a small group of islands lying off the mainland. The best berths lie between Pulau Woda (5.122), the N island, and the mainland, in a depth of 31 m (20 fm) and also between the E island and the mainland in similar depths.

Pulau Mare
5.170

1 Anchorage may be obtained, in depths of 49 m, off the village of Mare (0°35′N, 127°24′E) situated on the NW coast of Pulau Mare (5.122). There is a small pier here. This anchorage is approached from Selat Mare, the navigable stretch of water separating Pulau Mare and Pulau Tidore.

Anchorage may also be obtained off the village of Kovo, on the island's S coast, where there are depths of 57 m; the anchorage here is sheltered to an extent by Tanjung Kovo, the hook-shaped S extremity.

Pulau Tidore
5.171

1 Anchorage may be obtained, in depths of 18 m, off the village of Gamtofkange (0°40′N, 127°27′E), situated on the SE side of Pulau Tidore (5.115). This anchorage, however, is close to Soasiu (5.188), the main town of the island, which is frequently visited by local small craft. Elsewhere anchorage may be obtained anywhere off the island's E coast N of the parallel of the summit of Kiematubu (5.118).

Anchorages off the north-west coast of Halmahera

Within Teluk Sahu
5.172

1 Anchorage may be obtained within Teluk Sahu, off the village of Susupu (Sahu) (1°09′N, 127°26′E), in a depth of about 35 m (18 fm). Vessels should not proceed into depths less than 20 m (11 fm) as, owing to an abrupt decrease in depths, a surf runs closer inshore with W winds, even when light. Small vessels find shelter in similar depths off the heavily sanded up mouth of a small river at Lako, a village 1½miles S of Susupu.

Tanjung Duko
5.173

1 Anchorage may be obtained in a depth of 40 m (22 fm), N of Tanjung Duko (1°24′N, 127°29′E), a rocky point, with the point bearing 217° and Gamkonora (5.118) bearing 157°.

Off Sungai Ibu
5.174

1 Anchorage may be obtained about 7 cables W of the entrance to Sungai Ibu (1°30′N, 127°32′E) (5.194) in a depth of 12 m (39 ft), sand. Farther S the depths are less but the rocky holding ground is not so reliable. During the SE monsoon vessels may anchor closer inshore but in the NW monsoon it is inadvisable to move closer in, on account of the swell which may rise suddenly.

Diti
5.175

1 Safe anchorage may be obtained in a depth of 30 m (16 fm), sand, between Pulau Diti (1°57′N, 127°43′E), a reef-fringed islet thickly covered with vegetation, and the mainland E.

This anchorage can be approached from N or S, but without local knowledge is best approached from N and preferably at LW when the reefs are visible. There is ample swinging room for a vessel 100 m in length in the channel fairway; larger vessels should anchor farther N in depths of 40 m (22 fm).

Small craft channels and harbours off the south-west part of Halmahera

Pulau-pulau Damar
5.176

1 Small craft can enter the channel between Pulau Telor (1°09′S, 128°26′E) and Pulau Tadoku, 7 cables NE, where there is a least depth of 6 m (20 ft), leading to a sheltered anchorage off Pulau Kubi, a wooded islet 3 miles inside the channel entrance.

A small channel with least depths of 1 m (3 ft) gives access to the village of Waringin which lies nearly 2 miles inside from Tanjung Domoromadoto (Domoro ma doto) (1°08′S, 128°28′E), the SE extremity of Pulau Joronga (5.113).

Teluk Gane
5.177

1 Teluk Gane (0°46′S, 128°13′E), a narrow indentation on the SW coast of Halmahera, offers access to small craft; there is sheltered anchorage within the bay. Landing may be effected at Ganedidalam, a village with a prominent mosque, standing near the W entrance.

Pulau Bacan
5.178

1 Penambuan (0°42′S, 127°27′E) is a settlement on the W coast of Pulau Bacan (5.114) and situated on the E side of Selat Bacan (5.151), where there is a small pier for small craft.

Pelabuhan Sabatang, situated on the NE side of Pulau Bacan, lies about 2¼ miles NW of Tanjung Tuada (0°28′S, 127°41′E). The village of Sabatang, in which there is a flagstaff and a round-topped tree SW of it, stands at the head of a bight where there is a boat pier.

Pulau Obit
5.179

1 Sangkuangklano (0°37′S, 127°22′E), a village on the N coast of Pulau Obit (5.151), has a stone landing pier and a prominent mosque.

Selat Sambaki
5.180

1 Selat Sambaki separates the E side of Pulau Kasiruta from the N end of Pulau Bacan. The strait is obstructed at its S end by several islands, shoals, and reefs; the N end also has islands in its entrance but the passages either side of Pulau Toduku (0°20′S, 127°17′E), the central island, are clear and safe. Mainly used by local craft, the passages at the S end require a good deal of local knowledge as the streams in the passages, particularly at the S end, are strong attaining a rate of 3 kn.

Guruaboso
5.181

1 Guruaboso (Garua Boso), an inlet 1½ miles NW of Tanjung Semola (0°19′S, 127°45′E), a low point on mainland Halmahera covered with coconut plantations on each side, gives access for small craft to a village at the head of the inlet. The entrance to the inlet is narrow and reef-fringed but it opens out to a sheltered anchorage; landing may be effected at the village.

Landing may be effected at Saketa, a village 7 miles ESE of Tanjung Semola.

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Pulau Kasiruta
5.182

1 The W coast of Pulau Kasiruta (5.114) affords several small craft harbours and anchorages. Palamea (0°22′S, 127°08′E), the most important village on the island, offers a landing place. Teluk Sengga (0°18′S, 127°07′E) and Teluk Mamang, 2 miles SE of it, offer small craft anchorages; both bays are easy to enter. Tanjung Besori (0°25′S, 127°06′E), 7½miles S of Teluk Sengga, is a high steep point separating Teluk Lompus N from Teluk Besori S. Access to Teluk Besori is through a narrow channel leading to villages within the bay.

Pulau-pulau Latalata
5.183

1 Teluk Bobo and Teluk Gomo, small bays on the N side of Pulau Latalata (0°15′S, 127°03′E) and Pulau Muari, close NE, respectively, offer small craft anchorages and landings can be made at the villages situated at the head of each. Tuapen (0°12′S, 127°01′E), consisting of several rocks, lies 2½miles NW of the N point of Latalata.

A light (white metal structure, 10 m in height) is displayed from Pulau Sarangburung (0°15′S, 127°01′E), an islet lying close off the NW point of Pulau Latalata.

2 The passage between Pulau Latalata and the NW part of Pulau Kasiruta, passing either side of Pulau Pao Kecil (0°19′S, 127°04′E), and E of Pulau Pao Besar, 6 cables N, islets lying off the S coast of Pulau Latalata, is only used by local craft. The passage between Pulau Muari and Pulau Taneti, 5½ miles NE, is split into two parts by Tolimago (0°10′S, 127°11′E), a rocky islet with trees on it, lying mid-way.

Pulau-pulau Goraici
5.184

1 Small craft landings may be effected at several villages within this group, in particular on Pulau Siko (0°08′N, 127°07′E), the NW and highest islet, Pulau Gafi, 1¼miles NE, and at the S end of Pulau Gumorga (5.123). Passage between Pulau Siko and Pulau Goweba, close NW, is not recommended, nor through the islets comprising Tamotamo 1 mile W of Pulau Laigoma (0°08′N, 127°13′E) (5.123).

Small craft passages and landings on the west coast of Halmahera

Maidi
5.185

1 Landing may be effected at Maidi (0°08′N, 127°42′E), a village on mainland Halmahera, situated between Tanjung Uwama and Tanjung Gumele, 3 miles N. At the village there is a small sloping beach with coconut trees along it.

Pulau Makian
5.186

1 There is a small boat pier at Ngofakiaha (0°22′N, 127°25′E), a village situated on the NE side of Pulau Makian (5.115). If there is too much swell to effect a landing here this can always be accomplished in a small bight S of Tanjung Aabadaio, the N extremity of the island.

Tanjung Nyarigiro
5.187

1 A small inlet with a drying coastal reef, marked by beacons and discoloration, lies 7 cables N, and a similar inlet lies 1¾ miles N, respectively, of Tanjung Nyarigiro (0°25′N, 127°34′E), a reef-fringed point. The inlets offer sheltered anchorages and landings at villages at the head of each inlet.

Pulau Tidore
5.188

1 Soasiu (0°39′N, 127°26′E), the principal village on Pulau Tidore (5.115), has a small pier. A ferry service links Soasiu with Sidangoli (0°53′N, 127°30′E), 15 miles N, on mainland Halmahera.

A light (white metal framework structure, 6 m in height) is displayed from Soasiu.

A pier extends from the shore at Goto, a village 1¾miles N of Soasiu.

Rum (0°44′N, 127°23′E), situated on the NW coast of Pulau Tidore, has a small pier which is used for the ferry service linking with Ternate to the N.

Dodinga
5.189

1 Landing may be effected at Dodinga (0°51′N, 127°38′E), a village at the head of an inlet, which is itself at the head of Teluk Dodinga (5.113). A ferry service, operated from a small pier, links Dodinga with Ternate.

Sidangoli
5.190

1 Sidangoli (0°53′N, 127°30′E), a town and ferry terminal, lies on the N side of an inlet which is entered 5 cables SE of Tanjung Sidangoli on the W coast of Halmahera. A pier extends from the shore at the town which accommodates local craft and ferries. Sidangoli is the collection point for timber arriving from Pulau Morotai, which is processed at a local sawmill for export (via Ternate).

Teluk Tofiri
5.191

1 Teluk Tofiri, the shores of which are low, is entered between Tanjung Ratemu, a point 1½ miles N of Tanjung Sidangoli, and Tanjung Gulalo (1°00′N, 127°28′E) (5.158), 4½miles N. The bay is used by small craft, landing at several villages situated at the head of the bay. Pulau Tofiri, an islet standing on a reef, lies in the approaches to the bay 2½miles SSW of Tanjung Gulalo. An unmarked reef lies 7 cables NNE of the islet and there are several unmarked coral patches near the coast. Local knowledge within the bay is essential.

Teluk Todahe
5.192

1 Teluk Todahe (1°11′N, 127°24′E) is a small inlet affording shelter to small craft off the village of Todahe at its head. It is the only safe refuge for small craft during the NW monsoon. The entrance to the inlet is difficult to identify until close to it. Sahu (5.118) dominates the area surrounding the village.

Small craft passages off the north-west coast of Halmahera

Sungai Gamkonora
5.193

1 Sungai Gamkonora enters the sea 1 mile SSW of Ndigi Macin (1°28′N, 127°32′E), a coastal hill. The river drains marshy land and coastal forest through which numerous creeks flow. Small craft approach the river through a channel in the coastal bank although the bank constantly shifts its position.

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Sungai Ibu
5.194

1 Sungai Ibu, a small river, flows out 3½ miles SSE of Tanjung Liguamadehe (Ligua ma dehe) (1°33′N, 127°30′E). The mouth is narrow but widens within and is navigable by large praus. A sandbank extends from the river mouth.

Sungai Loloda
5.195

1 Sungai Loloda (1°42′N, 127°34′E) flows into the NE corner of Teluk Loloda, a bay fronting the islands comprising Pulau-pulau Loloda Selatan (5.116). Entrance to the river, which can only be used by small craft, may be effected by keeping close to the N headland of the bay and passing between it and two drying coral reefs situated off the river mouth, or passing S of these reefs to reach the entrance.

NORTH COAST OF HALMAHERA INCLUDING TELUK KAU TOGETHER WITH PULAU MOROTAI

General information

Chart 2788 (see 1.34)

Route
5.196

1 Selat Morotai, the strait of water separating Pulau Halmahera from Pulau Morotai to the N is the only passage N of Halmahera that is used by both foreign and local traffic. It is deep and clear except for charted dangers. On occasions passage N of Pulau Morotai is preferred when proceeding to and from Celebes Sea, via the passage N of Pulau Siau, and the N coast of Irian Jaya.

Topography
5.197

1 Pulau Morotai, a large, mountainous and forested-island, 43 miles in length, lies with Tanjung Wayabula (2°17′N, 128°12′E) its W point, about 9 miles NE of the N extremity of Halmahera and is separated from it by Selat Morotai. Pegunungan Sabatai, a long central range of mountains, rises to 1250 m (4099 ft) and is its highest point. The hilly E coast of Morotai is heavily indented by small bays and inlets and there are numerous villages; much of the coast is fronted by a barrier reef. The largest town on the island, Daruba, (2°03′N, 128°17′E) (5.227) lies on its S coast.

2 Pulau Rau (2°20′N, 128°09′E), a hilly and wooded island, lying 1¼ miles W of the W extremity of Morotai is separated from it by Selat Rau.

5.198

1 The N coast of Halmahera, between Tanjung Bisoa (2°13′N, 127°57′E) (5.116) and Tanjung Lelai, 60 miles SE, is heavily indented by Teluk Kau (5.213), a large bay open to the N, which lies between the two N-extending peninsulas. The sides of both peninsulas, facing what may be described as the outer part of the bay, are hilly and wooded with higher ground rising well inland.

2 Tanjung Jerewai (1°36′N, 128°40′E), situated at the N end of a broad, low, headland, forms the NE extremity of the NE-peninsula, of which Tanjung Lelai, 3½ miles E, is its NE point; Tanjung Gamcaka (Gamcake), 2 miles farther S, is its E extremity. Between these points a drying reef extends 1½ miles seawards. The main town and port, Tobelo (1°44′N, 128°00′E) (5.207), lies on the W side, at the outer end, of the approaches to Teluk Kau.

3 Pulau-pulau Tobelo (Kepulauan Tobelo), fronting Tobelo, consists of several low, coral islands extending 16 miles S from Tanjung Luari (Luwari) (1°49′N, 127°55′E) to Pulau Miti (1°34′N, 128°03′E), lying towards the approaches to Teluk Kau. A navigable channel separates these islands from the mainland.

Former mined areas
5.199

1 There are several areas within Teluk Kau (5.213) that are still considered dangerous due to mines from World War II. For further details on mined areas see 1.7 and Appendix I.

Natural conditions
5.200

1 **Currents.** In general, the flow of current off the W side of Morotai is NNE during the SE monsoon at a rate of about 1 kn. During the NW monsoon there is a flow to the ESE of a similar rate.

Tidal streams. There are both diurnal and semi-diurnal streams along the coasts of Halmahera and Morotai but the latter predominates. They are strong E of the N end of Pulau Morotai where rates can be as much as 3 kn. Within Selat Morotai they are not strong and navigation is easy; within Selat Rau, the narrow strait separating Pulau Rau from the W extremity of Pulau Morotai, they are strong with tide-rips N and S of shoals situated in or near the fairway.

5.201

1 **Local weather.** Off the E coast of Pulau Morotai, high seas and swell from the SE and NE have been experienced. Heavy showers from SSE, locally known as ‘Angin Lelai’, occur during the middle of the SE monsoon. This rain laden wind arrives without warning, accompanied by a heavy sea.

Principal marks
5.202

1 **Landmarks:**

Posawani (2°06′N, 127°55′E) (5.118).

Mamuya (1°47′N, 127°55′E), a conical-shaped mountain, rising near the coast at the S entrance to Selat Morotai is prominent.

Dukono (1°41′N, 127°53′E), a high mountain, and Togohi, another high mountain, 3½ miles S, are both conspicuous and when clear may be seen from a considerable distance.

2 Tokito (1°33′N, 127°52′E), Tami, 2½ miles S, and Ah, 1 mile farther S, are three prominent peaks when entering the outer approaches to Teluk Kau.

Iga (1°22′N, 128°19′E), Tatem, 10 miles NE, and Bobolo, 6 miles farther NE, are prominent mountains; all form good landmarks for vessels leaving or entering Selat Morotai from SE.

Major Light:

Tanjung Sopi Light (white metal framework structure, 40 m in height) (2°39′N, 128°34′E).

Directions for Selat Morotai

Entering from south-east
5.203

1 Vessels entering the strait from SE should initially pass between Pulau Mitita (1°58′N, 128°14′E), a wooded coral islet, fringed by a reef, which lies 1¾ miles SW of Tanjung Gila (Dehegila), the low tongue-shaped S extremity of Pulau Morotai, and Karang Momow (Momow Reefs), two coral patches with depths of less than 10 m (33 ft) over them. They are seldom marked by discoloration but occasionally there are tide-rips in the vicinity. The track passes:

2 Either side of Karang Kokomoruku, a 19 m (10 fm) coral patch 3 miles SW of Pulau Mitita, thence:

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SW of Karang Ponaponata (Pona Ponata) (1°58′N, 128°11′E), a coral patch with a least depth of 8 m (26 ft) over it. A light (white beacon) is displayed from Karang Dododahohe, another drying coral patch, 1 mile E, between Karang Ponaponata and Pulau Mitita. Thence:

3 SW of Karang Lutulutu (Lutu Lutu), a coral patch over which there is a least depth of 6 m (20 ft), situated 1 mile N of Karang Ponaponata, thence:

SW of Karang Goyauku (Goya Uku) (2°00′N, 128°12′E), a coral reef situated 1¼ miles S of Pulau Kokoya, an inhabited islet, lying at the S end of a narrow reef. Thence:

SW of Pulau Kokoya.

4 The track then leads N, in deep water, for a distance of about 15 miles, with the W edge of Pulau Rau bearing 000°, until abreast Tanjung Jojefa (2°12′N, 128°04′E), the prominent headland of the NE coast of the W extending peninsula of Halmahera, passing:

W of Pulau Kolorai, an inhabited islet, lying on the same narrow reef, 2½ miles N of Pulau Kokoya, thence:

W of Pulau Dodola Besar (2°05′N, 128°11′E), with Pulau Dodola Kecil, close S, lying at the N end of the reef extending N from Pulau Kokoya, thence:

5 W of Pulau Pelo, an islet lying close W of Pulau Galogalo Besar (2°08′N, 128°11′E), another inhabited island, thence:

W of the fringing reef surrounding Pulau Ngelengele (Ngele Ngele) Besar (2°12′N, 128°12′E) (5.227), lying at the N end of the coastal reefs along the W coast of Morotai.

The track then leads NW to the open sea between Tanjung Jojefa and Pulau Saminyamau, a low islet, covered with vegetation, lying close S off the S extremity of Pulau Rau (5.197).

Entering from north

5.204

1 Vessels approaching the strait from NW may use the directions given at 5.203, in reverse, maintaining the fairway. However, vessels may round Tanjung Jojefa safely at a close distance as deep water can be found up to the narrow fronting reef. Track can then be made directly SSE to a position W of Karang Ponaponata (1°58′N, 128°11′E) using the light displayed from Karang Dododahohe as the mark by which to adjust the track for exiting the strait SE.

2 If, in poor visibility, the light is not seen early on the SSE track, vessels should move farther offshore passing between Karang Kokomoruku and Karang Momow.

Useful mark:

Soundings on Lukuluku (1°54′N, 128°09′E), over which there is a least depth of 183 m (100 fm), may prove a useful mark when passing over it.

Selat Rau

5.205

1 Selat Rau, which separates Pulau Rau (5.197) from Pulau Morotai (5.197), enters Selat Morotai (5.196) at its N end. The strait is only 1¼ miles wide at its narrowest point. Although generally deep, at its N end there are several coral patches, with depths of 7 m (23 ft) in places, which extend across it. The best track, which has a least depth of 9 m (30 ft), lies in the fairway leading SW-NE, maintaining a distance of about 6 cables from each of the reef-fringed sides of the N end of the strait.

Tide-rips and strong streams occur in the strait; see 5.200.

5.206

1 **Useful mark:**

Three caves in a steep cliff near the village of Aru (2°23′N, 128°10′E) on the E coast of Pulau Rau are conspicuous from seaward when entering the strait from N.

Tobelo and Kupakupa

General information

5.207

1 **General description.** Tobelo (1°44′N, 128°00′E), a large town and port, and Kupakupa (5.211), the oil berth for Tobelo, 6 miles S, are situated at the N end of the W side of the outer part of the approaches to Teluk Kau. Tobelo is mainly an anchorage port but there is a quay for vessels to berth alongside. A regular ferry service links the town with Ternate via Morotai and occasionally to Manado.

2 The main exports are timber products and spices; there is also a thriving trade of banana exports to Japan.

In 1998 Tobelo had a population of about 13 000.

5.208

1 **Topography.** Sheltered by the islands forming Pulau-pulau Tobelo (5.198) which lie offshore fronting the town, the land behind rises to high ground with the summit of Dukono (5.202) being the highest point. Pulau Kumu, an island, which lies at the SE end of a reef extending SE from Tanjung Pilawana (1°44′N, 128°00′E), a low, hooked-shaped point directly fronts the roadstead off the town.

5.209

1 **Approach**. Tobelo may be approached from N or S using the deep-water channel which lies between the islands of Pulau-pulau Tobelo (5.198) and the mainland. From N, the passage leads SE passing between Pulau Tonuu (Tolonuu) (1°47′N, 128°00′E) and Pulau Popilo, an islet 1¼ miles SW; thence SW of Pulau Rarangane, an islet 7 cables SE of Tonuu; thence between Pulau Kakaralamo (Kokara Besar) (1°45′N, 128°02′E) and Pulau Kumu, 8 cables SW; thence as described at 5.210.

2 From S the track initially passes between Pulau Tuputupu (Tupu Tupu) (1°42′N, 128°04′E), an islet on a reef, and Pulau Kolorai, 1¾ miles SE; thence SW of the S extremity of Pulau Tagaya (Tagalaya), 5 cables N of the islet; thence between Pulau Kakaraici, 1¾ miles NNW of the islet, and a detached reef SE of Pulau Kumu; thence as described at 5.210.

5.210

1 **Entry.** With local knowledge entry may be made by suitable-sized vessels passing between the SE side of Pulau Kumu, marked by a beacon (conical topmark), and a detached reef, marked by a beacon (red can topmark), situated 4½ cables SE of it; thence rounding the S reef-fringed edge of Pulau Kumu; thence passing N of a beacon (red can topmark) marking the N edge of Pulau Ubuubu, an islet standing on a reef 5 cables SE of the town. The track then leads W towards the S pier of Tobelo which passes S of two shoal patches over which there is a least depth of 0·5 m (2 ft) lying 1½ cables N of Pulau Ubuubu. When NW of Pulau Ubuubu the track leads N to an anchorage off the town, in 9 m (30 ft), sand and mud, and between it and the shoal patches previously mentioned.

2 Larger vessels should anchor 6 cables SE of Pulau Ubuubu in depths of 22 m (12 fm), sand.

5.211

1 **Alongside berths.** At Tobelo there is a quay 120 m in length with depths of 5 m at MLWS; a light (white metal framework tower, 6 m in height) is displayed nearby.

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Small craft jetties are situated S of the quay and at the head of an inlet 6 cables N of the town.

2 The oil berth at Kupakupa, which lies 5 cables W of Tanjung Haaka (1°37′N, 128°00′E), consists of an L-shaped jetty with dolphins and can accommodate vessels up to 3500 dwt having a length of 100 m. There are depths of 8 m, at MLWS, alongside. Arriving and departing the berth can only be done during daylight hours; pilotage is not available.

A light (white beacon) is displayed from the oil berth.

5.212

1 **Port services:** medical assistance; provisions and supplies are limited; limited quantities of fresh water available at Kupakupa.

Communications. The nearest airport lies at Galela (5.230), nearly 20 km NW of the town.

Teluk Kau

General information

5.213

1 **General description.** Teluk Kau, separating the N-extending peninsula from the NE-extending peninsula of Halmahera, in reality comprises two parts, outer and inner. However, it is the inner part that is generally known as Teluk Kau. The bay, which is very deep for the most part, is entered between Tanjung Pacikara (1°19′N, 128°00′E) and a point 5½miles ESE and stretches about 35 miles SSW to its head.

2 **Historical note.** Teluk Kau has several areas still considered dangerous due to mines (5.199), through which swept channels give access to its S part. Between 1942–44, during World War II, Teluk Kau was a heavily fortified Japanese base, centred on Kau (1°10′N, 127°54′E), which later in 1945 was virtually destroyed by US aircraft, leaving behind a great number of sunken ships and ordnance in the entrance waters to the bay.

5.214

1 **Topography.** Teluk Kau is itself indented on both sides by numerous other bays, the largest being Teluk Waisile (Wasile), which lies directly inside its entrance and on its E side. The W shore of Teluk Kau is low for the most part; the E shore is higher and steep. At the head of the bay there is a small inlet (5.218), and there are some hills standing on the isthmus separating Teluk Kau from Teluk Dodinga (5.113).

Pulau Bobale, a low island covered with coconut trees and fronted by white beaches, lies in the entrance to Teluk Kau. For a description of the coasts N of the bay see 5.198.

5.215

1 **Tidal streams.** In general the streams are not strong. The lowest water levels occur between January and March and between July and October. The maximum rise and fall of tides that can be expected is respectively about 0·7 m (2 ft) above and 1·4 m (4 ft) below MSL. The maximum rate of stream on either side of Pulau Bobale is 1½ kn. When the wind blows in the opposite direction toward that which the stream sets, a difficult sea is experienced.

5.216

1 **Landmarks:**

Tabobo (1°11′N, 127°38′E), the W summit of Pegunungan Matamata (Mata Mata), and the unnamed E summit, 10 miles E, are prominent peaks within the bay.

Peak (1°19′N, 128°20′E), 1159 m (3801 ft) high, rising on the E shore 19 miles E of Pulau Bobale, is prominent within the bay.

Subaim (1°05′N, 128°03′E), with a sharp-pointed peak, is prominent. Watowato (Wato Wato), another peak, but higher with gently sloping sides, rising SE, is not easy to see.

5.217

1 **Directions.** If approaching from N, vessels should pass E of Karang Patola (1°45′N, 128°05′E), the E-most danger of Pulau-pulau Tobelo (5.198), over which there is a least depth of 3·5 m (12 ft); the reef is sometimes marked by surf and usually by discoloration. Thence 2 miles E of Pulau Miti (1°34′N, 128°03′E) (5.198), and not more than 1 mile E of Pulau Bobale (5.214). The swept channel off Bobale is 6 miles long, 5 cables wide, and is orientated SSW-NNE. A ridge, in the middle of the passage between Pulau Bobale and the mainland E, with a least depth of 5 m (16 ft) over it, should be avoided as it is one of the former mined areas within the bay. Another swept channel, but narrower, orientated N-S lies E of the ridge and between it and the reef-fringed mainland.

2 From a position at the S end of the W swept channel, passing Pulau Bobale, there are similar swept channels leading SW to Tanjung Boleo (1°09′N, 127°54′E), on the W side, and E to the village of Lolobata (1°15′N, 128°07′E) on the E side.

Useful marks:

Tanjung Loleo Light (white beacon) (1°06′N, 127°47′E); the light actually stands at Gamlaha (5.218) about 1 mile SW of Tanjung Loleo.

Wangeotak Light (green beacon, conical topmark) (1°08′N, 127°53′E).

5.218

1 **Minor harbours** exist at Gamlaha, 1 mile SW of Tanjung Loleo (1°07′N, 127°48′E), where there is a sawmill and logging takes place; off Sungai Kau (1°09′N, 127°52′E), for the port of Kau which is the main export area for copra, rattan and cacao, and within Teluk Bobane (Bobaneigu) (0°53′N, 127°40′E), a small inlet, at the head of Teluk Kau.

5.219

1 **Communications.** There is an airport at Kuabang-Kau (1°10′N, 127°54′E), a town on the W side of Teluk Kau. A coastal road connects Kau with Tobelo, in the N.

5.220

1 **Small craft.** Within Teluk Kau, there are piers at Kau (1°10′N, 127°54′E) (5.213) and Lolobata (1°15′N, 128°07′E) (5.217) for local craft, and landing may be effected N of Pulau Roni (1°00′N, 127°55′E), where there is a logging camp, and at Ekor (0°49′N, 127°50′E), a village.

Anchorages

West coast of Pulau Morotai

5.221

1 Anchorage may be obtained off the S entrance to Selat Rau (5.205) and SSE of Tanjung Wayabula (2°17′N, 128°12′E) in a depth of 20 m (11 fm), sand and rock. The best berth lies on the bearing 038° of the prominent tree on the point with the S edge of Pulau Saminyamau (5.203), 2¼miles W of the point, bearing 282°. More sheltered anchorage may be found S of Wayabula, a village E of the point, and between it and two drying reefs 1 mile S. However, local knowledge is needed for the latter anchorage as the area contains numerous shallow patches.

North-west coast of Pulau Morotai

5.222

1 There are temporary anchorages off Cio (Ciu) (2°24′N, 128°18′E), a village, in depths of about 22 m (12 fm) and also off Libano, another village, 5½ miles farther N, in a depth of 27 m (15 fm). The best anchorage may be obtained,

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in favourable conditions, in Teluk Sopi which is entered between Tanjung Sopi (2°39′N, 128°34′E), the low N extremity of Pulau Morotai, on which stands a light (5.202), and Tanjung Padangi, 7 miles SW. Depths of 49 m (27 fm) can be found off the village of Sopi at the head of the bay. The only danger is a 6 m (20 ft) patch which lies 1 mile NE of Tanjung Padangi.

South and east coasts of Pulau Morotai

5.223

1 Temporary anchorage may be obtained off the village of Sabatai (Sabatai-tua) (2°04′N, 128°25′E), a village on the S coast, in a depth of 47 m (26 fm), sand.

Anchorage may also be obtained outside of the coastal reef at Sangowo (2°06′N, 128°33′E), a village, situated on the SE coast about 3½ cables W of Tanjung Posiposi (Posi Posi). Here, depths are about 30 m (16 fm), sand and coral. A small inlet, with a marked (beacons) narrow passage leading N to the village through the coastal reef, gives access to a sheltered harbour for small vessels and small craft in depths of 6 m (20 ft). Landing can be made at the village.

2 On the E coast, sheltered anchorage may be obtained off Buhobuho (Busobuso) (2°12′N, 128°36′E) during the NW monsoon (October to March); the anchorage, in depths of 20 m (11 fm), lies within a barrier reef over which there is a least depth of 2·2 m (7 ft) lying 1¼ miles E of the village. The reef may be crossed in depths of 7 m (23 ft), SE of the shallow patch, with the village bearing NW; vessels with a deeper draught should approach Tanjung Lefao (Lefau), which is readily identifiable by a rock on the edge of the coastal reef, 1½ miles N of the village, on a W track, thence pass between the barrier reef and the reef-fringed coast, maintaining a distance of 3½ cables off the coast until a position SE of the village is reached.

3 Sheltered anchorage may be obtained off the village of Berebere (2°24′N, 128°39′E), on the E coast, in a depth of 40 m (22 fm), sand and coral. Pulau Tabailenge (Tobailengi), an islet standing on a coral reef, fronts the anchorage. The anchorage may be entered from N or S but the S approach is deeper and less obstructed by coral shoals. The best water lies off the islet when entering and the best berth lies NW of it and about 3 cables off. The harbour is used by small craft and maybe busy but from S the anchorage may be clearly viewed for clearance before entering.

Off Halmahera

5.224

1 Anchorage may be obtained off Supu (2°11′N, 127°59′E), a village at the head of Teluk Supu, a bay on the N coast of the N-extending peninsula of Halmahera. There are depths of 31 m (17 fm), sand, off the village which is fronted by a coastal reef extending 1 cable offshore. The best berth lies at least 2 cables off the reef and about 4 cables NE of the entrance to a small river S of the village.

5.225

1 One of the safest anchorages may be obtained within Teluk Galela, which is entered between Tanjung Salimuli (1°59′N, 127°57′E) and Tanjung Luari (5.198), 11 miles S. There are depths of 30 m (16 fm), sand and coral, 2 cables offshore and N of Galela (1°49′N, 127°50′E) (5.230), a village. Tarakanici and Tarakanlamo, close SE, are two prominent mountains rising NW of Galela. The anchorage is best approached anywhere between a SW to W track.

5.226

1 Good anchorage may be obtained in Teluk Bobolo (1°33′N, 128°30′E) which is situated on the NW-facing coast of the outer approaches to Teluk Kau (5.222). There are depths of 37 m (20 fm) in the E part of the bay SW of Tanjung Bobolo and about 7 cables offshore.

Small craft

Off Pulau Morotai

5.227

1 Wayabula (2°17′N, 128°12′E) (5.221), situated 5 cables E of Tanjung Wayabula, the W extremity of Pulau Morotai (5.197), has a pier which extends S over the coastal fringing reef. The village, which may be identified by a flagstaff, is fronted by a narrow roadstead with depths of 10 to 15 m (33 to 49 ft) in the fairway. A drying reef lies on the S side of the roadstead and there are numerous drying reefs in the approach from W and S.

2 A small craft channel leading S from Wayabula to Daruba, in the S, passes inside of Pulau Ngelengele Besar (2°12′N, 128°12′E), Pulau Ngelengele Kecil, 1 mile S, and Pulau Loleba Besar, 2 miles farther S, thence N of Pulau Sumusumu (2°03′N, 128°15′E) on the alignment (100°) of Pulau Dodola Kecil (5.203) with the S point of Pulau Rukerukete, an islet 1 mile W of Sumusumu. This alignment passes S of a 1 m (3 ft) rock. The track then continues S of Rukerukete and either side of Pulau Rube, 1 mile NW of Daruba.

3 At Daruba (Doruba) (2°03′N, 128°17′E) there is a pier; small craft are able to anchor off the pier in depths of 10 m (33 ft). There is an airport about 5 km E of the town.

Daruba is linked by ferry with Ternate (5.125).

5.228

1 Anchorage and landing can be effected at Sambiki, a village, situated 1¼ miles W of Tanjung Posiposi (2°06′N, 128°34′E) (5.223) where there is a break in the coastal reef by a gradually sloping beach into depths of less than 5 m (16 ft), hard sand. This sheltered anchorage should be approached from SE.

5.229

1 On the NE coast of the island, especially during the NW monsoon period, good landings may be effected at the villages of Misio (2°27′N, 128°41′E), within Teluk Misio, Luwoso (2°32′N, 128°38′E) situated within Teluk Luwoso, and at Pangeo, 2½ miles farther N.

Off Halmahera

5.230

1 Galela Roadstead lies in the SW part of Teluk Galela (5.225), W of Tanjung Bongo (1°49′N, 127°51′E); small craft can find anchorage in depths of 6 m (20 ft) off the village of Galela, which because of its many zinc-roofed buildings is conspicuous from seawards. A pier which lies a short distance S of the village, is used by praus.

EAST COAST OF HALMAHERA

General information

Charts 2788, 3248 (see 1.34)

Routes

5.231

1 For through routes passing E of Halmahera from a position W of Pulau Boo Besar (1°10′S, 129°18′E), leading N or S via Selat Jailolo, see 5.28.

For vessels using Selat Patientie and bound E to, or W from, Selat Sagewin (Irian Jaya), see 5.239.

Coastal routes are described at the appropriate places within the text.

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General description

5.232

1 The E coast of Halmahera, which extends from Tanjung Libobo (0°55′S, 128°27′E), the S extremity of the S-extending peninsula which may be identified by a hill rising within the point, to Tanjung Lelai (1°34′N, 128°43′E) (5.198), the NE point of the NE-extending peninsula, is steep, high, but without extensive marshes and mudbanks. It is, however, heavily indented with two large bays Teluk Weda (5.240) and Teluk Buli (5.257), which are separated by the E-extending peninsula of the island.

At the E extremity of the E-extending peninsula, Selat Jailolo, which separates the mainland from Pulau Gebe (0°05′S, 129°27′E) (chart 2786), is described at 5.274.

Depths

5.233

1 Shoal depths have been reported in the passages east of Halmahera. Mariners are advised to exercise caution when navigating in these areas.

Natural conditions

5.234

1 **Volcanic activity.** Volcanic sea-bottom disturbances have been reported on a number of occasions in an area 15 miles wide between the parallels 0°18′N and 1°00′N, and meridians 129°00′E and 129°54′E.

5.235

1 **Flow.** Tidal streams within Teluk Weda follow the coast and are only noticeable when close inshore; monsoonal drifts are not encountered until outside of the entrance points. Along the N shore of the bay the stream is W-going with a rising tide and E-going with a falling tide. Within Teluk Buli, the streams are similar with a rate not exceeding 1 kn. On occasions in both bays near the entrance extremities they may reach a rate of 1½ kn with pronounced tide-rips in evidence.

2 In the passage between Tanjung Ngolopopo and Pulau Muor, the streams are sometimes very strong and cause tide-rips. During the transition periods of the monsoons, regular and moderate streams setting NW-SE have been observed N of the point.

5.236

1 **Local weather.** In Teluk Weda during the entire NW monsoon the wind is light and the sea is calm, except in the NW part, where the wind which blows through the low valley W of Liember (0°35′N, 128°01′E) (5.245) strikes. In February and March, when the NW monsoon is strongest, sudden strong winds are experienced E of Tanjung Remdi (0°20′N, 128°33′E). At such times heavy rollers occur just beyond the lee of Tanjung Ngolopopo (0°13′N, 128°54′E). The turning period for the monsoons begins at the end of March, and only N of the latter point will gentle winds still be experienced.

2 In the beginning of the SE monsoon heavy showers from the SW occur occasionally. They last from 1 to 4 hours and are accompanied by a peculiarly thick and heavy atmosphere. After June this monsoon is quite strong and blows from S and SE. Most of the rain on the shore falls during this monsoon, in contrast to Teluk Buli where most of the rain falls during the NW monsoon.

Principal marks

5.237

1 **Landmarks:**

Goeba (0°15′N, 128°51′E), a prominent summit 296 m (972 ft) high, with steep sides, appears as a small table mountain from NE, rises towards the SE extremity of a peninsula extending SE from the E coast of Halmahera.

Twin peaks of El Fanum (0°03′S, 129°24′E) (5.281).

Peak (0°12′S, 129°32′E) (5.277) (chart 2786).

2 **Major lights:**

Pulau Boo Besar Light (1°10′S, 129°18′E) (4.265).

Tanjung Sofa Light (0°03′N, 129°17′E) (5.277).

Directions for Selat Jailolo

5.238

1 Selat Jailolo is the channel lying between Tanjung Sofa (0°03′N, 129°17′E), the rocky, prominent NW extremity of Pulau Gebe, and Pulau Muor, a small narrow rocky islet lying off the E extremity of the E-extending peninsula of Halmahera. The strait gives direct access for vessels passing between the S part of Halmahera Sea and the Pacific Ocean.

2 From S the initial track leads N to a position W of Tanjung Sofa, thence NNE passing:

Between the NW extremity of Pulau Gebe (5.260) and the SE extremity of Pulau Muor (0°11′N, 128°58′E), off which lies Pulau Weilon, a rocky islet, on the fringing reef.

3 When passing through Selat Jailolo, Pulau Muor should not be mistaken for a peak, 162 m (531 ft) high, rising close WNW of the SE extremity of the peninsula extending SE from the E coast of Halmahera.

Caution. Tidal streams near Tanjung Sofa are strong with tide-rips and whirlpools.

Directions for the passage between Selat Patientie and Selat Sagewin

5.239

1 From a position S of Tanjung Libobo (0°55′S, 128°27′E) (5.232), with Pulau Babi, a low wooded islet thickly covered with vegetation, close SE, the track to the W entrance of Selat Sagewin (7.54), N of Pulau Sagewin (0°57′S, 130°39′E) (7.54), leads E for a distance of about 130 miles, passing:

N of Takat Sapa (1°08′S, 129°03′E) (4.267), thence:

N of the islets forming Pulau-pulau Boo (4.263), thence:

2 S of the S islets forming Pulau-pulau Jefdoif (5.275), and:

N of the N coast of Pulau Kofiau (4.263), thence:

S of Pulau Nelayan (0°55′S, 130°22′E) (7.55), an islet lying 1½ miles W of Tanjung Mabo, the W extremity of Pulau Batanta (7.55), thence:

S of Tanjung Mabo (0°55′S, 130°23′E) (7.55).

3 **Useful marks:**

Tanjung Soos Light (1°10′S, 129°58′E) (4.265) which is displayed from the E extremity of Pulau Kofiau.

Batanta Light (0°55′S, 130°36′E) (7.62).

(Directions for Selat Sagewin are given at 7.62)

Teluk Weda

Chart 2788 (see 1.34)

General description

5.240

1 Teluk Weda is a very large bay situated between the S and E-extending peninsulas of Halmahera. Except for Batutani (Batu Tani) (0°27′S, 128°32′E), lying NE of Pulau-pulau Widi, the bay is not restricted and there are no known dangers outside 6 miles offshore.

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Topography

5.241

1 On the W side of the bay, between Tanjung Libobo (0°55′S, 128°27′E) (5.232) and Tanjung Foya (0°07′N, 127°56′E), a reef-fringed point about 50 miles N, there is continuous beach along the coast which is backed by wooded, hilly ground. Pulau Sunam (0°26′S, 128°07′E), an offshore islet which is reported to be infested by large snakes, lies between the two points.

5.242

1 Pulau-pulau Widi (Kepulauan Widi), several low islands in the S entrance to the bay, are covered with high trees or mangroves; these islands lie on two extensive reefs on the edges of which are coral rocks with white sand between them. The E reef comprises the islands of Gembira, Kokota and Kapuraca (Kapuraja) which enclose a lagoon; the W reef comprises Hilang, Daga and Sukar, the largest island. Pulau Dodora, a detached islet, lies 2 miles S of the E reef, whilst Pulau Dedawa (Dadawe) another detached island, lies 1 mile S of the W reef.

5.243

1 The NW and N coasts of the bay between Tanjung Foya and Tanjung Ngolopopo (58 miles ENE), a steep rocky point, at the E extremity of the E peninsula is mountainous and densely wooded. A number of shoals, not always marked, lie off the NW shore and in particular in the approaches to Weda (0°20′N, 127°52′E) (5.248). A number of shoals lie off the N coast; Karang Mie (Mi), which dries, lying between Tanjung Remdi (0°20′N, 128°33′E) (5.251) and Mesa, about 17 miles WNW, is the outermost danger.

Natural conditions

5.244

See 5.235.

Landmarks

5.245

1 Tajam (0°23′N, 128°37′E), a prominent conical-shaped mountain, rising on the E-extending peninsula, can easily be identified from between SE and SW.

Bial (0°27′N, 128°30′E), another mountain farther W of Tajam, with a steep W side which is prominent.

Liember (0°35′N, 128°01′E), a high mountain inland at the head of the bay, is often obscured by cloud but when clear is a good mark.

Pulau Joji (0°28′S, 128°05′E), an islet covered with coconut trees, but it is distinctive and prominent if passing along the coast between Pulau-pulau Widi and the mainland.

Directions for the approaches to Weda

5.246

1 From S, on passing either side of Pulau-pulau Widi, Weda (0°20′N, 127°52′E) (5.248) should be approached on the alignment (355°) of a hill (0°28′N, 128°04′E) 210 m (687 ft) high with Sagea, a saddle-backed mountain 3 miles N; this alignment passes to seaward of Karang Elmos, an atoll and the S-most reef of a series of off-lying reefs lying S of the port. When a peak 646 m (2117 ft) high, standing 7½miles W of Weda, bears 287°, thence on that bearing until the roadstead is reached. This track passes between Karang Pasir Tidore, a drying reef, 7 miles E of Weda, and Karang Lie Glogos, a similar reef, 4 miles S. Karang Pasir Tidore may be passed on its N side with the peak bearing 270°.

5.247

1 From E, on passing SE of Tanjung Ngolopolo (0°12′N, 128°54′E) and between it and Pulau Witimdi, two flat rocks 1½miles SE, or SE of Pulau Muor, 1 mile farther SE, the track leads W for about 35 miles until the bearing (287°) of the peak W of Weda is reached, thence on that bearing to the roadstead as previously mentioned.

Caution. See 5.235.

Weda

5.248

1 **General description.** Weda (0°20′N, 127°52′E), one of only two ports of local importance on the E coast of Halmahera, is a collecting point for copra, spices and timber (mainly logs) exports. The village of Weda is fronted by a coastal reef with Pulau Kulefu and Pulau Yef, two of the islets forming Pulau-pulau Kolo, a group of islets, lying up to 2 miles N of it.

2 **Anchorages.** Small vessels usually anchor in depths of 35 m (19 fm), sand and coral, S of an unmarked reef lying 3 cables S of Pulau Kulefu, the S-most islet, close E of the village, and about 5 cables off the coastal reef; two 1 m (3 ft) patches which lie 1¼ miles E and 1½ miles SE of the village, respectively, should be given a wide berth. Larger vessels should anchor in depths of 50 m (27 fm), at least 1½miles offshore and to seawards of the shallow patches.

3 **Alongside berth.** There is a jetty at Weda, 50 m in length with a depth of 4 m alongside at MLWS. A large storage area lies at the root of the jetty.

Anchorages

5.249

1 Anchorage may be obtained off the village of Foya (5.253) which lies 3¼ miles SW of Tanjung Foya (0°07′N, 127°56′E) (5.241), on the W side of Teluk Weda. Large vessels should anchor to seaward of several reefs which front the village in depths of 40 m (22 fm), coral. Excepting a 1 m (3 ft) coral patch 1 mile E of Tanjung Foya, this roadstead is open and safe.

5.250

1 Anchorage may be obtained on the N coast within Teluk Kokka, a small bay which is entered between Tanjung Waleh (0°26′N, 128°11′E) and a point 3¾miles farther WNW. The best berth lies in depths of about 35 m (19 fm) near the inner drying reefs. Karang Mela, a reef, lies off the entrance 1¼ miles W of Tanjung Waleh. During the SE monsoon and when the reefs are visible, a better berth for smaller vessels, in similar depths, mud, lies within an inlet on the NE side of the bay N of Pulau Tete, a low mangrove-covered islet 6 cables NW of Tanjung Waleh.

5.251

1 Anchorage may be obtained off the village of Banemo, about 1 mile E of Tanjung Remdi (0°20′N, 128°33′E) and also off Moreala, 3 miles WNW of the same point. In both places depths of 40 m (22 fm) lie about 4 cables offshore; in the latter anchorage, a 2 m (7 ft) patch exists 7 cables SE of the village.

5.252

1 Anchorage may be obtained off the village of Patani (0°17′N, 128°46′E), on the N coast of Teluk Weda, in a depth of about 55 m (30 fm), with the small landing pier at the village bearing 315° and on the alignment (about 117°) of the coast NW of Tanjung Ngolopopo (0°12′N, 128°54′E) (5.243) with the SW edges of Pulau Muor (5.238). The village is not easy to identify but on closing it, a white-roofed mosque will be seen. See also 5.256.

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Caution. Karang Legli, consisting of two 1·7 m (6 ft) patches, lies 5 miles WNW of Tanjung Ngolopopo and should be given a wide berth.

Small craft

5.253

1 On the E coast of Teluk Weda (5.240), small craft anchorage may be obtained off Foya (0°04′N, 127°53′E), a village situated on the N side of a river, and within several fronting reefs; when the coastal reef is visible, craft may anchor closer inshore and landing may also be effected. A flagstaff helps to identify the village.

5.254

1 On the N coast of Teluk Weda, landing may be effected at Sagea (0°28′N, 128°06′E), a village where there are several piers. The village lies at the head of a small bay and during the NW monsoon a great number of praus may be moored inside.

5.255

1 Small craft anchorage may be obtained off Mesa (0°24′N, 128°17′E), a village which lies on the W side of a short bulb-shaped headland. Both sides of the headland are fronted by reefs with navigable channels on each side. Landing can be effected on either side of the headland where there is a gently-inclined sandy beach.

5.256

1 A small landing pier exists at Patani (0°17′N, 128°46′E) (5.252) which is the centre of trade for this part of the coast and neighbouring islands. Praus are built here and local craft regularly visit the village.

Teluk Buli

General description

5.257

1 Teluk Buli, a large bay, lying between the E and NE-extending peninsulas of Halmahera, is entered between Tanjung Inggelang (0°33′N, 128°41′E), a low reef-fringed point, and Tanjung Wayamli, 30 miles N, and is backed by high land. It contains a number of dangers and, for practical purposes, is navigable only for vessels bound for Buli, on the N shore 28 miles WSW of Tanjung Wayamli. Teluk Sololo, a small uninhabited, steep-sided, hilly bay, forms the head of Teluk Buli.

2 Pulau Sayafi, a wooded elongated island, high in the middle, lies 7½ miles E of Tanjung Inggelang. Its NE shore is reef-fringed; Pulau Luwo, a low, reef-fringed islet, lies close SE.

Natural conditions

5.258

1 See 5.235. During the NW monsoon, heavy rain falls particularly within the bay area.

Landmarks

5.259

1 Tajam (0°23′N, 128°37′E) (5.245); visible from S.
Damoli (0°24′N, 128°34′E), a mountain, is prominent on the S side of the bay.
Bial (0°27′N, 128°30′E) (5.245), with Foni, close S, are both prominent on the S coast.
Waleh (0°32′N, 128°15′E), the highest peak within a range of peaks, is prominent from SW.

Directions for the approaches to Buli

5.260

1 From S, Tanjung Inggelang (5.257) should be given a wide berth as a 9 m (30 ft) patch lies 4 miles NE of the point. After rounding Tanjung Inggelang, keeping outside of the 200 m (100 fm) depth contour, the track initially leads W passing:
Between Pulau Inggelang, a low reef-fringed islet, covered with vegetation, lying close NW of the point, and Pulau Woto, a similar islet, 2½ miles N, thence:

2 S and W of Pulau Wor (0°38′N, 128°32′E) taking care to avoid a 2·5 m (8 ft) patch 5 cables SW of the islet.
The track then leads N passing:
E then N of Pulau Mia, an islet, 3½ miles NW of Pulau Wor. Karang Pinit, a small reef, lies 8 cables N of Pulau Mia.

3 The track then leads direct, in a clear channel, to the roadstead off Buli (5.263), passing:
WSW of Karang Woi, a drying reef, lying 4¼ miles NNW of Pulau Mia, thence:
ENE of Pulau Pakal (0°47′N, 128°20′E), a wooded, hilly island, lying nearly 6 miles SSE of Buli, thence:
ENE of Pulau Gee (Gei), an islet, 2 miles NNW of Pakal.

5.261

1 From E, the track leads W passing N of Pulau Leleve (0°44′N, 128°33′E), a reef-fringed islet, thence the track leads NW passing NE of a dangerous rock lying 6 cables E of Pulau Sain (0°46′N, 128°30′E), an islet lying at the S end of a fringing reef, thence N of this islet. The track then passes S and W of Karang Buist (Ronde Reef) (0°48′N, 128°25′E), an atoll, thence NW direct to the roadstead passing between Pulau Gee (5.260) and Karang Litin (5.262).

5.262

1 From N, Tanjung Wayamli (1°03′N, 128°43′E) (5.257) may be passed closely, though Karang Sailal, an 11 m (36 ft) shoal, lies 1½ miles SE of the point. Thence the track generally leads SW maintaining a distance of 2 miles off the N shore passing:
SE of Karang Semar, a 4·5 m (15 ft) patch, lying 1½ miles E of Tanjung Mokali (0°58′N, 128°33′E), thence:
NW of Karang Metonga, consisting of two patches with depths of less than 5 m (16 ft) over them, lying about 4 miles SSE of Tanjung Mokali, thence:

2 SE of Karang Baisan, a reef, 2½ miles WSW of Tanjung Mokali, thence:
SE of a 2·5 m (8 ft) patch lying 1 mile NE of Tanjung Busbus (0°56′N, 128°26′E), a rocky point, thence:
NW of a 2 m (7 ft) shoal lying 3 miles SSE of Tanjung Busbus.
The track then leads WSW as required to pass S of Karang Litin (0°52′N, 128°22′E), a drying reef, thence W to the roadstead. Another 2 m (7 ft) shoal patch lies 2½ miles ESE of Karang Litin.

(Directions continue for entering Buli at 5.264)

Buli

5.263

1 **General description.** Buli (0°52′N, 128°17′E), a village situated on the N coast of Teluk Buli, is the principal anchoring place in the bay for the collection of copra and timber from the surrounding district, which is then exported to the larger ports of Sorong or Ambon.

5.264

1 **Directions.** From any of the approach directions, the track leads W to an anchorage in the roadstead off the village,

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passing N of Pulau Gee (5.260). The best berth lies at least 1 mile offshore in depths of 36 m (20 fm), mud, where there is ample room to manoeuvre. Anchoring N of the village should be avoided as there are shallow depths up to 1 mile from the reef-fringed shore.

Two navigable channels, which lie through the coastal reef, N and S of the village give access to small craft between the shore and the anchorage.

Small craft

5.265

1 Small craft may find sheltered anchorage off the village of Inggelang (0°34′N, 128°39′E) situated on the S side of the island with the same name; a pier extends a short distance from the shore at the village. The channel leading S and W of this island, whilst navigable, is however, narrow and dangerous.

Landing may be effected E or W of Bicoli (0°35′N, 128°30′E), a village on the S side of the bay. Landing may also be effected at Maba (0°42′N, 128°17′E), farther N, where there is also sheltered anchorage on the N side of a sand spit linking the shore with Pulau Maba, an islet.

Anchorages

General

5.266

1 The anchorages off the E coast of Halmahera, excepting those within Teluk Weda, all require local knowledge and some are only suitable temporarily.

Off the villages of Tepeleu and Gemia

5.267

1 Temporary anchorage may be obtained off the villages of Tepeleu (0°19′N, 128°44′E) and Gemia, 1 mile E, in depths of about 29 m (16 fm).

Paniti

5.268

1 Anchorage may be obtained, in a depth of 23 m (13 fm), off the village of Paniti which lies close S of Tanjung Lut (0°24′N, 128°41′E), a reef-fringed point. Temporary anchorage may be obtained 5 miles farther S in a similar depth.

South of Tanjung Inggelang

5.269

1 Anchorage may be obtained in a small bay S of Tanjung Inggelang (0°33′N, 128°41′E) (5.257), in a depth of 24 m (13 fm), sand, where there are a few houses.

Off Tifonis

5.270

1 Anchorage may be obtained off the village of Tifonis, 3 miles S of Tanjung Petak (1°24′N, 128°45′E), a readily identifiable point, with a flat double-peaked hill close inside it; from a distance the hill resembles an islet. The best berth, for suitably-draughted vessels, lies E of the village in a depth of 14 m (46 ft) and between the shore and S extremity of a sandbank lying parallel with the coast, over which there are depths of 7 m (23 ft) in this vicinity. Deep-draught vessels should anchor seawards of the sandbank in a depth of 45 m (25 fm). Both anchorages should be approached from E with the village ahead.

2 **Caution.** Tifonis should not be confused with the village of Dorosago which lies 2 cables S of it.

Teluk Akelamo

5.271

1 Better anchorage may be obtained within Teluk Akelamo, a bay which is entered between Tanjung Petak (1°24′N, 128°45′E) and Tanjung Patliang, 7½miles NNW. The village of Akelamo stands close N of Tanjung Patliang whereas Sungai Akelamo (Ake Lamo) enters the sea 3 miles S of the point. Safe anchorage in depths of 18 m (59 ft) lies at least 3 cables off the entrance to the river.

Karang Patliang, a coral reef over which there is a least depth of 3·4 m (11 ft), lies 7 cables E of Tanjung Patliang.

Teluk Dabo

5.272

1 Anchorage may be obtained in Teluk Dabo, a bay entered about 3 miles S of Tanjung Lelai (1°34′N, 128°43′E) (5.198), in depths of about 25 m (14 fm). The bay is safe enough, but entrance to it lies between the N end of Karang Patliang (5.271) and a 1 m (3 ft) patch 4 cables NNE.

ISLANDS ON THE SOUTH-EAST SIDE OF HALMAHERA

General information

Charts 2786, 3248, 3745

General description

5.273

1 The islands situated SE of the E extremity of Halmahera comprise Pulau Gebe (0°05′S, 129°27′E), the largest, on which an important nickel-ore port exists on its SW-facing coast, Pulau Yu, 6 miles NE of Gebe, Pulau Gag, lying 22 miles SE of Gebe and Pulau-pulau Jefdoif (Yef Doif), the S-most group of islets. Whilst Pulau Gebe and Pulau Yu are part of Maluku, the latter islets are part of the province of Irian Jaya.

2 There are passages E of Pulau Yu and E of Pulau Gag, but most of the N-S traffic within Halmahera Sea passes through Selat Jailolo which is described at 5.238. The E-W passage between Selat Patientie and Selat Sagewin leading to ports in Irian Jaya is described at 5.239.

Topography

5.274

1 Pulau Gebe lies with Tanjung Sofa (0°03′N, 129°17′E) (5.238), its NW point, 25 miles ESE of Tanjung Ngolopopo (5.243), the E extremity of Halmahera. The SW-facing coast is covered with mangroves; the NE-facing coast is rocky, hilly, and wooded throughout with coconut plantations situated near the coast. Fau (5.281), an islet, lies about 13 miles SE of Tanjung Sofa. Pulau Yu, 6 miles NE of Gebe with Pulau Uta, an islet 1½ miles NE, are both covered with fairly high vegetation and coconut plantations; Pulau Uta is uninhabited.

2 Pulau Gag (0°26′S, 129°52′E), an island 22 miles SE of Pulau Gebe, is hilly, rocky and steep; it contains nickel-ore mines. Off the E side there are several reefs which require a wide berth. Gosong Nelayan, with a least depth of 2 m (7 ft) over it, lies within 1½ miles of the SE point of the island.

5.275

1 Pulau-pulau Jefdoif (Yef Doif), a group of low coral islets, lying on a bank, covered with vegetation and bordered by sandy beaches, lie about 38 miles SSE of Pulau Gebe. Pulau Miosging (Mios Ging), lies near the S edge of the bank together with Pulau Yepbam (Yefban), which lies 2½miles NNE. Pulau Mios, the largest islet of the group, lies 4 miles farther NNE of Pulau Yepbam; the island is prominent due to its twin conical peaks. Pulau Miosga (Mios

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Ga) (0°50′S, 129°54′E), 7½ miles E of Pulau Yepbam, is a low coral islet, detached from the bank, which is covered with vegetation and upon which stands a prominent square-shaped tree.

Tidal streams

5.276

1 Tidal streams at springs are strong near Fau (5.281) and particularly so between this islet and the coast of Pulau Gebe. Off the SE point of Pulau Gebe they are less strong than those off Tanjung Sofa, the NW point.

Tidal streams are also strong in the channel between Pulau Yu and Pulau Uta.

Principal marks

5.277

1 **Landmarks:**

Twin peaks of El Fanum (0°03′S, 129°24′E) (5.281) are particularly prominent in Selat Jailolo.

Peak (0°12′S, 129°32′E), 380 m (1247 ft) high, rising near the S extremity of Pulau Gebe, is conical and prominent in the S approach to Selat Jailolo.

Summit of Pulau Gag (0°26′S, 129°53′E) (5.274) rising near the N part of the island.

Twin conical peaks of Pulau Mios (0°46′S, 129°47′E) (5.275); visible for about 25 miles.

2 **Major light:**

Tanjung Sofa Light (white beacon) (0°03′N, 129°17′E); the light is displayed from a position about 8 cables E of the point.

Directions

5.278

1 As already described at 5.238, the main passage through these islands lies W of Pulau Gebe. There is however, a safe passage between Pulau Gebe (5.274) and Pulau Yu (5.274), and another between Pulau Uta (0°01′N, 129°37′E) (5.274) and Pulau Sayang (7.17), 22 miles NE.

2 There is also a safe passage, passing at least 3 miles E of Pulau Gag (0°26′S, 129°53′E) (5.274), which leads N from the E side of Pulau Kofiau (1°12′S, 129°50′E) (4.263), but when passing E of Pulau Gag from the W entrance to Selat Sagewin local knowledge is required, on account of the numerous islands and dangers extending NW from the coast of Irian Jaya.

It has been reported that Pulau Gag is radar conspicuous at 28 miles.

Port of Pulau Gebe

Chart 2786 plan of Gebe

General information

5.279

1 **Position.** The main port of Gebe (0°04′S, 129°23′E) lies within Teluk Ubulie, a small indentation towards the N end of the SW-facing side of Pulau Gebe and is sometimes known as this. Lying directly N of Tanjung Ubulie (5.281), another name often used, the port is one of the most important in the area.

5.280

1 **Function.** The port handles nickel ore which is open-cast mined from the W side of El Fanum (5.281) and is its main export; see also 5.295. Some vessels may be loaded alongside the ore jetty but most vessels load from the anchorage. In 1999 it was reported that a second loading anchorage position was available about 2 km N of the main port.

2 Kapalio, a coastal harbour handling local vessels only, lies some 2½ miles ESE on the S side of Tanjung Ubulie. The harbour lies between the mainland and Pulau Fau (5.281) and requires local knowledge to enter. Most of the population of the island lives in and around the nickel ore harbour.

5.281

1 **Topography.** Tanjung Ubulie (0°04′S, 129°23′E) is a rocky reef-fringed point; backing the port the twin summits of El Fanum rise up from the coast and dominate the area. Between Tanjung Ubulie and Tanjung Tulikalio (Tuli Kalio), 7 miles SE, there is a hollow in the coast which contains Pulau Fau, an islet, with a reddish conical hill near its S end, and a lagoon at its centre entered from the NE side.

5.282

1 **Approach and entry.** The nickel-ore berth is approached from the open sea and entered N of Tanjung Ubulie; the channel for Kapalio is entered from either N or S of Pulau Fau.

5.283

1 **Traffic.** In 2003, the port was used by 2 vessels with a total of 45 741 dwt.

5.284

1 **Port Authority.** The harbour and port for Gebe is operated by PT Aneka Tambang, Jalan Batuangus 11, PO Box 37, Ternate. Maluku Utara. Indonesia.

The port has a resident Harbour Master.

Limiting conditions

5.285

1 **Maximum size of vessel handled:** alongside up to 900 dwt; at the anchorage 60 000 dwt, having a draught of 20 m.

2 **Local weather.** Cargo working is suspended during periods of heavy rain and/or strong winds.

Arrival information

5.286

1 **Port operations.** Vessels may berth/unberth at the anchorage at any time between 0600–2359 hours; berthing/unberthing from the jetty between 0600–2200 hours.

Port radio. There is a port radio service operated from the Harbour Master's office near the ore jetty, call sign 'Pulau Gebe Radio'. The island also benefits from a coastal radio service but long distance communications should initially be made through Jakarta Radio. For details see *Admiralty List of Radio Signals Volumes 1 (2)* and *6 (4).*

2 **Notice of ETA.** ETA should be advised to the general agents and local agents at least 48 hours prior to arrival, with confirmation sent to local agents at least 24 hours prior to arrival.

Outer anchorages. Vessels may obtain selected anchorage in the channel N of Pulau Fau in depths of between 12 and 30 m, sand and coral, or about 1½ cables off the SE coast of Pulau Fau in depths of about 29 to 40 m, sand.

Pilotage. There is no pilot at Pulau Gebe.

Tugs not available.

Directions

5.287

1 Instructions are usually passed to vessels prior to arrival as to the procedure for loading. If jetty and anchorage positions are already occupied, instructions will be given as to the best anchorage to await a berth.

2 A transit beacon (two triangular topmarks, points up) standing on Tanjung Ubulie (0°04′S, 129°23′E) (5.281), and a similar beacon 2½ cables N of it are an aid to navigation.

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Berths

5.288

1 **Anchorage** for loading vessels is situated about 4 cables NW of the ore jetty in depths of about 66 m. Cargo is loaded from large capacity lighters by vessel's own gear.

Alongside berth. An ore jetty extends a short distance NW from the shore N of Tanjung Ubulie. There are depths of 9 m, at MLWS, alongside.

Port services

5.289

1 **Facilities:** limited; medical assistance is available.

Supplies: fresh water, fuel and provisions are not available.

Communications. There is an airport on the island with connections to Ternate.

Anchorages

Pulau Gebe

5.290

1 Anchorage may be obtained within Teluk Ingalan (0°12′S, 129°33′E), a bay at the S end of Pulau Gebe (5.274), and also off Umera, a village, in a bay close E. Depths in both bays are about 63 m; the latter bay is more open and suitable for larger vessels.

Anchorage may also be obtained off Sanafi (0°07′S, 129°31′E), a village on the NE-facing coast of the island, in a depth of 40 m.

Pulau Yu

5.291

1 Anchorage may be obtained on the SW side of Pulau Yu (5.274), which is partly rocky, NW of the village of Omnial (0°04′S, 129°36′E). The coastal bank here, however, is narrow and depths are about 60 m (33 fm); an anchor should be lowered and prepared before arrival. The bottom immediately off the village is too steep for anchoring and the tidal stream may be strong.

2 In favourable weather, anchoring may be obtained off the SW end of Pulau Uta (5.274), 1½ miles NE of the N part of Pulau Yu, in a depth of 64 m (35 fm) and about 1 cable offshore, with the S extremity bearing 083°. The coastal bank is again narrow here. Small vessels may anchor on the coral bank extending SE from the island, which is much wider, in a depth of 8 m (26 ft).

Charts 2786 plan of Gebe, 3248, 3745

Pulau Gag

5.292

1 Anchorage, open to the SE, may be obtained on a muddy bottom, with depths of about 30 m (16 fm) to within 1 cable of the shore, on the E side of Pulau Gag (5.274). Gosong Nelayan (5.274), off the SE extremity of the island, is the only danger to be avoided, though a 10 m (33 ft) patch lies nearly 2 miles SE of the NE extremity.

Small craft

Pulau Gebe

5.293

1 Landing may be effected at Kapalio (0°05′S, 129°25′E) (5.280), a village situated on the mainland opposite Pulau Fau (5.281). Small craft are able to enter a lagoon situated on the N side of Pulau Fau; the channel, with initial depths of 6 m opening up to greater depths, is restricted by a 2·7 m patch in the middle of the entrance to the lagoon.

2 Landing may also be effected through gaps in the coastal reef, when the surf is not too high, on both sides of the adjoining villages of Sanafi (5.290) and Kacepi (0°06′S, 129°31′E) situated on the NE-facing side of Pulau Gebe.

Pulau Yu

5.294

1 On the S side of Pulau Yu (5.274) there is an open lagoon (0°04′S, 129°38′E) which is entered from the sea through a narrow channel in the coastal reef. Suitable only for boats or praus, the depths inside are barely 2 m (7 ft) at best.

Pulau Gag

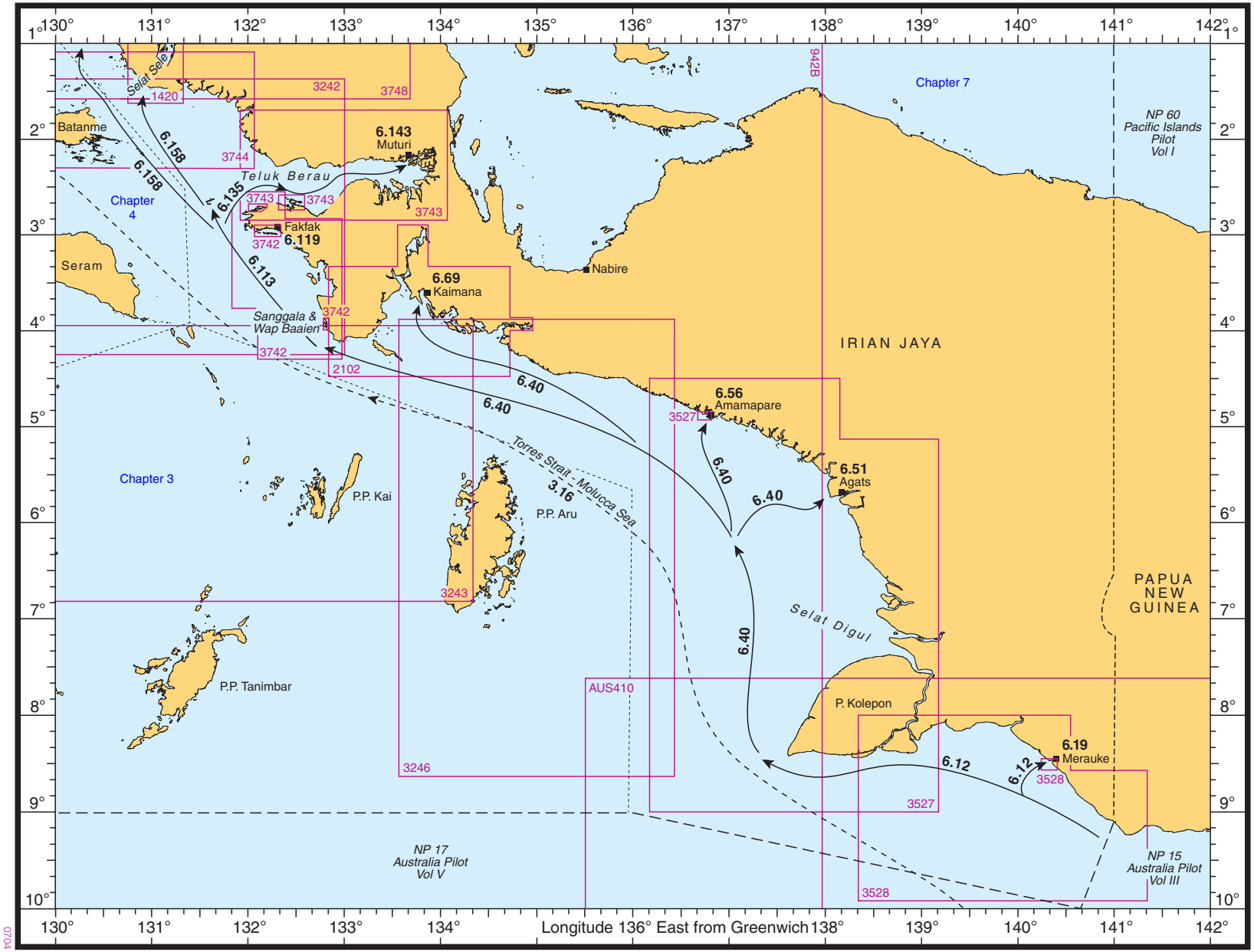
5.295

1 In 1999, it was reported that nickel ore was being mined in the N part of Pulau Gag (5.274), S of the settlement of Kablebet (0°25′S, 129°55′E). It was also reported that there was a wooden jetty for small craft situated in a small indentation on the E coast NW of Pulau Majet (0°27′S, 129°54′E), an above-water rock, on which there are some tall trees, lying 2 miles S of the NE extremity of the island.

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Chapter 6 - South-west coast of Irian Jaya including Teluk Berau



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CHAPTER 6

SOUTH-WEST COAST OF IRIAN JAYA NORTHWARDS FROM THE BOUNDARY AT 141°01′E TO TANJUNG SELE INCLUDING TELUK BERAU AND TELUK BINTUNI

GENERAL INFORMATION

Chart 4603

Scope of the chapter

6.1

1 In this chapter are described the harbours, anchorages and passages situated on the SW coast of Irian Jaya from the border with Papua New Guinea (chart 3528), thence NW to Tanjung Sele (1°26′S, 130°56′E) at the SW entrance to Selat Sele.

Also included in the description are the shores of Teluk Berau leading to Teluk Bintuni.

There are several ports of importance; Merauke (8°30′S, 140°23′E), near the SE limits of this volume, is the largest.

Topography

6.2

1 The whole of the SW-facing coast of Irian Jaya, between the border with Papua New Guinea and Teluk Lakahia (4°00′S, 134°38′E) (6.84), 460 miles NW, consists of low-lying mangrove-covered terrain through which numerous rivers flow into the sea. In many places the coastline is fronted by mudbanks. Sungai Digul (7°10′S, 138°42′E) (6.78), the longest river, is navigable for a distance of at least 560 km.

2 The entrance to Java Creek (not named on the charts) (9°05′S, 140°55′E), which has high banks and a crescent-shaped grove of trees nearby, may assist in identifying the coast of Irian Jaya lying NW of the Torassi River (6.13). During the South-east Trade Winds this part of the coast is often impossible to identify due to haze.

Farther N of Teluk Lakahia, for a distance of about 60 miles, the high S-facing slopes of the central mountain chain of Irian Jaya eventually reach down to the coast. There are several bays backed by hilly ground.

3 Jasirah Bomberai (6.110), which forms the S side of Teluk Berau (6.135), is generally low and forested, with part mangrove swamps in the N and part mountainous ground on the NW and SW coasts. Teluk Bintuni (6.135), the inner portion of Teluk Berau, cuts deep into Irian Jaya and almost severs the N peninsula.

From the N side of Teluk Berau to Tanjung Sele (7.70), at the N end of this coastline, about 96 miles distant, the land reverts, like the S end, almost entirely to low-lying mangrove-covered coasts again, with several rivers flowing through to the sea.

Shoals

6.3

1 There are a number of out-lying banks and shoals off this part of Irian Jaya. Towards the S end of the coast, Gosong Dolak (7°00′S, 136°51′E) (6.46) is one such bank. However, most of the shoals and dangers lie between Tanjung Fatagar (2°46′S, 131°56′E) (6.135), at the S entrance to Teluk Berau, and Tanjung Sele (1°26′S, 130°56′E) at the SW entrance to Selat Sele, and as far W as the E coast of Pulau Batanme; only some are marked.

2 Extensive mudbanks, drying in places, extend well offshore and drying coral and sand patches lie on and near the edge of the coastal bank. Also, many of the approach and entrance channels to the numerous rivers on this coast are subject to change. It is essential, therefore, to use the latest chart information prior to entering any of the river systems and, if practicable, engage the services of a pilot.

Natural conditions

Geology

6.4

1 Volcanic rock is not common in the mountains of Irian Jaya, but one of the few places where an igneous intrusion has appeared is in Pegunungan Sudirman. The outcrop, N of Amamapare (4°49′S, 136°58′E), has proved to be incredibly rich in copper, silver and gold deposits and this has led to the importance of Amamapare (6.56) as a major ore-exporting port.

2 Much of the area comprising Teluk Bintuni, on the NW coast of Irian Jaya, and in the E approaches to Teluk Irian on the N coast, contains vast amounts of biogenic natural gas (methane) which when liquefied can be exported from the point of issue or transported by pipeline to an offshore terminal. Gasfields, where charted, indicate the likelihood of encountering platforms, drilling rigs and associated traffic and the mariner needs to be aware of these hazards.

Flow

6.5

1 **Currents.** With the exception of the tidal streams, the coastal currents off the SW coast of Irian Jaya set in the direction of the prevailing monsoons i.e. NW or SE from Torres Strait to Banda Sea when passing N of Pulau-pulau Aru, and they are not strong. Within the more open waters of Arafura Sea, S of Pulau-pulau Aru, they set in a SW to W direction throughout the entire year.

2 **Tidal streams** generally set parallel to the coast but may be variable in direction and rate on account of the influences provided by the numerous rivers flowing into the sea on this coast. Off Ujung Salah (8°25′S, 137°38′E), the streams divide to set along the NW and S coasts of Pulau Kolepon; see 6.14. In Teluk Berau, they set regularly in and out with a rate of about 2½ kn; see 6.138.

With the land area so flat on much of this coast, tidal streams and height variations are experienced for a considerable distance up the various rivers.

Local weather

6.6

1 Along the SW coast of Irian Jaya to the border with Papua New Guinea the seasonal change in wind and weather are of the same general character as experienced in Arafura and Banda Seas, with the SE monsoon predominating. During the NW monsoon there is much rain along the coast and squalls are fairly frequent; this monsoon then weakens around April and the SE monsoon becomes established in May, although the winds are variable in both months. The seasonal distribution of rainfall depends upon the topography, but as a rule the wet season extends from December to March and the dry season reaches its height during August and September.

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General directions

Main routes

6.7

1 The main through routes between Torres Strait and Molucca Sea, and vice versa, pass outside the confines of this chapter and are described at 3.21 and 3.23. However, an alternative route, linking these two sea areas, which passes N of Pulau-pulau Aru and Pulau Seram, does briefly pass through the area W of Ujung Salah (8°25′S, 137°38′E) and is described at 3.24.

For offshore passages approaching Torres Strait from W see *Australia Pilot Volume V*; for passages through Torres Strait and along the S coast of Papua New Guinea see *Australia Pilot Volume III.*

Coastal passages

6.8

1 Only off the S coast of Irian Jaya is caution required, between the border with Papua New Guinea at 141°01′E and Ujung Salah (8°25′S, 137°38′E), nearly 200 miles W. There are a great number of shoals with depths of less than 10 m (33 ft) over them, situated up to 45 miles off this coast. Many of these dangers are from old reports and are not fully surveyed; Deelder Reef (9°53′S, 140°53′E), a small drying reef, is the most S of these dangers. Bad weather is usually experienced off Ujung Salah

2 With any sea running, as is usually the case during the SE monsoon and often during the NW monsoon, it is advisable to keep well away from the coast or a vessel will roll heavily.

At the N end, between Pulau Batanme and the mainland at Tanjung Sele (1°26′S, 130°56′E), there are navigable passages between the shoals and they are described within the text.

COASTAL PASSAGES — EASTERN BOUNDARY OF IRIAN JAYA TO TANJUNG NASAULANG

GENERAL INFORMATION

Chart 4603

Scope of the section

6.9

1 Within this section are described the harbours and anchorages situated on the SW coast of Irian Jaya, between the E boundary, at 141°01E, with Papua New Guinea, and Tanjung Nasaulang (4°05′S, 132°54′E), nearly 550 miles NW, and includes the coastal passages associated with this stretch of coast.

Also included are the important ports of Merauke (8°30′S, 140°23′E), in the S, Amamapare (4°49′S, 136°58′E), centrally placed, an important ore exporting port, and Kaimana (3°40′S, 133°45′E), in the N part of the coast.

Topography

6.10

1 Nearly the whole of this coastline consists of low-lying mangrove-covered terrain, fronted by a narrow mudbank, through which a great number of rivers flow into Arafura Sea. Well inland there are a series of high mountain ranges, known as the Central Highlands, which extend about 2000 miles in length throughout the whole of the island of New Guinea.

Pulau Kolepon (8°00′S, 138°30′E) (6.13), consisting of similar low and swampy terrain, lies close off the SW coast of Irian Jaya; it is separated from the mainland by Selat Muli, a navigable channel.

Natural conditions

6.11

1 See 6.4.

BOUNDARY OF IRIAN JAYA TO UJUNG SALAH INCLUDING THE PORT OF MERAUKE

General information

Charts Aus 410, 3528, 3527 (see 1.34)

Routes

6.12

1 The coastal route from the vicinity of Carpentaria Shoal (*Australia Pilot Volume III)* at the W entrance to Torres Strait (*Australia Pilot Volume III),* to a position, depending on draught, 30 miles W of Ujung Salah (8°25′S, 137°38′E), leads NW for a distance of about 260 miles.

Passage to Merauke, from Carpentaria Shoal, initially leads NW to position 10°S, 140°E, thereby passing W of the shoals in this area, thence N for a distance of about 80 miles, thence ENE to the pilot boarding position off the Fairway Light-buoy (8°35′S, 140°11′E).

2 Coastal passage E of the boundary with Papua New Guinea should only be undertaken with local knowledge; descriptions of the S coast of Papua New Guinea and navigable channels at the N end of Torres Strait may be found in *Australia Pilot Volume III.*

Topography

6.13

1 Between the E boundary of Irian Jaya, at 141°01′E, and Selat Muli (8°20′S, 139°00′E) (6.36), 135 miles W, the coast is low, muddy and covered with monotonous vegetation. Pulau Kolepon (Dolak) (8°00′S, 138°30′E), a low island separated from the SW coast of Irian Jaya by Selat Muli, is covered with dense forest, and is so marshy in places as to be almost inaccessible. Ujung Salah (Tanjung Salah, also charted as False Cape) (8°25′S, 137°38′E), the SW extremity of Pulau Kolepon, is low and mangrove-covered. Pulau Komoran (6.36) divides the S part of Selat Muli into two channels.

2 Much of the mainland area is swampy presenting an extraordinarily uniform appearance. It is, however, interspersed with just the occasional steep coastal point. A number of navigable rivers enter the sea along this stretch of coast; the most important being Sungai Merauke (6.19) which gives access to the port of Merauke (8°30′S, 140°23′E).

Sungai Torasi (Torassi River) which virtually enters the sea at the E boundary from within Papua New Guinea, is described in *Australia Pilot Volume III).*

Tidal streams

6.14

1 The tidal stream with the rising tide has been observed to set on to Ujung Salah, the SW extremity of Pulau Kolepon, with a rate of 1½ kn and there divide, setting NE along the NW coast of the island and E along the S coast of the island. With the falling tide the stream sets in contrary directions with a rate of 1 kn. See also 6.5.

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Principal marks

6.15

1 **Landmarks:**

Tanjung Mawal (8°07′S, 139°57′E) (6.32), the E entrance point to Sungai Bian, is one of the few prominent points on this coast that can be seen from some distance seawards.

Pulau Habee (8°14′S, 139°26′E) (6.35); because of high trees, the island is visible from a distance of at least 15 miles.

2 **Major lights:**

Merauke Light (8°29′S, 140°23′E) (6.24).

Kimaan Light (8°01′S, 138°54′E) (6.38); visible in Selat Muli only.

Other aid to navigation

6.16

1 **Racon:**

Pulau Habee Light (8°14′S, 139°26′E) (6.35).

For further details see *Admiralty List of Radio Signals Volume 2.*

Directions

6.17

1 Vessels plying to and from Torres Strait should do so from a safe distance W of the shoals extending W and N from the strait. If bound for the N part of Arafura Sea, rounding Ujung Salah (8°25′S, 137°38′E) (6.13), the SW extremity of Pulau Kolepon should be passed at a distance of not less than 30 miles unless required to do so.

There are sufficient lights positioned along this stretch of coast for safe E–W navigation.

Soundings may be a useful guide when in the vicinity of Ujung Salah; depths above the 10 m depth contour should always be maintained when rounding the point.

(Directions continue at 6.46)

6.18

1 Between Ujung Salah and the border with Papua New Guinea, the chart is the best guide over open water as there are numerous detached shoals over which there are depths of less than 10 m. Local knowledge is necessary for access to any of the navigable rivers; pilotage (6.21) is compulsory for Sungai Merauke.

Vessels should not approach the coast S of the border within 25 miles, as there are numerous detached sandbanks and this area has not been fully surveyed.

(Directions E of the border are given in Australian Pilot Volume III)

Merauke

Chart 3528 and plan of Pelabuhan Merauke (see 1.34)

General information

6.19

1 **Position.** Merauke (8°29′S, 140°23′E), a town and port, lies on the S side of Sungai Merauke about 2 miles within its entrance.

Function. Merauke is the capital of the S part of Irian Jaya and is the E–most town of Indonesia. Main exports include copra and timber; there is also an oil terminal 3 cables farther upriver.

In 1998 Merauke had a population of about 10 000.

2 **Topography.** Merauke, lying on low land protected by dikes, is situated on the edge of a unique landscape; an expansive alluvial plain of wild rivers leading to tidal flats, a wide floodplain and dense rainforest. Sungai Merauke, on which the town stands, is a navigable river of some length (6.29); it flows down to the sea at Merauke from an inland lake.

Port limits. Between the parallels of 8°31′·5S and that of the N entrance of the river; the meridian of 140°16′·5E, and a position 1½ miles upriver from the town jetty.

3 **Approach and entry.** The port is approached from the sea on a marked channel, thence the river is entered on leading lights (6.26).

Traffic. In 2003 the port was used by 9 vessels with a total of 56 646 dwt. The port is regularly used by local vessels including large passenger ferries.

Port Authority. Port Administrator, Jalan Gudang Arang, Merauke.

Website; www.portina4.go.id/merauke.htm.

Limiting conditions

6.20

1 **Controlling depths:** about 1·5 m, at MLWS over the inner bar; most vessels, however, enter and leave the port on or near HW on a rising tide.

Tidal levels. See *Admiralty Tide Tables.* Mean maximum range about 3·3 m, mean minimum range about 1·3 m.

Maximum size of vessel handled: 3500 dwt at the oil berth; vessels of 100 m in length can berth alongside the town jetty.

Arrival information

6.21

1 **Port operations.** Berthing and unberthing is carried out in daylight hours only.

Port radio. A port radio service is operated from the Harbour Masters office near to the town jetty; for details see *Admiralty List of Radio Signals Volume 6(4).*

Merauke also operates a coast radio service; for details of frequencies, see *Admiralty List of Radio Signals Volume 1(2).*

2 **Outer anchorage.** Anchorage may be obtained in the vicinity of the Fairway Light-buoy (8°35′S, 140°11′E) in depths of about 10 m, sand and stones.

Pilotage is compulsory for vessels over 150 grt; the pilot boards in the vicinity of the Fairway Light-buoy.

Tugs. The port has one tug for berthing assistance.

Harbour

6.22

1 **General layout.** Merauke is situated on the S side of Sungai Merauke in a bend of the river formed by a narrow peninsula at the SE end of which is Tanjung Sewa. The town jetty lies about 2 miles within its entrance and the oil jetty lies 3 cables farther upriver. The whole area is low-lying with surrounding swamp and jungle. The town lies at the W end of the Trans-Irian Highway which links other towns to the coast. Wasur Nature Reserve lies close E of the town and extends to the border with Papua New Guinea. Sungai Merauke is entered through a channel which has been scoured through the fronting coastal mudbank.

6.23

1 **Tidal streams.** From mid-March to mid-April the out-going stream was observed to flow for about 7 hours in the mouth of Sungai Merauke at a rate of about 2 kn; the in-going stream flowed for about 5 hours at 1 kn. During November and December the stream runs in the direction of the coast, NW for 7 hours and SE for 5 hours.

On occasions, after heavy rains, a rate of 5 kn has been observed off the town jetty.

Climatic table. see 1.159 and 1.170

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6.24

1 **Major light:**

Merauke Light (white beacon) (8°29′S, 140°23′E), which is displayed from the root of the town jetty.

Directions

6.25

1 From a position near the Fairway Light-buoy (safe water) (8°35′S, 140°11′E) the track initially leads ENE over the outer bar on the bearing 066° of the light-structure (6.26) standing 2 miles S of the river entrance, passing (positions from the light-structure S of the river entrance):

Between a buoy (port hand) (5 miles WSW) and a stranded wreck, 1 cable S of it, with a reported dangerous wreck 1 cable farther S; thence on to the alignment of the leading lights (6.26).

6.26

1 **Leading lights:**

Front light (white triangle, point up) (8°27′·6S, 140°21′·6E).

Rear light (white triangle, point down), 2½ cables NE of the front.

These lights are only shown when vessels are expected.

On the alignment (035°) the track leads NE over the inner bar into Sungai Merauke, passing:

NW of a light-beacon (green metal framework structure, 10 m in height) (3¼ miles WSW). It was reported (2004) that this beacon has been destroyed. Thence:

2 SE of a light-beacon (red metal framework structure, 10 m in height) (3¾ miles W), thence:

SE of a beacon (can topmark) (3 miles W), thence:

SE of a light-beacon (red metal framework structure, 10 m in height) (2½ miles W), thence:

NW of a light-beacon (green metal framework structure, 10 m in height) (2 miles NNW), thence:

NW of a beacon (starboard hand), standing close W of Tanjung Haram at the S entrance to the river.

3 The track then favours the S side of the river on rounding Tanjung Haram on account of fringing mudbanks on the N bank, thence to the town berth or continuing to the oil berth on the opposite bank to Tanjung Sewa (6.22) passing S of the mudbanks.

Useful marks:

Radio mast (red and white bands) (8°30′·4S, 140°22′·6E) is prominent.

Yatum Light (white metal framework structure, 25 m in height) (8°27′S, 140°19′E) standing on the coast 2 miles N of the river entrance.

Sungai Merauke Light (white metal framework tower, 40 m in height) (8°30′S, 140°22′E), which is displayed from a position on the coast about 2 miles S of the river entrance. This light is only shown when vessels are expected.

Berths

6.27

1 **Anchorage** is available N of Tanjung Sewa in depths of between 6 and 7 m, mud.

Alongside berths. A T-head, concrete-constructed jetty, 74 m in length, extends into the river at Merauke; there are charted depths of 4 m alongside. The jetty is used by a range of vessels including the larger ferries (6000 grt) plying between the port and Banyuwangi (Jawa) (*Indonesia Pilot Volume I)* and Jayapura on the N coast of Irian Jaya.

2 A T-head jetty, with dolphins, extends a short distance W into the deep water of the river at the oil terminal situated 3 cables N of the town jetty. There are depths of 6 m alongside. Tankers of 90 m in length having a draught of 5 m, can berth here.

Other berths. Near the town jetty there is a wooden pier for small craft, mainly local fishing boats.

Port services

6.28

1 **Facilities:** minor repairs; hospital; deratting exemption certificates issued.

Supplies: fresh water; limited fuel available; provisions.

Communications. Mopah Airport lies 4 km from the town with flights to Jayapura thence long-haul flights to Jakarta; Merauke is also connected to lesser towns on the SW side of Irian Jaya.

Small craft

6.29

1 Sungai Merauke (6.19) is navigable for a distance of 62 miles by local craft up to a length of 60 m; boats can reach a further 30 miles upriver to an inland lake. Tidal streams may still be experienced 60 miles upstream. About 30 miles above Merauke the jungle becomes thicker and the river narrower.

Anchorages

Chart 3528 (see 1.34)

6.30

1 Good anchorage may be obtained in a depth of 5·8 m, mud, with Pulau Habee Light (8°14′S, 139°27′E) (6.35) bearing 079° distant 2¼ miles. Vessels should approach this position with the light bearing 055° until the edge of the coast N of Tanjung Kayakaya, a steep point, bears 315° thence the track leads N to the anchorage.

Caution. A 1·9 m shoal lies 2 miles W of the light.

Small craft

Sungai Kumbe

6.31

1 **General.** Sungai Kumbe (8°21′S, 140°14′E) is approached through a very narrow channel and entered between two low points of land on the alignment (055°) of leading marks (triangular topmarks) situated close inside the river entrance. The river is navigable by boats for about 170 miles. The village of Kumbe lies on the N bank of the entrance. The entrance is not easily identified but a round-topped banyan tree (see 1.41) standing close S of it is visible at a good distance. Both banks of the entrance are overgrown with coconut trees fronted by a wide sandy beach.

2 **Tidal streams.** During the SE monsoon the in-going stream has a rate of about 1½ kn; out-going from 2 to 3 kn. During the NW monsoon the rates are greater. As the river is ascended the rates diminish.

The river is approached through a very shallow channel.

Landing can be effected at a pier near the village.

Sungai Bian

6.32

1 Sungai Bian, a navigable river, is entered between Tanjung Mawal (8°07′S, 139°57′E), the prominent, wooded, S entrance point and a point nearly 2 miles NW on the opposite shore. Its muddy waters extend about 10 miles offshore. A light (white beacon) is displayed from Tanjung Mawal.

The river entrance is approached with Tanjung Mawal bearing 054°, which leads over the bar; and between drying mudbanks. There is a minimum depth of 1·2 m on the bar but there are similar depths within the river up to a distance of about 10 miles.

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2 Anchorage for local craft may be obtained in the river off Tanjung Mawal.

The upper reaches may be reached by shallow-draught craft as far as the village of Kabtel (7°42′S, 140°03′E).

Great attention should be paid to drifting timber debris, and the tidal streams in and out flow at a fair rate; there are practically no slack water periods.

Sungai Koroi

6.33

1 Sungai Koroi (8°06′S, 139°43′E), the entrance to which lies about 13½ miles W of Sungai Bian, is entered at HW through mangrove-covered points; the river can be used by boats or shallow-draughted small craft for a short distance inland.

The entrance, which is marked by a stranded wreck lying on the E entrance bank close to the village of Okaba, is best approached on the bearing 344° though it is difficult to identify.

Sungai Sewa

6.34

1 Sungai Sewa (8°07′S, 139°35′E), 8 miles W of Sungai Koroi, is fronted by a drying mudbank. The entrance is only visible from S or SW. The river, which can be entered at HW by small craft, is navigable for about 10 miles before the swampy vegetation overhangs the channel.

Sungai Bulaka

6.35

1 Sungai Bulaka (8°06′S, 139°14′E) is entered between two mangrove-covered points. The approach to the river is obstructed by detached mudbanks, and like most of the rivers on this coast requires local knowledge to enter, but once into the river the depths are not less than 2 m anywhere, and in some places there is a least depth of 15 m.

The river is navigable by local craft as far as the village of Apong about 30 miles within its entrance.

2 In the SE approach, Pulau Habee (8°14′S, 139°26′E), a low islet covered with trees, standing on the coastal bank, and from where a light (white metal framework tower, 8 m in height) is displayed, makes a useful mark. Karang Sametinke (Sametin), a drying reef, lies 1½ miles SSW of the islet.

Southern entrance to Selat Muli

6.36

1 **General.** Selat Muli leads between the NE and E coasts of Pulau Kolepon (8°00′S, 138°30′E) (6.13) and mainland Irian Jaya. The strait gives access, via Sungai Dambu (6.39), to the town of Kimaan (7°59′S, 138°51′E), the only town situated on Pulau Kolepon. The S entrance comprises two channels separated by Pulau Komoran, a low marshy island; only the mud-obstructed E channel is navigable, the W channel, Selat Buaya, has not been fully surveyed.

2 The E channel is entered between Tanjung Kombies (Kumbis) (8°16′S, 138°55′E) and Ujung Hijau (Tanjung Grune), the SE headland of Pulau Komoran, and is only used by local craft.

Local knowledge is required when navigating the strait.

6.37

1 **Tidal streams.** In Selat Muli the tidal streams are generally strong, the N-going stream attains a rate of 4¾kn, the S-going stream attaining a rate of 2½kn. There is considerable diurnal inequality in the rates of the streams. Tidal streams over the bar at the S entrance have similar rates. The strait also experiences a high tidal range; see 1.127.

6.38

1 **Major light:**

Kimaan Light (white beacon) (8°01′S, 138°54′E); the light is displayed from a position near the entrance to Sungai Dambu.

6.39

1 **Directions.** The navigable E entrance channel over the mudbanks is approached on the bearing 250° of Tanjung Kombies (6.36), until a position about 3 miles off the point is reached, thence the track leads farther S on the bearing 237° of a beacon (white rectangular) standing on the Komoran shore. When about 5 cables off the beacon the track gradually leads N, crossing to the mainland side which has the deeper water passing E of Pulau Bumbel, an islet, lying about 2½ miles within Tanjung Kombies. Two miles N of Pulau Bumbel the track crosses to the Komoran side eventually joining the channel from Selat Buaya (6.36); thence it recrosses to the mainland side as far as Sungai Dambu, from near the entrance to which a light (6.38) is displayed.

2 **Useful marks:**

Light-beacon (red metal framework tower) standing 8 miles SSE of Tanjung Kombies.

Light-beacon (green beacon) standing 5 miles SSE of Tanjung Kombies.

For entry to Selat Muli from N see 6.91.

UJUNG SALAH TO TANJUNG NASAULANG INCLUDING THE PORTS OF AMAMAPARE AND KAIMANA

General information

Charts 3527, 3246, 2102 (see 1.34)

Route

6.40

1 From a position about 30 miles W of Ujung Salah (8°25′S, 137°38′E) (6.13), the SW extremity of Pulau Kolepon, the coastal passage initially leads N for a distance of about 150 miles, thence WNW for a distance of about 268 miles, to a position SSW of Tanjung Nasaulang (4°05′S, 132°54′E) (6.46). Taking into consideration the monotonous low-lying terrain of the mainland, and lack of landmarks, this track still gives easy access to Teluk Flamingo (6.52) and the minor port of Agats (5°33′S, 138°08′E), the ore port of Amamapare (4°49′S, 136°58′E), and the port of Kaimana (3°40′S, 133°45′E) farther N.

2 Mariners wishing for a more direct passage W of Ujung Salah should use the route passing through these waters, which is described at 3.24.

Topography

6.41

1 As previously mentioned most of this coastline consists of a vast area of mangrove-covered forests through which numerous rivers flow out to the sea. The longest river, Sungai Digul (6.78), extends nearly 350 miles from the slopes of Puncak Mandala (4°44′S, 140°18′E) (6.78) to the sea. Inland, in some places, the jungle and swamps envelop these rivers leaving the depths maintained but the channels impassable. In most cases the rivers do provide the only means of communication with inland villages.

2 Between Tanjung Nasaulang (4°05′S, 132°54′E) (6.46) and Tanjung Bohia (6.84), 100 miles E, the coast forms a large bay of which the N shore is low, flat and marshy, and bordered by shoals; the NE shore is high and steep with deep water lying close to the coast.

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Former mined area

6.42

1 An area considered dangerous due to former World War II mines lies within Teluk Kamrau (6.107) and directly W of Tanjung Simora (3°40′S, 133°41′E) (6.69) near the port of Kaimana; the area covers the shoreline 2 miles N of the point to a distance 2¾ miles seawards (1.7).

Flow

6.43

1 See 6.5. In the large open bay described at 6.41, between Tanjung Nasaulang (4°05′S, 132°54′E) and Tanjung Bohia (6.84), the tidal streams set WNW along the NE shore with the rising tide; similarly along the N and S sides of Pulau Adi (6.73). The out-going stream sets opposite in direction to the in-going. The streams in the outer part of the bay are weak but increase in strength in the narrow channels and entrances to the smaller bays. In the N part of Teluk Kamrau (6.107), and in the narrow entrance to Teluk Arguni (6.107), the out-going stream causes heavy tide-rips.

Principal marks

6.44

1 **Landmarks:**

Bright working lights of the copper mines (4°05′S, 137°14′E) situated high on the slopes of Puncak Jaya (6.56) can be seen from a considerable distance offshore. One report has the lights visible at over 90 miles from SW.

Pulau Laag (5°22′S, 137°44′E), an islet, on which there are tall trees, situated between Amamapare and Agats, is prominent for some distance offshore. The islet is joined to the mainland at LW.

2 **Major lights:**

Pulau Habeeaman (green beacon) (7°13′S, 139°00′E), when entering Sungai Digul.

Tanjung Aika Light (4°52′S, 136°45′E) (6.64), displayed at the entrance to Sungai Tipuka.

Pulau Adi Light (white structure) (4°19′S, 133°37′E).

Other aids to navigation

6.45

1 **Racons:**

Amamapare Approach Buoy A (4°55′·7S, 136°41′·2E), off the entrance to Sungai Aika (6.56).

Tanjung Watuleijurung (5°19′·6S, 134°34′·1E)

For further details see *Admiralty List of Radio Signals Volume 2.*

Directions

(continued from 6.17)

6.46

1 From a position at least 30 miles W of Ujung Salah (8°25′S, 137°38′E) (6.13) and in depths of not less than 10 m, the initial track leads N to the position 6°S, 137°E, passing:

E of Gosong Dolak (7°00′S, 136°51′E), is a sandbank with a least depth of 14 m over it and depths of 35 m, mud, around it.

2 The track then leads WNW for a distance of 268 miles, to a position SSW of Tanjung Nasaulang (Nassaulang) (4°05′S, 132°54′E), passing:

NNE of Tanjung Watuleijuring (5°20′S, 134°34′E), the NE extremity of Pulau Warilau, from where a light (3.191) is displayed, thence:

SSW of Pulau Tumbutumbu (Tumbu Tumbu) (4°20′S, 133°29′E), an islet on a reef, covered with vegetation, situated 4½ miles S of Pulau Adi. A light (6.44) is displayed from the SE extremity of Pulau Adi. Thence:

3 SSW of Tanjung Nasaulang (Cape van den Bosch), a high wooded point rising up to mountainous ground behind.

(Directions continue at 6.117; directions leading to the approaches of Agats are given at 6.47; for Amamapare at 6.48 and for Kaimana at 6.49)

Passage to Sungai Utumbuwe (leading to Agats)

6.47

1 From the position at 6°S, 137°E, the track to the Fairway Light-buoy (5°40′S, 137°53′E) moored off the entrance to Sungai Utumbuwe (6.51) leads ENE for a distance of about 57 miles.

(Directions for Agats are given at 6.52)

Passage to Sungai Aika (leading to Amamapare)

6.48

1 From the position at 6°S, 137°E, the track to the Fairway Light-buoy (4°55′S, 136°41′E) leads NNW for a distance of about 68 miles.

(Directions for Amamapare are given at 6.65)

Passage to Teluk Kaimana (for Kaimana)

6.49

1 From the position at 6°S, 137°E, the track leads NW to the position 4°S, 134°E (off Pulau Aiduma, described at 6.85), for a distance of about 212 miles. Thence 21 miles farther NW to the approaches to the port passing:

SW of Pulau Lauzaro (3°55′S, 134°00′E), the largest of three islets lying off the entrance to Teluk Macantutul (6.86), thence:

2 SW of Pulau Sagin (3°53′S, 133°55′E), a small hilly islet, lying close SE of Pulau Namatote (Namatotte) (6.87), thence:

SW of a 5 m (16 ft) patch situated 8 cables SW of Tanjung Bitsyara (3°43′S, 133°48′E) from where a light (6.72) is displayed.

(Directions continue for Kaimana at 6.72)

Passage from Agats to Amamapare

6.50

1 Vessels on passage between the Fairway Light-buoy (5°40′S, 137°53′E) (6.52) off Agats, and that off Amamapare (6.65), 85 miles NE, should pass SW of Gosong De Jong (5°18′S, 137°21′E), which consists of two dangerous detached rocks situated close within the 10 m depth contour.

Agats

General information

6.51

1 **Position.** Agats (5°32′S, 138°08′E), a small port, stands on the S bank of Sungai Utumbuwe (6.51).

Function. Agats is the capital of the Asmat Region of Irian Jaya. It is also the communications and commercial centre for the area. Fishing is the main trade but the main export is lumber, mainly logs. The port is a main call for the passenger ferries which link Merauke with Sorong.

In 1995 the town had a population of 1500.

2 **Topography.** Much of the small town of Agats sits barely propped above the mud on the edge of the S bank of Sungai Utumbuwe, a river of some 70 miles in length.

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The river settlement comprises a system of boardwalks, on account of the high rise of the river. Some modern buildings exist on solid hinterland ground. However, much of this low-lying area is surrounded by mangroves, swamp and jungle.

3 **Approach and entry.** The river is approached from the Fairway Light-buoy and entered through a marked channel 13 miles in length.

Tidal levels. See *Admiralty Tide Tables.* Mean maximum range about 2.6 m. In a period of heavy rains the tidal height can be increased by as much as 5 m.

Maximum size of vessel handled. Vessels up to 5000 dwt are handled

Local knowledge is required.

Directions

6.52

1 From the vicinity of the Fairway Light-buoy (5°40′S, 137°53′E) the track leads NE over Gosong Providentiaal, a mudbank extending 13 miles W from the coast, and into Teluk Flamingo. This open bay fronts the entrances of several rivers including Sungai Utumbuwe. A channel, scoured through the mudbank, which leads to the river entrance, is marked by light-beacons (starboard hand). A light (white metal framework structure, 20 m in height) (5°32′S, 138°05′E) is situated close within the river on the N bank. At the junction with Sungai Barat Laut (6.80), the channel is marked by a buoy (isolated danger) (5°34′S, 138°01′E), moored at the SW extremity of a sandbank extending from the E entrance point to Sungai Barat Laut, and by a light (white beacon) 1½ miles farther NE of the buoy. The river is entered passing SE of the isolated danger buoy.

2 Directions for Sungai Barat Laut and Sungai Dumes, the other rivers which enter Teluk Flamingo, are described at 6.80.

Berths

6.53

1 Anchorage may be obtained in the vicinity of the Fairway Light-buoy in depths of about 18 m. A shoal patch, however, with depths of less than 5 m over it lies 3 miles SSW of the light-buoy.

A T-head jetty extends a short distance from the shore at Agats. There is a least depth of 5 m alongside.

Anchorage may be obtained within the river N or S of the jetty in depths of 12 m, mud.

Port services

6.54

1 **Facilities** are limited; medical assistance can be provided.

Supplies. Some provisions may be obtained.

Communications with Merauke can be achieved using helicopters; the nearest operational airfield lies at Ewer (5°30′S, 138°05′E) about 20 minutes by launch from Agats. Otherwise there is an airfield at Senggo some distance upriver but this requires a 6 hour journey by launch from Agats.

Small craft

6.55

1 Sungai Utumbuwe is navigable for about 50 miles by local craft with a draught of up to 3 m, thence a farther 20 miles by boats. Landings can be effected at several villages situated along the length of the river.

Amamapare

Chart 3527 plan of Approaches to Amamapare (see 1.34)

General information

6.56

1 **Position.** Amamapare (4°49′S, 136°58′E), an ore loading port, lies about 6 miles within the entrance to Sungai Aika.

Function. The port is the export outlet for the copper and gold mines situated at Grasberg about 50 miles N, high above Tembagapura. Known locally as Copper City, Tembagapura nestles in a valley, 1850 m (6000 ft) high, on the slopes of Puncak Jayawijaya (chart 4603), the highest point in Indonesia at 4788 m high. Copper concentrates are piped, in liquid form, to a point near the port, through the world's longest slurry pipelines. The concentrates are then dried, and barged to a port site and stockpiled. A conveyor belt system transports the ore from the stockpile area to the loading jetty and waiting vessel or into a barge for a vessel loading at anchor. The port is also used by general cargo vessels importing foodstuffs and machinery.

2 **Topography.** This low-lying area comprises mangroves, swamp and jungle terrain through which Sungai Aika flows out to the sea. Amamapare itself is not linked by road with other towns but hard ground is found about 35 miles N and a road then leads N towards the mine site and parallel with Sungai Aika, leading on to Sungai Otomona. Several towns lie along this road.

Sungai Tipuka (6.68), another long river flowing down from the high mountains inland, shares the same estuary with that of Sungai Aika.

3 **Approach and entry.** Amamapare is approached from the sea by a marked channel and entered on the alignments of three sets of leading lights.

Traffic. In 2003 the port was used by 78 vessels with a total of 1 425 783 dwt.

Port Authority. PT Alatief P&O, PO Box 685, Tembagapura, Irian Jaya, Indonesia.

The port has a resident Harbour Master/Site Manager.

Limiting conditions

6.57

1 **Controlling depth.** There is a least depth of 4·6 m at MLWS, over the outer sand bar, situated between Nos 3 and 5 Light-buoys.

Tidal level. Mean maximum range about 1·7 m. On occasions the level may be higher due to periods of heavy rain. See *Admiralty Tide Tables*, under Aika.

Maximum size of vessel handled: one of 41 000 dwt has berthed alongside; maximum length about 200 m, breadth about 32 m. Maximum draught is 6·2 m.

Arrival information

6.58

1 **Port radio.** There is a port radio at Amamapare, call sign: 'Port Ampre'; contact with the port should be established as soon as possible prior to arrival. For further details see *Admiralty List of Radio Signals Volume 6(4).* Long distance communications with the port should initially be undertaken through Jakarta Radio (PKX) from S and W or Jayapura Radio (PNK) from N and E, thence through either Merauke Radio (PKY5) or Sorong Radio (PKY4) when closer to the port. Details for coast radio stations are given in *Admiralty List of Radio Signals Volume 1(2).*

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6.59

1 **Outer anchorage.** Anchorage may be obtained, for those vessels awaiting a berth, or required to top off cargo loading, in a position about 5 cables W of the Fairway Light-buoy (4°55′S, 136°41′E) in a depth of 36 m.

The outer anchorage, however, is exposed to NW and W winds, particularly between December and February, and a disruptive short swell may produce rolling.

6.60

1 **Pilotage** is compulsory; the boarding position, as shown on the chart, lies 2¾ cables NW of the Fairway Light-buoy. A small harbour tug always precedes a vessel to the berth as an extra guide.

Tugs are available to assist berthing.

6.61

1 **Regulations.** All vessels are subjected to a Customs search on arrival; it is usual for electrical items of personal effects to be removed and placed under seal.

When working cargo, ship moves, cargo stowage and trimming are the responsibility of the ship's personnel.

Harbour

6.62

1 **General layout.** The loading berth at Amamapare lies on the N bank of Sungai Aika. The river is mangrove-lined throughout and there are several villages sited nearby the terminal on the edge of the river. The jetty, which extends well into the river, is backed by a port site which is supplied by barges from a point further inland. A conveyor belt system carries the ore from the port site to a gantry crane on the jetty thence it is poured into the vessel. The crane, which stands in a fixed position, can only move its gantry in the vertical mode; ships are therefore required to move up and down the jetty when loading several holds.

6.63

1 **Tidal streams.** Streams are diurnal; if crossing the bar on HW the direction of stream at the berth will be W-going and vessels will then be berthed port side to the jetty. If E-going vessels swing on the anchor and berth starboard side to the jetty. Stream rates, excluding rain effect, are about 1½ kn in each direction.

6.64

1 **Major light:**

Tanjung Aika Light (white beacon) (4°52′S, 136°45′E), displayed at the entrance to Sungai Tipuka (6.68).

Directions

6.65

1 From the vicinity of the Fairway Light-buoy (4°55′S, 136°41′E), the initial track leads E between the channel marking light-buoys until the alignment of the first set of leading lights is reached.

Outer leading lights:

Front light A1 (beacon, 7 m in height) (4°52′·8S, 136°46′·8E).

Rear light A2 (similar beacon, 14 m in height), 4 cables NE of the front.

2 On the alignment (056½°) of the first set of leading lights standing at Aika, a village, the track leads NE between channel marking light-buoys to the entrance to the river, passing NW of the W extremity of Pulau Wayeteri, a mangrove-covered, sandbank-fronted islet together with Pulau Apiripi, a similar islet, lying at the E entrance point to the river. The track then leads 035° until the alignment of the second set of leading lights off No 10 Light-beacon (port hand) is reached.

3 **Middle leading lights:**

Front light B1 (beacon, 6 m in height) (4°50′·1S, 136°47′·5E).

Rear light B2 (similar beacon, 13 m in height), 1 cable NNE of the front.

On the alignment (013½°) the track leads to the turn of the river, thence 052° to a position N of No 13 Light-beacon (starboard hand), and the alignment of the third set of leading lights.

4 **Inner leading lights:**

Front light C1 (beacon) (4°50′·2S, 136°49′·5E).

Rear light C2 (similar beacon, 10 m in height), 2¼ cables E of the front.

On the alignment (101¾°) the track passes S of No 12 Light-beacon (port hand), 1 mile farther E, thence on a series of short tracks to the berth.

5 **Cautions.** The entrance to the river is often discoloured with out-flowing muddy water which may give the impression of lesser depths. On occasions a strong set has been experienced during NW winds between No 4 Light-buoy (port hand) and No 8 Light-beacon (port hand). The aids to navigation on this chart are reported to be unreliable. They may be missing, unlit or out of position.

Ore berth

6.66

1 A T-head jetty constructed of reinforced-concrete piles, and well fendered, extends about 180 m SSE from the shore. The overall length of the berth is 287 m with a straight face of 159 m; depths alongside range between 8 m at the W end to 9·2 m at the E end.

Other berths. Alongside the port site, a short distance N from the jetty, there is a quay for handling barges and a berth for tugs. The barge quay can be used to discharge general cargo from flat barges.

Explosives are discharged at a special anchorage E of No 13 Light-beacon; thence trans-shipped by barge upriver to the mines.

Port services

6.67

1 **Facilities** are limited; minor repairs, floating crane of 100-ton capacity.

Supplies. Stores, fresh water and provisions will only be provided on an emergency basis or in limited quantities if requested well in advance of arrival.

Communications. The nearest airport lies at Timika, a modern mining town situated on Sungai Aika, between Amamapare and Tembagapura (6.56). The town is connected by air and sea with Jayapura on the N coast of Irian Jaya.

Small craft

6.68

1 Sungai Tipuka shares the same estuary as Sungai Aika. The W part of the estuary, previously known as Uhurupao, through which a navigable channel leads NE and NNE into the river, lies between Tanjung Aika (4°52′S, 136°45′E), the W entrance point to Sungai Tipuka, and a point 1½ miles E which forms the W entrance point to Sungai Aika.

Sungai Tipuka gives access for small craft to several villages situated along its banks; it is navigable for some distance inland.

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Kaimana

Chart 2102 (see 1.34)

General information

6.69

1 **Position.** Kaimana (3°40′S, 133°45′E), a small port and town, lies on the E side of Teluk Kaimana.

Function. Kaimana is a regional town of about 10 000 inhabitants. Trade is local rather than international, as the port is a collecting point for timber and copra; and it has a useful roadstead. The port is also a main call for small product tankers; the oil berth lies close N of the town.

2 **Topography.** Kaimana and the adjoining villages encircle Teluk Kaimana, a small open bay, which is backed by a backdrop of dark, forested hills cut with deep gorges on its E side and part lowland on its W side. The bay, which is entered between Tanjung Simora (3°40′S, 133°41′E) and Tanjung Bitsyara (Bitsjara), 8 miles ESE, is fronted by a fringing reef. Much of the land E of the bay is mountainous whilst that to the W is low-lying and part swampy.

3 **Approach and entry.** Approach is from S and the port is entered from Teluk Kaimana. See 6.42.

Traffic. In 2003 the port was used by 9 vessels with a total of 55 699 dwt.

Port Authority. Pertamina-Jakarta. There is a resident Harbour Master at Kaimana.

Limiting conditions

6.70

1 **Controlling depth.** There is a least depth of 6 m (20 ft), at MLWS, in the channel leading to the oil berth.

Tidal levels. Within Teluk Kaimana, mean maximum range about 1·8 m, mean minimum range about 0·9 m, see *Admiralty Tide Tables* for further information.

Largest vessel: alongside 3500 dwt; the larger ferries (5000 dwt) which call at Kaimana, use an anchorage.

Arrival information

6.71

1 **Port operations.** Tanker vessels are berthed and unberthed during daylight hours only.

Port radio. There is a coastal radio service operated from Kaimana; for details see *Admiralty List of Radio Signals Volume 1(2)*

Pilotage is not compulsory.

Tugs. Not available.

Directions

(continued from 6.49)

6.72

1 **Approach from SE.** From the position SW of Tanjung Bitsyara (3°43′S, 133°48′E) (6.69) from where a light (white metal framework structure, 15 m in height) is displayed, the track continues NW for about 2 miles until a position W of this point is reached.

The track then leads N, with Kaimana Light (red beacon), displayed from the jetty at Kaimana, ahead, bearing 000°, for about 3½ miles to an anchorage off the town, passing W of the fringing reefs close S of Kaimana.

2 **Useful marks:**

Tanjung Simora Light (white beacon) (3°40′S, 133°41′E).

Prominent mosque standing 1 cable S of Kaimana Light.

Aerobeacon structure at Tanjung Poweri, close SE of the town.

6.73

1 **Approach from SW.** After rounding Tanjung Nasaulang (4°05′S, 132°54′E) (6.46), the track leads ESE, thence E along the S coast of Pulau Adi (4°12′S, 133°30′E), an island with low hills but no outstanding summits, passing:

WSW of Pulau Nasaulang (Nusa Wulan) (6.89), lying 4 miles ESE of Tanjung Nasaulang, thence:

WSW and S of Pulau Tumbutumbu (4°20′S, 133°30′E) (6.46), thence:

S of the SE extremity of Pulau Adi from where a light (6.44) is displayed.

2 The track then leads N to the harbour, a distance of nearly 40 miles, passing:

E of a shoal patch (3°53′S, 133°41′E) over which there is a least depth of 5·2 m (17 ft).

Useful marks: Kaimana Light (6.72) when in range, ahead, is a useful mark; for others, see above.

6.74

1 **Passage through Selat Adi.** Selat Adi (Nautilus Strait), the strait separating Pulau Adi from the mainland, makes an alternative passage from SW to Kaimana.

The strait is entered from W between Tanjung Usau (4°05′S, 133°14′E) and Tanjung Kainara, the NW extremity of the island, 4½ miles ESE. The strait is best navigated on the alignment (067°) of the SE extremity of Pulau Urobi (4°04′S, 133°21′E), a rocky islet, and the NW extremity of Pulau Karawatu (4°02′S, 133°27′E), a reef-fringed islet; there is a least charted depth of 13 m (43 ft) in the fairway and a swept depth of 10 m (33 ft).

2 The track then passes S of Pulau Urobi, thence SE of Pulau Karawatu and Pulau Keliwala, a similar islet, from where a light (white beacon) is displayed, 3½ miles farther NE. The track then leads NNE to the harbour passing ESE of a dangerous rock, position approximate, lying 6½ miles NE of Pulau Keliwala and clear of two swept coral patches with depths of less than 5 m (16 ft) over them, situated 12½ miles NE of the same island.

A swept channel, with a least depth of 7 m (23 ft) passing NW of Pulau Karawatu and Pulau Keliwala from S of Pulau Urobi, may be used with local knowledge.

3 **Caution.** Tidal streams in Selat Adi and S of Adi set E with the rising tide and WNW with the falling tide. At times the sea breaks over the entire width of the strait due to streams meeting from different directions.

Berths

6.75

1 **Anchorage** may be obtained, off the town in the roadstead, in depths of 14 m (46 ft); the W edge of the bay, fronted by a bank, sand and mud, is marked by a beacon (port hand) and the edge of the fringing reef on the E side of the bay is marked by a buoy (starboard hand).

General cargo berth: situated at Kaimana, consists of a wooden jetty with depths of 1·5 m at LW. Kaimana Light (6.72) is displayed from the root of the jetty.

Oil berth: a T-head jetty, 30 m in length at its head, with dolphins placed on either side, is situated a short distance N of the town. Vessels of 90 m in length can berth alongside in depths of 8 m at MLWS.

Port services

6.76

1 **Facilities** are limited; medical assistance.

Supplies: limited quantities of fresh water; limited provisions.

Communications. There is an airfield 4½ miles NW of Kaimana with regular services to Sorong (for Jakarta) and Biak.

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Minor harbours

Chart 3527 (1.34)

General

6.77

1 It is essential that local knowledge is obtained before entering any of the minor harbour areas described below. Whilst every effort is given to promoting up to date information, many of the channels and descriptions change without notice. Local charts should always be consulted.

Sungai Digul

6.78

1 **General information.** Sungai Digul winds its way nearly 350 miles from the SE slopes of Puncak Mandala (4°44′S, 140°18′E), a high snow-covered peak in Pegunungan Sterren, to a low, muddy delta covered with jungle which floods at HW. The inland high range of peaks extends SE across the E border into Papua New Guinea.

2 From a position about 50 miles E of Ujung Digul (6°54′S, 138°32′E), on the coast, Sungai Digul divides into two branches; the main S branch flowing directly into the sea and Sungai Kawarga, leading to Sungai Odammun, the N branch, 20 miles N, entering the sea through three mouths (6.92). The main branch of Sungai Digul is entered between Ujung Lumpur (7°12′S, 138°40′E) and Ujung Digul, 18 miles NNW; Sungai Odammun is entered between Ujung Digul and a point 20 miles NNE.

Vessels 50 m in length having a draught of 3·6 m can navigate Sungai Digul as far as the entrance to Sungai Kaoh.

3 **Controlling depth.** Over the entrance bar there is a least depth of 1·5 m

Tidal levels. Mean maximum range about 4·2 m, mean minimum range about 1·0 m, see *Admiralty Tide Tables.*

Local knowledge is required for the river passage.

Tidal streams. Both in-going and out-going streams, which are diurnal, may be strong. Generally, the in-going stream is strongest in the channel along the N bank in the entrance to the main S branch of Sungai Digul, and the out-going stream is strongest in the channel along the S bank. In the latter, the maximum rate of the out-going stream was observed to be from 5 to 6 kn for some hours and about 3 kn on the in-going stream.

4 At or near spring tides, with the first rise after LW, a bore or flood wave about 2 to 3 m high travels up Sungai Odammun. The wave is in the form of breakers and may endanger small vessels; it reaches Bade (7°10′S, 139°35′E), but above this village can only be noticed as a slight swell. A second bore travels up Sungai Digul; above the meeting with Sungai Kawarga (7°07′S, 139°23′E), several waves may be experienced.

Directions. The main S branch of Sungai Digul is the channel usually used by vessels navigating as far as Tanahmerah (6°06′S, 140°18′E), a government station nearly 280 miles inland.

5 From the Fairway Light-buoy (7°08′S, 138°33′E), the best track over the bar leads ESE to a position 1½ miles N of Ujung Lumpur Light (green GRP tower), which is displayed 1½ miles W of the point; thence E to a position about 1 mile S of Ujung Aman Light (red beacon), which is displayed 2 miles WSW of Ujung Amman (7°10′S, 138°51′E), passing SSW and S of two drying mudbanks on which there is an islet and several rocks. Thence the track initially follows the N bank of the river passing S of a dangerous rock, 3 miles ESE of Ujung Amman; thence N of Pulau Habeeaman (Habeeamman), from where a light (6.44) is displayed; thence S of Pulau Habeesilam; thence W of Pulau Orasilam — all mangrove-covered islands.

6 Sungai Ederah, which flows into the right bank of Sungai Digul, 77 miles inland, is navigable for 40 miles. Sungai Kaoh (6°34′S, 140°22′E), the entrance to which lies 72 miles farther inland, is also navigable for a considerable distance by vessels 50 m in length having a draught of 3·6 m, but this river is difficult to navigate.

If approaching Sungai Digul from SW, Tanjung Dolak Light (7°23′S, 138°32′E) (6.91) is a useful mark.

Caution. If approaching Sungai Digul from NW, take care to avoid mistaking one of the mouths of Sungai Odammun for Sungai Digul.

7 **Berths.** There are two jetties at Bade (7°10′S, 139°35′E), a village, or vessels may find an anchorage off the village, and also at Tanahmerah (6°06′S, 140°18′E), a town situated farther upstream. Vessels may find an anchorage N or S of the town, in depths of 8 m, but a mudbank, over which there is a least depth of 3 m lies adjacent to the town and has to be crossed if continuing upriver.

A light (white beacon) is displayed from Bade.

Sungai Jugu

6.79

1 **General information.** Sungai Jugu, a river which flows down to the sea from the SW slopes of Puncak Mandala, has two mouths; the N entrance (5°45′S, 138°09′E) is entered 10 miles S of Teluk Flamingo (6.52). The S entrance, 10 miles farther SE, is navigable by vessels with a draught of about 3·7 m as far as a position 5°21′S, 139°20′E, under favourable conditions.

The S entrance, which has several drying sandbanks in its S approaches including Gosong Triton (5°59′S, 138°05′E), is marked by channel light-beacons.

The main export from this area is hardwood logs, which are collected at various sites along the river.

2 **Tidal streams** set between N and NE over the off-lying banks with the rising tide and between S and SSW with the falling tide.

Directions. Vessels should approach the S entrance in its fairway with the S entrance point, which is wooded, bearing 094°; this track passes:

N of the drying banks lying N of Gosong Triton (see above), and:

S of a dangerous rock situated 8 miles WNW of the point, thence:

S of Atay Light (beacon, port hand) situated 6 miles WNW of the point.

3 Unfortunately the S entrance point is difficult to distinguish until the 5 m depth contour is reached. When Birufu Light (beacon, starboard hand), situated at the S entrance point bears 090°, then on this bearing, passing N of the light and into the river. It is reported that a depth of 3·5 m plus height of tide can be obtained over the bar; depths are deeper within the entrance.

The N entrance channel through to its joining with the S channel of Sungai Jugu is only navigable by small craft, as is Sungai Kampung, a tributary of the S channel. About 20 miles within the N channel, Sungai Anna, another tributary, joins this channel with Sungai Utumbuwe (6.51).

Sauwa

6.80

1 **General information.** Sauwa (5°09′S, 138°13′E) is a village situated at a place where Sungai Barat Laut broadens, known locally as Danau Sauwa (Lake Sauwa), about 30 miles upriver from its entrance. This navigable

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river, which shares the same Fairway Light-buoy as Sungai Utumbuwe, leading to Agats (6.51), has several collecting points for the export of hardwood logs. Using a system of leading marks, vessels with a draught of 4·5 m can easily reach Sauwa.

2 Sungai Dumes is a river which branches in an E direction from Sungai Barat Laut virtually within its entrance. It is navigable for a considerable distance by vessels of up to 50 m in length, with a draught of 3·6 m, thence by small craft. In 1909 an expedition used the river to reach Puncak Trikora (4°16′S, 138°40′E), a high peak in Pegunungan Jayawijaya (chart 4603), a long range of mountains.

3 **Directions.** From the vicinity of the Fairway Light-buoy (5°40′S, 137°53′E) the track leads NE towards the river entrance, passing NW of the buoy (5°34′S, 138°01′E) (6.52) situated at the junction with Sungai Utumbuwe, and the light-beacon 1½ miles farther NE.

4 Passage into Sungai Barat Laut is made on a series of leading marks (posts, triangular topmarks). The first set (5°27′S, 138°02′E) leads across the river, in depths of 4 m, on the alignment (323°) until the alignment (284°) of the second set (2 miles W) is reached, thence on that alignment. The track then follows the W bank for about 7 miles before crossing to the E bank for about 3 miles, thence resuming the W bank up to the village of Yamas (5°18′S, 138°04′E). From Yamas to Sauwa the best water lies along the E (or left) bank of the river throughout.

5 Passage into Sungai Dumes continues N into the river when abreast of a beacon (can topmark) on the E bank indicating the first crossing position for Sungai Barat Laut. The track maintains the E bank for about 5 miles, then crosses to the W side until the village of Yahunyufri (5°23′S, 138°07′E), standing on the N bank, is reached.

Sungai Pi, a small and narrow river, joins Sungai Dumes to Danau Sauwa from a position about 1 mile E of the village. In most places depths are in excess of 3 m but the river is only suitable for small craft.

6 **Anchorages and alongside berths.** Anchorage may be obtained in Danau Sauwa in a depth of 9 m in the N channel about 1 mile NW of Sauwa. Anchorage may also be obtained off Yamas in a depth of 7 m. Within Sungai Dumes, anchorage may be obtained off Yahunyufri in a depth of 5 m.

For handling logs, there is a wooden jetty at Yamas, and two wooden jetties at Sauwa which small vessels may berth alongside.

7 **Facilities:** none available; supplies and provisions are not available either.

Communications. The nearest airport lies at Ewer (6.54) or Agats when operational.

Anchorages

Charts 3527, 3246, 2102

General

6.81

1 Anchorage may be obtained anywhere off the coast between the entrance to Tanjung Pohonbatu (4°56′S, 136°50′E) and the entrance to Sungai Uta (6.103), 55 miles NW, in depths of not less than about 12 m (36 ft); particularly when there is a high sea or swell running. Good individual anchorages are described below.

Off Sungai Mayiweta

6.82

1 Anchorage may be obtained off the wide entrance to Sungai Mayiweta, which lies 11 miles E of Tanjung Pohonbatu (4°56′S, 136°50′E). The best berth lies with the E point of the river entrance bearing 050°, distant 8 miles, in 7 m. Between the anchorage and the coast there is a drying sandbank.

Tanjung Pohonbatu lies at the extremity of a mangrove-covered spit extending SE from Pulau Wayeteri (6.65).

Off Sungai Mimika

6.83

1 Anchorage may be obtained off Sungai Mimika (4°43′S, 136°26′E) in a depth of 20 m, with the W entrance point of the river bearing 014° and about 2½ miles offshore. Kokonao, a village, lies close W of the mouth of the river; a clump of high trees near the village helps to identify the river entrance.

Tidal level information can be found in *Admiralty Tide Tables.*

The light at the entrance to Sungai Keakwa (6.101) is a useful mark.

Climatic table. See 1.159 and 1.167

Teluk Lakahia

6.84

1 Anchorage may be obtained everywhere within Teluk Lakahia, a large indentation in the coast, sometimes known as Tikungan Lakahia.

The bay is entered between Tanjung Bohia (4°07′S, 134°37′E), a low protruding point, and Tanjung Awura, a high, rocky point, 8¼ miles NW. Pulau Lakahia, a reef-fringed islet, lies in the S approaches to the bay. Off Tanjung Bohia, a sandbank extends 1½ miles W from the coast.

2 Large vessels enter the bay passing N of Pulau Lakahia where there is plenty of deep water, but with local knowledge suitable vessels can pass S of it at a distance of about 5 cables, in depths of about 11 m (36 ft). However, on the latter track, a bank consisting of mud and sand, over which there is a least depth of 2 m (7 ft), extends up to 3 miles W from the E shore. On approaching the bay from S, the summit of Bukit Bohia (Bohia Hill), wooded, rising 1 mile E of Tanjung Bohia, will be seen first and is a useful mark when rounding the shallows off the point.

3 Within the bay, the best anchorage lies about 1½ miles SW of Tanjung Etaburi (4°00′S, 134°36′E), on the hilly and wooded N shore, and about a similar distance SE of the entrance to Sungai Kambelangan, a small river. Depths here are about 25 m (14 fm), and the holding ground is good.

A 3 m (10 ft) patch lies 1 mile S of Tanjung Etaburi.

4 The best passage giving access to Teluk Iteba (Etna) (6.104), an elongated stretch of water leading E and inland from Teluk Lakahia, initially passes S and E of the 3 m (10 ft) patch lying 1 mile S of Tanjung Etaburi; thence between Karang Yapbari, a sandbank, over which there are depths of less than 5 m (16 ft), and a drying sandbank extending W from Tanjung Tarela (Tarella) (3°59′S, 134°39′E).

For tidal height differences within Teluk Lakahia and Teluk Etna see *Admiralty Tide Tables.*

Selat Iris

6.85

1 Anchorage may be obtained within Selat Iris, the stretch of water separating Pulau Aiduma (3°58′S, 134°06′E), a

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forested and hilly island, 26 miles SE of Kaimana, and the mainland. The strait is used by local craft and there are strong tidal streams especially in the NW passage.

2 The best berth lies in a bay on the NE side of the strait 3 miles E of Pulau Saruenus (Sarue Nus) (3°55′S, 134°05′E), an islet, lying off the NE extremity of Pulau Aiduma. Here the water is deep, but close to the N shore of the inlet there are depths of 40 m (22 fm). Small vessels may find a quiet anchorage in an inlet farther E which has some islets off its entrance; by keeping to the E side on entry, similar depths can be achieved.

3 Anchorage may also be obtained in Teluk Mangkawu (3°58′S, 134°14′E), an inlet on the mainland. Depths are about 32 m (17 fm) and except for a rock at its E entrance the inlet is clear of dangers.

Anchorage may be obtained, in depths of 24 m (13 fm), about 8 cables E of the NW extremity (3°59′·5S, 134°12′·5E) of Pulau Dramai, an island SE of Pulau Aiduma lying in the S entrance to Selat Iris. A creek S of this anchorage flows through to the W coast of the island.

Teluk Macantutul

6.86

1 Anchorage may be obtained within Teluk Macantutul, previously known as Triton Bay, a large bay situated on the mainland and SE of Kaimana.

The bay, the shores of which are generally rocky and high, is entered between the NW point (3°55′S, 134°02′E) of Pulau Aiduma, on which the village of Aiduma stands, and Tanjung Aiwa, 6½ miles NW. Outside of the bay lie a group of three off-lying islets; Pulau Lauzaro (6.49), the largest, lies 2½ miles W of the NW point of Pulau Aiduma, with Pulau Faukate and Pulau Orombai, a short distance apart, 5 cables farther W. A 5·8 m (19 ft) patch lies 5 cables S of Pulau Lauzaro.

2 In the entrance, Pulau Baronusu and Pulau Sokkos are two islets lying 5 cables NW of the NW point of Pulau Aiduma; Pulau Awarawis, consisting of two islets, lie 5 cables E of Tanjung Aiwa. In the channel between Pulau Baronusu and Pulau Aiduma there is a detached 10 m (33 ft) patch lying in the fairway 3 cables N of the NW point of Pulau Aiduma.

Pulau Mauwara, an island on the NW side of the bay, lies with its SW point 2 miles ENE of Tanjung Aiwa; the passage between it and the mainland is not recommended. Pulau Semisarom, an island, lies 5 cables S of Mauwara; the channel between these two islands is also not recommended.

3 In the centre of the bay lie a group of small islands of which Pulau Nusurumi (3°50′S, 134°05′E), from where a light (white beacon) is displayed, is the largest; on the SE side of the bay lie Pulau Ambasinsi, a group of islets, lying 2½ miles SE of Pulau Nusurumi.

The best berth lies at the head of the bay off the village of Lobo (3°46′S, 134°06′E) where there are depths of 27 m (15 fm), mud. Approaching this anchorage vessels may pass either side of the Nusurumi group, though the best water lies NW of these islands, thence close to the W side of the mainland N from Tanjung Kumura, a rocky point 2 miles S of Lobo, on account of a mudbank extending S and W from the entrance to Sungai Tombona.

Selat Namatote

6.87

1 Anchorage may be obtained in most parts of Selat Namatote, the strait separating Pulau Namatote (Namatotte) from the mainland. Tidal streams are sometimes strong, especially in the N part where eddies and tide-rips frequently form near the reefs.

From S, the strait is entered between Tanjung Aiwa (3°52′S, 133°57′E) and Pulau Sagin (6.49) situated close off the S extremity of Pulau Namatote, a long, high and rocky island. Depths in the strait vary between 11 and 60 m (36 ft and 33 fm); the lesser depths are found at the N end.

2 Good anchorage may be found, for small vessels, in Teluk Gagak (Raf Bay), an inlet on the E side of the strait. The entrance is narrow but the fairway through is deep. There are depths of 14 m (46 ft) inside with ample room to swing. At the head of the bay a boat channel leads to the entrance of a small river.

Off Sungai Karufa

6.88

1 Anchorage may be obtained during the NW monsoon in depths of about 7·6 m (25 ft) anywhere on the extensive mudflat which extends more than 5 miles from the low marshy coast between Teluk Kaimana (6.69) and the entrance to Sungai Karufa (3°54′S, 133°24′E) (6.108), nearly 21 miles W. Several 5 m (16 ft) patches lie in the E part of this mudflat, but apart from the 5·2 m (17 ft) patch described at 6.73 and the dangers described at 6.74, this area provides a secure berth. Large vessels with a deeper draught may anchor farther to seawards in depths of 10 to 20 m (33 ft to 11 fm).

Pulau Nasaulang

6.89

1 Anchorage may be obtained during the SE monsoon in a depth of about 14 m (45 ft) on the ridge between Pulau Nasaulang (Nusa Wulan), a hilly and wooded island lying 4 miles ESE of Tanjung Nasaulang (4°05′S, 132°54′E) (6.46), and the coast N.

During the NW monsoon anchorage may be obtained, in depths of 20 m (11 fm), close offshore W of Pulau Derdi, which actually consists of two islets, lying 5 miles E of Pulau Nasaulang. A 5 m (16 ft) shoal lies 6 cables W of the most S islet of Pulau Derdi. Anchorage may also be obtained in the bight NE of an unnamed islet lying close to the coast 2½ miles NNE of Tanjung Papisoi (4°07′S, 133°01′E), a high rocky point.

Small craft

General

6.90

1 There are a considerable number of rivers and inlets on this stretch of coast that are navigable by small craft for some distance inland. There are also a considerable number of tributaries which inter-connect these rivers that are also navigable. Many entrances are reportedly marked, some by lights or buoys, but these navigational aids cannot be relied upon as surveys of some rivers are incomplete. As a consequence, only the more commonly used small craft channels and berths are described. All require local knowledge and/or the benefit of local charts with which to be guided.

Northern entrance to Sungai Muli

6.91

1 The N entrance to the strait lies between Ujung Lumpur (7°13′S, 138°42′E) (6.78) and Tanjung Dolak, 15 miles SW; the land on each side is marshy, muddy and covered with vegetation interspersed with a few open spaces. It has been reported that the N entrance experiences discoloured water and strong tide-rips, particularly S of Ujung Lumpur. The approach track initially leads E from the open sea along the

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N coast of Pulau Kolepon, passing at least 2 miles N of an islet lying 3½ miles N of Tanjung Dolak (Ujung Dolak) (7°23′S, 138°32′E), from where a light (white beacon) is displayed. Over the outer bar there are depths of 6 m. The strait is then entered in deep water for a distance of about 32 miles maintaining the N bank before adopting a central fairway.

2 Depths of 7 m can be carried for a distance of about 20 miles within the entrance, but mudbanks eventually restrict the navigable channel considerably to depths of less than 5 m and the passage towards the entrance to Sungai Dambu (6.39) becomes tortuous.

Several jetties extend into the river at various locations along both banks of the strait.

The S entrance to Selat Muli is described at 6.36.

Estuary of Sungai Odammun
6.92

1 The estuary of Sungai Odammun consists of three mouths, named from N, Sungai Mabur, Sungai Mayu and Sungai Yar. The latter is entered about 8 miles E of Ujung Digul (6°54′S, 138°32′E) (6.78). Sungai Mabur is the least used but vessels of 3·6 m draught can use the other two channels to gain entry into Sungai Odammun, thence into Sungai Obaa and Sungai Mappi (Chart 4603). Small craft can navigate Sungai Mappi for a considerable distance inland; numerous villages may be found at various locations along its banks.

Sungai Cook and Sungai Krongkel
6.93

1 Sungai Cook (6°20′S, 138°26′E) runs into Teluk Cook, a small bay where there is a large village standing on each bank. It has an entrance channel with a depth of 1·2 m (4 ft) at MLWS. Small craft are only able to navigate about 20 miles inland.

For tidal height differences at Sungai Cook see *Admiralty Tide Tables.*

Sungai Krongkel, the entrance to which lies 8 miles farther N of Sungai Cook, is a similar river in shape and size. There are depths of 2·1 m (7 ft) in its entrance. The village of Birab lies close within the N entrance point; small craft call here and at other villages upriver. In both rivers the main industry among the populace is fishing.

Sungai Barat
6.94

1 Sungai Barat (5°23′S, 137°52′E) enters the sea 10 miles E of Pulau Laag (6.44). It is nearly 5 cables wide at its mouth and is approached through a channel with a depth of 4·9 m. It is navigable by local craft with a draught of 3·6 m for a distance of 30 miles. At this distance the river divides into three branches, the W branch being accessible for a further 6 miles. The E branch eventually joins with Sungai Barat Laut (6.80).

There are numerous villages on the banks of Sungai Barat.

Sungai Cocq d'Armandville
6.95

1 Sungai Cocq d'Armandville (5°20′S, 137°47′E), a river entered NE of Pulau Laag (6.44), has a least known depth of 2·1 m over the bar at its mouth, but inside it is only suitable for small craft.

Sungai Blumen
6.96

1 Sungai Blumen (5°17′S, 137°44′E) is entered about 3 miles N of Pulau Laag (6.44). The approach channel leads NE to the entrance passing NW of Pulau Laag. The river is navigable by small craft for a distance of about 30 miles where it then connects with Sungai Cocq d'Armandville (6.95).

Boats can proceed a further 15 miles up Sungai Blumen.

Sungai Kasteel
6.97

1 Sungai Kasteel (5°17′S, 137°38′E) may be identified by tall trees standing on its W entrance point. Pulau Kasteel, an island lying off the river entrance, is lower at the middle than at its ends and resembles a castle with battlements. A mudbank connects the N part of the island to the mainland.

A channel with a depth of 2·7 m leads into the river but a short distance within its entrance the river divides into two branches. The E branch connects with Sungai Blumen (6.96); the W branch is navigable by small craft for a good distance.

Sungai Otakwa
6.98

1 Sungai Otakwa (5°00′S, 137°12′E) enters the sea 23 miles E of Tanjung Pohonbatu (6.82) having twisted its way from the slopes of Puncak Jayawijaya (6.56), 50 miles N. The river can only be used by small craft. Entrance to the river, which was last surveyed in 1936, is accessed by passing W and N of a mudbank situated 3 miles SW of the W entrance point. During the SE monsoon the bar experiences breakers so that navigation is difficult; depths on the bar, formed by hard sand, are reported to be at least 2 m at LW but this should not be relied on.

Sungai Inabukwa
6.99

1 Sungai Inabukwa (4°58′S, 137°07′E) enters the sea about 17 miles E of Tanjung Pohonbatu (6.82). There is a reported depth of 3 m over the entrance bar to the river; tidal streams attain a rate of 1½ kn each way. Only small craft enter the river to visit several villages on its banks. Yapero, a large village, lies close within the E entrance point. The river entrance is approached from SSW.

Teluk Pisang
6.100

1 Teluk Pisang, close E of Tanjung Pohonbatu (6.82), is shallow. Pulau Puriri (4°56′S, 136°53′E), a small islet overgrown with tall trees and bushes and with a sandy beach, lies 3 miles E of the point and near the W entrance point to the bay. Pulau Naurio, consisting of two islets with high trees and sandy beaches, lies 1 mile NE of Tanjung Pohonbatu.

Landing may be effected on beaches at the head of two inlets at the head of the bay and on the islets; they are often used by neighbouring inhabitants.

Sungai Timuka and Sungai Keakwa
6.101

1 Sungai Timuka (4°47′S, 136°32′E) enters the sea 15 miles WNW of the entrance to Amamapare. Timuka, a small town, lies at the W entrance point of the river.

Sungai Keakwa, the entrance to which lies 3 miles farther N of Sungai Timuka, is used by local craft and also by the inter-island ferry service. A light (white beacon) is displayed from the E entrance point to Sungai Keakwa.

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Nime, a town, stands about 2 miles within the entrance to Sungai Keakwa.

A prominent white-roofed house stands close W of Timuka and a large white board stands at the W entrance point to Sungai Keakwa.

Sungai Makemaw

6.102

1 Sungai Makemaw (4°38′S, 136°08′E) enters the sea through prominent entrances. The shallow bar between the fronting mudbanks, however, only allows small craft to enter, normally at or near HW.

Sungai Uta

6.103

1 Sungai Uta, with two white boards at its mouth (4°33′S, 135°59′E) is about 3½ cables wide at its entrance and maintains a width of 1 cable or more for a good distance within. Light-draught vessels are able to ascend it for several miles. Sungai Uta eventually leads into Sungai Urumuga, a river which leads down from the very high inland mountains N.

Teluk Iteba

6.104

1 **General description.** Teluk Iteba (Etna), a narrow elongated inlet 17 miles in length, is 7 cables wide at its entrance between Tanjung Bawia (3°56′S, 134°40′E), a steep wooded point backed by the high ground of Pegunungan Bawia, and Tanjung Itewi, another steep and wooded point E of it.

The N side of the inlet is mountainous throughout its length with Pegunungan Bamana, a range of high peaks rising from just inside the entrance. A waterfall in a small bay in the W part of the inlet, N of the N entrance point, falls gradually from a height of nearly 200 m (660 ft). In the E part of the inlet, about 11 miles within its entrance, stands a remarkable mountain shaped like Napoleon's hat.

2 On the S side, apart from Pegunungan Seriwi, a lower range rising 3 miles E of Pegunungan Bawia, the remaining S shore is low with mangrove swamps, with a few hills rising farther E towards the head of the inlet. Teluk Iteba is approached through Teluk Lakahia (6.84).

A number of navigable rivers enter the inlet at various locations and there are also a number of villages on both sides of the inlet which can only be used by local craft.

Tidal streams in the inlet are semi-diurnal and at springs usually have a rate of from 3 to 4 kn in the narrow parts. The streams usually follow the direction of the channel and eddies are formed near the mid-channel reefs and mudbanks.

3 **Berths and landing places.** In the small bay directly N of Tanjung Itewi, Sungai Emborra flows out about 1 mile SW of the waterfall previously mentioned; there is a settlement on the N shore of the bay where there is a small stone jetty and a mooring buoy.

Landings may be effected at villages situated along the muddy banks of the Sungai Orema (Oremma), the principal river, which enters the inlet directly S of Tanjung Yaramabonga, a low point on the S side about 4½ miles E of Tanjung Bawia.

Landing may also be effected at Kiruru (3°57′S, 134°57′E), a village, standing at the head of the inlet.

Teluk Kayumerah

6.105

1 Teluk Kayumerah (Kayu Merah), a rocky, reef-fringed bay, is entered between Tanjung Awura (6.84) and Tanjung Nambima (4°03′S, 134°18′E), a high steep point, 12 miles W.

Pulau Kayumerah, an island with two prominent peaks, lies in the middle of the entrance. Off its N end are several rocky islets; the channels between are only suitable for small craft. Pulau Salakula, an islet, lies between Pulau Kayumerah and the mainland W. The passage between Kayumerah and Salakula is not recommended.

2 The villages within the bay are only visited by local craft. Sungai Airawoi, a river which enters the bay at its head, is navigable by boats for a short distance upriver.

Teluk Bitsyara

6.106

1 Teluk Bitsyara (Bitsjara), a bay, entered directly E of Tanjung Bitsyara (3°43′S, 133°48′E) from where a light (6.72) is displayed, gives access to several villages and to Sungai Sisir (Sisiandang), a river which enters the bay at its head.

Teluk Kamrau leading to Teluk Arguni

6.107

1 Teluk Kamrau is entered between Tanjung Simora (3°40′S, 133°40′E) (6.69) and Tanjung Taronmeta, a low point 9 miles NW. The entrance to this bay is obstructed by sandbanks and reefs but there is a navigable passage leading N from Teluk Kaimana (6.69) which is marked in places. A light (port hand) is displayed from Pulau Serote (3°34′S, 133°38′E), a low reef-fringed islet.

Two rivers, Sungai Ombwaller and Sungai Irimawa, flow into Teluk Kamrau at its N end. Both are navigable but the latter is difficult to negotiate; the former has been surveyed and is used by local craft.

2 Teluk Arguni is entered from Teluk Kamrau by a narrow passage between the mainland and Pulau Syirnusu (3°26′S, 133°36′E), a low mangrove-covered island. A 1·5 m (5 ft) patch lies 2 miles SW of the island; the entrance track passes W and N of this patch. Once inside the bay, which is steep-sided in the S part, the navigable channel, although in deep water, is difficult to navigate for about 25 miles on account of the tidal streams being strong.

3 Thereafter, the river eases in strength but depths decrease considerably for a further 10 miles. Small craft are eventually able to gain access to Teluk Bintuni (6.136). There are numerous villages within the bay, many of which can only be reached by small craft.

It should be noted that within Teluk Arguni crocodiles abound.

Sungai Karufa

6.108

1 Sungai Karufa (3°54′S, 133°24′E), a muddy river with low mangrove-covered banks, enters the sea 14 miles NE of Tanjung Usau (6.74). A wide bar, over which there is a least depth of 3 m (10 ft), fronts the river mouth. The entrance is best approached from SE between a 3·5 m (11 ft) shoal, distant 2 miles NW, and a 5 m (16 ft) shoal, distant 2½ miles N of Pulau Keliwala (3°59′S, 133°30′E) (6.74), after having rounded this island from S.

2 Vessels of less than 50 m in length can navigate the river for about 16 miles. Beyond this distance the river, though still navigable, narrows considerably.

Tidal streams in the river have been observed to flow regularly in both directions.

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COASTAL PASSAGES — TANJUNG NASAULANG TO TANJUNG SELE INCLUDING TELUK BERAU AND TELUK BINTUNI

GENERAL INFORMATION

Chart 942B

Scope of the section

6.109

1 Within this section are described:

The coastal routes between Tanjung Nasaulang (4°05′S, 132°54′E) and Tanjung Sele, nearly 200 miles NW.

Also described are the deep bays, Teluk Berau and Teluk Bintuni, and the off-lying islands of Pulau-pulau Pisang.

Included in the description are the harbours, channels and anchorages associated with both the routes and the two bays.

2 The only ports of importance on this section of coast are Fakfak (2°56′S, 132°17′E) and the oil terminal at Muturi (2°12′S, 133°41′E).

Topography

6.110

1 The whole area is heavily indented by Teluk Berau leading to Teluk Bintuni, which forms one large indentation almost severing the NW portion of Irian Jaya; see (6.135).

2 In the S part, Jasirah Bomberai is a large area of land, indented by inlets and bays on the coasts, with numerous large and small islands; it is surrounded by a continuous chain of mountain ranges. The hinterland is almost entirely made up of lowland interspersed by areas of mangrove-covered jungle through which numerous rivers flow out to the sea. Reputed to be one of the most beautiful areas of Irian Jaya, on account of its famous rock-paintings, the peninsula is itself similarly almost severed, at its E edge, from the rest of the country by Teluk Arguni (6.107).

3 To the N of Teluk Berau, the coastal area once again resumes a terrain of vast mangrove-covered swampland through which numerous rivers flow down to the sea from the high ground of Jasirah Doberai (7.2) forming the NW extremity of Irian Jaya.

Natural conditions

6.111

1 **Flow.** Currents in the open sea off this portion of Irian Jaya move in the direction of the prevailing monsoon; they are generally strong off the S part of the area particularly between Irian Jaya and Pulau Seram. Elsewhere they are less noticeable.

2 Tidal streams are generally semi-diurnal and affect areas close to the coast where they predominate. Their strength depends on the height of the range entering and exiting the many rivers, but they are still, nevertheless, usually strong in the rivers. In some cases their effect, together with discoloration, may be felt some distance offshore.

Within Teluk Berau and Teluk Bintuni, the streams set regularly in and out along both shores at a rate of up to 2½ kn.

6.112

1 **Local weather.** See 6.6. Within Teluk Berau and Teluk Bintuni the climate is better and whilst here it may rain in stages all through the year the amount is moderate. During the SE monsoon, fog or haze hanging over the low coasts can be a problem.

TANJUNG NASAULANG TO TELUK BERAU INCLUDING THE PORT OF FAKFAK

General information

Charts 3242, 3742 (see 1.34)

Route

6.113

1 From a position SSW of Tanjung Nasaulang (4°05′S, 132°54′E) (6.46), the route to a position ENE of Pulau Sabuda (2°39′S, 131°37′E), the largest island of Pulau-pulau Pisang, a group of islands lying in the S approaches to Teluk Berau, initially leads NW thence NNW for a distance of about 117 miles.

Topography

6.114

1 The SW-facing coast of Jasirah Bomberai (6.110) consists of two major ranges separated by an area of low-lying ground. The S range, Pegunungan Kumawa, has its highest peak (4°00′S, 133°03′E) (chart 2102), at nearly 1500 m (5000 ft) high, in the S of the region. Pegunungan Fakfak, the N range, occupies much of Jasirah Onin (Fakfak), the NW arm of Jasirah Bomberai; it's highest point is a similar peak rising E of Fakfak (2°56′S, 132°17′E).

2 A number of detached islands lie close to the coast on the S side of Jasirah Onin. Pulau Batuputih (Batu Putih) (2°57′S, 131°58′E), a rocky island covered with vegetation, lies 7 cables S of the SW extremity of Jasirah Onin; a conspicuous headland with white cliffs forms the W end of the island.

Pulau-pulau Raja Willem III, a group of islands lying within Teluk Sebakor, a bay on this SW-facing coast, consists of three islands. The largest, Pulau Karas (3°28′S, 132°40′E), is hilly, wooded, and reef-fringed; Pulau Faur, rocky and wooded, lies 1 mile E of Karas, and Pulau Tuburuasa, the smallest island, lies 5 cables N of Faur.

3 Pulau-pulau Pisang (2°39′S, 131°37′E), another group of islands, lying in the S approaches to Teluk Berau, consist of Pulau Sabuda, a large island, and four unnamed islets close together 1½ miles S of it with two rocky islets, Pulau Tartaruga 2¾ miles W of the NE end of Sabuda and Pulau Sencan, 3 miles farther W. All are reef-fringed and covered with vegetation and rise sharply from the sea.

Flow

6.115

1 **Currents** in the open water between Irian Jaya and Pulau Seram follow the direction of the prevailing monsoon at a rate of about ½ kn during the NW monsoon and 1 kn during the SE monsoon.

Tidal streams. The in-going stream sets to the N and the out-going stream sets to the S along this coast. Both streams are weak.

Tide-rips are very much in evidence off Tanjung Fatagar (2°46′S, 131°56′E) (6.135), the NW extremity of Jasirah Onin and S entrance point to Teluk Berau; they extend well to the W of it.

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Landmarks

6.116

1 Conical peak, 1006 m (charted as 3297 ft) high, standing 4½ miles N of Tanjung Nasaulang (4°05′S, 132°54′E) (6.46), is prominent.

Waterfall (3°53′S, 132°49′E), prominent from seawards near the entrance to Teluk Sanggala, 2 miles N of Momon (6.117).

Gunung Baik (3°41′S, 132°45′E), with a rounded summit, is prominent.

Conspicuous cliff on Pulau Batuputih (2°57′S, 131°58′E) (6.114).

Directions

(continued from 6.46)

6.117

1 From a position SSW of Tanjung Nasaulang (4°05′S, 132°54′E) the route to a position ENE of Pulau Sabuda (2°39′S, 131°37′E) leads NW thence NNW for a distance of about 117 miles, passing:

SW of Tanjung Nasaulang, thence:

SW of the N end of Jasirah Momon (Mommon) (3°55′S, 132°48′E), a steep wooded peninsula, thence:

SW of a reported 7 m (23 ft) coral patch (3°53′S, 132°42′E), thence:

2 SW of Tanjung Tongerai (3°38′S, 132°43′E) (6.129), the S entrance point to Teluk Sebakor, thence:

SW and WSW of Pulau Batuputih (2°57′S, 131°59′E) (6.114) from where a light (white beacon) is displayed at its W extremity, thence:

WSW of Tanjung Kokraf (2°56′S, 131°58′E), a steep, wooded point, lying at the S end of a narrow tongue of land barely 1 mile N of Pulau Batuputih, thence:

WSW of Tanjung Gaenif (2°53′S, 131°58′E), the rocky, steep and wooded entrance point of Teluk Suweri, thence:

3 WSW of a 4 m (13 ft) rocky patch lying 1¼ miles W of Tanjung Fatagar (2°46′S, 131°56′E) (6.135), the S entrance point to Teluk Berau. Thence:

ENE of the E extremity of Pulau Sabuda; a light (white metal framework tower, 17 m in height) is displayed from this point. It should be noted that this light is obscured by high ground and islets between 034°–090° (56°) and at 106° (1°) by Pulau Sencan.

4 **Useful mark:**

Summit (3°26′S, 132°39′E) of Pulau Karas (6.114) rising in its N part. From a distance the summit and that of the lower summit 4½ miles SE, appear as two islands.

(Directions continue at 6.164; directions for Teluk Berau are given at 6.140)

6.118

1 Vessels passing SW of Pulau-pulau Pisang should follow the directions previously mentioned, but farther offshore, until the position SW of Pulau Batuputih is reached. The track then continues NW to a position SW of Pulau Sabuda and the islets situated 1 mile S of it. Vessels opting for this passage should plan to avoid the 5 m (16 ft) patch lying 2½ miles WNW of Pulau Sencan (2°36′S, 131°33′E) if tracking farther N towards the swept channel leading to Selat Sele. Otherwise directions continue NW towards Selat Sagewin at 6.166.

Fakfak

General information

6.119

1 **Position.** Fakfak (2°56′S, 132°17′E) is a small town and port situated close within the W entrance to Teluk Fakfak, a narrow indentation in the coast.

Function. Fakfak, a regional administrative centre, stands on a hill about 100 m (328 ft) high, rising up from the shore within the bay and is regularly visited by both local and foreign vessels. It is also a regular call by passenger ferries linking ports in Maluku province. The main export cargoes handled are forest products with small amounts of textiles and tobacco.

2 There is a small oil terminal (6.123) situated 4½ miles W of the town.

In 1995 the town had a population of about 15 000.

Topography. This area is a continuance of the non-volcanic Outer Banda Arc (1.110), separated by the Aru trough. The mountain ranges surrounding Fakfak within Jasirah Bomberai consist of New Guinea granites. The coastal area is hilly, fronted by a reef-fringed shore. Sungai Fakfak, a small river, flows into the head of Teluk Fakfak. Karang Metimeti (6.122), lies in the SW approaches to the harbour, 1¼ miles SW of the town.

3 **Approach and entry.** Fakfak is approached from S on passing E of Pulau Panjang (6.122), thence entered from Teluk Fakfak. The harbour may also be approached from W by passing close W thence N of Pulau Panjang.

Traffic. In 2003, in addition to the many local vessels, the port was used by 30 vessels with a total of 75 042 dwt.

4 **Port Authority.** For the harbour: Adpel Fakfak, Komplex Pelabuhan Fakfak.

Internet address; www.portina4.go.id/fak2.htm.

For the oil terminal: Pertamina, Jalan Jend. A. Yani, Fakfak. Irian Jaya.

Limiting conditions

6.120

1 **Tidal levels.** Mean maximum range about 1·5 m; mean minimum range about 0·6 m, ; maximum range at the oil terminal is reported (1997) to be about 2·3 m at springs.

Further details may be obtained from *Admiralty Tide Tables.*

Maximum size of vessel handled: about 5000 dwt at Fakfak and 3500 dwt at the oil terminal.

Arrival information

6.121

1 **Port operations.** Berthing for both the harbour and oil terminal may only be undertaken during daylight hours.

Port radio. The port is reported to have a port radio but traffic information is often relayed to agents, particularly at the oil berth, using Sorong Radio; for details of both stations see *Admiralty List of Radio Signals Volume 1(2).* There is a coastal radio station at Fakfak..

Pilotage is not available.

Tugs not available.

Directions

6.122

1 The anchorage off Fakfak may be approached from S or from W. If approaching from S, the track initially passes (positions from the town):

W of Tanjung Tubokmatan (3°06′S, 132°25′E), the W extremity of Pulau Semai (16 miles SE), a rocky, wooded island. Between this point and a position E of Tanjung Wamarusa, see below, there are two

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isolated coral shoals which need to be avoided. And:

2 E of Karang Egeron (Egeron Reef) (9½ miles S) which consists of a group of detached coral shoals over which there is a least depth of 1·5 m (5 ft). Between these shoals and Tanjung Wamarusa there are further isolated shoals with a least depth of 2 m (7 ft) over them to be avoided. thence:

3 E of Tanjung Wamarusa (3°00′S, 132°18′E), the E extremity of Pulau Panjang, a long, narrow, wooded island, 9½ miles in length, lying parallel with the coast and 2½ miles offshore, S of Fakfak. A light (white metal framework tower, 13 m in height) visible between 139·5°–094·5° (315°) is displayed from the point. The point should not be passed at a distance of less than 5 cables. Thence:

W of Pulau Tubiserang (2 miles SSE), a rocky, wooded, reef-fringed islet situated on the SW end of a reef connected to the E shore. Thence:

4 E of Karang Metimeti (Meti Meti) (1¼ miles SW), a detached drying coral reef, with a light-beacon (red beacon, red cylinder topmark) standing on the S extremity, the reef is also marked on its SE side by a beacon (port hand); a second beacon stands on the reef close W of the beacon (port hand). Thence:

W of the coastal reef (4 cables SSE) which is marked by two light-buoys (starboard hand), thence to the anchorage (6.123).

5 If approaching from W, the track initially leads N between the W end of Pulau Panjang and Pulau Ekka, 1¾ miles W, an islet similar to Panjang but much smaller and marked by a light-buoy (port hand) moored at the E extremity of its fringing reef; thence along the N coast of Pulau Panjang in deep water and passing either side of Karang Metimeti. A small detached reef, marked by a beacon, lies 1½ miles WNW of Metimeti.

The passage N of Pulau Ekka is not navigable.

6 **Useful mark:**

Fakfak Light; displayed from the town.

Passage to the berths from the anchorage leads N into Teluk Fakfak, passing E of a light-buoy (port hand) moored off the coastal reef 2 cables S of the town. Small craft anchorage may be obtained in the bay.

Berths

6.123

1 **Anchorage** may be obtained in a depth of 46 m (25 fm), S of the town. The best berth lies on the opening of Pulau Ekka and Pulau Panjang or when the steep headland, 3 miles SE of the town, is seen midway between Pulau Tubiserang (6.122) and Pulau Keke, a large rock standing on the coastal reef.

Alongside berths. There are two berths; the main berth, of concrete construction, is 45 m in length and has a depth of 5 m alongside. Close N, the second berth has a similar length but with depths of only 1·5 m alongside.

2 **Oil terminal.** Fakfak Oil Terminal is situated in a small bay about 4½ miles W of the town. The T-head jetty berth lies at the end of a concrete bridge constructed over the fringing coastal reef; the jetty head is 35 m in length with a depth of 11 m alongside.

Port services

6.124

1 **Facilities:** limited; medical assistance.

Supplies: limited fresh water; fuel in small quantities by road; limited provisions.

Communications. There is an airport at Fakfak with connections to Jayapura thence Jakarta.

Anchorages

North of Tanjung Nasaulang

6.125

1 Anchorage may be obtained, in a depth of 50 m (27 fm), off a break in the steep coast 2 miles N of Tanjung Nasaulang (4°05′S, 132°54′E) (6.46). A prominent rock, covered with vegetation, lies near the N end of this break, and the drying mouth of a rivulet lies near a similar rock 1 mile S.

Teluk Wap

6.126

1 Anchorage may be obtained within Teluk Wap (3°58′S, 132°49′E), a small bay, which lies on the S side of the isthmus connecting Momon (6.117) to the mainland and is fronted by three islets lying close together on a bank. The berth here lies E of the bank in a depth of 51 m (28 fm), sand. During the SE monsoon the swell runs into the head of the bay.

Teluk Sanggala

6.127

1 Safe anchorages may be obtained within Teluk Sanggala, a deep indentation in the coast, which is entered E of the N end of Momon (3°55′S, 132°48′E) (6.117). During the SE monsoon one berth lies S of the E of two drying patches lying E of Momon, and about 1 mile from the head of the bay, in a depth of 33 m (18 fm), sand; or N of this patch in a depth of 50 m (27 fm), sand. To reach these anchorages vessels should round Momon at a distance of about 1 mile, thereby avoiding several drying reefs and shallows off its N end, thence keep close to the E side of the bay where the water is deep.

2 Another berth also lies between the prominent waterfall (6.116), near the entrance to Teluk Sanggala, and an 8 m (26 ft) patch situated 6 cables W of it; this anchorage however is open to swell and winds. Two islets lie 1 mile NW of the waterfall.

Between Teluk Sanggala and Teluk Sebakor

6.128

1 Anchorage may be obtained, in a depth of 50 m (27 fm), either N or S, according to the monsoon, of an islet standing on the coastal reef lying 11½ miles S of Tanjung Tongerai (3°38′S, 132°43′E) (6.129).

As depths are great at 1 mile offshore, an anchor should be prepared well in advance of arrival.

Teluk Sebakor

6.129

1 Teluk Sebakor, a large indentation in this coastline, is entered between Tanjung Tongerai (3°38′S, 132°43′E), the rocky, steep and wooded S entrance point to the bay, and Tanjung Turkanggur, a similar point, 20 miles N. The shores of the bay are uninhabited. Off the latter point there are several small islets. Fronting the bay are the islands forming Pulau-pulau Raja Willem III (6.114). Most of the inner parts of the bay are obstructed by numerous coral shoals and reefs.

2 The bay affords anchorage during both monsoons anywhere in the lee of the entrance points and islands.

A recommended anchorage may be obtained off Mas (3°29′S, 132°42′E), a village situated on the E side of Pulau Karas (6.114), in depths of about 50 m (27 fm), sand.

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Teluk Weri

6.130

1 Teluk Weri, a small horseshoe-shaped bay 10 miles NW of Teluk Sebakor, is entered between Tanjung Kirana (3°14′S, 132°35′E) and a rocky point, 3 miles N.

Anchorage may be obtained within the bay during the SE monsoon in depths of about 45 m (25 fm), sand and coral; a 3·5 m (11 ft) shoal lies off the SE side of the bay.

In the S approach there are a number of off-lying shoals to be avoided. In the N approach Pulau Kawarnuwa (Kawar Nuwa), a prominent islet, lies 2¾ miles W of the N entrance point to the bay and a 5 m (16 ft) patch lies 6½ miles WSW of the same point.

Teluk Sipalunanam and Togarwatan

6.131

1 Anchorage may be obtained in both Teluk Sipalunanam and Teluk Togarwatan, close W, which are separated by Tanjung Gangrurimur (2°56′S, 132°02′E), the S extremity of a rocky, steep and wooded peninsula. The former bay, which is reef-fringed, has good holding ground, mud, in depths of about 40 m (22 fm). It is best entered from S.

2 Teluk Togarwatan consists of three small inlets on its N shore, of which the middle inlet has the best depths; its SW approach is fronted by several dangerous shoal patches extending SW to Tanjung Kokraf (6.117).

The passage between Tanjung Kokraf and Pulau Batuputih is not recommended. From N, the preferred passage to enter the bays passes S and E of Pulau Batuputih (6.114).

Small craft harbours and channels

Tunasgain

6.132

1 Tunasgain (Tunas Gain) (3°12′S, 132°36′E) is a village situated on the N shore of Teluk Weri. A wooden jetty, 10 m long and with a depth of 3·4 m alongside, is suitable for small craft to berth.

Pinto Besar

6.133

1 Pinto Besar is a navigable channel for local craft which separates Pulau Urat (3°09′S, 132°33′E), a small rocky, wooded island, from Pulau Semai (6.122), close W. Pulau Urat is itself separated from the mainland by an even narrower channel suitable only for shallow-draught craft.

Werpigang

6.134

1 Werpigang (2°56′S, 132°10′E), a village situated close within the W entrance to a small bay, 7½ miles W of Fakfak (6.119), has a wooden jetty suitable only for small craft.

The village, where many of the houses stand on piles along the shore, is the principal centre between Fakfak and Tanjung Ribututin (Ributtutin) (2°58′S, 132°04′E).

TELUK BERAU LEADING TO, AND INCLUDING, TELUK BINTUNI

General information

Charts 3242, 3743 (see 1.34)

General description

6.135

1 Teluk Berau, formerly known as McCluer Gulf, is the outer part of a large and deep indentation which together with Teluk Bintuni, the inner part, extends nearly 110 miles E to a point within 10 miles of Teluk Irian, almost severing the NW portion of Irian Jaya from the rest of the country.

Teluk Berau is entered between Tanjung Fatagar (2°46′S, 131°56′E), a high point situated at the W end of a wide tongue of land, and Tanjung Uaim, a low marshy point, 42 miles N. The shores of Teluk Berau are sparsely populated; the depths are irregular but there are no dangers in the fairway except for some shoals in the approach to the large bight on the S side, E of Teluk Sekar (6.149).

2 Teluk Bintuni, formerly known as Bintuni Gulf, is entered nearly 60 miles E of the entrance to Teluk Berau, between Tanjung Tanahmerah (2°26′S, 133°07′E), a low point, and Tanjung Mingari (6.140), 13½ miles NW. Bintuni sub-district produces crude oil, but there is an increasing interest in biogenic gas exploitation (6.137) in the region. The exportation of mangrove timber, particularly to Korea, is also undertaken in this area. The only port of importance in this whole area is the oil terminal at Muturi (2°12′S, 133°41′E) (6.143), from where crude oil is exported.

The vast area N of both bays is known locally as Kepala Burung (The Bird's Head), by its shape.

Topography

6.136

1 The S shore of Teluk Berau is fairly high and rocky as far E as Tanjung Goras (2°47′S, 132°41′E), which lies about 17 miles ESE of Tanjung Sekar, the W entrance point to Teluk Sekar (6.149); elsewhere it is low and bordered by mangroves. The wide tongue of land which terminates in Tanjung Fatagar is high and densely wooded but without landmarks.

The N shore of Teluk Berau is bordered by extensive low, marshy ground N of which stand the mountain ranges.

On both sides however, the mountains are far inland and cannot be used for navigational purposes.

2 Both shores of Teluk Bintuni are fringed by low, marshy ground except for two hills behind Tanjung Tanahmerah formed of reddish loam and bare on their seaward faces.

The inner reaches of Teluk Bintuni form one of the most extensive mangrove swamps in the world. However, within this area several prominent hills and mountains rise up from this low-lying ground.

Marine exploitation

6.137

1 Teluk Bintuni is a regularly used site for offshore mobile oil rigs and drilling operations. Vorwata Gasfield situated on the N side of the bay 16 miles E of Tanjung Mingari (2°17′S, 132°56′E) (6.140) is the main site for the area; see also 6.4. Platforms are marked, but oil rigs and attendant craft may be encountered anywhere E of 133°E. Platforms, fixed or movable rigs, if sighted, should be given a wide berth.

For details on mobile oil/gas rigs see *The Mariner's Handbook.*

Tidal streams

6.138

1 Tidal streams regularly set in and out of both Teluk Berau and Teluk Bintuni, setting in until the time of HW and out until the time of LW. The maximum rate, which was observed to be 2½ kn, occurs in the deep channels between the banks near the S shore E of Tanjung Sekar.

2 On the S side, the tidal stream which sets into the W part of Teluk Berau divides into two branches near Pulau Barat (2°36′S, 132°23′E) (6.140); one branch sets towards the channel S of Pulau Ogar (2°39′S, 132°27′E) (6.149) and Pulau Arguni E of it, the other passes N of these

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islands and sets E through the channels between the banks in the large bight E of these islands. In the narrow parts the stream attains a rate of 3 kn and there are strong tide-rips off Pulau Barat.

3 On the N side, where the influence of several large rivers is felt at LW, the streams are very variable both in direction and rate. In the rainy season the rivers discharge much discoloured water, which is sharply defined against the sea water for a considerable distance offshore.

In the N monsoon, squalls combined with strong tidal streams make conditions difficult for small craft in both bays.

Principal marks

6.139

1 **Landmarks:**

Pulau-pulau Pisang (2°39′S, 131°37′E) (6.114) are an excellent mark when approaching Teluk Berau from N or S.

Pegunungan Tantiri (2°20′S, 133°58′E), with two sharp peaks, is particularly prominent when bound for Muturi Oil Terminal (6.143).

2 Modan (Top Modan) (2°23′S, 133°52′E), rising WSW of Tantiri; prominent but a much lower peak.

Pegunungan Suwuri (2°34′S, 133°50′E), another prominent peak, is also noticeable when bound for Muturi.

Gunung Sigemerai (2°02′S, 133°36′E), a small range of prominent peaks, with Pegunungan Batubara (2°05′S, 133°29′E), a lower range 8 miles WSW, on the N side of Teluk Bintuni.

3 **Major light:**

Tanjung Tanahmerah Light (white metal framework tower, 10 m in height) (2°26′S, 133°07′E); the light is displayed from a position 5 cables ESE of the point.

Directions for entering Teluk Berau

Approach from south

6.140

1 From a position SW of Pulau Batuputih (2°57′S, 131°59′E) (6.117), from where a light is displayed, the approach to the entrance of Teluk Berau initially leads N to a position at least 3 miles W of Tanjung Fatagar (2°46′S, 131°56′E) (6.135), on account of shoal patches extending W from the point. The track then leads NE into the entrance to a position S of Tanjung Sabra (2°17′S, 132°17′E), from where a light (white metal framework tower, 15 m in height) is displayed, passing:

NW of a 7·5 m (25 ft) patch lying 1 mile W of Pulau Was (2°45′S, 131°59′E), an islet, thence:

NW of Tanjung Wetin (2°42′S, 132°06′E) (6.151), the N entrance point to Teluk Patipi from where a light (6.151) is displayed, thence:

S of Tanjung Sabra which is distinctive from NW with its high trees fronted by a sandy beach; from S or W the trees are difficult to distinguish.

2 The track then leads E in the fairway to a position S of Tanjung Mingari (2°17′S, 132°56′E), passing:

N of an isolated dangerous rock (2°35′S, 132°21′E), over which there is a least depth of 1 m (3 ft), thence:

N of Pulau Barat (2°36′S, 132°23′E), a high wooded islet lying off the S shore, thence:

S of shoals lying off the N shore, over which there is a least depth of 11 m (36 ft), 16 miles ESE of Tanjung Sabra, thence:

S of Tanjung Karakra (2°18′S, 132°41′E), a low point, from where a light (white beacon) is displayed. Thence:

S of Tanjung Mingari, low and marshy and the E entrance point of Sungai Sebyar (6.154).

Approach from north

6.141

1 From the vicinity either side of Pulau Yefyus (1°45′S, 131°08′E) (6.164), the track leads SE thence SSE to the position S of Tanjung Sabra (6.140), passing:

S of an area (1°57′S, 131°34′E) (6.160) containing numerous shoals and dangers.

2 The track then leads E as described at 6.140.

Directions for the approaches to Muturi Oil Terminal

(continued from 6.140)

6.142

1 From a position S of Tanjung Mingari (2°17′S, 132°56′E) the track leads ENE, for a distance of about 35 miles, to the Fairway Buoy (spherical topmark) (2°17′S, 133°31′E), charted as a non-IALA starboard-hand buoy (black and white bands), moored off the entrance to the channel leading to Muturi Oil Terminal, passing:

WNW of a sandbank over which there is a least depth of 12 m (39 ft), lying 4½ miles NNW of Tanjung Tanahmerah (2°26′S, 133°07′E), from where a light (6.139) is displayed.

Muturi Terminal

General information

6.143

1 **Position.** Muturi Terminal (2°12′S, 133°41′E) lies within Teluk Bintuni, on the W side of Sungai Muturi, and about 3 miles within its entrance.

Function. The terminal is a loading berth for crude oil tankers up to 30 000 dwt. The town of Muturi (2°06′S, 133°42′E), with a population of about 5000, lies 8 miles farther upriver.

2 **Topography.** The area surrounding the terminal is low-lying and mangrove-covered; there are numerous small islands which form a number of inter-connecting rivers and channels. Sungai Muturi, the main river, flows down to the sea for a distance of about 50 miles from Pegunungan Mawi, a high range of mountains situated at the E end of Jasirah Doberai (7.2).

3 **Approach and entry.** The terminal is approached through Teluk Berau thence Teluk Bintuni, and entered from Sungai Muturi.

Port Authority. Under supervision from Pertamina-Sorong (7.85).

Limiting conditions

6.144

1 **Tidal levels.** Mean maximum range about 3·9 m, mean minimum range about 2·5 m, see *Admiralty Tide Tables.*

Maximum size of vessel handled: the terminal is designed to accept vessels of 30 000 dwt, 200 m in length, having a draught of 10·6 m (34 ft).

Arrival information

6.145

1 **Port operations.** Berthing and unberthing is undertaken during daylight hours and only with the permission of the

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Harbour Master at Sorong. On arrival, vessels should berth on an in-going stream, using the port anchor to swing the vessel; once secured alongside the anchor can then be housed. Departing vessels leave on the out-going stream.

Port radio. A port radio service is reported to operate from the oil terminal. A coastal radio station operates from Batubara (2°07′S, 133°30′E), call sign Bintuni Radio; initial contact however should be made through Sorong Radio. For details see *Admiralty List of Radio Signals Volume 1(2).*

2 **Outer anchorage.** Vessels awaiting a pilot or berth should obtain an anchorage about 2 miles E of the Fairway Buoy (2°17′S, 133°31′E) (6.142) in a depth of about 15 m (49 ft), hard mud, or a similar distance S of it, in a depth of 30 m (16 fm). If anchoring E of it, mariners should be aware of the 7 m (23 ft) bank extending WSW from Tanjung Kabarisi (2°16′S, 133°39′E).

3 **Pilotage** is compulsory for the oil terminal for vessels over 50 dwt. Pilotage is arranged from Sorong (7.87).

Requests for a pilot should be communicated with Sorong at least 24 hours prior arrival at the entrance to Sungai Muturi.

Tug is available to assist berthing/unberthing.

4 **Regulations.** On occasions vessels may enter the river without a pilot, but only with the permission of the Harbour Master (Adpel) at Sorong.

Steel hawsers are not permitted for securing vessels at the oil berth.

Tidal streams are semi-diurnal; directions are 070°–250° at the entrance to Sungai Muturi. In-going and out-going rates at springs are about 2 kn. Off the berth, however, the out-going streams can be strong especially after heavy rains; the maximum rate here is about 4½ kn.

Directions

6.146

1 From the vicinity of the Fairway Buoy (2°17′S, 133°31′E) (6.142), the track initially leads ENE into the river, which is marked by non IALA channel buoys, thence N, thence resuming an ENE track in the fairway, finally N again to the berth.

Berths

6.147

1 **Anchorage** may be obtained off the terminal in a depth of about 12 m (39 ft), hard mud.

Alongside berth. The oil berth consists of a T-head jetty 28 m long, 7 m wide, with four dolphins and four mooring posts; there is a least depth of 15 m at MLWS, alongside.

Small craft may proceed farther upriver to the town of Muturi (6.143) where there is a jetty. The town is frequently visited by praus, trading in sago, from the S side of Teluk Bintuni.

Port services

6.148

1 **Facilities** are limited; medical assistance is available.

Supplies: also limited; oil fuel may be obtained with sufficient notice but fresh water is unobtainable; some provisions may be obtained with notice from Batubara.

Communications. The nearest airport is situated at Batubara (2°07′S, 133°30′E) (6.150), 11 miles NW, with connections to Sorong. Reaching Batubara is often best achieved by fast launch.

Minor harbours

Kokas

6.149

1 **General information.** The harbour at Kokas (2°42′S, 132°25′E), a large town, occupies most of the W arm of Teluk Sekar, a small indentation on the S coast of Teluk Berau. The town, which is established at the foot of a hill, is the regional centre of commerce for the area. Teluk Sekar, which is entered between Tanjung Sekar (2°41′S, 132°25′E), a steep, rocky, reef-fringed point, and Tanjung Taramnusa, a similar point 3 miles E, is sheltered from the wind and sea by the islands fronting it. Tidal streams in the harbour are weak. Kokas is frequently visited by local vessels and is the only port in Teluk Berau visited by a regular passenger ferry service.

2 **Topography.** As a result of Sungai Kaiuni entering Teluk Sekar at its head, the bay, which is surrounded by hilly, wooded ground, is filled by a wide mudflat over which there are depths of 6 to 7 m (20 to 23 ft).

Outside of the bay lie a group of offshore islands. The largest, Pulau Ogar, is hilly and wooded; on its W side lie Pulau-pulau Sariga, a group of rocky islets; to the E lies Pulau Arguni, lower and smaller than Ogar with scattered rocks and islets between. Pulau Barat (2°36′S, 132°23′E), the outermost islet, is described at 6.140.

3 **Pilotage** not available.

Tidal levels. Mean maximum range about 1·2 m; mean minimum range about 0·3 m, see *Admiralty Tide Tables* under Sekar Bay.

Directions. Although Teluk Sekar may be approached from E or W, the best approach is from W, where there is more open water and the streams are less strong, passing between Tanjung Sekar and Pulau Krok, a rock covered with vegetation lying close off the SW coast of Pulau Ogar, 1½ miles ENE. The track lies close to the S coast mainland.

4 On rounding Tanjung Sekar, the track leads S to an anchorage with the pierhead at Kokas, ahead, bearing 182°, passing between the mainland and mudbank with a least depth of 3·6 m (12 ft) over it. The channel width here is 2 cables.

If approaching from E, the track lies between Pulau Ogar and Pulau Melintang (2°40′S, 132°28′E), an islet, 3 cables S.

Useful mark:

A light (framework tower, 10 m in height) is displayed from the extremity of a narrow headland extending a short distance N from E of the town.

5 **Berths.** Good anchorage may be obtained about 1 to 2 cables N of the pierhead in a depth of 7 m (23 ft).

The pier, which extends about 1½ cables NNE from the shore over the fringing reef, accommodates vessels at its head in depths of 4 to 5 m.

Small craft visiting Kokas from E may use the channels between Pulau Ogar and Pulau Arguni, and the channels through the islets lying S of Pulau Ogar and between it and the mainland.

Batubara

6.150

1 **General information.** Batubara (2°07′S, 133°30′E), a town and oil port, formerly known as Steenkool, sometimes known as Bintuni, lies on the E bank of Sungai Wasian, about 13 miles inside its entrance. The river at Batubara is about 115 m wide. Vessels of 2200 dwt, 100 m in length having a draught of 4·2 m can berth at the port; local

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knowledge is necessary. The river should not be navigated at night.

Sungai Awerepikambore (2°11′S, 133°34′E), a tributary of Sungai Wasian, affords an inside passage, for shallow-draught vessels, to the oil jetty (6.143) in Sungai Muturi.

2 **Tidal levels.** See information in *Admiralty Tide Tables* under Sungai Wasien. Mean maximum range about 3·5 m, mean minimum range about 2·2 m.

Pilotage not available.

Directions. The best time to arrive at Batubara is 1 hour before HW (Batubara). The inner bar (2°10′S, 132°34′E), which has the least depths on the river, should always be crossed on the rising tide.

3 If approaching the river entrance from W, the track leads E to the buoy (6.146) moored off the entrance to Sungai Muturi, passing S of a sandbank extending about 2 miles offshore from the mouth of Sungai Rittowe (2°14′S, 133°29′E) (6.156). Thence the track leads NE to the non-IALA starboard-hand light-buoy (2°15′S, 133°33′E), moored at the entrance to Sungai Wasian. The river fairway takes a mid-channel aspect until the inner bar is reached, thence the best water lies near the E bank before resuming the mid-channel track.

4 **Berths.** Anchorage may be obtained off the entrance to Sungai Muturi as indicated at 6.145, or within Sungai Wasian at a position about 1 mile S of the junction with Sungai Awerepikambore (6.150) in depths of 12 m (39 ft).

At Batubara there is a concrete-constructed jetty 68 m in length with a least depth alongside of 4·2 m. There is also an oil jetty for small tankers of 500 dwt and two other jetties situated at the town.

Passage above Batubara can only be undertaken by small craft.

5 **Facilities:** small repairs are available if arranged prior to arrival; hospital and medical assistance.

Supplies: limited fresh water; fuel and provisions.

Communications. There is an airport at Batubara with connections to Sorong.

Anchorages

Teluk Patipi

6.151

1 Good anchorage may be obtained in Teluk Patipi, a narrow bay situated near the S entrance to Teluk Berau. It is entered between Tanjung Kramram (2°43′S, 132°05′E), a rocky and steep headland, and Tanjung Wetin, a similar point, 1½ miles NE. The entrance is free from dangers and a sheltered berth lies towards the E end in depths of about 10 to 12 m (33 to 39 ft), mud. The tidal streams off the entrance to the bay sometimes cause strong eddies.

A light (2°41′·8S, 132°05′·8E) is displayed from Tanjung Wetin.

Small craft harbours and channels

General

6.152

1 As would be expected in a large waterway into which numerous rivers flow, there are a considerable number of small craft channels linking villages and towns, which in some cases lie well inland, to other locations within Teluk Berau and Teluk Bintuni.

Described below are some of the more important small craft anchorages and channels; local knowledge is advisable for entry to each.

2 It should be noted that there is a large tidal range at the head of Teluk Bintuni so that the appearance of the headlands in this locality may vary greatly when viewed at either high or low water, see 6.138. Some of the points, consisting of low-lying mangroves, are also difficult to identify.

Southern shore of Teluk Berau

6.153

1 Teluk Tawar, entered 7 miles ENE of Tanjung Fatagar (2°46′S, 131°56′E) (6.135), affords anchorage for small craft during the SE monsoon. Teluk Salakiti (2°44′S, 132°05′E), which is entered 8½ miles ENE of Tanjung Fatagar, affords sheltered anchorage for small craft; landing may be effected at Salakiti, a village, situated on the W side of the bay.

2 Within Teluk Patipi (6.151), a boat channel leads N of a mudbank extending W from Sungai Degen at the head of the bay. The channel passes N of Pulau Bunoha, a small group of rocks, lying 2 cables W of the mudbank.

Sungai Bedidi (2°47′S, 132°46′E) and Sungai Bomberai, 1 mile farther ENE, are the principal creeks which flow through the marshy land occupying a large bight 8 miles E of Teluk Sekar. Although the entrances to both rivers are nearly closed by drying bars small craft can enter on HW, thence depths in the rivers increase.

Northern shore of Teluk Berau

6.154

1 Sungai Bira (2°10′S, 132°11′E), the entrance to which lies 11 miles SE of Tanjung Uaim (6.139), gives access to small craft visiting several villages on the river. A channel leading N to the entrance is initially marked by beacons (2°12′S, 132°10′E); a mooring buoy is moored close W of the E entrance point to the river.

2 Sungai Kemudan enters the sea 1½ miles WNW of Tanjung Karakra (2°18′S, 132°41′E) (6.140). Although over the bar there is barely a depth of 1 m (3 ft), depths in the river increase and praus can reach the village of Mongge about 30 miles within the entrance; boats can reach Samariak (Samaniak), another village, 12 miles farther upriver. In the lower reaches streams attain a rate of about 2 kn.

Mongge lies on the road system leading to Sorong.

3 Sungai Wiriagir (2°17′S, 132°53′E), flowing out 13 miles E of Tanjung Karakra, is marked by beacons as far as the village of Wiriagir, 2 miles within its mouth.

Sungai Sebyar, the more important of these two rivers, enters the sea 2½ miles E of Sungai Wiriagar and is fronted by a bar over which there is a least known depth of 2 m (7 ft), but inside the depths increase considerably. The river can be navigated for a distance of about 30 miles by praus. Tomu, the first village of many on this river, lies about 6 miles upriver from its entrance; it is connected to the road system leading to Sorong.

Southern shore of Teluk Bintuni

6.155

1 Sungai Kasuri is only used by local craft. It is entered between the sandbanks extending from the E side of Pulau Asap (2°28′S, 133°20′E), a low-lying island, and Pulau Sianiri Kecil, 3 miles E. The navigable channel, which can be used for a considerable distance inland, has a least depth in the fairway of 4 m (13 ft) as far as the village of Aroba, 14 miles S of its entrance. A shorter route, with better depths, lies through Tanusan Wimara, another navigable channel situated between Pulau Asap and the

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mainland; this channel joins Sungai Kasuri about 5 miles inside its entrance.

2 Sungai Kasira, the entrance to which lies on the E side of Pulau Sianiri Kecil, is navigable by small craft to the village of Babo (2°33′S, 133°26′E) 3½ miles within its entrance. A dangerous wreck, which lies on the E side of the channel about 1¼ miles within its entrance, is marked by a beacon (spherical topmark). Landing can be effected at two piers suitable for boats at Babo.

Tidal level information for Babo can be found in *Admiralty Tide Tables.*

3 Sungai Kaitero (2°31′S, 133°37′E) is entered 11 miles E of Sungai Kasira and is the most important river on the S side of Teluk Bintuni. The upper reaches of the river are well populated. When approaching the mouth, the higher ground behind the marshes can be seen. Sungai Taridura (2°28′S, 133°36′E), the E passage, leads into the river between Pulau Amutu Besar, a large mangrove-covered island, and Pulau Amutu Kecil, a smaller island, nearly 1½ miles E. The W channel, which is obstructed by sandbanks, leads between Pulau Amutu Besar and the mainland S.

4 The bar, which lies 6 miles within the river's entrance, has a least depth of 4 m (13 ft) over it. The river is navigable for about 25 miles S to the town of Tamarome. Landings can be effected at several villages on the river.

Northern side of Teluk Bintuni

6.156

1 Sungai Kamarin, which flows out 20 miles E of Tanjung Mingari (2°17′S, 132°56′E) (6.140), can only be entered by small craft on or near HW. The best water lies close W of the E sandbank extending S from the E entrance point. The river divides close within its mouth; the navigable channel lies along the E branch.

Sungai Timbuni, entered 2½ miles E of Sungai Kamarin, leads to the oilfields of Mogoi and Wasian, about 20 miles N of the mouth. The river is regularly navigated by praus.

2 Sungai Rittowe (2°14′S, 133°29′E), the entrance to which lies 10½ miles E of Sungai Timbuni, has a least depth of 5·5 m (18 ft) in the entrance channel, which curves anti-clockwise from deep water into the river.

The area is subject to strong tidal streams. When entering from E, vessels should first pass S and W of a dangerous sandbank extending S and SW from its E entrance.

Channels at the head of Teluk Bintuni

6.157

1 On passing the entrance to Sungai Muturi (6.143), there are two main channels leading to logging villages at the head of Teluk Bintuni. Selat Modan leads between the SW end of Pulau Modan (2°23′S, 133°51′E) and an island close S. This channel leads through to other rivers extending far into the SE part of the bay. Mariners should be aware that tidal ranges in this part of the bay are high; see 1.127, and *Admiralty Tide Tables,* under Modan.

2 Selat Nusawamer which tends to lead into the N and NE part of the bay, is entered between Pulau Nusawamer, a long narrow island, and Pulau Maniai (2°18′S, 133°53′E), close N. The E track initially passes N of the mudflat surrounding Pulau Karaka (2°19′S, 133°47′E) and Pulau Strewenoo (2°19′S, 133°52′E), a rocky and fairly high islet, standing close off the N side of Pulau Nusawamer.

3 Sungai Tatawori, an alternative channel, leads N of Pulau Modan from the sea; the river separates the N side of Pulau Modan from Pulau Nusawamer but eventually it leads into Selat Nusawamer about 15 miles within its entrance.

TELUK BERAU TO TANJUNG SELE

General information

Charts 3242, 3743, 3744 (see 1.34)

Routes

6.158

1 **Coastal.** From the position ENE of Pulau Sabuda (2°39′S, 131°37′E) (6.117), the coastal route continues NW to the 10 m (33 ft) minimum depth swept channel in the vicinity of Pulau Yefyus (1°45′S, 131°08′E) (6.164) leading to Selat Sele and the port of Sorong at its N end.

Vessels entering, or exiting, Teluk Berau from Selat Sele (7.69) pass S of an area to be avoided (6.160) containing numerous shoals.

2 **Offshore.** An offshore route lies farther W than the coastal route from Pulau Sabuda. This route leads NW to a 14 m (46 ft) minimum depth swept channel (1°40′S, 130°45′E), passing NE of Pulau-pulau Kasya (Ef Kasja) (1°59′S, 130°48′E) (4.288) and Pulau-pulau Penyu (7.57), thence NNE to the S entrance to Selat Sagewin (7.54) or W to Selat Obi (4.29). It is the usual route for vessels coming from ports S of Teluk Berau.

3 **Caution.** In both the above routes the swept channels are not shown on British Admiralty charts; local charts and/or local knowledge are therefore required on this passage.

Small craft or small vessels are able to navigate some of the rivers which enter the sea in this part of Irian Jaya. However, the channels leading to these rivers change constantly and no reliance should be placed on charts without ascertaining the latest information. It is therefore essential to have the benefit of local knowledge before entering any river.

Topography

6.159

1 Between Teluk Berau and Tanjung Sele (1°26′S, 130°56′E) (7.70), 75 miles NW, the coast is low for the most part and densely wooded. However, higher land at Tanjung Yamtup, 31 miles E of Tanjung Sele, is conspicuous and may be identified from Pulau Yefyus (1°45′S, 131°08′E) (6.164). A number of rivers enter the sea on this stretch of the coast; the more important ones are Sungai Metamani (2°03′S, 132°02′E) (6.170), Sungai Waronge (1°48′S, 131°55′E) (6.171), and Sungai Kaibus (1°40′S, 131°51′E) (6.168).

Area to be avoided

6.160

1 An area to be avoided containing numerous shoals lies 20 miles W of the entrance to Teluk Metamani (Metamani Baai) (2°03′S, 132°00′E) (6.170).

The area, which is charted, covers approximately 200 square miles.

Marine exploitation

6.161

1 Vessels engaged in oil drilling operations may be encountered anywhere in the waters off the S entrance to Selat Sele. Lighted oil rigs, platforms and associated oil company craft should always be given a wide berth.

For further details on oil rigs, particularly those rigs that are movable, see *The Mariner's Handbook.*

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Tidal streams

6.162

1 Off the mouths of the rivers along this stretch of coast, the maximum fall of tidal stream that can be expected is 1·3 m below MSL, which occurs in May or June and November or December. The maximum rise is 0·8 m.

Offshore currents are a variable combination of tide and monsoonal drift but near the shore streams predominate.

Tidal streams in the rivers are frequently strong especially in the wet season.

Principal marks

6.163

1 **Landmarks:**

Tanjung Yamtup (1°31′S, 131°26′E) (6.159); on the inner route to Tanjung Sele.

Tanjung Sele (1°26′S, 130°56′E) (7.70); the point is particularly distinctive from S when bound for Selat Sele.

Tanjung Wamonket (1°31′S, 131°13′E) (6.174); distinctive from W when bound for Selat Sele.

Pelana (1°49′S, 130°21′E) (4.282) with Kubah (4.282), slightly lower, 1 mile SE, are both prominent peaks on the E coast of Pulau Batanme; visible on the outer route.

2 **Major light:**

Pulau Yefyus Light (white metal tower, 20 m in height) (1°45′S, 131°08′E); visible between 060°–018° (318°).

Directions

(continued from 6.117)

Teluk Berau to Selat Sele

6.164

1 From a position ENE of the E extremity of Pulau Sabuda (2°38′S, 131°39′E), from where a light (6.117) is displayed, the track leads NW for a distance of about 64 miles to the swept channel (6.158), in the vicinity E or W of Pulau Yefyus (1°45′S, 131°08′E), a low isolated islet, with high trees, from where a light (6.163) is displayed, leading to Selat Sele, passing:

SW of an area to be avoided (6.160), 20 miles W of the entrance to Teluk Metamani (2°03′S, 132°00′E) (6.170).

2 From the vicinity of Pulau Yefyus the track continues NW, in the swept channel, to the S approaches of Selat Sele, passing (positions from the islet):

SW of a dangerous rock (6¼ miles NNW) over which there is a least depth of 0·5 m (2 ft); there are further shallow patches close SE and N of the rock, thence:

NE of a shoal patch (8¼ miles NW) over which there is a least depth of 4·8 m (16 ft), thence:

3 NE of a 5·5 m (18 ft) patch (1°31′S, 130°55′E), situated 5 miles S of Tanjung Sele, thence:

SW of a similar patch, 3 miles S of Tanjung Sele, thence:

SW and W of Tanjung Sele (1°26′S, 130°56′E), maintaining the swept channel into the strait.

6.165

1 **Useful marks:**

Pulau Umpe (1°29′S, 130°59′E), a wooded islet situated 4 miles SE of Tanjung Sele, from where a light (white metal tower, 10 m in height) is displayed.

Barrel buoy (red and white bands) (1°47′S, 130°58′E), charted as a mooring buoy with black, red and white stripes, moored over a dangerous underwater rock, with a 2·5 m (8 ft) coral shoal patch close ESE.

2 Pulau Membok Light (1°24′S, 130°55′E) (7.84); visible near the N end of the swept channel.

(Directions for Selat Sele are given at 7.84)

Teluk Berau to Selat Sagewin

(continued from 6.118)

6.166

1 **General.** The track initially leads NW, but farther offshore than that described at 6.164.

Passage. From a position SW of Pulau Sabuda (2°38′S, 131°39′E) (6.114), to the S approaches to Selat Sagewin, the track leads NW, for a distance of about 75 miles, to the S end of the swept channel (1°40′S, 130°45′E) (6.158), thence in this channel, passing:

NE of Pulau-pulau Daram (2°09′S, 130°55′E) (4.278), thence:

2 NE of Pulau-pulau Kasya (1°59′S, 130°48′E) (4.288), thence:

SW of the buoy (6.165), marking a dangerous rock, thence:

Clear of a swept 6·3 m (21 ft) coral patch (1°41′S, 130°48′E), lying close SE of the entrance to the 14 m swept channel. Thence:

NE of Karang Magdal (1°28′S, 130°33′E) (7.57), thence:

3 NE of a 2·6 m (8 ft) patch lying 8 cables NE of Pulau Pentako Ef (1°25′S, 130°29′E) (7.57), the most E island of Pulau-pulau Penyu, thence:

SW and W of Karang Elanglaut (1°20′S, 130°30′E) (7.57).

The track then continues N in the swept channel to deep water at 1°10′S, 130°30′E, thence NNE to the entrance to Selat Sagewin, with Batanta Light (0°55′S, 130°36′E) (7.62) ahead, bearing about 023° as a useful mark, passing:

WNW of Pulau-pulau Kabu (1°09′S, 130°35′E) (7.57), from where a light is displayed.

Alternative passage — Teluk Berau to Selat Sagewin

6.167

1 An alternative, but longer, passage exists between the approaches to Teluk Berau and those of Selat Sagewin. From the vicinity E or W of Pulau Sabuda (2°38′S, 131°39′E) (6.114), the track leads even farther W by passing W of Pulau-pulau Dua (1°31′S, 130°31′E) consisting of Pulau Meslu Besar and Pulau Meslu Kecil, reef-fringed islets covered with high trees, and Pulau-pulau Penyu (7.57). This passage, however, does not have the benefit of a swept channel and although charted depths are generally greater throughout, a number of isolated shallow depths have been reported over recent years.

2 Karang Hesketh (Hesketh Shoal) (1°27′·5S, 130°22′·5E) (4.278), lying between Pulau-pulau Penyu and Pulau-pulau Nusela (4.278), is the only recognized charted danger on this passage.

When N of the islands forming Pulau-pulau Penyu the track leads NNE towards the entrance to Selat Sagewin.

(Directions continue for the approach to Selat Sagewin at 7.62)

Taminabaun

6.168

1 **General information.** Taminabaun (1°27′S, 131°59′E), a town connected by a good road to Sorong, lies about 17 miles inside the entrance to Sungai Kaibus. The river also gives access to the village of Konda, situated about

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7½ miles inside its entrance, where a landing may be effected.

Sungai Kaibus is approached through Teluk Kaibus which is entered between Tanjung Bakoi (1°40′S, 131°52′E) and Tanjung Seleboi, 5½ miles NW; both points are prominent.

The main trade is timber, mainly exporting logs.

2 **Directions.** The approach channel initially leads E over the bar from a light-buoy (safe water), moored 16½ miles W of Tanjung Sibabu (1°43′S, 131°54′E), a low, wooded point. On passing a light-buoy (starboard hand), moored 5½ miles W of the point, the track leads NE into the river. Thereafter the channel is marked by buoys. Over the bar there is a least depth of 2 m (7 ft) but depths in the river are considerably greater.

Vessels having a draught of 2·7 m (9 ft) can reach the town where an anchorage may be obtained. There is a jetty which accommodates small craft.

Small craft

General

6.169

1 In most cases it is essential before entering any of the rivers on this coast to have the benefit of some local knowledge. Charts used should always be the latest editions, as many of the river channels are subject to frequent changes and only some are marked. Whilst small craft, by definition, generally have shallow draughts, uncharted dangers may still exist.

Sungai Metamani

6.170

1 Sungai Metamani is the principal river of three rivers flowing into Teluk Metamani (Metamani Baai), a mangrove-lined bay fronted by sandbanks. The bay is entered between Tanjung Uaim (2°05′S, 132°01′E) (6.135) and Tanjung Rur, a steep headland with trees on it, 2¾ miles N.

The bar has a least depth of 1·5 m (5 ft) over it at LW, but depths within Sungai Metamani increase considerably as far as the village of Mugem (2°00′S, 132°06′E) about 7 miles upriver.

2 Sungai Kais, which flows in 1 mile E of Tanjung Rur, is between 1½ and 4 cables wide and has a least known depth of 3 m (10 ft) as far as the village of Yahadiang about 6 miles upriver. For tidal information, see *Admiralty Tide Tables.*

Sungai Waronge

6.171

1 Sungai Waronge flows into Teluk Waronge, a mangrove-lined bay, which is entered between Tanjung Rumoninpori (1°49′S, 131°54′E), a low wooded point fronted by a sandbank, and Tanjung Sibabu (6.168), 6 miles N.

2 The bar consists of two channels over it; however, the E channel has a least depth of 5·5 m (18 ft) in it at LW, but like most rivers on this coast, depths generally increase within. At a point 12 miles within its entrance Sungai Waronge diverges, with Sungai Kaibusgema, another navigable river, leading N towards Taminabaun (6.168). Sungai Waronge itself continues NNE to the villages of Waronge (1°31′S, 132°08′E) and Itako, 6 miles farther upriver.

3 Tidal information can be found in *Admiralty Tide Tables* under Waronge River.

Caution. A dangerous rock lies 7 miles SW of Tanjung Rumoninpori, in the S approaches to the bar channels. The E channel is therefore best approached from S and entered well E of the rock.

Sungai Karabra and Sungai Sebak

6.172

1 Sungai Karabra, entered 15 miles NE of Pulau Yal (Yef Yal) (1°40′S, 131°26′E), an islet standing on a drying reef, is restricted only to small craft on account of shallow depths over the bar. Depths in the river for a distance of 4 miles upstream of the junction with Sungai Sebak, see below, vary between 7 and 13 m (23 to 43 ft), but above this point become more irregular. Sungai Karabra flows down to the sea a considerable distance from the high mountains of Jasirah Doberai (7.2).

2 Sungai Sebak enters the sea 13 miles NE of Pulau Yal; it connects with Sungai Karabra 7 miles above its entrance, and it also is only accessible to small craft because of shallow water over the bar and drying sandbanks fronting its entrance.

Sungai Beraur

6.173

1 Sungai Beraur is entered between Tanjung Yamtup (1°31′S, 131°26′E) (6.159) and Sungai Sebak, about 5 miles ENE. Pulau Matel (Yef Matel) a low islet, lies close within the SE end of a bank extending SE from Tanjung Yamtup. The river can be ascended for a distance of about 25 miles to the point where it is formed by the confluence of Sungai Mararin and Sungai Giliwolo.

2 The bar channel, leading N from a position either side of Pulau Yal (6.172), has a least depth of 2 m (7 ft) over it at LW. At the river entrance, a sandbank splits the channel into two; the E channel has the best water. Once inside the river, depths increase considerably.

Caution. There are several drying reefs and dangers in the vicinity of Pulau Yal; however, the reef on which the islet stands can be approached closely on either side especially at LW when it and the other reefs in the vicinity can plainly be seen.

Sungai Segun

6.174

1 Sungai Segun (Klasop) is approached from Teluk Segun, a large open bay, and entered between Tanjung Yamtup (1°31′S, 131°26′E) (6.159) and Tanjung Wamonket, a high distinctive point covered with high trees, 14½ miles W. The bay is obstructed by shoals and its shores are fringed with drying banks; four rivers flow into the bay.

Pulau Kobalin, a small islet, lies 4 miles E of Tanjung Wamonket and near the SW end of a drying bank.

2 From open water, the track leads NNE over the bar, with a least depth of 3 m (10 ft) over it, to a beacon (spherical topmark) standing at the entrance to the navigable channel which enters the bay. Sungai Segun flows into the W side of the bay and is navigable for about 8 miles.

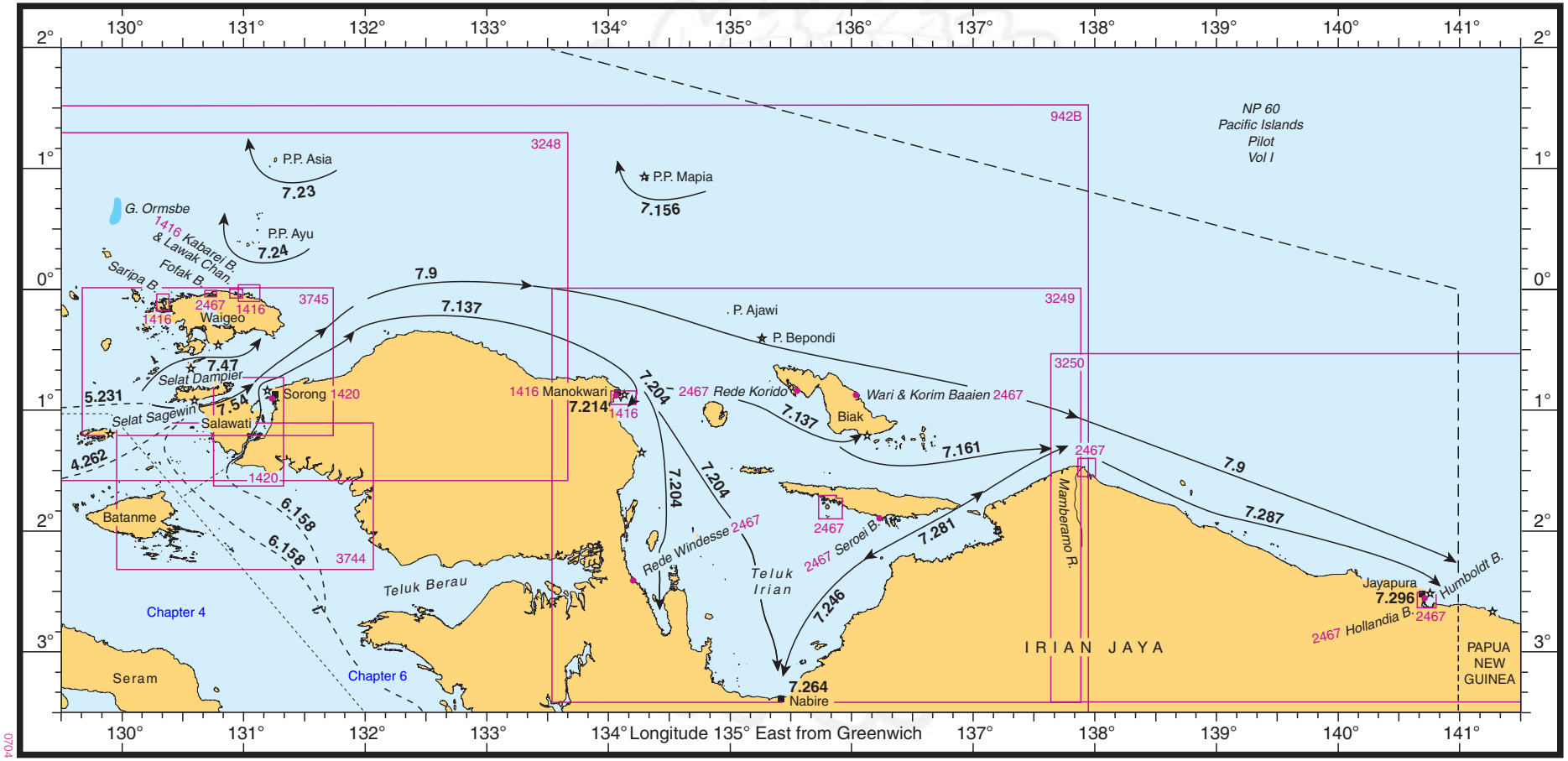
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NOTES

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Chapter 7 - North coast of Irian Jaya including Teluk Irian



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CHAPTER 7

NORTH COAST OF IRIAN JAYA — TANJUNG SELE TO THE BORDER WITH PAPUA NEW GUINEA AT 141°E INCLUDING THE ISLANDS AND STRAITS NORTH-WEST OF THE PROVINCE

GENERAL INFORMATION

Chart 4507

Scope of the chapter

7.1

1 In this chapter are described:

The N coast of Irian Jaya from Tanjung Sele (1°25′S, 130°55′E) to the border with Papua New Guinea at longitude 141°E including the outlying islands forming Pulau-pulau Mapia.

The islands and straits lying NW of the mainland.

The ports, harbours and passages associated with this part of Irian Jaya.

Topography

7.2

1 The N coast of Irian Jaya to the border with Papua New Guinea at 141°E is heavily indented by Teluk Irian, a large open bay which penetrates the land mass S up to 150 miles in places. Fronting the bay lie several significant islands of which Pulau Biak is the most important.

On the W side of the bay, the coastal area is backed by the high ground of the W peninsula throughout. However, Jasirah Doberai, a high range of mountainous terrain consisting of sedimentary limestones, sandstones and shale, dominates the N part of the extensive W peninsula.

2 On the E side of the bay, a narrow belt of coastal marshy ground is backed by Pegunungan Van Rees and Pegunungan Gauttier forming two similarly high mountainous ranges which eventually slope down to the sea at Jayapura. Sandwiched between the latter ranges and the very high ranges of the Central Highlands (6.10) to the S lies an area of low-lying jungle and swampland penetrated only by Sungai Mamberamo (7.286), the largest river in the province.

Off the NW extremity of Irian Jaya lie several hilly islands including Pulau Waigeo, the largest.

Shoals

7.3

1 Within the limits of this chapter there are several areas containing numerous shoals which should be avoided. In particular the waters W and NW of Pulau Waigeo (0°15′S, 130°48′E), the waters surrounding Pulau-pulau Miosauri (Mios Auri) (2°02′S, 134°44′E), Karang-karang Gayebi (2°08′S, 135°13′E) together with Karang-karang Tydeman, 5 miles E, described at 7.210, the W side of the head of Teluk Irian where there are incomplete surveys, and the SW coast of Pulau Supiori (0°45′S, 135°34′E) (7.162) where there is a coastal plateau over which there are uncertain depths.

2 Whilst the chart is the best guide, masters without local knowledge are advised to keep to recognized channels or straits when sailing within the waters of Irian Jaya and to follow the applied directions, where described within the text, for entering or leaving a port.

Marine reserves

7.4

1 Within the limits of this chapter there are two areas where Marine Reserves have been established:

Raja Ampat (0°23′S, 130°15′E) an area lying S of the W end of Pulau Waigeo.

Within Teluk Irian to include Pulau Mioswaar (Mios Waar), Pulau Roon (2°24′S, 134°33′E) and Pulau Angrameos.

For details on Marine Reserves and conservation see 1.67.

Natural conditions

Flow

7.5

1 **Currents** off the N coast of Irian Jaya and around Pulau-pulau Ayu and Asia tend to set E during the NW monsoon and W during the SE monsoon. The current becomes weaker closer to the mainland coast; offshore rates of 2 to 3 kn have been experienced in each direction especially after strong winds have been blowing. Normally the rate in the open sea is about 1½ kn in each direction.

2 **Tidal streams** are only noticeable off the mouths of rivers. Within Teluk Irian the streams are weak.

In the area NW and N of Pulau Waigeo and around Pulau-pulau Ayu and Asia, the streams are strong through the passages and particularly around the islands. Rates of up to 5 kn have been reported through the passage within Pulau-pulau Ayu.

Tidal streams within Selat Dampier, Selat Sagewin and Selat Sele are described in the appropriate parts of the text.

Local weather

7.6

1 Between the E boundary and Teluk Irian, and including the bay, the monsoons do not show the great difference between wet and dry weather, which is such a strong feature for the middle and W parts of the archipelago. The heavy showers of rain with wind gusts fall mostly in July and August, the end of the normal dry season. During December to February, the normal wet season, the NW winds are very strong but there is little rain.

2 On occasions, during July, August and September, NW winds predominate in one year whilst NE winds may in another. The best weather in the area is usually after April but before the rain in July.

It may be said that Teluk Irian is protected from the open weather of the Pacific Ocean except during the NW monsoon when a N swell and sea with decreasing strength reaches the head of the bay.

General directions

Through route

7.7

1 A through route, for deep laden vessels departing ports on the NE coast of Australia (*Australia Pilot Volume III)*

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and opting for a N-about passage to the N parts of the Indian Ocean, leads NW from Vitiaz Strait and Isumbud Strait (4°48′S, 145°51′E), both described in *Pacific Islands Pilot Volume I,* passing along the N coasts of Papua New Guinea and Irian Jaya to a position at the E entrance to Selat Sagewin (7.54), the deep, safe navigable passage situated at the NW end of Irian Jaya.

Chart 4603

2 From the W entrance to Selat Sagewin, tracks lead SW to Ceram Sea thence S to the passage lying E of Pulau Alor and between it and Pulau Timor described at 2.27, or following a more direct line of passages from Ceram Sea to Selat Lombok, described in *Indonesia Pilot Volume II*.

Chart 4507

Coastal routes

7.8

1 The main passages lying at the NW end of Irian Jaya all give access to the port of Sorong (0°53′S, 131°15′E). The passage between Pulau Mios Su (0°21′S, 132°10′E) and the mainland is unsafe and not recommended.

In general the N coast of Irian Jaya may be passed at a distance of between 5 and 10 miles offshore; to the E of Teluk Irian there are, however, several groups of offshore islands. Pulau Biak (1°00′S, 136°00′E) together with Pulau Supiori may be passed on their respective N or S sides.

Teluk Irian may be entered from NW, NE or centrally through Selat Miosnum (7.173).

THROUGH ROUTE — SELAT SAGEWIN TO THE IRIAN JAYA/PAPUA NEW GUINEA BORDER (FOR VITIAZ STRAIT)

General information

Charts 4507, 3248, 3249, 3250

General description

7.9

1 A through route leads from Selat Sagewin at the NW end of Irian Jaya for vessels bound for ports on the E coast of Australia (*Australia Pilot Volume III).* This route is particularly useful in the opposite direction for deep-laden vessels wishing to sail N-about of the continent to points situated in the N part of the Indian Ocean but unable to utilise the shallow waters of Torres Strait.

East of the border with Papua New Guinea the passages through the various islands to Vitiaz Strait are all described in *Pacific Islands Pilot Volume I.*

2 It has been assumed that vessels using this through route will generally be sailing a greater distance offshore than those passages described for the coastal routes along this part of the Irian Jayan coastline, except when departing or arriving at the E entrance to Selat Sagewin and when passing N of Pulau Supiori (0°44′S, 135°35′E). Landmarks and major lights, such as they are, will not therefore be readily visible. The very high peaks inland on the mainland are usually covered in cloud. However, vessels following a closer track to the coast may use the landmarks and major lights described in the appropriate parts of the coastal passages.

Currents

7.10

1 Offshore currents along the N coast of Irian Jaya are generated by the monsoon seasons but rarely exceed 1½kn in each direction. Across the N coast of Irian Jaya during the NW monsoon the current sets E, and W during the SE monsoon. Off the NNE-facing coasts of Irian Jaya and Papua New Guinea they tend to set in the direction of the coast (WNW-ESE).

The area is also clear of the effect of tropical cyclones which usually track E-W a considerable distance N of the land mass.

Data buoy

7.11

1 An unlit ODAS buoy has been established in position 0°02′N, 137°53′E. This position, which is approximately 90 miles N of Tanjung Narwaku on the N coast of Irian Jaya, is likely to lie far N of the normal through route tracks along this coast.

Principal marks north of Pulau Supiori and Biak

7.12

1 **Landmarks:**

Bumbeffor (0°43′S, 135°29′E) (7.162), a mountain.

Pulau Bependi (0°24′S, 135°16′E) (7.161).

Mountain (7.167), rising 3 miles SE of Tanjung Praisbari (0°41′S, 135°49′E), the N extremity of Pulau Biak.

Major light:

Pulau Bependi Light (0°24′S, 135°16′E) (7.167).

Directions

7.13

1 The information contained at 7.9 should be read in conjunction with these directions.

From a position N of Tanjung Yupleket (0°54′S, 130°56′E) (7.66), at the E entrance to Selat Sagewin, the route initially leads ENE for a distance of 82 miles to a position NNW of Pulau Mios Su (0°21′S, 132°10′E) (7.126), from where a light (7.130) is displayed; thence E for a further 35 miles to a position N of Tanjung Wesio (Weios) (0°22′S, 132°43′E) keeping to seaward of the 200 m (100 fm) depth contour.

2 From the latter position the route then leads E, for a distance of about 160 miles, to a position N of Tanjung Imbirsbari (Imbieri) (0°38′S, 135°24′E), the NW extremity of Pulau Supiori, and between it and Pulau Bependi (7.161), 15 miles NNW, from where a light (7.167) is displayed, passing clear of Karang Isabel (0°30′S, 135°14′E) (7.161). The track continues E along the N coasts of Pulau Supiori and Biak for about 25 miles to a position N of Tanjung Praisbari (0°41′S, 135°49′E) (7.167), the N extremity of Pulau Biak; thence ESE for a distance of about 185 miles to a position NE of Pulau Liki (1°36′S, 138°43′E), from where a light (7.291) is displayed; thence a further 145 miles SE to the E border with Papua New Guinea.

3 **Caution.** During the SE monsoon it is recommended to pass N of Karang Isabel when traversing E to W, and S of Karang Isabel when traversing W to E. On occasions the preference is to pass N of Gosong Bependi (7.161), the bank on which Pulau Bependi stands, and between the bank and Pulau Ayawi (7.161), where there is a clear and deep channel.

4 **Useful mark:**

Pulau Numfoor (1°02′S, 134°52′E) (7.163).

(Directions for the passages along the coast of Papua New Guinea are given in Pacific Islands Pilot Volume I; coastal directions for the E approach to Selat Sagewin are given at 7.130 and for the strait 7.64 in reverse. Directions for the coastal passage E of Tanjung Narwaku are given at 7.293)

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NORTH-WEST COAST OF IRIAN JAYA — TANJUNG SELE TO TANJUNG SORONG INCLUDING THE ISLANDS AND STRAITS NORTH-WEST OF THE MAINLAND

GENERAL INFORMATION

Charts 942B, 3248

Scope of the section

7.14

1 Within this section are described:

Selat Sagewin.

Off-lying islands and isolated dangers including Pulau Waigeo and Selat Dampier.

Selat Sele including the oil terminals of Salawati, Kasim and Arar together with the port of Sorong.

Also included are the lesser passages, harbours and anchorages associated with the waterways.

General description

7.15

1 This part of NW Irian Jaya contains numerous islands, islets and dangers and three main waterways of which Selat Sagewin is the most direct and most frequently used for through traffic. Selat Sele gives access from N or S to a series of oil terminals and the port of Sorong (0°53′S, 131°15′E). Selat Dampier, the most N recognised passage is used by local vessels as the depths here are much less than those of the Sagewin and there are also several dangerous shoals to be avoided.

2 The mainland area comprises lowland forest with marshy terrain especially on each side of Selat Sele. High ground lies on each side of Selat Sagewin; Pulau Batanta, on its N side, is hilly throughout. All the off-lying islands are hilly.

Natural conditions

7.16

1 For general comments see 7.5. For individual waterway tidal streams and local weather information see under the strait concerned.

OFF-LYING ISLANDS AND ISOLATED DANGERS INCLUDING PULAU WAIGEO AND SELAT DAMPIER

Off-lying islands and isolated dangers

Charts 3248, 3745 (see 1.34)

General description

7.17

1 To the NW of Pulau Waigeo there are numerous islands and dangers. Pulau Sayang (0°18′N, 129°53′E), the most NW of the islands, lying about 35 miles NW of Tanjung Selpele (7.30) the W point of Pulau Waigeo, is low, flat, but with high trees. Pulau Ai, a low, flat islet with high trees, lies 1 mile N of the W end of Pulau Sayang. A number of shoals lie within 1 mile of the S and SW sides of Pulau Sayang and appear discoloured against the white sandy bottom which can be seen at great depths.

2 Gosong Asia, with a depth of 15 m (52 ft) over it, lies 5 miles E of Sayang; it is not marked by discoloration. Gosong Ormsbe (Ormsbee), with a least known depth of 17 m (56 ft), lies from about 13 to 28 miles NNE of Pulau Ai. Gosong Aurora (0°44′N, 129°32′E), lying about 30 miles NW of Pulau Ai, is described at 5.28. Between these two banks lies a third, shown as Winchester Bank on chart 942B, over which there is a least depth of 23 m (13 fm); a detached, reported 25 m (14 fm) shoal lies 1¾ miles SE of Winchester Bank.

3 North of Pulau Waigeo lie Pulau-pulau Asia and Pulau-pulau Ayu, two small off-lying groups of islets, which are described at 7.23.

South-west of Pulau Waigeo lies the island group Pulau-pulau Yeffam (Yef Fam) described at 7.48.

Topography

7.18

1 Between Pulau Waigeo and Pulau Sayang there are several hilly islands; all are separated from each other by deep water channels. Pulau Wayag (0°10′N, 130°03′E) lies 7½ miles SE of Pulau Sayang; Pulau In lies near the W end of foul ground, consisting of rocks and islets, which extends 6 miles ESE from Wayag; Pulau Quoy (0°08′N, 130°08′E) lies close N of the E part of the foul ground.

Pulau Bag lies 4 miles ESE of Pulau Quoy and Pulau Uranie, a larger island, lies 7 cables farther E. All these islands are uninhabited but are practically inaccessible owing to an infestation of small stinging gnats.

2 Farther S, Pulau Deem (0°01′N, 130°05′E), a small, round, wooded islet, lies 8 miles SSW of Pulau Quoy. Pulau Kawe, the largest of the group, which is separated from mainland Waigeo by Selat Bougainville (7.36), lies with its NW end 1½ miles SE of Pulau Deem and is high in its S part; there are detached rocks close on its W and E sides. The N part of Pulau Kawe is densely wooded and the S part is a reddish colour, sparsely covered with vegetation. Two rocks, on which the sea breaks, lie 7 cables off the N end of Pulau Kawe and an islet fringed by foul ground lies 2 miles E of the NE end of the same island. Pulau Balabalak, hilly and covered with grass, lies about 2 miles W of Pulau Kawe and Karang Hitam, an above-water rock, lies between them. Pulau Roibe (0°06′S, 130°11′E), a small, but narrow and hilly island, lies 1¼ miles SSE of the E end of Pulau Kawe.

Tidal streams

7.19

1 Strong tidal streams set around and between these islands. North of Pulau Kawe they are particularly strong and sometimes there are tide-rips W of Pulau Deem.

Landmarks

7.20

1 Pulau Deem (0°01′N, 130°05′E) (7.18) is readily conspicuous when traversing the strait N of Pulau Kawe.

Summit, sharp and high, of Pulau Kawe (0°04′S, 130°08′E), when approaching Selat Bougainville from W.

Directions

7.21

1 **Channel between Pulau Wayag and Pulau Kawe.** The channel fairway between Pulau Wayag and Pulau Kawe is deep and clear of dangers. If entering from W the track leads E with the SE end of Pulau Uranie (0°06′N, 130°16′E) initially bearing 081°, thence 090°, when the NE end of Pulau Kawe bears 180°. Pulau Kawe should not be approached within 2½ miles.

In general this channel is preferred to that of Selat Bougainville (7.36), farther S.

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Anchorage

7.22

1 There is a secure anchorage (0°10′N, 130°00′E), for small vessels, in 31 m (17 fm), protected from all winds, in the lagoon which is on the S side of Pulau Wayag (7.18), 1 mile E of the W end of the island. Excepting the islets at its entrance, the only danger in the approaches to the anchorage is from S where there is a 5·2 m (17 ft) coral patch situated 2 miles SSE of it. Small craft are able to anchor well inside the entrance.

In 1993, the shores of the lagoon were reported to be uninhabited.

Pulau-pulau Asia and Pulau-pulau Ayu

Pulau-pulau Asia

7.23

1 **General description.** Pulau-pulau Asia (1°03′N, 131°15′E), shown as Asia Islands on chart 942B, lying 65 miles NNE of the N end of Pulau Waigeo, consists of three low islets situated on a reef. Pulau Fani is the largest islet and the most N; Pulau Igi and Pulau Miarin, the most S, are all covered in coconut trees. There are no permanent inhabitants but on occasions visits are made by the Ayu islanders.

The reef is steep-to and the edges are visible only at LW springs; it must therefore be approached with caution.

A light (white beacon) is displayed from the N point of Pulau Fani.

Pulau-pulau Ayu

7.24

1 **General description.** Pulau-pulau Ayu, shown as the Ayu Islands on chart 942B, lie on two extensive drying reefs, the N reef about 20 miles SSW of Pulau-pulau Asia. This group consists more of overgrown sandbanks and islets rather than islands. Pulau Ayu (0°22′N, 131°03′E), the largest islet, lies on the S reef and is inhabited; Pulau Urbabo (Ur Babo) consists of two wooded islets lying on the same reef 4½ miles WNW of Ayu.

2 Pulau Mioskuan (Mios Kuan), the most S islet on the N reef, is a sandbank covered with coconut trees on which there is a village. A plume-shaped casuarina tree stands on the S end of the islet and a shrub-covered rock lies close off its N end. Pulau Miosros (Mios Ros), a wooded rock, lies 1 mile E of Pulau Mioskuan. Pulau Abdon (0°30′N, 131°07′E) (7.28), lies on the W side of a large lagoon in the middle of the N reef. Pulau Padarangeer (0°39′N, 131°09′E), a rocky and sandy cay 8 m (26 ft) high, lies on the N edge of the N reef.

3 Pulau Budd (0°32′N, 130°44′E), a low, uninhabited, reef-fringed islet covered with trees, lies 23 miles W of Pulau Abdon.

7.25

1 **Flow.** The current is reported to set strongly W along the reefs, especially through the passage leading between the two groups comprising Pulau-pulau Ayu.

In the lagoon, which is situated within the N reef of Pulau-pulau Ayu and entered by a channel on its NW side, the in-going tidal stream has a rate of about 5 kn; about ¼ hour before LW it sets strongly over the reefs in all directions. In the channel the stream continues until HW and then, after a brief period of slack, sets out, but not as strongly as the in-going stream.

7.26

1 **Directions.** In general the two reef areas should be given a wide berth. In daylight and with local knowledge, the passage between the reefs can be negotiated, particularly at LW when the reef edges are visible. The depths in the channel are great and the steep-to sides of the reefs present no dangers. However, local inhabitants have stated that during the NW monsoon the current sets E through the passage and the swell thus caused creates heavy breakers.

7.27

1 **Anchorage** in the channel leading into the lagoon is dangerous. With local knowledge, temporary anchorage may be obtained in the entrance to the channel but better anchorage, out of the influence of tidal streams and in a depth of 33 m (18 fm), may be obtained close S of the inner end of the channel.

Some black rocks, usually uncovered, lie on the N side of the entrance to the lagoon and there are some detached reefs, barely marked by discoloration, on the S side of the entrance.

7.28

1 **Small craft.** In the channel leading into the lagoon in the middle of the N reef, vessels of up to 55 m with a draught of 3·4 m have been known to gain access to the lagoon and landings may be made onto Pulau Abdon (0°30′N, 131°07′E) where there is habitation and some coconut groves.

Navigation must be carried out by eye which is not difficult if the vessel is conned from aloft. In any case vessels should not enter or leave the channel leading to the lagoon during the strength of the tidal stream at springs.

Pulau Waigeo

General description

7.29

1 Pulau Waigeo (0°15′S, 131°48′E), lying NW of the W end of Irian Jaya and in the main separated from it by Selat Dampier, consists almost entirely of hills and mountains sloping down to a coastline that has no beaches. The whole island is formed by three irregular-shaped peninsulas joined on the N coast by a narrow hilly isthmus barely 2 miles wide, and separated on the S side by the indentations of two large bays entered from the S side of the island. Along the S coast of Waigeo there is a narrow intermittent line of coral reefs lying up to 3 miles offshore.

2 The whole island is covered with dense forest and there are a number of rivers entering the sea on most sides. Gunung Nuk (0°05′S, 130°45′E) (7.35), prominent on the N coast is one of several prominent landmarks around the island.

Marine reserve. See 7.4.

Topography

7.30

1 The W coast of Waigeo is high and, for the most part, fringed by a narrow, steep-to coral reef. The whole area is heavily indented by bays and there are numerous islands off both the W and SW coasts.

Pulau Batangpele (0°18′S, 130°14′E) is the largest and highest of a group of islands lying 5 miles S of Tanjung Selpele, the W extremity of Waigeo; it is separated from Pulau Minyaifun by a narrow channel. Pulau Tamagui lies close SE of Batangpele and Pulau Ronsuar lies 1¾ miles E of the E extremity of Batangpele.

2 Other islands SE of Pulau Batangpele include Pulau Fwoyo (0°24′S, 130°13′E), the outermost islet of the group, Pulau-pulau Miosarar (Mios Arar) (0°23′S, 130°16′E), a group of islets with coconut plantations, Yeftsiep (0°22′S, 130°17′E), a coral islet, Pulau-pulau Mutus (0°21′S, 130°21′E), a group of coral islets and Pulau-pulau Biantsyi

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(0°19′S, 130°21′E). The passages between many of these islands have not been fully surveyed.

7.31

1 The N coast of Waigeo is sparsely populated; it is mostly rocky, except in the numerous small bays, and rises vertically from the sea in places. A number of islands lie close offshore; Pulau-pulau Seprang (0°01′S, 130°18′E), at the W end, consists of an islet and several rocks. Pulau Lohloh (Loh Loh), 8 miles E of Pulau-pulau Seprang, consists of two groups of six rocky islets about 1½ miles apart. Pulau Manuran (0°02′N, 130°53′E), lying towards the E end, is by far the largest island along this coast. West of Teluk Fofak (0°03′S, 130°45′E) the entire N coast is steep; the bay itself provides the most sheltered of several good anchorages.

7.32

1 The E coast consists of a coastline 26 miles in length with several small indentations. Most of the coast is reef-fringed but deep water lies within 1 mile of it except in the S part where a coral bank extends 7 miles E from Tanjung Momfafa (0°18′S, 131°20′E), the E extremity of the island.

7.33

1 The S coast of Waigeo is indented by Teluk Kabui (7.46) and Teluk Mayalibit (7.45), two large distinctive bays. The former bay is fronted by Pulau Gam (0°28′S, 130°35′E), a large island, which is separated from the main island by Selat Kabui (7.46). Pulau Gam, which is hilly throughout, has a prominent summit (7.35) rising in the SE part of the island. Teluk Mayalibit is entered from the sea by a narrow deep water channel; the sides are hilly and wooded throughout. Depths gradually decrease towards the N end.

Tidal streams

7.34

1 Within the bays on the coasts of Waigeo, and in nearly all of the navigable passages leading to habitation and landing places, the tidal streams are strong. Rates of up to 5 kn have been encountered in the channels of the two main bays on the S coast. Elsewhere rates are about 2 kn, especially around the islands on the W coast and through Selat Bougainville.

Streams within Selat Dampier are described at 7.50.

Principal marks

7.35

1 **Landmarks:**

Gunung Nuk (0°05′S, 130°45′E), a mountain, is very prominent on the N coast of Waigeo, its horn-shaped summit showing above the adjacent mountains.

Serojil (Serodjil), another prominent mountain, rises 14 miles W of Nuk, on the N coast.

Pupri (0°11′S, 131°18′E), rising up from the sea on the E coast, is prominent. Pelana (Zadelberg), rising 7 miles WSW of Pupri, is also prominent.

2 Prominent mountain, 490 m (1608 ft) high, rises 1½ miles NNW of Tanjung Imbikwan (0°23′S, 131°15′E) on the S coast of Waigeo.

Remarkable peak (0°29′S, 130°39′E), rising in the SE part of Pulau Gam, off the S coast of Waigeo; the summit of Gam lies 2½ miles N of the peak.

Peak, rising 2½ miles E of Tanjung Selpele (0°13′S, 130°15′E) (7.30) on the W coast of Waigeo, is prominent.

3 **Major light:**

Pulau Saonek Besar Light (white beacon) (0°28′S, 130°47′E).

Directions for Selat Bougainville

7.36

1 Selat Bougainville which separates Pulau Kawe (0°05′S, 130°08′E) from the islands lying close off the W end of Pulau Waigeo, is about 11½ miles wide. Transiting the strait by night is not recommended, preference being given to the passage N of Pulau Kawe (7.21). There are two patches of above-water rocks lying in the central part of the strait about 3 miles S of Pulau Kawe and there are dangerous rocks situated 1 mile N of Pulau Me (0°07′S, 130°16′E), a hilly island. Pulau-pulau Seprang (7.31) lie in the N approaches.

2 When approaching from W or SW, as well as the above-water rocks previously mentioned, a sand and coral patch (0°12′S, 130°04′E), over which there is a least depth of 7 m (23 ft), must also be avoided.

When approaching from S, the deep passage lying between Pulau Ju (0°19′S, 130°08′E) and Pulau Minyaifun (7.30), nearly 2 miles E, is recommended; a 7 m (23 ft) patch lies 1½ miles E of the S end of Pulau Ju. Pulau Yefmat, a reef-fringed, rocky islet, lies 1 mile S of Pulau Minyaifun.

Anchorages

7.37

1 The only anchorage at which vessels frequently call is at Pelabuhan Saonek, situated midway along the S coast of Pulau Waigeo (7.29). Most of the safe anchorages lie on the W coast.

2 Anchorage may be obtained in a depth of about 29 m (16 fm) on the line of the prolongation of the boat pier at Saonek (0°26′S, 130°46′E), a village. If staying long, vessels should be moored. Two small piers, for small craft, lie W of the boat pier. Pulau Saonek Besar, an islet covered with vegetation, from where a light is displayed (7.35), stands in the S approach and 2 miles offshore. Pulau Saonek Kecil, a wooded islet, lies in the E approach about 2 miles ESE of the village. In the W approach a 3 5 m (11 ft) patch lies in the fairway about 2 miles SW of the village.

7.38

1 Anchorage may be obtained on the W coast, in a depth of 50 m (27 fm), sand and coral, within the entrance to Teluk Alyui, which is entered between Tanjung Selpele (0°13′S, 130°13′E) (7.30) and Tanjung Dentrecasteaux, the W extremity of the island, 1½ miles NNW. An above-water rock lies close NW of Tanjung Selpele. Anchorage may be found farther inside in a depth of 40 m (22 fm), sand. The only signs of habitation in the bay lie at the village of Selpele standing close within Tanjung Selpele.

2 Anchorage may also be obtained on the W coast within Teluk Waisai, which is entered between Tanjung Waisai (0°18′S, 130°26′E) and Pulau Gemien, lying close offshore, 3½ miles ESE. The best berth lies off the village of Waisai (0°15′S, 130°31′E) at the head of the bay in a depth of 50 m (27 fm), mud. The bay can be approached from S or W but the former is more open and from a position W of Pulau Peniki (0°22′S, 130°25′E) the track leads NE to the bay, passing between two drying reefs lying 2 miles N and NE, respectively, from the island.

3 Farther S on this coast, anchorage may be obtained within Teluk Warparim, which is entered 1½ miles E of Tanjung Ombrab (0°26′S, 130°29′E). In the bay there are

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depths of 40 m (22 fm), mud. The approach to the bay lies close along the NW coast of Pulau Gam (7.33).

7.39

1 The only anchorage on the N coast lies within Teluk Fofak, best shown on chart 2467. The bay, which is entered between Tanjung Farest (Hoek Forrest) (0°02′S, 130°43′E) and Ujung Batukarang (Rotsige Hoek), 8 cables E, offers shelter for small and medium-sized vessels in both monsoons. However, the entrance, which offers deep water, is barely 3 cables wide between the fringing reefs; there is also a small reef on which there are rocks, lying 2 cables NNW of Ujung Batukarang. Once inside the bay, anchorage may be obtained, in depths of 36 m (20 fm), mud, in a cove S of an islet lying 5 cables S of Ujung Saine (Hoek Saine), a point lying 6 cables SSE of Tanjung Farest. See also 7.43.

Small craft

7.40

1 **Teluk Alyui.** The inner portion of this bay (7.38) situated on the W coast comprises many bays. Believed to be uninhabited, the inner portion may be reached by small craft and landings can be accomplished. The passage between the inner and outer portions, though deep, is very narrow and a rock lies in the fairway at the inner end. Teluk Alyui may be entered from N as well as from W but only with local knowledge, as the channels between the islands are narrow.

7.41

1 **Teluk Manetep.** This bay lies close E of Pulau Me (0°07′S, 130°16′E) (7.36), on the NW extremity of Pulau Waigeo, and affords anchorage for small craft close inshore and where a landing may be effected. Teluk Wunoh (Woenoh), another bay, is separated from Teluk Manetep by a tongue of land. Pulau Wunoh (0°05′S, 130°19′E), an island, fronts Teluk Wunoh; above-water rocks covered with vegetation lie between the island and the coast S.

7.42

1 **Teluk Saripa** (Saripa Baai), a narrow indentation on the N coast of Waigeo, best shown on chart 1416, is separated from Teluk Wunoh by a narrow, steep and moderately high tongue of land. The entrance to the bay is about 5 cables wide and lies between rocks on each side. Pulau Sipsipa (0°05′S, 130°22′E), an islet, lies at the S end of the rocks extending on the N side of the entrance channel. The bay provides safe anchorage for small craft and landing may be effected at a village lying close within the bay on the W shore.

7.43

1 **Teluk Fofak** (7.39) on the N coast of Pulau Waigeo, best shown on chart 2467 plan of Teluk Fofak, provides safe anchorage for small craft in several small inlets and a landing may be effected at the village of Lamlam on the N side of the bay, nearly abreast with Ujung Saine (Hoek Saine) (0°02′S, 130°44′E), and also at another village at the head of the bay. There is a waterfall 7 cables E of Lamlam.

7.44

1 **Teluk Kabarei** (Kabarei Baai), best shown on chart 1416, lies nearly 15 miles E of Teluk Fofak. It is entered directly W of Tanjung Warmaserin (0°02′S, 130°58′E). A pier, used by small craft, extends from the shore at Kabarei, a village standing at the head of the bay.

Pulau Lawak, a hilly, wooded islet, stands in the W approach to the bay and is separated from the shore by a narrow navigable channel.

2 Directly E of Tanjung Wariai (0°01′S, 131°03′E), a rocky point 5 miles E of Teluk Kabarei, and between the point and Pulau Boni, a reef-fringed islet 1½ miles SE, there are small craft channels and anchorages.

7.45

1 **Teluk Mayalibit** (Majalibit Baai), situated on the S coast of Waigeo, is entered 2 miles ENE of Tanjung Babula (0°23′S, 130°56′E). It extends NW to within 2 miles of the N coast of the island; a road links the head of the bay with Teluk Fofak.

2 The bay is entered by a narrow tortuous channel, about 5 miles in length, in which strong tidal streams with counter-currents are experienced (7.34); local knowledge is essential, particularly as there are several dangers lying in the approaches to the entrance. Having passed through the channel into the main part of the bay, navigation is easier and depths are generally deep throughout except near the edges. Several villages stand on the shores of the bay and a landing may be effected at each one. Puan (0°09′S, 130°41′E), a wooded island, lies across the fairway towards the N end of the bay.

7.46

1 **Teluk Kabui** is formed between the N coast of Pulau Gam (7.33) and the S extending W peninsula of Pulau Waigeo (7.29). This bay, which is more accessible than Teluk Mayalibit, is entered between Tanjung Yennanas (0°27′S, 130°41′E), the E point of Pulau Gam, and the coast of Waigeo 1½ miles NE. There are several settlements within the bay at which a landing may be effected. Pulau Ura (0°25′S, 130°41′E), an islet, and two smaller islets close NE of it, obstruct the E side of the entrance to the bay. Pulau Friwinbonda and Pulau Friwin, two islets, lie about 1½ miles S of Tanjung Yennanas. Pulau Mioskon (Mios Kon), a wooded islet, bordered by foul ground, lies 3½ miles SSE of Tanjung Yennanas in the S approach to the bay.

2 Selat Kabui (0°26′S, 130°33′E) is a very narrow channel, with a least depth of 1·2 m (4 ft), separating Pulau Gam at its N side, from Pulau Waigeo.

Selat Dampier

General description

7.47

1 Selat Dampier lies between the S side of Pulau Waigeo and Pulau Batanta (7.55), about 20 miles S. The main channel is between the islands of Mansuar (0°35′S, 130°36′E), a long, narrow, hilly island rising steeply from the sea, together with Pulau Kri and Pulau Koh, on the N side, and Pulau Augusta (0°39′S, 130°34′E) and Pulau Merpati close NE, both low flat islets with high trees, on the S side.

2 Between Pulau Merpati and the N coast of Batanta, described at 7.55, lie several reefs, islets and detached shoals. Pulau-pulau Tapok (0°42′S, 130°46′E) are three flat islets lying on a drying reef at the E end of the detached shoals. Pulau Jerief, a low flat islet, lies on a reef, 7 miles ESE of Pulau Merpati.

3 Karang Bata (0°42′S, 130°26′E), lying in the W approach to the strait, consists of three rocky patches with a least depth of 5·5 m (18 ft) over them. They are only slightly marked by discoloration.

Topography

7.48

1 Pulau-pulau Yeffam (Yef Fam) consists of two groups of islands lying W of Karang Bata (7.47) in the W approaches to the strait. Pulau Penemu (0°36′S, 130°16′E), the largest

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of the N group, is high at its NW end and is very steep. There are no permanent inhabitants on the island. Pulau Keruo is the largest of the rocky islets which lie within 1 mile of the S part of Pulau Penemu.

The channels between Pulau Penemu and Pulau Yeben, 6 miles NE and between Pulau Penemu and Pulau Fam, 2½ miles S, are clear of dangers.

2 Pulau Fam (0°39′S, 130°17′E), high near its W end, is the N-most and largest island of the S group and is distinctive because of its flat summit; two hills of about the same height stand at the E end of the island. Pulau Ambabee, an islet, lies close off the NW side of Pulau Fam.

Pulau Mingiman (0°45′S, 130°06′E) and Pulau Yar, 11 miles WSW of Pulau Fam and at the W end of the group, are coral islands with high trees, like the islands between.

Flow

7.49

1 **Current.** In the W approach to Selat Dampier, the currents are greatly affected by the direction and force of the wind. In the monsoon seasons the following is apparent:

September to April (NW monsoon)	S-going current
May to August (SE monsoon)	NW or N-going current
Transition periods	Little or no current

7.50

1 **Tidal streams.** In the narrower part of the strait between Pulau Merpati (0°40′S, 130°35′E) and Pulau Jerief, 7 miles ESE, the streams set as follows:

Falling tide	Generally ENE-going
Rising tide	Generally WSW-going

Season and tide	Direction	Rate and duration
Height of NW monsoon (December to March)		
Falling tide	ENE-going*	6–8 hours 4–5 kn (springs) 1–3 kn (neaps)
Rising tide	SW-going	3–4 hours weak
Height of SE monsoon (May to September)		
Falling tide	ENE or NE-going	Short duration** not strong
Rising tide	W-going gradually turning SW-going	8–10 hours 5 kn (springs) 4 kn (neaps)

2 * In both monsoons the stream during the falling tide is usually strongest at the E entrance to the strait.

** During the SE monsoon an E-going stream sometimes runs for 2 to 3 days consecutively and a rate of 4 kn for 1 to 2 hours has been observed.

Principal marks

7.51

1 **Landmarks:**

Pupri (0°11′S, 131°18′E) (7.35) together with Pelana, in the E approach.

Gunung Kerucut (0°24′S, 130°50′E), a low conical peak, indistinctive from E or W but prominent from S. Bomjai, a higher but rounded peak, 5 miles N, will be visible.

Remarkable peak (0°29′S, 130°39′E) (7.35).

2 Summit of Pulau Fam (0°39′S, 130°17′E) (7.48), which rises near the SW end of the island, although flat, is distinctive in the W approaches.

Pulau Batanta (0°52′S, 130°37′E) (7.55), the summit of the island with the same name, is clearly visible when approaching from SW.

Tree (0°45′S, 130°15′E), standing on a sandy cay 4½ miles S of Pulau Fam, is conspicuous in the SW approaches.

3 **Major lights:**

Pulau Saonek Besar Light (0°28′S, 130°47′E) (7.35).

Pulau Augusta Light (white concrete tower) (0°39′S, 130°35′E).

Directions

7.52

1 The main channel passes between Pulau Mansuar (0°35′S, 130°36′E) (7.47) and Pulau Augusta (7.47), 2 miles S. Approaching from E the channel is deep and clear of dangers; all vessels should maintain the fairway on a track 070°–250° between these two islands as there are patches, with a least depth of 9 m (30 ft) over them, extending NW and W from the W end of Pulau Augusta and a 10 m (33 ft) patch situated 1½ miles WSW of the W end of Pulau Mansuar. The track then leads either W passing N of Pulau Fam (0°39′S, 130°17′E) (7.48) or SW passing SE of Karang Bata (0°42′S, 130°26′E) (7.47) and between it and the NW coast of Pulau Batanta (7.55). If passing N of Pulau Fam vessels may pass N or S of Pulau-pulau Yefdoif (5.275) when bound for the passage (5.239) S of Halmahera.

2 Vessels coming from W and using the channels N or S of Pulau Kofiau (4.263) should use Selat Sagewin (7.54); deep-draught vessels are advised to use Selat Sagewin when bound either E or W.

Caution. The passages N of Pulau Mansuar, and between it and the S coast of Pulau Gam (7.33), and the passage between Pulau Augusta and Pulau Merpati (7.47) are not recommended. The passages S of Pulau Merpati, and between it and the N coast of Pulau Batanta, are navigable in clear weather, but preferably with the benefit of local knowledge, on account of a number of dangerous detached shoals and strong currents in the vicinity of the reefs and islets.

Anchorages

7.53

1 Anchorages within Selat Dampier may only be obtained with the benefit of local knowledge. In the S group of Pulau-pulau Yeffam, anchorage may be obtained in a few places, particularly around Pulau Miosandau Besar (0°42′S, 130°14′E) where the depths vary between 6 m (20 ft) off its S end and 36 m (20 fm) off its N end. However, tidal streams in this area are known to be strong. In the E approaches to the main channel, the only anchorage of importance on the S coast of Pulau Waigeo is situated at Saonek (7.37).

2 On the N coast of Pulau Batanta, described at 7.55, anchorage may be obtained in several of the bays situated along this coast where there is complete shelter. The bays at the W end of the island are not recommended as they are open to the winds of the NW monsoon.

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SELAT SAGEWIN

General information

Charts 3745, 3248, 1420 plan of Selat Sele (see 1.34)

General description

7.54

1 Selat Sagewin, lying between the S coast of Pulau Batanta and the N coast of Pulau Salawati, is a deep and safe channel and the channel mostly used by vessels, particularly deep-draught vessels, passing between Ceram or Halmahera Seas through to ports on the N coast of Irian Jaya and vice versa. It is 2 miles wide at its narrowest points and about 28 miles in length.

Although well lit, the strait is frequently obscured by rain but still provides a safer passage than that through Selat Dampier.

Topography

7.55

1 Selat Sagewin is bordered on the N side by the S coast of Pulau Batanta and on its S side by the N coast of Pulau Salawati.

Pulau Batanta consists principally of a chain of densely wooded mountains of which Batanta (0°52′S, 130°37′E), 1070 m (3511 ft) high, standing towards the W end of the island is its highest point.

2 The N coast, irregular in outline and with many islands lying offshore, is formed by spurs from the mountains between which lie deep bays.

The W coast of the island is very steep and has no off-lying dangers. Pulau Nelayan, a rocky, wooded islet, lies 1¼ miles W of Tanjung Mabo (0°55′S, 130°23′E), the SW point of Pulau Batanta, standing at the end of a low neck of land; the headland appears from a distance as an islet.

3 The E end of the island is indented by a hilly, wooded and steep coastline; Karang Batanta, with a least known depth of 5 m, extends 5 miles E of Tanjung Evanas (0°47′S, 130°55′E), the E extremity of Pulau Batanta.

The S coast of the island is high and steep throughout and indented by numerous small bays; the 200 m (100 fm) depth contour lies close and parallel to the shore.

7.56

1 Pulau Salawati, which is separated from Irian Jaya by Selat Sele (7.69), for the greater part is low with impenetrable jungles. However, the NW part of the island is mountainous with several high peaks; Tanjung Dadi (0°58′S, 130°38′E), the NW extremity of the island is particularly prominent.

2 Pulau Sagewin (0°57′S, 130°39′E), a high, wooded, island, separated from Pulau Salawati by a narrow channel, lies at the W entrance to the strait. In general its coasts are regular without any deep indentations. Except for local vessels calling at Sailolof (7.117), other vessels tend to keep well offshore from the W coast of the island on account of numerous dangerous shoals and foul ground.

3 The N coast, which can also be approached closely, consists of limestone hills but it is considerably lower than Pulau Batanta, to the N. The W coast, except for the N portion, is low and marshy. The N portion of the E coast is similar to the W with extensive forests and sago palms.

The S and E coasts of Pulau Salawati are described at 7.69.

Chart 3744 (see 1.34)

7.57

1 The islands lying off the W coast of Pulau Salawati forming dangers in the SW approach to Selat Sagewin are low, thickly covered with vegetation, and lie on long narrow ridges running parallel with the coast. Pulau-pulau Kabu (1°09′S, 130°35′E), consisting of three wooded islands and an islet with high trees, of which Pulau Ifmun is the most important, lie about 10 miles SSW of Tanjung Dadi (0°58′S, 130°38′E) on the outermost ridge. Pulau Loslos (1°16′S, 130°36′E), consisting of two islets, lies 7 miles S of Pulau-pulau Kabu.

2 Farther offshore, Pulau-pulau Penyu, a group of eight low, densely wooded, islands which include Pulau Ef Waai (Efwai) (1°26′S, 130°27′E), the largest, and Pulau Pentako Ef, 2 miles E, lie 12 miles SW of Pulau Loslos; Karang Magdal, a coral reef with a least depth of 2 m (7 ft) over it, lies 4½ miles ESE of the group, and Karang Elanglaut (1°20′S, 130°30′E), consisting of two detached reefs, 2 miles apart, which dry at LW, lies between the group and Pulau Loslos.

Chart 3745, 3248

Ferries

7.58

1 A ferry service is in operation between Jodlo (0°52′S, 130°49′E) (7.68), situated on Pulau Batanta, and Sokol (7.68), 4 miles SE, on the N coast of Pulau Salawati.

Occasional ferry services run from Sorong to Pulau Batanta and Pulau Waigeo and may be encountered crossing the E entrance to the strait.

Flow

7.59

1 **Current.** A current is known to follow the course of the channel at a rate of about 1 kn in each direction.

Tidal streams are of mixed characteristics, with the semi-diurnal stream predominant; only the E approaches of the strait are affected as the broad body of tidal water from Selat Sele sets in and out.

In the vicinity of the entrances the maximum rate of streams is not likely to be in excess of 2 kn except in the channels lying close to the coast; whereas rates in Selat Dampier are considerably more.

Principal marks

7.60

1 **Landmarks:**

Batanta (0°52′S, 130°37′E) (7.55), the summit of Pulau Batanta, is prominent in both the W and E approaches.

Summit of Pulau Sagewin (0°57′S, 130°39′E) (7.56) is conspicuous from W from some distance and prominent from the E when in the vicinity of the E entrance.

Tanjung Dadi (0°58′S, 130°38′E) (7.56) is conspicuous from W.

2 Tanjung Wasaget, 1 mile S of Tanjung Dadi, is also conspicuous from W.

Pulau Nelayan (0°55′S, 130°22′E) (7.55) is prominent when approaching from W.

Tanjung Evanas (0°47′S, 130°55′E) (7.55), the E extremity of Pulau Batanta, is prominent in the E approaches.

Pulau Yefdoif (Senapan) (0°53′S, 131°02′E) a high, wooded islet, lying on a reef joined to the NE extremity of Pulau Salawati, is prominent in the E approaches.

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3 **Major lights:**

Pulau Ram Light (0°50′S, 131°12′E) (7.78), in the E approach.

Tanjung Warangket Light (white metal structure) (0°54′S, 130°50′E).

Tanjung Soos Light (1°10′S, 129°58′E) (4.265), in the W approaches to the strait.

Other aids to navigation

7.61

1 **Racons:**

Pulau Ram Light (0°50′S, 131°12′E) (7.78).

Tanjung Soos Light (1°10′S, 129°58′E) (4.265).

For further details see *Admiralty List of Radio Signals Volume 2.*

Directions

(continued from 4.269, 5.239, 6.166 or 6.167)

Approach from west or the passages S of the strait

7.62

1 Vessels passing N of Pulau Kofiau (1°11′S, 129°50′E) (4.263) bound for the strait will first sight the high mountains of NW Pulau Salawati and the summit of Pulau Batanta; the Batanta side being the higher of the two.

2 From W, and a position S of Tanjung Mabo (0°55′S, 130°23′E) (7.55), the track leads E for a distance of about 15 miles to a position N of Pulau Sagewin (7.56) maintaining deep water throughout. From SSW, and a position WNW of Pulau Ifmun (1°09′S, 130°34′E) (7.57) from where a light (white beacon) is displayed, the track leads NNE for a distance of about 12½ miles in deep water throughout until a position W of Pulau Sagewin is reached; thence the track rounds the island to a position N of it.

3 **Useful mark:**

Batanta Light (white metal framework tower, 10 m in height) (0°54′·5S, 130°36′·5E) displayed from a point on the N shore and NW of Pulau Sagewin; visible between 261°–077° (176°). The light is a particular useful mark, ahead, on a bearing of about 023°, when coming from the passages S of the strait.

7.63

1 From a position N of Pulau Sagewin (7.56), the track leads ENE in deep water throughout the passage, passing (with positions from Tanjung Warangket (0°54′S, 130°50′E):

NNW of Tanjung Warangket, a steep, rocky point on the S side of the strait, from where a light (7.60) is displayed, and midway between the point and the coast N, thence:

SSE of Tanjung Kandorwa (5½ miles NE), the steep, rocky SE point of Pulau Batanta, thence:

2 NNW of Pulau Yefdoif (12 miles E) (7.60), thence:

SSE of Karang Batanta (13½ miles ENE) (7.55), an area of coral shoals extending E from Pulau Batanta, thence:

NNW of Pulau Ram (23 miles ENE), from where a light (7.78) is displayed, thence:

NNW of Tanjung Sorong (0°49′S, 131°14′E) (7.70), a moderately high, wooded point, situated at the NE end of Selat Sele, on mainland Irian Jaya.

(Directions continue E from Selat Sagewin at 7.130)

Approach from east

7.64

1 From E, and a position NNW of Tanjung Sorong, the directions described at 7.63 should be used in reverse.

Anchorages

Off Pulau Sagewin

7.65

1 Anchorage may be obtained in a depth of 46 m (25 fm) about 1 cable off the SE end of Pulau Sagewin (0°57′S, 130°39′E), but tidal streams here may attain a rate of 3 to 4 kn at about HW and LW.

Off Tanjung Yupleket

7.66

1 Good anchorage may be obtained during the SE monsoon in a depth of 49 m, sand, off the mouth of a rivulet in the SW corner of a bay directly E of Tanjung Yupleket (0°54′S, 130°56′E), a rocky point 6½ miles ESE of Tanjung Mayasalava (0°55′S, 131°02′E) (7.70), the NE point of Pulau Salawati.

Teluk Marchesa

7.67

1 Teluk Marchesa is entered between Tanjung Kandorwa (0°50′S, 130°54′E) and Tanjung Makoi, a high point, 2½ miles NE. Pulau Ayemi, a high, wooded, reef-fringed island, lies in the entrance 5 cables N of Tanjung Kandorwa. The entrance S of the islet is only suitable for small craft.

Safe anchorage may be obtained near the head of Teluk Marchesa in depths of about 35 m, mud and sand. Large vessels should enter N of Pulau Ayemi; the track leads W towards Pulau Maribio, an islet at the head of the bay. A 9 m patch lies 7 cables WNW from the SW extremity of Pulau Ayemi.

Small craft

Jodlo

7.68

1 Jodlo (0°52′S, 130°49′E), on the N side of the strait, 13 miles ENE of Batanta Light, is the only village of importance. It lies at the head of a small bay whose entrance is fronted by a reef over which there are shallow depths.

Jodlo is linked by ferry with Sokol, 4 miles SE, another village at the head of an open bay on the S side of the strait, and also to Sorong.

SELAT SELE

General information

Charts 3744, 3745, 1420 (see 1.34)

General description

7.69

1 Selat Sele, the navigable strait lying between the E and S coasts of Pulau Salawati and the NW part of Irian Jaya, is frequently used. Vessels of suitable draught navigating directly between Fakfak and Manokwari, for example, find the strait safer and more efficient to use than the passages farther N. The strait gives access, from either end, to the port of Sorong (0°53′S, 131°15′E) (7.85) and several oil terminals (7.93). The depths in the N part are irregular, but most deep-draught vessels can pass into the strait from N to the oil terminals without difficulty. See 7.74.

2 The central part of the strait is obstructed by many islands, islets, shoals and obstructions, and the S part of the strait becomes increasingly narrow. Depths outside the S entrance are considerably less than those at the N end and should be taken into consideration when approaching and using the strait from S.

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3 Passage through the strait may be undertaken by using either of two swept channels. These channels, sometimes tortuous, are marked in places by leading lights and/or other aids.

Although navigation in the strait presents no difficulty, winds may attain hurricane force in local storms and vessels should carry enough ballast to ensure manoeuvrability in the restricted waters.

Topography

7.70

1 All the islands in the strait, except Ram, Tsiof and Doom, at the N end of the strait, Matan and Warir on the W side and Salutan Genan, Salutan Pele and Saplap at the S end, are low but covered with high trees.

2 The shores of the strait are low and wooded; the reefs are only slightly marked by discoloration. At the S end the strait is entered between Tanjung Sele (1°26′S, 130°56′E) the W extremity of Irian Jaya and the SE entrance point to Selat Sele, which is a reef-fringed, rocky headland with high trees, and Tanjung Menonket, a similar point, 6½ miles NW. At the N end, the strait is entered between Tanjung Sorong (0°49′S, 131°14′E), the high, wooded and reef-fringed NE point, and Tanjung Mayasalava, a reef-fringed, low, rocky point, 13 miles WSW.

3 The W coast of Pulau Salawati is similar; however, it is only visited by local vessels on account of numerous dangerous shoals and detached reefs.

Depths

7.71

1 **Deep-water passage.** In the main deep-water passage (7.80) the least swept depth is 16 m. However, charted depths of less than 16 m can be found along this passage. Vessels of up to 303 m in length with draughts not exceeding 15 m are able to use this passage.

Alternative passage. In the alternative passage (7.82) passing E of Pulau Kabra (7.81) the least swept depth is 6·5 m in the passage 3 miles SW of Pulau Kabrabemuk (7.82).

Tidal levels

7.72

1 At the N entrance, Tanjung Sorong (0°49′S, 131°13′E), mean spring range about 1·2 m, mean neap range about 0·6 m; at Pulau Yefdoif (Senapan) (0°53′S, 131°02′E), levels are similar to Tanjung Sorong.

At the S entrance, Pulau Peli (1°24′S, 130°55′E), mean spring range about 0·8 m, mean neap range about 0·2 m.

For further information, see *Admiralty Tide Tables*.

Restricted areas

7.73

1 Kasim Terminal (7.99) and Salawati Terminal (7.105), situated at the S end of the strait, have restrictions on entry; only those vessels having the approval of Pertamina Sorong have permission to berth and such vessels must be under the direction of an authorised pilot.

Pilotage

7.74

1 Pilotage is not compulsory for the strait; it is however, compulsory for vessels calling at any of the oil terminals situated within the strait and also for the port of Sorong (7.87).

The pilot boarding position (0°53′S, 131°10′E) for the oil terminals lies about 1¼ miles NW of Pulau Tsiof; for Sorong the position is 0°52·0′S, 131°13·5′E about 1¼ miles NW of the port.

Deep-draught vessels may only enter and leave by the N entrance to the strait.

Local knowledge

7.75

1 Without the benefit of local knowledge, the deep-water passage should only be undertaken during daylight. Vessels when navigating in Selat Sele, have the choice of using either the deep-water passage described at 7.80, or the alternative and more direct passage described at 7.82 but with lesser depths; in both cases, the directions should be used in reverse.

Natural conditions

7.76

1 **Flow.** In the wide N section of the strait, tidal streams are not perceptible. Close N of Pulau Segaran Light (1°10′S, 131°07′E) the tidal stream is of mixed characteristics with the semi-diurnal stream predominant. The average maximum rate in this area is about 2 kn, but a current sets NNE at about ¼ kn.

In the narrow section at the S end of the strait, the streams can attain a rate of 3 to 4 kn, but they cause no difficulty in navigating the strait.

7.77

1 **Local weather.** During a survey of Selat Sele, S and SE winds of variable force were experienced during July and August. In September, October and November the force of wind decreased and periods of calm intervened. There were persistent light N and NW winds during February and March. Winds in February and March were occasionally accompanied by intermittent rain squalls, which were sometimes quite local and usually occurred at night or in the afternoon. The rainfall during the SE monsoon is usually very slight.

Principal marks

7.78

1 **Landmarks:**

Tanjung Sorong (0°49′S, 131°13′E) (7.70).

Pulau Yefdoif (Senapan) (0°53′S, 131°02′E) (7.60).

Oil tanks at Sorong (0°53′S, 131°15′E) are visible in daylight for a considerable distance.

Radio mast at Sorong, position approximate.

Flares on Pulau Rombombo (0°57′S, 131°06′E), displayed near the centre of the island.

Tree situated on Pulau-pulau Sobrain (1°05′S, 131°08′E) (7.81) which is conspicuous in the deep water channel.

2 Tanjung Sele (1°26′S, 130°56′E) (7.70) affords a good landmark in the S approaches to the strait.

Pulau Membok (1°25′S, 130°55′E), a wooded islet, close within the S entrance; high trees make the islet prominent as far as the S entrance to Kasim Terminal.

Major light:

Pulau Ram Light (white beacon, 20 m in height) (0°50′S, 131°12′E) displayed at the N end of the strait.

Other aid to navigation

7.79

1 **Racon:**

Pulau Ram Light (0°50′S, 131°12′E).

For further details see *Admiralty List of Radio Signals Volume 2.*

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Directions from north

Deep-water passage

7.80

1 From a position about 8 cables W of the W extremity of Pulau Tsiof (0°53′S, 131°12′E), a wooded island with foul ground on its E side, from where a light (white metal framework tower, 10 m in height) is displayed, the track through the strait initially leads SSE, thence S to a position E of Pulau Kasiem (1°00′S, 131°09′E), a reef-fringed islet, passing (positions from Pulau Kasiem):

E of a coral patch (1¾ miles NE), over which there is a least depth of 3·4 m.

2 The track then passes W of a light-buoy (starboard hand) (2¼ miles ESE) marking a patch, over which there is a least depth of 2·5 m. At this position it should be noted that the Deep-water passage and the Alternative passage join.

7.81

1 From a position W of the buoy the deep-water passage follows a series of recommended tracks, as shown on chart 1420:

230°–050°, which passes N of Pulau Kabra (2½ miles SSE), thence SE of a beacon (starboard hand) (2·2 miles S) and NW of a buoy (port hand) (2½ miles S), thence:

176°–356°, through Selat Sangolin Mon, the stretch of water between the W coast of Pulau Kabra and the islands lying off the SE coast of Pulau Warir, until a position E of the reef-fringed islets of Pulau-pulau Sobrain (4¾ miles S) is reached, thence:

2 218°–038°, passing SE of Pulau Oramace (1°07′S, 131°06′E) and Pulau Kafyani, 6 cables SW, thence passing between beacons (lateral) marking the rocks 1½ miles S and SSW of the latter island, thence NW of a buoy (port hand) 1·6 miles SSW of the same island, thence:

229°–049°, passing W and NW respectively of two buoys (port hand) moored 7 cables E of Pulau Yef Bo (1°11′S, 131°03′E), thence:

3 192°–012°, passing E of a buoy (starboard hand) moored 4 cables E of Pulau Yef Bo, thence between a port and a starboard buoy, moored 8 cables N of Pulau Yef Mo (1°14′S, 131°03′E), thence:

157°–337°, passing NE of Pulau Yef Mo and E of a buoy (starboard hand) moored off the NE side of this island, thence:

4 193°–013°, passing along the E side of Pulau Yef Mo, and W of a buoy (port hand) moored 4 cables E of the island, to the deep-water passage leading SW, through the narrows at Tanjung Waifkalettet (1°15′S, 131°03′E), marked by a beacon, to the S entrance of the strait.

Useful marks:

Pulau Matan (0°57′S, 131°09′E), a reef-fringed, wooded, islet; in the N part of the strait.

Arar Light (1°02′S, 131°14′E) (7.96).

(Directions for the S approach to the strait are given at 7.84)

Alternative passage

7.82

1 From the position E of Pulau Kasiem, described at 7.80, another track, with lesser depths, leads E of Pulau Kabra (1°03′S, 131°09′E), thence on the recommended track 237°–057°, which passes between Pulau Balbili (1°06′S, 131°11′E), from where a light (white column, 2 m in height) is displayed at the NE extremity of the island, and Pulau Kabrabemuk, 7 cables NW. A depth of 9·7 m lies W of the fairway 4 cables E of the E side of Pulau Kabrabemuk and a 4·4 m patch lies close N of an islet which itself lies close N of Pulau Balbili.

2 Vessels passing close SE of a light-buoy (port hand), moored in the channel S of Pulau Kabrabemuk, on the recommended track, will maintain the fairway. However, in restricted visibility the side channel described at 7.83 is the safer option when passing N or S through this area.

3 **Leading lights:**

Front light (red column, 4 m in height) situated at the NE end of a reef extending 3 cables NE from Pulau Segaran (1°10′S, 131°06′E).

Rear light (green metal framework tower, 10 m in height) situated at the W end of Pulau Kamoomyel (4·1 miles SSW from front light).

4 On the alignment (196°) of the leading lights, the track leads SSW to a position E of Pulau Segaran Light, passing WNW of a buoy (starboard hand) moored 5 cables NE of Segaran Light, which marks a 2 m shoal patch. A 5·5 m patch lies close to the track W of the buoy.

5 The track continues SSW to the deeper water situated NW of Pulau Kamoomyel, thence WSW to the narrows at Tanjung Waifkalettet, passing:

ESE of Pulau Segaran, thence:

Between Pulau Selutangenan, an island 9 cables S of Segaran, and Pulau Unaginim, a reef, on which a light (green triangle, point up, on beacon, 5 m in height) is displayed, 6 cables E. Thence:

E of Pulau Yef Nanas (1°13′S, 131°05′E) which is marked by a beacon.

7.83

1 **Side channel.** Vessels following the alternative passage may use a side channel which, on passing E of Pulau Kabrabemuk, continues S, thence passes E and SSE of Pulau Balbili rejoining the recommended track 2½ miles SW of Pulau Kabrabemuk. This channel has a least swept depth of 10 m and has more open water.

Directions from south

Approaches

7.84

1 When approaching the S entrance to Selat Sele, from the swept channel SW of Pulau Umpe (1°29′S, 130°59′E) (6.165), the alignment (011°) of the W end of Pulau Membok (1°25′S, 130°55′E) (7.78) with the W side of Pulau Peli (7.118), 11 cables N, leads N into the strait until the S side of Tanjung Sele (1°26′S, 130°56′E) bears 090°, then a mid-channel track should be maintained through the narrows, passing (with positions from Pulau Membok):

2 SE of Pulau Membok (7.78), from where a light (red square on white metal framework tower, 5 m in height) is displayed, thence:

NW of Pulau Lugo (3 miles ENE), with an islet close SW, thence:

NW of Pulau Teleme, (4½ miles ENE), thence:

SE and E of Salawati Terminal (5 miles NE) (7.105), thence:

3 W of Pulau Yef Kasim (8½ miles NE) (7.99), an island fronting Kasim Terminal (7.99).

Thence NE to a position NW of Tanjung Waifkalettet (1°15′S, 131°03′E).

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Useful marks:

Pulau Umpe Light (1°29′S, 130°59′E) (6.165).

Wilyam Light (red beacon, 5 m in height) (1°17′S, 131°00′E).

Pulau Kamoomyel Light (1°14′S, 131°06′E) (7.82).

Sorong

Chart 1420 plan of Sorong

General information

7.85

1 **Position.** Sorong (0°53′S, 131°15′E) is situated on the NE side of Selat Sele and is the most important port in this part of NW Irian Jaya.

Function. Sorong is the crossing point which connects the N and S coasts of Irian Jaya. The main exports consist of crude oil in decreasing quantities, plywood in increasing quantities, and small parcels of nickel ore which are shipped from the mines on Pulau Batanme and Pulau Kofia. Locally produced sea products including frozen shrimp and tuna fish are also exported.

2 Sorong is also on the regular ferry services connecting other parts of Irian Jaya with points farther W.

Until 1965, the town of Sorong occupied nearby Pulau Doom (7.85), 5 cables offshore, but on becoming too large it was relocated to the mainland.

In 1996 Sorong had a population of about 50 000.

3 **Topography.** The port area lies on a narrow strip of coastal plain backed by high ground. The only major road leads E from the town to Teminabuan (1°30′S, 132°00′E), about 113 km SE. South of Sorong the coastal area consists of low-lying ground with mangrove swamps; N of the town the land is hilly and wooded.

4 Pulau Ram, a reef-fringed island covered with high trees on its W side and unusual shaped trees on its E side, lies 1 mile SSW of Tanjung Sorong (0°49′S, 131°13′E) (7.70). Three islets, covered with vegetation, lie on the reef which extends N from the N side of the island. Some low black rocks lie on a reef which extends about 1½ miles W from the island.

Pulau Dopior, an islet, lies at the W end of foul ground, 2 cables W of Tanjung Nuyew, a low point at the W end of Sorong.

5 Pulau Doom, pronounced Dom, lies 5 cables SW of Sorong; it is now mainly built up with numerous fishing villages.

Between Pulau Tsiof (7.80) and the mainland SE, there are several islets, shoals and dangers through which the S approach channel leads to the port.

Port limits. The port is contained within the parallels of 0°50′S and 0°58′S and from the meridian 131°11′E to the coast; see chart.

6 **Approach and entry.** Sorong is approached from Selat Sele and entered from either WNW or SSW on leading lights via two navigable channels.

Traffic. In 2003, in addition to local traffic, the port was used by 471 vessels with a total of 2 351 987 dwt.

Port Authority. Harbour Master (Adpel) Sorong, Jalan Jenderal A. Yani No 13, Sorong. Indonesia.

Website; www.portina4.go.id/sorong.htm.

Pertamina: Port Administrator, Jalan Jend. A. Yani No 19, Sorong. Indonesia.

Limiting conditions

7.86

Tidal levels: see *Admiralty Tide Tables*. Mean spring range about 1·2 m; mean neap range about 0·6 m.

Maximum size of vessel handled: one of 21 000 dwt, having a length of 175 m and draught 10 m, has berthed at the oil jetty.

Arrival information

7.87

1 **Port operations.** Berthing/unberthing may be undertaken at any time.

Port radio. There is a port radio service which is operated from the Harbour Master's office at the root of the oil jetty; for details on port communications see *Admiralty List of Radio Signals Volume 6(4).*

There is also a coast radio station at Sorong; for details see *Admiralty List of Radio Signals Volume 1(2).*

2 **Notice of ETA.** Masters should forward their ETAs to the Port Authority at least 72, 48 and 24 hours in advance of arrival, correcting the ETA if more than 1 hour in error. Included in the message should be the vessel's last port of call, reason for calling, and arrival draught.

Outer anchorage. Vessels arriving and requested to wait for either a pilot or a berth should anchor, in a depth of 30 m, mud, about 1 mile NW of Tanjung Nuyew (0°53′S, 131°14′E) (7.85).

3 **Pilotage** is compulsory for vessels over 70 grt. Pilots board at the pilot boarding station (0°52·0′S, 131°13·5′E). Request for a pilot should be made 6 hours prior to arrival and 3 hours prior to departure.

Tugs are available.

Harbour

7.88

1 **General layout.** The town of Sorong stretches along 8 km of seashore both N and E of Tanjung Nuyew. Adjacent to the town there are several jetties and berthing areas. Sorongdoom, the main settlement of Pulau Doom (7.85), is linked to the mainland by ferry services. East of Sorong the settlements consist mainly of fishing villages.

2 Karang Dua, two detached reefs, marked by a light-beacon (isolated danger), lie 4 cables offshore and 1 mile E of Pulau Doom. Karim and Tun, two inhabited islets, lie in the entrance to Sungai Warmun, a mangrove-lined river, 2 miles SE of the town.

Tidal streams. The tidal streams in the inner roadstead, S of the town and E of Pulau Doom, can be strong but normally the rate never exceeds 1 kn.

Climatic table. See 1.159 and 1.161

Directions

7.89

1 Approaching from Selat Sagewin or the N coast of Irian Jaya, vessels should proceed to the pilot boarding station (7.87) unless instructed to anchor (7.87).

The approach to the berths is made within a 14 m swept channel on the alignment of leading lights; Sorong Light (white beacon), which marks a 3·3 m shoal, stands on the E alignment 4¼ cables WNW of the common front light (see below).

2 **Ramoi Leading Lights:**

Common front light (white triangle, point up, on white metal framework tower, 8 m in height) (0°53′·1S, 131°15′·4E).

Rear light (white triangle, point down, on metal framework tower, 5 m in height) situated on Ramoi Hill, 1 mile ESE of front light.

3 On the alignment (102½°) of the leading lights the track leads ESE, passing:

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SSW of Pulau Dopier (7.85), from where a light (red square on white metal framework tower, 5 m in height) is displayed, thence:

SSW of two mooring buoys, moored WSW and W of the oil jetty.

Vessels leaving the port and bound for Selat Sagewin may, on releasing the pilot, proceed seawards on the leading line previously described, passing N of Pulau Tsiof.

7.90

1 Approaching Sorong from S, vessels, except those exempt pilotage, usually proceed to the pilot boarding station (7.87), thence enter the port on the leading line described at 7.89. On departing the port and bound for the S entrance to Selat Sele, vessels may, after releasing the pilot, proceed S on the N set of leading lights in reverse.

2 **Sorong North Leading Lights:**

Common front light — see above.

Rear light (white triangle, point down on white metal framework tower, 5 m in height), situated 4½ cables NE of front light.

On the alignment (032½°) of the leading lights, the track leads NNE passing between Pulau Nanah (0°55′S, 131°14′E) and Pulau Mu, 1 mile SE.

3 An 8 m patch lies close E of the alignment, 4¼ cables ESE of the E extremity of Pulau Nanah. A beacon marks a rock lying 4½ cables W of the S extremity of Pulau Mu and a stranded wreck lies on a reef 8 cables WSW of Pulau Vandu (0°56′S, 131°15′E).

Berths

7.91

1 **Inner anchorage.** Vessels may obtain an anchorage in the inner roadstead as shown on the chart, in depths of about 30 m, in a swept area SE of a light-buoy (port hand) moored S of a shoal patch, 2 cables NE of Pulau Doom (7.85).

2 **Alongside berths.** Two concrete-constructed commercial wharves, 3 cables E of Tanjung Nuyew, have a total length of about 280 m between them with depths of 11 m alongside. These berths accommodate general cargo, bulk and passenger vessels. A ferry quay close W of the point provides a connecting service with the airport on Pulau Yefman (7.92), and about 1 cable E, a T-head oil jetty with dolphins extends 200 m S from the shore; off which there is a dangerous wreck. At the head of the jetty there are depths of 15 m. Farther E, Usha Mina Quay is a T-head jetty which is used by inter-island coastal vessels and farther E again there are two small fishing market quays, Alfa Kumia Quay and Karimun Solo Quay.

3 **Other berths.** Several mooring buoys are laid in the NE part of the harbour WSW and SE of the oil jetty. A repair jetty lies on the W side of a small bay E of the town. There are several jetties on Pulau Doom. A repair jetty exists on the E side of Pulau Karim (7.92).

Port services

7.92

1 **Repairs:** minor repairs can be effected on craft up to 200 dwt on Pulau Karim (0°54′S, 131°16′E) where there is a slipway and repair berths.

Other facilities: deratting certificates and derat-exemption certificates issued; hospitals with good medical facilities exist at Sorong.

Supplies: fresh water at the oil jetty, diesel/heavy fuel can be supplied from the oil jetty; provisions.

2 **Communications.** The airport for Sorong is situated on Pulau Yef Man, which lies 7½ miles WSW of Sorong. There are daily flights to Jakarta and Makassar via Ambon. Ferries (fast launches) leave from the town for the island on a regular basis. Sorong is also a port of call for the larger passenger ships which link other ports in the archipelago.

Rescue: there is a coastguard rescue service.

Arar Terminal

Chart 1420

General information

7.93

1 **Position.** Arar Terminal (1°02′S, 131°14′E) lies on the E side of Selat Sele, towards the N end, and nearly 10 miles S of Sorong.

Function. The terminal is an LPG/refined light oil loading port.

Topography. The terminal lies on low-lying, mangrove covered terrain and is fronted by a number of islets, reefs and dangerous rocks. Pulau Selebus, an islet, lies 5 cables SW of the terminal; Pulau Yesusir, an islet, lies in the N approach, 9 cables NW of the terminal.

2 **Approach and entry.** The terminal is approached from within Selat Sele and entered principally from S by a marked channel through the fronting islets.

Traffic. Small LPG/product tankers regularly call at this terminal.

Port Authority. Operated by Petrochina International (Bermuda) Ltd.

Limiting conditions

7.94

1 **Maximum size of vessel handled:** 3500 dwt, having a length of 120 m and draught of 6 m.

Local weather. Visibility is greatly reduced during the rainy season (September to December).

Arrival information

7.95

1 **Port radio.** The terminal has a port radio service, there is also a coast radio station at Sorong. For details see *Admiralty List of Radio Signals Volumes 1(2)* and *6(4).*

Notice of ETA. See 7.101.

Outer anchorage. See 7.101.

Pilotage is compulsory; see 7.101.

Tugs not available.

Directions

7.96

1 The terminal may be approached from either N or S but the latter direction is marked by beacons in the approach channel which leads E then NE from the swept channel passing E of Pulau Kabra. The passage lying between the marked shoal 1½ miles E of the N end of Pulau Kabra and Pulau Yawya (1°01′S, 131°13′E) may also be used from N.

Useful mark:

Arar Light (1°02′S, 131°14′E) displayed from the terminal.

Berth

7.97

1 The terminal consists of an offshore loading platform with four attendant dolphins; vessels are berthed alongside the platform and two of the dolphins. A pipeline extends to the shore installation and storage tanks.

There is a depth of 11 m, at MLWS, alongside.

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Port services
7.98

1 **Facilities:** limited; medical assistance.
Supplies: provisions available.
Communications. See 7.92.

Kasim Terminal

Chart 1420

General information
7.99

1 **Position.** Kasim Terminal (1°18′S, 131°01′E), an oil terminal, stands on the Irian Jaya mainland within Selat Sele abreast the E side of Pulau Yef Kasim.

Function. The terminal is a crude oil loading port; LPG cargoes are also handled.

Topography. The terminal lies on low-lying, wooded, ground. It is fronted by Pulau Yef Kasim, a low island covered with trees and in places some vegetation, and separated from it by a deep navigable passage.

2 **Approach and entry.** The terminal is approached from Selat Sele and entered by the navigable channel separating Pulau Yef Kasim from the mainland.

Traffic. In 2003 the terminal was used by 9 vessels with a total of 66 588 dwt.

Port Authority. Operated by Petrochina International (Bermuda) Ltd.

Limiting conditions
7.100

1 **Depths.** See 7.71.

Maximum size of vessel handled: 135 000 dwt, 274 m in length having a draught of 14·5 m; the minimum size being 17 000 dwt and 160 m in length.

Local weather. The worst weather for this area occurs during September to December when there is heavy rain and poor visibility.

Arrival information
7.101

1 **Port operations.** Berthing/unberthing can only be done during daylight hours. Vessels arriving at the pilot station after 1600 (local time) must anchor until the following morning.

Port radio. There is a port radio service at the terminal and a coast radio station at Sorong; for details see *Admiralty List of Radio Signals Volumes 1(2)* and *6(4).*

2 **Notice of ETA.** Masters should forward their ETAs at the pilot boarding position to Pertamina Sorong, 72, 48, and 24 hours prior arrival, and any subsequent change of more than 3 hours. The message should include the last port of call, draught and any reported sickness onboard.

Outer anchorage. Anchorage, for vessels bound for either Kasim, Salawati or Arar Terminals, may be obtained in a depth of 36 m, sand and mud, close W of the pilot boarding position approximately 1¼ miles NW of Pulau Tsiof (7.80).

3 **Pilotage** is compulsory. The pilot boarding position (0°53′S, 131°10′E) lies about 1¼ miles NW of Pulau Tsiof. Requests for a pilot should be made at least 6 hours before arrival and 3 hours before departure.

Tugs are available.

Traffic regulations. Entry is restricted to vessels under the direction of a Mooring Master.

Directions
7.102

1 After negotiating the strait from N (7.80), the track leading to the berth at Kasim becomes dependent on the tidal stream. With an in-going stream a vessel is able to enter the navigable channel leading to the berth from N; with an out-going stream a vessel must first pass W of Pulau Yef Kasim, thence enter the channel from S.

Berths
7.103

1 **Oil terminal.** The berth at Kasim consists of a T-head loading platform with two breasting dolphins either side, 110 m in length, connected to the shore by a pipe-way trestle. Mooring dolphins are also connected by a walkway to the berth. There are depths of 19 m alongside.

Dry-cargo berth. A dry cargo berth, close S of the terminal, is 112 m in length with a depth of 6·1 m alongside.

A reef, marked at its N end by a light-beacon, lies close W of the dry-cargo berth; the reef is separated from it by a navigable channel.

Port services
7.104

1 **Facilities:** limited; medical assistance is available at the terminal.

Supplies: limited fresh water and limited provisions.
Communications. See 7.92.

Salawati Terminal

Chart 1420

General information
7.105

1 **Position.** Salawati Terminal (1°21′S, 130°58′E) lies close within the S entrance to Selat Sele and on its W side.

Function. The terminal is a major crude oil loading port.

Topography. The terminal lies close offshore low wooded ground 1½ miles NE of Tanjung Kamyolo, the S extremity of Pulau Salawati (7.56). A series of wooded islets extend SW from Tanjung Kamyolo including Pulau Yef Bi, the nearest, to Pulau Gelo, the outermost, 5½ miles distant. A number of small rivers enter the strait N and S of the terminal.

2 **Approach and entry.** The terminal is approached from Selat Sele; entry is dependent on tidal streams.

Port Authority. Operated by Pertamina; see 7.85.

Limiting conditions
7.106

1 **Maximum size of vessel handled:** 100 000 dwt, 275 m in length and draught 13 m.

Local weather. Delays may occur during the rainy season (September-December) when the port is closed due to bad weather.

Arrival information
7.107

1 **Port radio.** There is a port radio service at the terminal and a coast radio station at Sorong; see *Admiralty List of Radio Signals Volumes 1(2) and 6(4).*

Notice of ETA. See 7.101.
Outer anchorage. See 7.101.
Pilotage. See 7.101.

Traffic regulations. Entry is restricted to vessels under the direction of a Mooring Master.

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Directions
7.108

1 On approaching the berth from N, berthing is dependent on the direction of the tidal stream which can be strong, with a rate of up to 4½ kn. Vessels are turned, off the berth, accordingly on an out-going stream.

Berth
7.109

1 The terminal at Salawati consists of a dolphin berth from which a pipeline extends NNE to the entrance of a small river. The pipeline is landed ashore close within its entrance where there are storage tanks. Tankers moor on the SE side of the dolphin faces; the storage tanker *Wampum* is permanently secured to the NW face. There is a depth of 14·5 m alongside the SE face.

Port services
7.110

1 **Facilities:** limited.
Supplies: limited.
Communications. See 7.92.

Minor harbours

Chart 1420

Samate
7.111

1 **General description.** Samate (0°58′S, 131°04′E), a town and small port, lies 3 miles SE of Tanjung Mayasalava (7.70), the W entrance point of the N entrance to Selat Sele and close W of Tanjung Samate (0°58′S, 131°05′E). Vessels usually anchor in the roadstead N of the town and E of Pulau Bam (7.112) in a depth of about 12 m.

The roadstead is best approached from N but can be reached from S with local knowledge. There is often a NE swell in the roadstead and vessels may roll heavily even in the finest weather.

7.112

1 **Directions.** From Pulau Batanta or Pulau Waigeo, the track leads S towards the roadstead with Pulau Bam (0°56′S, 131°04′E), a wooded islet, ahead, bearing 169°, passing E of Pulau Yefdoif (Senapan) (0°53′S, 131°02′E) (7.60). When the alignment (097°) of Pulau Katapacan, a rocky islet 1¾ miles E of Pulau Bam, with the NE point of Pulau Rombombo, a narrow islet 6 cables SE of Pulau Katapacan, is reached, the track leads ESE until a secure anchorage E of Pulau Bam is obtained.

7.113

1 **Small craft.** There is a regular ferry service which links the town with Sorong and the airport on Pulau Yefman (7.92). Entry to Samate is usually from S, passing between the fringing rocks off Tanjung Samate and the reef extending S from Pulau Rombombo.

Yeflio
7.114

1 **General description.** Yeflio (1°08′S, 131°13′E) is a small port which services the town of the same name 2½ miles inland. The port, which consists of a T-head jetty, is fronted by Pulau Makmak, wooded, and fringed by mangroves. The port exports logs and timber products.

7.115

1 **Directions.** The port is approached by a series of swept channels which emanate from the alternative passage (7.82) passing E of Pulau Kabra. There is a least depth of 4·5 m in the approaches. On the alignment (123°) of Pulau Sagamun (1°05′S, 131°14′E) with a prominent tree on the mainland, 1½ miles SE, the track leads SE until a point about 5 cables off Pulau Sagamun is reached, thence the track leads SSE passing between Pulau Sagamun and Pulau Eflalo, an islet 5 cables SW of Pulau Sagamun. The track then leads S passing E of Pulau Kerem (Yef Kerem), an islet 7 cables S of Pulau Sagamun, and E of Pulau Makmak.

7.116

1 **Anchorage** may be obtained off the jetty in a depth of 12 m.

Sailolof
7.117

1 Sailolof (1°15′S, 130°46′E), a small port, stands 13 miles NW of the entrance to Selat Sele. It is the only town of importance on the W coast of Pulau Salawati as it is linked by road to Samate (7.111) in the NE of the island.

Anchorages

7.118

1 Anchorage may be obtained almost anywhere in Selat Sele as depths and holding ground are generally suitable for a temporary berth.

In the S part of the strait, good anchorage may be obtained during the NW monsoon in depths of about 11 to 16 m, hard bottom, E of Pulau Peli (1°23′S, 130°55′E). During the SE monsoon, good anchorage for suitable vessels, may be obtained, in a depth of 30 m, E of Pulau Lugo (7.84), 2 miles ESE of Pulau Peli.

Small craft harbours and channels

In the northern part of Selat Sele
7.119

1 On the E side of Pulau Yefman (0°55′S, 131°07′E) (7.92) two small craft jetties allow ferries to berth from Sorong on a regular basis. The main airport stands on this island.

On Pulau Karim (0°54′S, 131°16′E) (7.92) there is a jetty on the E side of the island and adjacent to the repair facilities. A ferry service links the island with Sorong.

On the E side of Pulau Doom (0°53′S, 131°14′E) (7.85), a number of small craft jetties front the town of Sorongdoom (7.88). The major industry on the island is now fishing. There is a regular ferry service with Sorong.

In the southern part of Selat Sele
7.120

1 Seget (1°24′S, 130°58′E), a village where there is a pier with a depth of 1·5 m at its head, stands on the E side of the strait, 3½ miles within its S entrance.

Selat Lenna
7.121

1 Small craft may pass through Selat Lenna which leads between the coast of Pulau Salawati and several offshore islands. The N part of the strait passes between Pulau Salawati and Pulau Warir (7.80), and at the S end, W of Pulau Yef Mo (1°14′S, 131°03′E) (7.81). The N entrance is marked by three beacons. There is also a passage N of Pulau Yef Mo; the E side of the island forms part of the deep water passage through the strait.

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COASTAL PASSAGES — TANJUNG SORONG TO TANJUNG SAWEBA

GENERAL INFORMATION

Chart 942B

Scope of the section

7.122

1 In this section are described the coastal routes from Selat Sele to Teluk Irian covering the N coast of Kepala Burung (The Bird's Head). Included in the description are the passages, harbours and anchorages associated with the passages.

Topography

7.123

1 The coast between Tanjung Sorong (0°49′S, 131°13′E) (7.70) and Tanjung Saweba (0°43′S, 133°57′E) (7.205), about 165 miles E, forms the crown of the locally named Kelapa Burung (The Bird's Head) (6.135). The whole coast is mountainous and wooded, interspersed occasionally by an area of coastal flats. In many places the seaward slopes rise straight up from the sea. Pegunungan Tamrau, an inland range of very high mountains, rising up to its highest point (0°33′S, 132°28′E) at 3000 m (nearly 10 000 ft), backs the lower coastal mountains S of Tanjung Yamursba (0°21′S, 132°25′E) (7.140). This high range is often obscured by cloud.

Natural conditions

7.124

1 **Flow.** Currents in this area generally set in the direction of the prevailing monsoon. They set E during the NW monsoon and W during the SE monsoon. They are not known to be strong along this coast. Farther offshore and between the coast and Pulau-pulau Mapia (0°49′N, 134°17′E) (7.156) there is a permanent set between W and NW at a rate of about 1 to 1½ kn.

Tidal streams follow the coast but are negligible; they may however be noticeable off the mouths of rivers after heavy rains.

Local weather. Heavy rain falls mostly during July and August.

TANJUNG SORONG TO PULAU MIOS SU

General information

Charts 3745, 3248, 3249 (1.34)

Route

7.125

1 The route between Tanjung Sorong (0°49′S, 131°13′E) and Pulau Mios Su, the outer island forming Pulau-pulau Su (7.126), lying off the N extremity of Irian Jaya, leads ENE for a distance of about 63 miles. The passage between Pulau-pulau Su and the mainland is only suitable for small vessels.

Vessels coming from Selat Sagewin or Selat Sele usually proceed, in good weather, close to the coast and are then able to utilize bearings on the landmarks between Tanjung Dore and Tanjung Yamursba.

Topography

7.126

1 Between Tanjung Sorong (0°49′S, 131°13′E) and Pulau Mios Su, 63 miles ENE, the coast is for the most part high and wooded. Between Tanjung Sorong and Tanjung Dore (0°44′S, 131°33′E) (7.130), 20 miles ENE, the coast is uninhabited and there are no outstanding landmarks, but the W spurs from Pegunungan Tamrau (7.123) will usually be in sight. Behind this coastal hilly land, and separated from it by the valley of Sungai Warsamson (7.134) which runs E and W, is a high ridge of mountains extending E to join the Tamrau range. A small bay lies directly E of Tanjung Dore.

2 Between Tanjung Dore and Pulau Mios Su, 43 miles ENE, the coastal mountains rise steeply up from the sea except where Sungai Mega flows down from the high ground forming a remarkable break in the coastline. Pulau-pulau Su (0°21′S, 132°11′E) consisting of two reef-fringed coral islets, Mios Su and an islet previously known as Pulau Middelburg (7.136), 1¼ miles ESE, are both covered with high trees and are separated from the mainland by a navigable channel.

Tidal streams

7.127

1 See 7.124.

Principal marks

7.128

1 **Landmarks:**

Tanjung Sorong (0°49′S, 131°13′E) (7.70).

Morait, which rises close W of Tanjung Dore (0°44′S, 131°33′E), is prominent.

Pulau Hum, an islet on a reef with high trees, charted as an island, situated 2½ miles E of Tanjung Dore, is conspicuous against the lighter background.

Rock (0°40′S, 131°52′E) (7.133), situated close off the coast, is conspicuous.

2 Hill, rising above Tanjung Asi (0°44′S, 131°42′E), is prominent; a waterfall close E is also visible.

Tonggerap (0°39′S, 132°03′E), the most prominent summit of the range of mountains along this coast.

Puncak Terjal (0°24′S, 132°25′E), with a steep summit, rising 3 miles S of Tanjung Yamursba, is prominent.

Major light:

Pulau Ram Light (0°50′S, 131°12′E) (7.78).

Other aid to navigation

7.129

1 **Racon:**

Pulau Ram Light (0°50′S, 131°12′E) (7.78).

For further details see *Admiralty List of Radio Signals Volume 2.*

Directions

(continued from 7.63)

7.130

1 From a position NNW of Tanjung Sorong (0°49′S, 131°13′E) to a position NNW of Pulau Mios Su, 63 miles ENE, the track leads ENE, passing:

NNW of Pulau Batulobang (Batu Lobang) (0°45′S, 131°25′E), a rock 24 m (80 ft) high with an arched opening, thence:

NNW of Tanjung Dore (0°44′S, 131°33′E), the steep rocky W entrance point to Teluk Dorehum, thence:

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2 NNW of Tanjung Sansapor (0°29′S, 132°06′E), a steep wooded point, thence:

NNW of Pulau Mios Su (0°21′S, 132°10′E), the most N islet of Pulau-pulau Su, from where a light (white metal framework tower, 16 m in height) is displayed.

The passage between Pulau Mios Su and Pulau Middelburg (7.136), and between Pulau Middelburg and the coast, is not recommended.

(Directions continue at 7.141)

Anchorages

Off Sungai Warsamson

7.131

1 Temporary anchorage may be obtained in a depth of 46 m (25 fm) and about 7 cables off the mouth of Sungai Warsamson (0°47′S, 131°24′E) (7.134), which enters the sea 1¾ miles SW of Pulau Batulobang (7.130).

Off Makebon

7.132

1 Anchorage may be obtained, for small vessels, within Teluk Dorehum (7.135) off Makebon, a village 1 mile S of Tanjung Dore (0°44′S, 131°33′E), in a depth of 27 m (15 fm) and sheltered from N winds. The channel leading S to the anchorage is narrow however, and there are shoals on either side of it. A 2·7 m (9 ft) patch lies 9 cables W of Tanjung Dore and the channel passes E of it. Local knowledge is advisable. See also 7.135.

Off Sungai Mega

7.133

1 Anchorage may be obtained off the entrance to Sungai Mega (0°40′S, 131°54′E). Small vessels may anchor in depths of 7·3 m (24 ft), mud and sand, in the small roadstead inside the reefs lying 6½ cables offshore. Larger vessels should anchor outside of the reefs in depths of 13 m (43 ft), mud. The outer anchorage should be approached from N with the village of Mega, situated 8 cables W of the river entrance, ahead, as there is a 4·5 m (15 ft) patch lying 2¾ miles NW of the river entrance and a conspicuous dark-coloured rock, lying 2 miles NW of the entrance.

Small craft

Sungai Warsamson

7.134

1 Sungai Warsamson (0°47′S, 131°24′E), a river of some considerable length, flows down from the high ground of Pegunungan Tamrau and runs virtually parallel with the coast except for the last few miles as it enters the sea. The river is navigable by small craft for about 1 mile inside but beyond this point the current is too rapid.

Teluk Dorehum

7.135

1 Teluk Dorehum, a small indentation in the coast, which is entered between Tanjung Dore (0°44′S, 131°33′E) (7.130) and a point 2½ miles SE, provides shelter for small craft. The bay gives access to two villages on its S shore 2 miles inside where landings may be effected. Both villages are fronted by reefs and detached rocks and the best approach leads W passing N of them, then returning E passing S of them as there is sufficient water between the reefs and the shore to anchor from this direction.

Pulau Middelburg

7.136

1 A boat pier lies on the S side of Pulau Middelburg (0°22′S, 132°12′E), the most S islet of Pulau-pulau Su. Coconut plantations are cultivated on the island. The island is linked by small craft with the village of Werurmeja, 2½ miles S on the mainland, where a pier landing may be effected. Werurmeja may be identified by a flagstaff; copra and fruit are shipped by road to Sorong.

PULAU MIOS SU TO TANJUNG SAWEBA

General information

Charts 3248, 3249 (see 1.34)

Route

7.137

1 From a position NNW of Pulau Mios Su (0°21′S, 132°10′E) to a position NNE of Tanjung Saweba (0°43′S, 133°57′E), the W entrance point of Teluk Irian, the route initially leads E thence ESE for a distance of about 112 miles.

East of Tanjung Yamursba (0°21′S, 132°25′E) there are no dangers outside a distance of 2 miles from the coast.

Topography

7.138

1 Between Pulau Mios Su (7.126) and Tanjung Saweba (7.205) the coast is steep and mountainous; the mountains virtually descend to the sea. A narrow coastal bank, barely 2 miles wide, fronts the coastline. Within the bank, areas of detached shallow patches exist throughout; in some places they lie close inside the 200 m (100 fm) depth contour. East of Tanjung Saukorem (0°33′S, 133°10′E) (7.142) a small narrow coastal plain develops which gradually opens out to an area of lowland, through which Sungai Wayori and Sungai Prafi (War Prafi), two of the largest rivers in the area, flow down to the sea from Pegunungan Arfak (7.208). A number of other rivers enter the sea along this coast.

Tidal streams

7.139

1 Tidal streams run in the direction of the coast and are not strong.

Landmarks

7.140

1 Puncak Terjal (0°24′S, 132°25′E) (7.128).

Tanjung Yamursba (0°21′S, 132°25′E), the N extremity of Irian Jaya, can be identified by some yellow stripes on it. On closer approach a lower cape will be seen to project from it at right angles.

Bansie (0°24′S, 132°38′E), a mountain rising near the coast, is prominent.

2 Sau, a mountain 649 m (2130 ft) high, rising 2¼ miles SW of Tanjung Saukris (0°27′S, 132°58′E) (7.142), is prominent from E.

Puncak Bulat (0°33′S, 133°02′E), prominent, with a rounded summit rising 3½ miles SW of Tanjung Srabapan (7.142).

3 Tree, standing on the NW summit of a double-peaked mountain, 9½ miles SE of Tanjung Manganeki (0°36′S, 133°14′E) (7.142), is distinctive.

Hill, standing close within Tanjung Sidai (0°43′S, 133°34′E) (7.142), is conspicuous.

Biyenkorf (0°47′S, 133°33′E), a mountain standing 3½ miles SSW of Tanjung Sidai, which due to its

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isolation and unusual shape forms an excellent landmark.

Directions

(continued from 7.130)

7.141

1 From a position NNW of Pulau Mios Su (0°21′S, 132°10′E) to a position NNE of Tanjung Saweba (0°43′S, 133°57′E), the W entrance point of Teluk Irian, the coastal route initially leads E to a position N of Tanjung Wesio (0°22′S, 132°43′E), see below, passing:

N of Pulau Mios Su, from where a light (7.130) is displayed, thence:

N of Tanjung Opmarai (0°23′S, 132°16′E), a low point backed by hills, thence:

N of Tanjung Yamursba (0°21′S, 132°25′E) (7.140), thence:

2 N of Tanjung Kambrini (0°22′S, 132°37′E), rising to a rocky hill 49 m (161 ft) high at the end of a hilly range, thence:

N of Tanjung Wesio (Weiso), a steep point showing reddish grey rock by which it may be distinguished. A rock resembling a chimney lies on the E side of the foot of the point.

From the position N of Tanjung Wesio, the route either continues E following the through route described at 7.13, or continues ESE to the W entrance to Teluk Irian as described below.

7.142

1 From the position N of Tanjung Wesio, the route leads ESE for a distance of about 78 miles to a position NNE of Tanjung Saweba (0°43′S, 133°57′E) (7.205), passing:

NNE of Tanjung Saukris (0°27′S, 132°58′E), with a hill rising on its headland; a prominent mountain (7.140) lies 2¼ miles SW of the point, thence:

NNE of Tanjung Srabapan (0°31′S, 133°05′E), a low, reef-fringed point, thence:

2 NNE of Tanjung Saukorem (0°33′S, 133°10′E), a low, reef-fringed point from where a light (white metal framework tower, 30 m in height), is displayed, thence:

NNE of Tanjung Manganeki (0°36′S, 133°14′E) which may be identified by a hill, 210 m (689 ft) high, close within it; a mountain 499 m (1638 ft) high, with a flat summit, lies 3½ miles W of the point. Thence:

3 NNE of Tanjung Sidai (0°43′S, 133°34′E), a steep, reef-fringed N point of a broad headland which rises to a conspicuous hill. Tanjung Boropen is the W point of the same headland. Thence:

NNE of Tanjung Wabain (0°43′S, 133°44′E), a reef-fringed point which rises to a wooded hill, thence:

NNE of Tanjung Saweba (7.205), the W entrance point to Teluk Irian.

(Directions continue for the W side of Teluk Irian and Manokwari at 7.209)

Anchorages

General

7.143

1 Temporary anchorage may be obtained in favourable weather, in depths of 10 to 20 m (33 ft to 11 fm), anywhere off the coast between Tanjung Yamursba (0°21′S, 132°25′E) (7.140) and Tanjung Wesio (Weiso) (7.141), 18 miles E.

Between Tanjung Opmarai and Tanjung Yamursba

7.144

1 Anchorage may be obtained during the SE monsoon on a bank, with depths of 9 to 18 m (30 to 60 ft), which fringes the coast between Tanjung Opmarai (0°23′S, 132°16′E) (7.141) and Tanjung Yamursba, 9½ miles ENE. During the NW monsoon there are heavy rollers on the bank.

Off Wau

7.145

1 Anchorage may be obtained, in a depth of 14·6 m (48 ft), E of the village of Wau which stands on a low point 11 miles ESE of Tanjung Wesio (0°22′S, 132°43′E). Small vessels may find a berth inside two reefs with depths of 4·9 and 5·8 m (16 and 19 ft), lying 5 cables offshore.

West of Tanjung Boropen

7.146

1 Large vessels may obtain an anchorage in the bight W of Tanjung Boropen (0°43′S, 133°34′E) (7.142). There are depths of 13 m (43 ft) at least 7 cables offshore in this location.

Small craft anchorages and landings

Sungai Kor

7.147

1 There is a good landing place on the E side of of the mouth of Sungai Kor, 4½ miles E of Tanjung Opmarai (0°23′S, 132°16′E), when the swell is from E. In similar conditions landings can also be effected under the lee of some coastal rocks which lie near some dwellings E of the river mouth. A rock covered with vegetation lies close to these dwellings.

Sungai Kor can be entered by boat at HW but is navigable for only about 8 cables above the mouth of the river.

Warpaperi

7.148

1 Between the villages of Warpaperi (0°33′S, 133°08′E) and Saukorem, 2½ miles E, the coast is fringed by a reef. Landing may be effected, even when surf is running, through a distinctive break near the middle of this reef.

Tanjung Sidai

7.149

1 Anchorage for small craft may be obtained in a depth of 8 m (26 ft) off Tanjung Sidai (0°43′S, 133°34′E) (7.142), where there is an opening in the coastal reef. The village of Sidai lies 2 miles E of the point.

Teluk Siwi

7.150

1 Teluk Siwi, entered on the W side of Tanjung Wabain (0°43′S, 133°44′E) (7.142), affords sheltered anchorage close S of the point for small craft during E winds. It is not suitable for larger vessels because of the steep bottom with considerable depths farther offshore. The village of Maseni stands on the E point to the entrance to Sungai Auri, a small river near the head of the bay.

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TELUK IRIAN INCLUDING THE OFF-LYING ISLANDS FRONTING THE BAY AND PULAU-PULAU MAPIA

GENERAL INFORMATION

Chart 942B

Scope of the section

7.151

1 In this section are described:

Pulau-pulau Mapia, the outermost group of islets lying off this coastline.

The islands fronting Teluk Irian including Pulau Biak and the port of Biak.

Teluk Irian including the port of Manokwari.

Also described are the passages, harbours and anchorages associated with the islands and Teluk Irian.

General description

7.152

1 Teluk Irian occupies a very large indentation into the N coast of Irian Jaya. In one area of its W coast it is barely 10 miles from Teluk Bintuni (6.135) on the SW coast of Irian Jaya. The bay is bounded on the N by the islands of Kurudu, Sorenarwa and Miosnum and thence by a line drawn to Tanjung Saweba (0°43′S, 133°57′E), it's W entrance point.

Lying outside of these fronting islands lie the islands, from W, of Numfoor, Supiori, Biak and Pulau-pulau Padaido, a small group of islands at the E end.

2 Lying still farther out lie the dangers surrounding Pulau Bependi (0°24′S, 125°16′E) and Pulau Ayawi (0°12′S, 134°59′E). Pulau-pulau Mapia, a small group of atoll islets lying about 75 miles NW of Ayawi, is separated from it by the deep water of New Guinea Trench where depths exceed 5000 m (2733 fm).

Natural conditions

Flow

7.153

1 **Currents.** Across Teluk Irian, N of the inner series of islands, which include Miosnum, and on both sides of Supiori, Biak and Pulau-pulau Padaido, the monsoon drift is felt. This sets E during the NW monsoon and W during the SE monsoon. The maximum rate is reported to be about 2 kn but it may sometimes reach 3 kn along the SE coast of Biak.

2 **Tidal streams** set into Teluk Irian when the tide is rising at Serui (1°53′S, 136°14′E), and out when the tide is falling at that place.

Except in the shoaler parts of the narrow channels leading into the bay the rates do not exceed 1 kn. The streams through Selat Sewandeh, Selat Kurudu and Selat Dombo set in the directions of the channels. With the exception of Selat Kurudu (see 7.251) these streams attain rates of 2–2½ kn. The streams in Selat Miosnum are not known, but because this strait is deep they are probably not as strong as in the other straits.

3 Inside Teluk Irian there is a weak tidal stream but no drift stream.

In the S part of the bay the streams turn about 2 hours after HW and LW at Serui (7.183).

Local weather

7.154

1 During both monsoons, rough seas may be encountered at the E end of Selat Sorenarwa, that body of water lying between Pulau-pulau Padaido and Pulau Sorenarwa. Within Teluk Irian a warm, dry, SW wind sometimes blows down from the hills on the W side. As it sets in, the coast temperatures rise considerably and the air becomes very dry and rather hazy at sea level. This experience, locally called the '*Wambrau*', has been known to last for several days. It sometimes raises a rough sea in the bay. See also 1.147.

2 During May and June the whole of the E side of the bay, stretching to the head of the bay, experiences variable wind directions and considerable rainfall; the latter occurring mostly at night. The sea state is calm.

On the SW side of the head of the bay, between Tanjung Busurua (2°28′S, 134°38′E) and Tanjung Bumi, about 72 miles SE, no predominating winds are recorded but land and sea breezes are noticeable. Between February and June this part of the bay experiences a great deal of rainfall.

3 Off Pulau Numfoor (1°02′S, 134°53′E), from June to September a '*wambrau*' is only experienced from SW at the beginning of August and September, with strong winds for several days and then becoming quieter from S. At the end of September the island experiences much rain accompanied by squalls and thick weather.

4 In the vicinity of Pulau Supiori and Biak, November and April are the transition months. The change from the NW to the SE monsoon is characterized by a period of long calm locally called *'Wampasis'* (Quiet wind). In both monsoons the sky is overcast and especially towards the equator much rain is experienced. During the SE monsoon there is often a thick mist over the sea for long periods.

General directions

7.155

1 Through routes in this area pass N of Pulau Supiori and Biak. Offshore routes lie S of these islands connecting with the port of Biak (7.175) from either E or W.

Coastal routes from W lead into Teluk Irian connecting with the port of Manokwari (7.214) or to the port of Nabire (7.264) at the head of the bay, passing E of Karang-karang Tydeman (2°10′S, 135°18′E) from where a light is displayed. A passage also leads S from the W entrance to the smaller port of Miei (2°44′S, 134°31′E) 7.227) situated within Teluk Wandammen.

2 Coastal routes from E lead SE into the bay passing through Selat Kurudu or for smaller vessels through Selat Dombo when bound for Nabire.

Serui (1°53′S, 136°15′E) (7.183), a small port, lies on the S coast of Pulau Sorenarwa.

Outlying islands and dangers

Pulau-pulau Mapia

7.156

1 **General description.** Pulau-pulau Mapia lie about 75 miles NW of Pulau Ayawi (0°12′S, 134°59′E) (7.161). The group consists of three low coral islands covered with coconut palms which stand on the drying reef of a steep-sided atoll. The only break in the reef lies on its W side. Depths in the lagoon vary considerably but the greatest depth 49 m (27 fm), sand and coral, lies at its N end. Pulau Pegun (0°50′N, 134°16′E), the largest of the three islands, lies at the S extremity of the atoll. Pulau Bras lies in the NE part and Pulau Fanildo, an islet, lies at the N extremity of the atoll.

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7.157

1 **Flow.** During a survey from May to June 1933, a W-going current with a rate of about 1½kn was observed near Pulau Pegun.

In the boat channel, there is a strong out-going stream on the falling tide.

Local weather. From the middle of June to the middle of August, E to ESE winds prevail near the atoll, with squally weather and much rain. Landing is often impossible due to the heavy surf and swell. A W wind prevails in mid-November and the weather is generally brighter.

7.158

1 **Major light:**

Pulau Pegun Light (0°50′N, 134°17′E) (white beacon, 30 m in height) is displayed from the S extremity of the island.

7.159

1 **Directions.** The atoll should be approached with caution especially from NE, as the outer edges of it are not visible at LW and soundings give no warning. In 1992 it was reported that the atoll lay 1 mile E of its charted position.

In 1977 breakers were reported 20 miles E of Pulau Pegun.

7.160

1 **Landing** may be effected in favourable weather on the beach at the S end of Pulau Pegun. A narrow tortuous boat channel, with a controlling depth of 1·5 m (5 ft) lying at its inner end, leads into the lagoon on the W side of the atoll about 2 miles NNW of the N end of Pulau Pegun. The entrance to the boat channel may be identified by two rocks near the edge of the reef; boats should pass about ½cable N of them.

ISLANDS AND DANGERS FRONTING TELUK IRIAN INCLUDING PULAU-PULAU BIAK AND THE PORT OF BIAK

General information

Chart 3249 (see 1.34)

General description

7.161

1 Teluk Irian is fronted by a number of islands: Pulau Supiori and Pulau Biak, forming Pulau-pulau Biak, with Pulau-pulau Padaido, a group of smaller islands lying SE of them, Pulau Numfoor (Mefoor), the W-most, Pulau Miosnum, Pulau Sorenarwa and the smaller Pulau Kurudu at the E end, described at 7.251.

2 A number of islets and dangers exist NW of Pulau Supiori. Pulau Ayawi (0°12′S, 134°59′E), the N-most islet, covered with trees and uninhabited, lies at the SE end of an extensive elongated bank. Pulau Bependi (0°24′S, 135°16′E), a densely wooded island with two peaks, is situated on Gosong Bependi, a bank over which there are irregular depths, 15 miles N of the NW end of Pulau Supiori. Karang Isabel, a reef over which there is a least depth of 4·7 m (15 ft), lies between Pulau Supiori and Pulau Bependi.

3 Through traffic normally passes N of Pulau Supiori and Pulau Biak whereas coastal traffic passes S of these islands.

Topography

7.162

1 Pulau-pulau Biak, which consists of Pulau Supiori and Pulau Biak, occupies a land mass of uplifted coral limestone nearly 70 miles in total length.

Pulau Supiori (0°45′S, 135°30′E) is traversed by two mountain ranges lying parallel and aligned NW-SE. The summit of the island lies 5 cables NNW of its SE point but Bumbeffor, a prominent peak, stands near the NW end of the NE range. Pulau Supiori is reef-fringed throughout. Off the SW coast of Supiori there are a number of offshore islets and dangers associated with a barrier reef; Pulau Rani (0°57′S, 135°30′E), a sandy island covered with coconut palms, lies at the SE end of the reef.

2 Pulau Biak (1°00′S, 136°00′E), boot-shaped, is separated from Supiori by Sorendidori, a narrow saltwater creek which can only be navigated by small vessels. Much of the island is low-lying; the N part is hilly and parts of the central plain are also backed by hilly ground. Tanjung Barari (Warari) (1°05′S, 136°23′E), the E extremity of Biak, is low and wooded.

Pulau-pulau Padaido, a group of islands and reefs, lie with Pulau Owi (1°15′S, 136°12′E), the most W of the islands in this group, 3 miles off the SE coast of Biak.

7.163

1 Pulau Numfoor (Mefoor), a densely wooded island, lies about 37 miles ENE of Tanjung Oransbari (1°20′S, 134°17′E) on the mainland. It has a flat appearance without any prominent peaks. It has one of the best road systems in the area; a legacy from World War II.

Pulau Miosnum (1°30′S, 135°13′E), a densely wooded island traversed by a mountain range, lies 23 miles SSE of Pulau Numfoor, and 7 miles SE of the W extremity of Pulau Sorenarwa; Pulau-pulau Fonokabai is a group of islets and dangers extending up to 8 miles E of the island.

2 Pulau Sorenarwa (1°46′S, 136°14′E), an island lying across the E side of the entrance to Teluk Irian, has a central chain of mountains traversing its entire length. The island is heavily indented in its W part; its summit, in the E part, is nearly 1500 m (5000 ft) high. Bumpeki, with a sharp prominent peak, from N or S, stands about 11 miles W of the summit. Pulau Sorenarwa is separated from Pulau Biak by Selat Sorenarwa (7.171), an open expanse of water and deep throughout.

Exercise areas

7.164

1 There are three exercise areas in close proximity to Pulau Biak. Warnings of an impending exercise are promulgated by the Indonesian Navy. The areas are not charted.

1. NE of Biak, between the meridians of 136°E and 137°E and parallels 1°S and the equator.
2. S of Biak, 5 miles either side of 136°E meridian and 10 miles S from the shore.
3. An area with a radius of 5 miles centred on position 1°20′S, 136°22′E.

Special light-buoys mark each area when an exercise takes place.

Natural conditions

7.165

1 **Currents.** During the SE monsoon the current sets NW, dividing at Tanjung Barari (1°05′S, 136°23′E) (7.162) and setting along both sides of Pulau-pulau Biak. During the NW monsoon the current divides into two branches W of Tanjung Mandundi (0°39′S, 135°22′E) (7.167), one setting N of Pulau-pulau Biak and the other SE between Pulau Supiori and Pulau Numfoor, lying about 32 miles SW, thence E through Selat Sorenarwa (7.171) and thence NE and out through its E end. From the latter branch another sets NNE and NE along the SE coast of Biak and unites with the N branch off Tanjung Barari.

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2 The greatest variations of the main direction of drift stream occur near Pulau Numfoor. On each side of the island it is S-going in the NW monsoon and N-going in the SE monsoon. During the latter monsoon an ENE-going stream has sometimes been observed along the S coast of Numfoor instead of a W-going stream.

3 **Tidal streams** in the channels between Pulau Pakreki (Pakriki) (1°14′S, 136°31′E) and the islands on each side, set strongly S with the falling tide and weakly N on the rising tide. In the vicinity of Pulau Pakreki, to the S of a line joining the N ends of Padaidori and Pai (7.172), heavy tide-rips may be encountered.

4 Streams off the N coast of Pulau Sorenarwa (7.163) and off the S coast, except near the E and W extremities, set E and W but do not exceed a rate of 1 kn. Farther N they come under the influence of the currents.

7.166

1 **Local weather.** See 7.154. Land and sea breezes usually occur over Pulau Supiori and Pulau Biak 3 hours after sunrise and sunset. They are only of importance during the periods that the monsoon wind is less strong. During the NW monsoon the wind is very strong; repeated heavy W squalls called '*Wamandas*' by the local inhabitants come almost unexpectedly from W and WSW on the S coast of the main islands, and from a more N direction on the N coast.

On the S coast of Sorenarwa it is calm in both monsoons but during the SE monsoon a '*wambrau*' (7.154) is occasionally experienced.

Principal marks — Pulau-pulau Biak

7.167

1 **Landmarks:**

Pulau Bependi (0°24′S, 135°16′E) (7.161).

Bumbeffor (0°43′S, 135°29′E) (7.162), a mountain.

Peak in the SW range, 453 m (1487 ft) high, standing 4 miles SSE of Tanjung Mandundi (0°39′S, 135°22′E), the NW point of Pulau Supiori, is fairly prominent.

2 Mountain, 739 m (2426 ft) high, rising 3 miles SE of Tanjung Praisbari (0°41′S, 135°49′E), the N extremity of Pulau Biak.

Pulau Pakreki (Pakriki) (1°14′S, 136°31′E), an island in the Padaido group, has a very prominent table-topped summit.

Pulau Mbrosi (Bromsi), another prominent island, lying 4 miles E of Pakriki, is the highest of the Padaido group.

3 **Major lights:**

Pulau Bependi Light (white beacon) (0°24′S, 135°16′E); displayed from the SW extremity of the island. Visible on the passage N of Supiori and Biak.

Tanjung Barari (Warari) Light (white beacon) (1°05′S, 136°23′E); displayed from a reef extending 2 cables from the point; visible on the passage N of Biak and along its S coast.

Principal marks — Pulau Sorenarwa

7.168

1 **Landmarks:**

Marai (1°38′S, 135°33′E), a mountain rising at the W end of the island, is prominent.

Bumpeki (1°45′S, 136°19′E) (7.163); visible on both N and S coasts.

Pulau Manupampi (1°48′S, 135°49′E), an uninhabited and rocky island, is prominent from E or W along the S coast.

2 Pakini (1°56′S, 136°21′E), the central prominent peak of three peaks, rising on Pulau Ambai; visible along the S coast.

Major light:

Pulau Naufi Light (2°13′S, 136°15′E) (7.250); visible on part of the S coast.

Directions

Passage north of Pulau-pulau Biak

7.169

1 A through route N of these islands is described at 7.13 where vessels may pass either side of Karang Isabel (0°30′S, 135°14′E) (7.161); vessels passing closer to the N coasts of Pulau Supiori and Pulau Biak should pass S of Karang Isabel and at least 3 miles off the salient points of Supiori.

Offshore passage — Tanjung Saweba to Biak

(continued from 7.142)

7.170

1 An offshore passage, from a position NNE of Tanjung Saweba (0°43′S, 133°57′E) (7.205), continues ESE for a distance of about 133 miles to the approaches to Biak (1°11′S, 136°05′E) passing:

NNE of Tanjung Karetsbari (Keretsbari) (0°56′S, 134°51′E), the N extremity of Pulau Numfoor (Mefoor), one of the smaller islands fronting Teluk Irian. A light (white metal framework tower, 16 m in height) is displayed from Yerunana (Yenmanu), a village 2 miles WSW of the point. Thence:

SSW of Pulau Rani (0°58′S, 135°30′E) (7.162), from where a light (white beacon, 15 m in height) is displayed, thence:

S of Tanjung Sambersbari (1°10′S, 135°56′E), a hilly, wooded and rocky point, thence to the approaches to Biak.

(Directions for Biak are given at 7.179)

Selat Sorenarwa — passage south of Pulau-pulau Biak

7.171

1 For vessels preferring to pass S of Pulau Biak, by using Selat Sorenarwa, rather than N, the directions given at 7.170 for the offshore route to Pulau Biak should be followed until the position SSW of Tanjung Sambersbari (1°10′S, 135°56′E) is reached, thence the track initially continues ESE, thence E, passing:

SSW of Pulau Rurbasbeba (1°19′S, 136°12′E) with Pulau Rurbaswedari close E, rocky and wooded islets, surrounded by deep water, thence:

2 SSW of Wararasowe (1°20′S, 136°21′E), a reef partly drying when it shows as a bright white sandbank and plainly marked by discoloration when covered, thence:

S of the dangerous rocks extending SE from Pulau Konori (1°19′S, 136°22′E), a narrow tree-lined strip of sand and coral, thence:

S of two dangerous rocks (1°22′S, 136°32′E), situated close together, thence:

S of Pulau Rasi (1°20′S, 136°37′E), an islet from where a light (white metal framework tower, 16 m in height) is displayed.

3 The track continues E to a position about 10 miles N of Tanjung Narwaku (1°28′S, 137°55′E) (7.286), in depths of not less than 55 m (30 fm). The directions for an alternative

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passage at the E end of Selat Sorenarwa leading to the position N of Tanjung Narwaku are given at 7.172.

Useful marks:

Mokmer Light (1°11′S, 136°08′E) (7.179).

Summit of Pulau Owi (1°15′S, 136°12′E).

Sungai Mamberamo Light (1°28′S, 137°54′E) (7.286).

(Directions continue for the coastal passage S at 7.293)

Selat Sorenarwa — alternative passage

7.172

1 Vessels wishing to avoid the heavy sea at the E end of Selat Sorenarwa, during the NW monsoon should use a recommended passage that lies between Pulau Biak and Pulau Owi (1°15′S, 136°12′E) (7.162), the most W island of Pulau-pulau Padaido, thence pass N of these islands.

From the directions given at 7.170 and a position S of Tanjung Sambersbari (1°10′S, 135°56′E), the track initially leads E passing S of Biak, thence ENE, passing:

2 NNW of Pulau Owi, and between it and Pulau Biak, thence:

NNW of Pulau Auki, a wooded island, lying 4 miles E of Owi, at the W end of an atoll on which also lie the islands of Mioswundi (Mios Wundi), Nusi and Pai. Thence:

Clear of Karang Wundumimas (1°08′S, 136°27′E), a reef, with a swept depth of 5·8 m (19 ft).

3 The track then leads E to the position N of Tanjung Narwaku (1°28′S, 137°55′E), passing:

N of Pulau Padaidori (1°09′S, 136°37′E), the wooded most N island of Pulau-pulau Padaido, thence:

N of Kassinampia, an extensive coral bank, with a least depth of 6 m (20 ft) over it, lying 5 miles E of Pulau Padaidori.

(Directions continue for the coastal passage S at 7.293)

Other passages

7.173

1 **Selat Miosnum,** the strait separating the steep-to SE coast of Pulau Miosnum (7.163) from Tanjung Woka (1°36′S, 135°25′E), the high and rocky W point of Pulau Sorenarwa, is deep and clear of dangers in the fairway. A light (white metal beacon, 10 m in height) is displayed from the point.

Selat Sewandeh, the strait separating the W end of Pulau Miosnum from Pulau Sewandeh (1°29′S, 135°01′E), a densely wooded, reef-fringed islet 4½ miles W, is deep and clear of dangers. Farther W of the islet there are a number of detached coral shoals with a least depth over them of 10 m (33 ft).

7.174

1 **Passages within Pulau-pulau Padaido.** The passages lying close either side of Pulau Pakreki (1°14′S, 136°31′E) (7.167) are deep and clear except for charted dangers. However, in the W passage, a detached shoal with a depth of 7·9 m (26 ft) over it, lies 2 miles WNW of the island.

The passage between Pulau Mbrosi (1°13′S, 136°36′E) (7.167) and Pulau Padaidori has a least depth of 7 m (23 ft) in it; a strong current runs through the passage.

2 The passage between the N end of Pulau Miosmanggwandi (Mios Manggwandi) (1°16′S, 136°36′E), a reef-fringed and wooded island, and the S side of Pulau Pasi (1°15′S, 136°36′E), is about 1 mile wide and is clear of dangers.

The narrow passage between Pulau Mbrosi (7.167) and Pulau Pasi has a reported depth in the fairway of 18 m (59 ft) but is not recommended.

Biak

General information

7.175

1 **Position.** Biak (1°11′S, 136°05′E) is an important town and seaport on Pulau Biak off the N coast of Irian Jaya.

Function. The town is a major exporter of timber products, particularly plywood, and frozen tuna fish, but copra, edible seaweed (Eucheuma), cocoa, cloves and coffee are also exported in smaller amounts. The port has an oil terminal situated at Waupenor, a suburb. Biak also maintains a large Indonesian Naval Base (7.180).

In 1997, Biak had a population of nearly 50 000.

2 **Topography.** Biak is the collective government name for several linked settlements which extend along the shore of Laguna Sorido, a lagoon situated on the S side of Pulau Biak. This natural harbour is bordered on its S side by a narrow barrier reef, consisting of shoals, reefs and sandbanks over which there are varying depths. The hinterland is low-lying and wooded.

Approach and entry. Biak is approached from Selat Sorenarwa and entered by leading lights into the inner harbour of Laguna Sorido.

3 **Traffic.** In 2003, in addition to local vessels, the port was used by 43 vessels with a total of 193 298 dwt.

Port Authority. Port Administrator (Adpel), Jalan Jenderal Sudirman No 53, Biak. Irian Jaya.

Website address; www.portina4.go.id/biak.htm.

Email; pelindo4@biak.wasantara.net.id

Oil berth: Pertamina, Jalan Jend. Sudirman No 51, Biak.

Limiting conditions

7.176

1 **Controlling depths.** Both the approach and harbour channels have been swept to a minimum depth of 11 m, but charted depths are greater. The least depth in the channel leading to the oil berth is 11·9 m (39 ft) and to a position off the naval base 1 mile farther W, 8·3 m (26 ft).

Tidal levels. Mean maximum range about 1·2 m, mean minimum range about 0·6 m. See information for Sorido in *Admiralty Tide Tables.*

2 **Maximum size of vessel handled:** 30 000 dwt, having a draught of 11 m, at the cargo wharves; 18 000 dwt, having a draught of 9 m, at the oil berth.

Local weather. Biak is subject to sudden strong breezes in both monsoon seasons. Occasionally *'wambraus'* with very strong rain-laden SW winds envelop the port. These troublesome conditions mainly affect smaller vessels and small craft but on occasions even the larger vessels are required to take on extra moorings or have to leave the berth for an anchorage outside the harbour.

Arrival information

7.177

1 **Port radio.** There is a port radio service operated from the Port Authority office situated at the main quay, Dermaga Umum. There is also a coast radio station at Biak, for details see *Admiralty List of Radio Signals Volumes 1(2)* and *6(4).*

Notice of ETA. Vessels should communicate with the Port Authority, via the local agent, at least 72, 48, thence 24 hours prior to arrival. Messages should include last port of call, cargo details and draught.

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Outer anchorage. Vessels on arrival, awaiting a berth and/or pilotage, usually anchor in position 1°12′S, 136°05′E in deep water.

2 **Pilotage** is compulsory for vessels over 70 grt. The pilot boarding position lies at the entrance to the harbour and on the alignment of the first set of leading lights. Requests for a pilot should be forwarded at least 6 hours before arrival and 3 hours before departure. Berthing/anchorage instructions are usually passed by VHF/Radio prior to arrival. Vessels already at anchor will receive their pilot at the anchorage.

Tug assistance is available.

Harbour

7.178

1 **General layout.** As previously mentioned, the town of Biak consists of several settlements linked together, stretching about 4 miles along the N side of Laguna Sorido. The village of Sorido lies at the N end of the lagoon. The main berth lies abreast the town; this general quay accommodates general cargo vessels and the large passenger ferries which call regularly at the port.

The oil berth lies 3 cables farther W at Waupenor, and the naval base 1 mile farther W again. In between there are local craft berths. A local ferry berth lies 5 cables E of the general cargo quay.

2 **Exercise area.** A naval exercise area borders the S side of the lagoon; its E border lies about 9 cables W of the entrance to the port. See also 7.164.

Tidal streams are weak off the port with a rate of about ½ kn. Inside the lagoon the in-going stream sets W and the out-going stream sets E.

Climatic table. See 1.159 and 1.163

Directions

7.179

1 Vessels should arrive at the approaches to Biak in position 1°13′·0S, 136°06′·5E. From this position the first set of leading lights will be clearly seen; a pilot boards in the vicinity of the entrance to Sorido Laguna.

Outer Leading Lights:

Front light (white triangle, point up, on metal framework structure; 10 m in height) (1°11′·4S, 136°05′·6E).

Rear light (white triangle, point down, on white mast; 15 m in height) (260 m NW of front light).

2 On the alignment (322°) of the first set of leading lights the track initially leads NW, through a 12 m swept channel, into the harbour entrance, until the inner set of leading lights is reached, passing between two coral spits over which there are depths of less than 2 m (7 ft). A light-buoy (port hand) marks the edge of the W spit.

Inner Leading Lights:

Front light (white triangle, point up, on white mast; 10 m in height) (1°11′·1S, 136°04′·5E).

Rear light (similar structure, point down; 15 m in height) (240 m WNW of front light).

3 On the alignment (295°) of the second set of leading lights the track leads WNW, through an 11 m swept channel, into the harbour and towards the general quay berths.

Useful mark:

Mokmer Light (white metal framework tower, 5 m in height) (1°11′S, 136°08′E). Visible between 268°–094° (186°) except where obscured by the islands of the Padaido group.

Berths

7.180

1 **Anchorage.** There are several anchorage berths, in depths of from 10 to 21 m (33 ft to 12 fm), in the E part of the lagoon. If bound for an anchorage berth, it is advisable to request a berthing position from the Port Authority prior to entering.

Alongside berths. The main, general cargo, quay (Dermaga Umum) situated at Biak, has a length of 142 m with a depth of 12 m alongside; it can accommodate the largest vessel (7.176).

2 **Oil berth.** The oil terminal lies at Waupenor (7.178); a number of oil tanks are situated behind the berth. It is a T-head berth with dolphins on either side; there is a depth of 10 m at MLWS alongside. Tankers of 18 000 dwt having a length of 160 m can berth here; the minimum size for berthing is reported to be 6000 dwt having a length of 70 m.

Other berths. A naval berth lies 1 mile farther W of the oil terminal; there are depths of 3 m alongside at MLWS.

Port services

7.181

1 **Facilities:** minor repairs; medical assistance, hospital; deratting and deratting exemption certificates issued.

Supplies: limited fuel by road tanker; fresh water, provisions.

Communications. There is an airport 2 km E of the town with flights connecting with Jakarta, Surabaya and Makassar. A number of local flights connect with other destinations within Irian Jaya.

Minor harbours

Chart 2467 plan of Korido and Teluk Serui (see 1.34)

Korido

7.182

1 **General description.** Korido (0°50′S, 135°34′E), a small port, is situated at the E entrance point to Teluk Korido on the SW coast of Pulau Supiori. The port handles the export of forest products. The harbour is formed by a break in the coastal reef through which a channel leads to a pier at the town.

Teluk Korido is entered between Tanjung Mankekesdi (0°52′S, 135°32′E) and Tanjung Rimon (Pimonsbari), the SE point of Supiori, 6½ miles E. The inner part of the bay is obstructed by reefs.

Tidal levels. Mean maximum range about 1·4 m, mean minimum range about 0·8 m; see *Admiralty Tide Tables.*

2 **Directions.** The channel leading to the pier is marked by light-beacons; the E reef-fringed entrance point is also marked by a beacon (starboard hand). Pulau Bransfari, an islet, lies on the coastal reef close E of the break which leads to the pier.

Anchorage may be obtained in a depth of 69 m (38 fm), coral, in the roads off the break in the coastal reef. Small vessels can lie closer inshore. A vessel should approach the anchorage on the alignment (318°) of a distinctive tree in Ababiadi with the peak of Bumbeffor (7.162), and anchor when the pierhead at Korido bears 020°.

3 **Caution.** See 1.41.

Alongside berth. A pier extends a short distance S from the shore; there is a depth of about 1 m at MLWS alongside.

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Facilities and supplies are limited.

Small craft. Ababiadi, a village, lies 1 mile NW of the pier at Korido and can be reached by boats through a channel in the reef. A drying rock lies in the middle of the channel entrance.

Serui

7.183

1 **General description.** Serui (1°53′S, 136°15′E), a small port and town, lies at the head of Teluk Serui on the S coast of Pulau Sorenarwa (7.163). The port handles the export of forest products. Teluk Serui is entered between Tanjung Abori (Awokarupi) (1°55′S, 136°14′E), a steep point, and a point 1¾ miles E. Pulau Mawampi, a rocky islet covered with vegetation, lies in the E approach to the bay 3½ cables S of the E entrance point.

2 **Tidal levels.** Mean spring range about 1·6 m, mean neap range about 0·8 m; see *Admiralty Tide Tables.*

Port radio. There is a coast radio station at the town; for details see *Admiralty List of Radio Signals Volume 1(2).* The port is also reported to have radio communications with vessels.

Pilotage. There is no pilotage service.

3 **Directions.** The limit of the roadstead off the town, is the parallel of the S point of Pulau Nundawipi, an islet on the W side of the bay, 6 cables within its W entrance point. The bay is deep and clear of dangers and presents no difficulties in entering.

Vessels bound for the port from Selat Kurudu (7.251) should pass S of Pulau Urangkaitui (1°59′S, 136°24′E), a saddle-shaped islet, and the most S danger of Pulau-pulau Ambai (7.191).

4 **Anchorage** may be obtained in the roadstead in a depth of 33 m (18 fm), mud, S of the pier. During the SE monsoon there is a heavy sea in the bay at times.

Alongside berth. The pier at Serui extends S from the shore; it has a length of 53 m with depths of 5 m at MLWS alongside. A light (metal column, 15 m in height) is displayed from the pierhead.

5 **Oil terminal.** Situated 1½ miles N of Tanjung Mamori the W point of the headland on which Tanjung Abori, 4 cables E, is the E point. The L-shaped jetty with two dolphins extends SW from the shore; it can accommodate tankers of 3500 dwt having a length of 90 m and draught 10 m. There is a least depth of 11 m, at MLWS, alongside the jetty. A light (white metal tower) is displayed from the root of the jetty.

Services: are limited but there is a hospital; fresh water and provisions are available.

Communications. There is an airport at Serui with connections to Biak.

Anchorages

Chart 3249 (see 1.34)

Pulau Numfoor

7.184

1 **Teluk Rumboi.** Anchorage may be obtained in depths of about 31 m (17 fm), coral and sand, in Teluk Rumboi (1°05′S, 134°50′E), an open bay with a wooded foreshore, on the SW side of Pulau Numfoor (7.163). The bay is best entered from SW, anchoring about 3 cables off the reef at the head of the bay.

7.185

1 **Yerunana.** Anchorage may be obtained in a depth of 35 m (19 fm), sand, off Yerunana (Yenmanu) (0°57′S, 134°49′E), a village situated near the N extremity of Pulau Numfoor. A light (white metal framework tower, 16 m in height) is displayed from the village.

Pulau Miosnum

7.186

1 **North coast.** Pulau Slamiapien (1°28′S, 135°06′E), consisting of two rocky islets covered with vegetation, lies 1 mile W of the NW point of Pulau Miosnum (7.163). Two bays lie close together, 7½ and 9½ miles E of Pulau Slamiapien, on the N side of Pulau Miosnum. The W bay affords the better anchorage in a depth of 69 m (38 fm), sand. Both bays can be entered by keeping in mid-channel.

Pulau Sorenarwa

7.187

1 **Teluk Wooi.** Anchorage may be obtained, in a depth of 46 m (25 fm), mud, NE of the village of Wooi (1°41′S, 135°31′E) which lies close within Teluk Wooi. The bay, which lies towards the W end of the S coast of Pulau Sorenarwa (7.163), is reef-fringed and the entrances are rocky, wooded and hilly. Inside the bay, the land is low-lying and covered with mangroves. The bay is best approached from S with the track leading N in the fairway between the entrance points 2 cables wide. Once inside, a medium-sized vessel has ample room to swing. A strong current sets across the entrance.

Chart 2467 plan of Ansus and Approaches (see 1.34)

7.188

1 **Off Pulau Karuati.** Anchorage may be obtained, in a depth of 55 m (30 fm), about 6 cables E of Pulau Karuati (Karoeati) (1°53′S, 135°49′E), an islet off the S coast, which is joined by a reef to Pulau Bawei, a hilly wooded islet, and part of Pulau-pulau Kuran (Koeran). Pulau Nuori (Noeori), the only other islet in the group, lies 8 cables NW of Bawei.

Of the three islets only Karuati is inhabited.

7.189

1 **Teluk Kanawa.** Anchorage may be obtained within Teluk Kanawa (Kanawa Baai), an open bay, 8 miles NE of Pulau Karuati (7.188). The bay is entered directly W of Pulau Yanusi (Janoesi) (1°48′S, 135°56′E), a high island, which is connected to the mainland by a reef. Pulau Uwandeipi (Oewandeipi), a reef-fringed islet, lies in the middle of the bay; the best berth lies either side of the islet in depths of about 44 m (24 fm), mud. There is ample room to pass N of the islet, but shallow water extends a short distance from the NE side of it.

The village of Kanawa lies 1¼ miles NW of Pulau Uwandeipi on the W side of the bay.

Chart 3249 (see 1.34)

7.190

1 **Mariarotu.** Anchoring may be obtained off Mariarotu (1°49′S, 136°01′E), a village on the S coast of Pulau Sorenarwa (7.163), in a depth of 45 m (25 fm) with good holding ground. Tanjung Panduami, 3 miles SW, is a prominent point and useful mark.

7.191

1 **Pulau-pulau Ambai.** Sheltered anchorages may be obtained within Pulau-pulau Ambai, a group of islands which lie off the coast between Teluk Serui (7.183) and Wadapi, a village 10 miles E. Good anchorage, out of the way of heavy squalls, lies off Saweru (1°55′S, 136°17′E), a village lying in the middle of the E coast of Pulau Saweru. The track from the open sea passes between Pulau Ambai (7.168) and two islets which lie S of Saweru. Good anchorage may also be obtained off the N side of Pulau

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Manopariapi (1°55′S, 136°24′E), the E island of the group, in a depth of 47 m (26 fm), mud.

7.192

1 **Pulau Miosindi.** Anchorage may be obtained, in depths of 37 m (20 fm), in fair weather, off the village of Samberi (1°31′S, 135°50′E) on the S coast of Pulau Miosindi, a reef-fringed and wooded island. The island, together with Pulau Aibai, an islet, also reef-fringed and wooded, 2½ miles W, lie off the N coast of Pulau Sorenarwa and near its W end.

Pulau Supiori

7.193

1 **Pulau Miospandi.** Anchorage may be obtained on the N coast of Pulau Supiori (7.162) off the W coast of Pulau Miospandi (Mios Pandi) (0°38′S, 135°29′E), a low, wooded, reef-fringed islet. The best berth lies with the NW edge of the islet bearing 030° and the S extremity of Pulau Miospuri (Mios Puri), a similar islet 2 miles ESE, bearing 102° in a depth of 13 m (42 ft).

The best approach to the anchorage leads E passing close N of Tanjung Imbirsbari (Imbieri) (0°38′S, 135°24′E) (7.13), thence N of Fando and Fanda, two prominent rocks, 3½ miles E of the point, and between these rocks and a coastal reef extending W from the N end of Miospandi.

7.194

1 **Teluk Wabudori.** Teluk Wabudori, on the N coast of Pulau Supiori, is entered between a low point 12½ miles E of Tanjung Imbirsbari (0°38′S, 135°24′E) and Tanjung Rasudori, a hilly point 1½ miles farther E. The bay affords safe anchorage at all times. A channel about 2½ cables wide leads SSW between the entrance points which are fringed by a reef. A drying patch, which is steep-to, lies near the middle of the bay.

Anchorage may be obtained in a depth of about 26 m (14 fm), with the village of Wabudori standing on the W shore of the bay, bearing 245° distant 3¼ cables. This berth is about 2 cables S of the drying patch.

7.195

1 **Teluk Wafordori**, a small sheltered bay on the N coast, is entered about 4 miles SE of Tanjung Bosensbari (0°40′S, 135°39′E). Anchorage may be obtained in the bay, by small vessels, in a depth of about 16 m (52 ft), mud and sand. A coral reef extends 5 cables W from the E entrance point.

The bay should be approached from N passing W of the extending reef, thence anchoring about 5 cables WNW of the village of Wafordori which lies on the E side of the bay.

A 4·2 m (13 ft) patch lies 9 cables WNW of the village.

Off Sorendidori

7.196

1 Anchorage may be obtained on the S coast of Pulau Supiori, S of the S entrance to Sorendidori (7.162) in a depth of 50 m (27 fm). The best berth lies SW of a detached reef (0°48′S, 135°42′E), plainly marked by discoloration, lying off the S entrance to the creek. Although open from S, this anchorage is safe and there is ample room to manoeuvre.

With local knowledge small vessels may find a sheltered anchorage about 1 mile within Sorendidori in a depth of 17 m (56 ft), mud.

Chart 2467 plan of Wari and Korim (see 1.34)

Pulau Biak

7.197

1 **Teluk Wari** (Wari Baai), on the NE coast, entered close W of Tanjung Nubee (Noebee) (0°51′S, 136°03′E), affords good anchorage for vessels during the SE monsoon in a depth of about 40 m (22 fm), 3 cables from the head of the reef-fringed bay.

Sungai Wari, a small river, enters the bay at its head and the village of Wari stands on its W bank.

7.198

1 **Teluk Korim,** 1 mile S of Teluk Wari, is entered W of Tanjung Snerisbari (0°53′S, 136°04′E), a low but steep and rocky point. The bay is clear of dangers and vessels may lie safely in it. Anchorage may be obtained in a depth of 10 to 30 m (33 ft to 16 fm), mud and sand, about 5 cables from the head of the bay. In depths of less than 15 m (49 ft) during the SE monsoon, a ground swell sometimes runs here.

Chart 3249 (see 1.34)

Pulau-pulau Padaido

7.199

1 **Pulau Mioswundi Lagoon.** The only suitable anchorage within Pulau-pulau Padaido (7.162) lies within a lagoon, and naval exercise area, flanked on its W side by the reef extending S from Pulau Mioswundi on which Pulau Konori (1°19′S, 136°22′E) (7.171) stands, and on its E side by the reef extending S from Pulau Pai on which Pulau Nusi (1°17′S, 136°25′E) (7.172) stands.

2 Anchorage may be obtained in the lagoon in depths of about 22 m (12 fm), with good holding ground in mud, sand and coral. The entrance to the lagoon is marked by a buoy (port hand) situated 2¼ miles SE of Pulau Konori. The anchorage should be approached on the alignment (332½°) of the W edge of Pulau Mioswundi (1°16′S, 136°22′E) (7.172) with Yumni, an islet lying 2¼ miles farther NW.

3 Anchor when the N edge of Konori bears 270°.

Caution. Vessels should not use this anchorage when an exercise is due to take place; such events are promulgated by local notices to mariners and by Navarea X navigational warnings.

Small craft

Pulau Numfoor

7.200

1 A landing pier for boats lies on the N side of Teluk Rumboi (1°05′S, 134°50′E) (7.184) situated on the SW coast of Pula Numfoor (7.163); landing may also be effected at Namber (1°04′S, 134°50′E), a village situated at the head of a small inlet 2 miles N of Teluk Rumboi.

Landing may be effected through an opening in the reef at the village of Yerunana (0°57′S, 134°49′E) (7.185) on the NW coast. A channel, marked by beacons, gives access to small craft at the village of Yensamberi situated 5 miles ESE of Tanjung Karetsbari (0°56′S, 134°51′E) (7.170), on the NE side of Pulau Numfoor.

2 Landing may be effected on a pier at Menggari (0°58′S, 134°56′E), a village on the NE coast. The pier, which extends over the coastal reef, can be reached by small craft at HW.

There is also a stone pier at a small harbour within Teluk Mansyokidori, a bay on the E side of Tanjung Aikar (1°08′S, 134°51′E), the SW point of Pulau Numfoor. It is reported that the head of the pier covers at HW.

Pulau Sorenarwa

7.201

1 **Teluk Yaimaria** situated on the S coast of Pulau Sorenarwa (7.163) and near its W end, is entered between Tanjung Wopore (1°42′S, 135°35′E) and Tanjung Orearo, a

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high point, 2 miles ESE. Landing can be effected at the village of Wopi at the head of the bay.

Chart 2467 plan of Ansus and Approaches (see 1.34)

2 **Teluk Ansus** (Ansoes) lies 12 miles ESE of Teluk Yaimaria, on the NW side of Pulau Ansus (Ansoes), and Pulau Keiari (1°45′S, 135°48′E), two hilly and wooded islands. The channel to the head of the bay leading to the village of Ansus (Ansoes) is tortuous, with reefs on each side. Ansus may also be approached from E by the channel between Pulau Ansus and Pulau Manupampi (7.168).

Landing may be effected at Ansus which is one of the largest villages in Irian Jaya, with a population of over 5000.

Forest products are shipped to Manokwari or Biak.

3 **Teluk Papuma** (Papoema) (1°45′S, 135°52′E) is entered E of reef-fringed Pulau Kawayuni, an islet, from which a reef extends 5 cables S. Landings can be effected at several villages in the bay. Papuma (Papoema), the main village, which stands on piles over the coastal reef, lies at the head of the bay; from W of the village a small river enters the sea.

Chart 3249 (see 1.34)

Teluk Randowaya is entered N of Tanjung Arareni (1°54′S, 136°33′E) on the S coast of Pulau Sorenarwa. The bay gives access to Randowaya, a village situated on its E side, where a landing may be effected.

4 **Teluk Sumberbaba** entered on the E side of Tanjung Tekopi (1°50′S, 136°42′E) gives access to Sumberbaba, a village at its head where a landing may be effected on to a boat pier. There are two small reefs in the E approach to the bay lying 3 and 4 miles E, respectively, of Tanjung Tekopi.

Teluk Pom (1°37′S, 135°42′E), a small inlet on the N coast of Pulau Sorenarwa, and near its W end, affords anchorage for small craft. Landing may be effected at a village on the W side of the bay. The village of Pom stands on the drying shore reef in a bight on the S side of the E entrance point.

Pulau Supiori

7.202

1 **Selat Sowek** (Sower) is a strait which separates the SW coast of Pulau Supiori (7.162) from the narrow coastal barrier reef 3½ miles SW. Pulau Rani (0°57′S, 135°30′E), from where a light (7.170) is displayed, lies at the SE end of the barrier reef. The strait, whilst navigable at its S end, is obstructed by numerous shoals and dangers at its N end; the outlet channels here are only suitable for small craft.

Landing may be effected at Sowek (0°50′S, 135°30′E), a village at the head of a basin in the coastal reef on the mainland. The approach to the village is marked by beacons.

Pulau Biak

7.203

1 **Arnini** (1°05′S, 135°49′E), a village on the W coast of Pulau Biak (7.162), stands close E of a basin which offers sheltered anchorage for small craft. The entrance to the basin has depths of about 5 m (16 ft) but depths are considerably greater within.

Bosnik (1°10′S, 136°13′E), a village situated on the SE coast of Pulau Biak, has a boat pier which extends S over the coastal reef. Local craft are able to anchor close inshore where the coastal reef slightly recedes off the village. The coastal bank is barely 2½ cables wide off the port.

Bosnik is a collecting point for forest products; during the NW monsoon working cargo is very difficult.

2 **Tidal levels**; mean maximum range about 1·2 m, mean minimum range about 0·6 m; see *Admiralty Tide Tables*.

Charts 2467 plan of Wari and Korim, 3249

Teluk Korim. A narrow shallow channel leads from the SW corner of Teluk Korim (7.198) into a lagoon. A boat landing pier at the S entrance point to this channel is accessible at all times. The village of Korim stands on this point.

Tidal levels; mean maximum range about 1·1 m, mean minimum range about 0·6 m; see *Admiralty Tide Tables*.

TELUK IRIAN — WESTERN SIDE — INCLUDING THE PORT OF MANOKWARI

General information

Chart 3249 (see 1.34)

Routes

7.204

1 From a position NNE of Tanjung Saweba (0°43′S, 133°57′E) the track into the W part of Teluk Irian leads SE to a position NE of Tanjung Memori (0°52′S, 134°08′E), thence, either:

(a) to the approaches to Manokwari (0°52′S, 134°05′E), or;

(b) continues SSE to a position E of Tanjung Oransbari (1°20′S, 134°17′E) thence S to Miei (2°44′S, 134°31′E), or;

(c) continues SE from Tanjung Oransbari to a position NE, thence E of Karang-karang Tydeman (2°10′S, 135°18′E), thence S to Nabire (3°22′S, 135°30′E).

Topography

7.205

1 Tanjung Saweba (0°43′S, 133°57′E), the W entrance point to Teluk Irian, is low and fairly steep-to but rises to hills about 300 m (982 ft) high, 1¾ miles S. Most of the W coast of Teluk Irian is hilly and wooded, backed by high mountain ranges in places. Pegunungan Wondiwoi, a range of high peaks centrally placed on a prominent N projecting peninsula, is situated on the SW part of the bay; the peninsula is hilly and wooded throughout.

2 Tanjung Memori (0°52′S, 134°08′E), a low and wooded point, 14 miles SE of Tanjung Saweba, is the end of a peninsula which has two peaks (7.208). Tanjung Oransbari (1°20′S, 134°17′E), 30 miles SSE of Tanjung Memori, is low with reefs lying close offshore.

3 Pulau Rumberpon, an island with a prominent summit (7.208), lying close offshore, 24 miles S of Tanjung Oransbai, is hilly and wooded on its N and W sides; on its E side it is fairly low and entirely covered by mangroves. Pulau Mioswaar (Mios Waar), a hilly and wooded island together with Pulau Roon, similar in vegetation, are situated in the approaches to Teluk Wandammen (7.222).

4 Between Pulau Roon and Tanjung Yauer (3°00′S, 134°51′E), the coast continues hilly and wooded and there are a number of offshore islands and reefs here; Puncak Yauer (7.208) dominates the area.

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Marine reserve

7.206

1 See 7.4.

Tidal streams

7.207

1 Tidal streams along the W shore may be both diurnal and semi-diurnal with the latter predominating. The lowest water level occurs in December or January and June or July. Rates are weak; the strongest affect may be felt off the mouths of rivers after heavy rains.

The maximum rise and fall of tide that can be expected is, respectively, about 0·8 m above and 1·1 m below MSL.

Principal marks

7.208

1 **Landmarks:**

Conspicuous tree, standing on the W summit of a twin-peaked hill, 3 miles W of Tanjung Memori (0°52′S, 134°08′E).

Summit of Pegunungan Arfak (1°09′S, 133°58′E), at nearly 3000 m (10 000 ft) high, is prominent in clear weather; however, like many of the high peaks on this coast the summits are frequently obscured by cloud and Arfak is no exception.

2 Conspicuous tree standing on Tanjung Oransbari (1°20′S, 134°17′E).

Sekfur (1°25′S, 134°12′E) together with Masimi, 5 miles S, are both both prominent summits rising S of Tanjung Oransbari.

Summit of Pulau Rumberpon (1°46′S, 134°13′E), which rises in the N end of the island, is prominent for some distance. Visible on the route to Teluk Wandammen.

3 Puncak Yauer (2°58′S, 134°48′E), a conspicuous peak rising in the S part of the area, is visible at a great distance on the route to Nabire.

Pulau Kabuai (2°33′S, 134°53′E), a low sandy islet with tall trees; it is prominent at the N end of a barrier reef extending N from the head of Teluk Irian. Visible on the route to Nabire.

4 **Major lights:**

Tanjung Oransbari Light (white metal framework tower, 20 m in height) (1°21′S, 134°17′E); the light is displayed from a position 5 cables SW of the point.

Pulau Kabuai Light (2°33′S, 134°53′E).

Pulau Yop Light (2°32′S, 134°24′E) (7.225).

Directions

(continued from 7.142)

7.209

1 From a position NNE of Tanjung Saweba (0°43′S, 133°57′E) (7.205) the track to the approaches to Manokwari, initially leads SE for a distance of about 18 miles, to a position NE of Tanjung Memori (7.205), passing:

NE of Tanjung Saweba, thence:

NE of Pulau Miosauri (Mios Auri), an islet on which there are high trees, which lies on the edge of the coastal bank 3 miles SE of Tanjung Saweba, thence:

2 NE of Tanjung Memori (0°52′S, 134°08′E) from where a light (white metal framework tower, 17 m in height) is displayed.

(Directions continue for Manokwari at 7.218; for the approaches to Nabire at 7.210 and for the approaches to Teluk Wandammen at 7.211)

Approaches to Nabire (normal route)

(continued from 7.209)

7.210

1 The mariner has the option of two routes leading to the approaches to Nabire, a small port at the head of Teluk Irian. The normal route, and the one most commonly used from W, is described here; alternative routes to Nabire are described at 7.212.

From the position NE of Tanjung Memori (0°52′S, 134°08′E) the track initially leads SSE thence SE, for a distance of about 104 miles, to a position NE of the light (see below) displayed from Karang-karang Tydeman, passing:

2 ENE of Tanjung Memori, from where a light (7.209) is displayed, thence:

ENE of Tanjung Mupi (1°02′S, 134°04′E), a low point, which may be identified by a gap in the forest at the mouth of a small river. Warmupi, a village, stands on both banks of the river mouth, thence:

ENE of Tanjung Masawui (Massawui) (1°13′S, 134°12′E), a steep, rocky and wooded point, thence:

3 ENE of the reefs extending 2 miles E of Tanjung Oransbari (1°20′S, 134°17′E), from where a light (7.208) is displayed, thence:

SW of the collective shoals extending up to 15 miles W of the W extremity of Pulau Miosnum (1°30′S, 135°13′E) (7.163), thence:

NE of the outermost shoal water extending N from Pulau Maransabadi (2°02′S, 134°44′E), a hilly and wooded island and the largest within Pulau-pulau Miosauri, a group of islands, reefs and shoals lying on a plateau 33 miles E of the mainland. Thence:

4 NE and E of a drying reef, the most N danger of Karang-karang Tydeman (2°10′S, 135°18′E), a small cluster of shoals and dangerous rocks, from where a light (white beacon) is displayed on the N end of the reef. Karang-karang Gayebi, a similar group of dangerous rocks, lies 5 miles W, with a 4·5 m (15 ft) coral patch lying between, thence:

W of Pulau Jaunan (3°06′S, 135°32′E) (7.259), the most W reef of Pulau-pulau Mamboor, from where a light (7.263) is displayed.

(Directions continue to Nabire at 7.263)

Approaches to Teluk Wandammen (for Miei)

(continued from 7.209)

7.211

1 From the position NE of Tanjung Memori (0°52′S, 134°08′E) the track to the approaches to Teluk Wandammen initially leads SSE, as directed at 7.210, to a position ENE of Tanjung Oransbari, thence S to a position E of Tanjung Riarwepam (2°10′S, 134°21′E), the S extremity of Pulau Mioswaar (Mios Waar), a distance of about 84 miles, passing:

2 E of Batu Haiwai, a drying reef situated 2 miles N of Tanjung Mambiwi, thence:

E of Tanjung Mambiwi (1°30′S, 134°13′E), a reef-fringed point, thence:

E of Tanjung Yori (1°33′S, 134°12′E), a low point, on which stand some casuarina trees with a distinctive round-topped tree showing above the rest. A small group of coral shoals extends a short distance offshore E of the point; there are often tide-rips over the shoals and a heavy swell at the height of the NW monsoon, thence:

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3 E of Pulau Wairundi (1°49′S, 134°25′E), an uninhabited, low, sandy islet, with high casuarina trees, lying about 8 miles E of Pulau Rumberpon (7.205). Drying reefs extend from its NW and SE ends and are prolonged by spits of sand and stones for 1½ miles NW and nearly 2 miles SE from the islet, thence:

E of the N extremity of Pulau Mioswaar (Mios Waar) (2°05′S, 134°22′E) (7.205) and between the island and Pulau-pulau Miosauri (Mios Auri), thence:

E of Tanjung Riarwepam (2°10′S, 134°21′E), the S extremity of Pulau Mioswaar; a line of coral shoals extends 3 miles S of the point.

(Directions continue for Teluk Wandammen at 7.226)

Alternative approach to Nabire

7.212

1 After following the directions at 7.211 as far as the position E of Tanjung Riarwepam, an alternative route to Nabire leads SE for a distance of about 32 miles, passing:

NE of Tanjung Ayami (2°17′S, 134°34′E), the N extremity of Pulau Roon (7.205); a 16 m (52 ft) shoal lies 1¾ miles NE of the point, thence:

2 SW of Pulau Matas (2°12′S, 134°46′E), the most S of the islets of Pulau-pulau Miosauri, and from where a light (yellow beacon) is displayed, thence:

NE of Tanjung Busurua (2°28′S, 134°38′E), the NE point of the peninsula on the W side of which Teluk Wandammen lies, thence:

SW of a detached reef lying close W of Pulau Rorebo (2°23′S, 134°58′E), a low reef-fringed islet covered with vegetation and visible for at least 10 miles, thence:

3 Into the clear and deep channel between the drying reefs at the S end of the chain extending SSE from Pulau-pulau Miosauri and the reefs on the N side of Pulau Kabuai (2°33′S, 134°53′E) from where a light (7.208) is displayed, thence:

NE of Pulau Kabuai.

The track then leads SSE for a distance of about 62 miles direct to Nabire.

Caution. The channels situated between the chain of reefs extending SSE from Pulau-pulau Miosauri are not recommended.

7.213

1 Another route leading towards Nabire may be used, especially in restricted visibility (see local weather at 7.154) or if the light on Pulau Kabuai is known to be inoperative. It leads S from the position NE of Tanjung Busurua passing E of the point, until a position W of Pulau Angrameos (Angra Meos) (2°42′S, 134°50′E), a hilly and wooded island, is reached; thence the track leads SE to a position NE of Tanjung Mangguar (2°53′S, 134°51′E), a reef-fringed point, and between it and Pasir Nabadi, a coral reef, on which there is a bright patch of drying sand, lying 6½ miles NE of the point. Tanjung Mangguar should not be passed less than 1 mile off.

2 From the latter position, the track then leads ESE thence SE direct to Nabire, passing:

SSW of a 3 m (10 ft) coral and sand shoal, lying 7½ miles E of Tanjung Mangguar, thence:

NNE and NE of Pulau Kumbur (3°01′S, 135°04′E) (7.259), with dangerous rocks 1 mile N and S of it, thence:

NE of Pulau Nutabari (Nu Tabari) (3°06′S, 135°10′E) (7.259).

(Directions for Nabire are given at 7.267)

Manokwari

Chart 1416 plans of Approaches to Manokwari and Manokwari (see 1.34)

General information

7.214

1 **Position.** Manokwari (0°52′S, 134°05′E) is an important commercial port and large town situated at the NW end of Teluk Irian.

Function. The main export commodities shipped from the port are forest products but there is an increasing trade in cocoa and tobacco. There is a constant importation of general goods, foodstuffs and machinery items. An oil terminal lies 1 mile WSW of the town.

In 1995 the town had a population of nearly 100 000.

2 **Topography.** The natural harbour of Manokwari occupies both sides of an inlet at the head of Teluk Dore. The surrounding area on the E side is high and wooded; on the W shore it is low and wooded in places. Pulau Mansinam, a hilly and wooded island, together with Pulau Lemon (Mioswappi or Mios Wappi), a low islet, lie in the E approaches to the harbour 6 cables offshore. Karang Butsiuri and Karang Bombeaka, two reefs, front the harbour from S.

Port limits. The port is bounded by lines joining the N end of Pulau Lemon with Tanjung Sanggen, 8½ cables NW, and Tanjung Ambla 2½ miles ENE.

3 **Approach and entry.** The harbour is approached from Teluk Irian and entered through the swept channels of Teluk Dore.

Traffic. In 2003 the port was used by 89 vessels with a total of 328 981 dwt.

Port Authority. Port Administrator (Adpel) Manokwari, Jalan Banjarmasin No 3, Manokwari. Irian Jaya, Indonesia.
Website; www.portina4.go.id/manok.htm.
Email; pelindo4@manokwari.wasantara.net.id
Oil Terminal: Pertamina, Jalan Trikora, Manokwari.

Limiting conditions

7.215

1 **Controlling depths.** In the approach area W from Tanjung Memori and from S on the alignment of leading lights within Teluk Dore, the channels have been swept to a depth of 14 m (46 ft). Charted depths are, however, considerably greater.

Tidal levels. See *Admiralty Tide Tables*. Mean spring range about 1·4 m, mean neap range about 0·7 m.

2 **Maximum size of vessel handled:** 7000 dwt, having a length of 150 m and draught 9·6 m has been accommodated on the Government (Pelni) Wharf. Larger vessels are accommodated at an anchorage.

At the oil terminal (7.220) the maximum size of vessel that may be accommodated is one of 6500 dwt, having a length of 130 m and draught 8 m.

Arrival information

7.216

1 **Port radio** is operated from the Harbour Master's office situated 1½ cables NNW of the Government Wharf, there is also a coast radio station at Manokwari; For details see *Admiralty List of Radio Signals Volumes 1(2)* and *6(4)*.

Notice of ETA. Vessels should forward their ETA messages 72, 48 and 24 hours prior to arrival to the local agent and Port Authority.

Pilotage is compulsory for vessels over 70 grt. Pilots usually board in the vicinity of the pilotage limits as directed, W of Pulau Lemon (Mios Wappi) if using the S passage or N of Pulau Mansinam if using the E passage.

Tugs are available.

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Harbour

7.217

1 **General layout.** The harbour consists of two small inlets which lie at the head of Teluk Dore. The main town and roadstead lie in the E inlet; the town and main berths occupy its E side and small craft slipways, a power station and large timber yard occupy the W side.

In the W inlet, the NE side is dominated by the oil terminal complex and a single berth. Close S of it lies a naval base with a single berth. Ferry services link Manokwari with Pulau Mansinam, a popular tourist island attraction, and also Pulau Lemon.

2 **Tidal streams** through the channels leading to the harbour are negligible; on occasions a weak stream may be experienced. Outside of the offshore islands the streams set at moderate rate.

Local weather. January is the worst month for rainfall; the first four months of the year are, however, generally accompanied by heavy rainfall. September and October are the driest months.

Climatic table. See 1.159 and 1.162

Directions

(continued from 7.209)

7.218

1 **Entry from south.** From a position E of Tanjung Memori (0°52′S, 134°08′E) (7.205) the track leads S thence W passing:

E of a 10 m (33 ft) patch lying 2 miles SSE of Tanjung Memori, thence:

S of Tanjung Mangewa, the S extremity of Pulau Mansinam (7.214).

The track then leads NW to the pilot boarding area and the alignment of leading lights, which are shown only on an occasional basis when vessels arrive at the port.

2 **Leading lights:**

Front light (white triangle point up, 2 m in height) (0°51′·9S, 134°04′·5E),

Rear light (white triangle point down, 3 m in height) situated 85 m N of the front.

On the alignment (006½°) of the leading lights, the track leads N into the roadstead, passing:

W of Pulau Lemon (Mios Wappi), thence:

Between the light-buoy (port hand) moored off Tanjung Sanggen, the low, reef-fringed W entrance point to the roadstead, and the light-buoy (starboard hand) moored at the SW end of Karang Butsiuri. A light (white metal beacon, 4 m in height) is displayed from the NE end of the reef.

3 **Useful marks:**

Light (white beacon) displayed from a point on the W side of the roadstead 1¾ cables N of the repair yards. Lights (special) are displayed inshore of the white beacon.

7.219

1 **Entry from east.** From the position E of Tanjung Memori, the track initially leads SE to pass between the 10 m (33 ft) patch previously mentioned and the reefs fringing the S point of the headland containing Tanjung Memori. The track then leads W towards the pilot boarding area passing N of Pulau Mansinam and Pulau Lemon; thence between the NE end of Karang Butsiuri, from where a light is displayed, and a light-buoy (starboard hand) moored 1¼ cables SW of Tanjung Rarisambari, the E entrance point to the roadstead.

2 **Useful mark:**

Karang Butsiuri Light-beacon bearing 290° leads through the swept area on this passage.

Berths

7.220

1 **Anchorage** may be obtained in the roadstead in a depth of 35 m (19 fm); small vessels may find a better berth farther N into the inlet in depths of 15 m (49 ft).

Alongside berths. Government Wharf, situated abreast of the town, is 100 m long with depths of 10 m, at MLWS, alongside; this berth accommodates the larger ocean-going passenger ferries and general cargo vessels. A light (red metal mast, 7 m in height) is displayed from a position close NW of the wharf and a buoy (port hand) is moored 1 cable W of the wharf. A T-head jetty lies close S of Tanjung Rarisambari; it is 90 m long with a depth of 6 m at MLWS alongside.

2 A T-head jetty, 43 m in length, lies on the W side of the harbour close N of the repair yards. There is a reported depth of 4·1 m alongside. A fish quay lies 1¼ cables farther N; berthing here can only be arranged at HW.

Other berths include two mooring buoys moored off Government Wharf and a fitting out basin S of the repair yards.

3 **Oil terminal:** situated in the W inlet, it consists of a T-head jetty with dolphins which extends SW from the shore. There are depths of 8 m, at MLWS, alongside.

Other berths. A T-head jetty lies close S of the oil terminal and is used by the Indonesian Navy.

Port services

7.221

1 **Repairs:** may be effected from a modern repair yard situated on the W side of the roadstead. A slipway can accommodate vessels of up to 130 m in length and 6 m draught; there is a floating crane of 50-tons capacity. Onboard repairs can be arranged with advance notice to the local agent.

Other facilities: hospital, medical assistance; deratting exemption certificates issued.

2 **Supplies:** fuel can be arranged by road tanker; fresh water; provisions.

Communications. Rendani Airport lies 2 miles SW of the town near the village of Emi (0°53′S, 134°03′E). There are connecting flights to Makassar (for Jakarta), Biak and Sorong.

Teluk Wandammen

Chart 3249 (see 1.34)

General information

7.222

1 **General description.** Teluk Wandammen, which indents the SW coast of Teluk Irian for about 22 miles, is, except for the low-lying land area at its head, high, wooded and steep throughout. It is fronted by Pulau Yop (2°33′S, 134°23′E), a hilly and wooded island with shoals extending 2½ miles N from its N extremity.

2 Miei (2°44′S, 134°31′E) (7.227), an anchorage port handling logs and the export of bagged sago and nutmeg; together with Wasior (7.226), 8 cables N, are the main settlements situated within Teluk Wandammen. Lying on the E side of the bay, which comprises a narrow strip of low land, heavily populated, it is backed by the high, wooded ground rising to the peaks of Pegunungan Wondiwoi (7.205). A coastal road links Miei with the villages of Rakwa in the N and Wasimi in the S.

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Dumping ground
7.223

1 A dumping ground for ordnance (2½ miles square) lies 10 miles N of the N extremity of Pulau Yop (2°33′S, 134°23′E).

Local weather
7.224

1 There appear to be regular periods of N or S winds in the bay; but during surveys, wind directions were recorded from NE or NW as well. In general, the winds do not cause a sea state; there is little wind at night. Any rain that falls is usually in the evenings and during the night, sometimes preceded by strong NW winds.

Major light
7.225

1 Pulau Yop Light (2°32′S, 134°24′E), displayed from the NE point of the island.

Directions
(continued from 7.211)

7.226

1 From a position E of Tanjung Riarwepam (2°10′S, 134°21′E) the track leads SW thence S to the entrance to the bay, passing (with positions from Karang Num (2°15′S, 134°29′E)):

NW of Karang Num, a reef over which there is a least depth of 11 m (36 ft), and:

SE of a 6·4 m (21 ft) shoal (7½ milesW), thence:

W of the shoals lying 3 miles W of Tanjung Imanberu (14 miles S), a point near the N end of the Wondiwoi peninsula, thence:

2 Between Pulau Yop (18 miles SSW), from where a light (7.225) is displayed, and Tanjung Sobie, a rocky, reef-fringed point on the peninsula, thence to the swept roadstead off Miei.

Useful mark:

Wasior Light (white beacon) displayed from the village of Wasior (Wassior) (2°44′S, 134°30′E) on the E side of the bay.

Berths
7.227

1 Miei (2°44′S, 134°31′E) has a roadstead which fronts the town. There are depths of between 30 and 50 m (16 and 27 fm) within a distance of 4 cables off the shore. The roadstead has been swept to a depth of 15 m (49 ft). There is a jetty at Miei where a landing may be effected and a 175 m long pier extends WSW from the shore at Wasior, 8 cables NW. A bright green patch on the side of the mountains SE of Miei forms a good mark when approaching the anchorage.

Services
7.228

1 **Supplies:** limited fresh water; provisions.

Communications. In 1997 communication with the port was maintained by sea trade with Manokwari; a government vessel makes regular calls. There is an airfield at Miei with limited facilities; flights connect with Manokwari.

Oransbari
7.229

1 Oransbari (1°18′S, 134°15′E) is a settlement and anchorage port lying about 3 miles NW of Tanjung Oransbari. Anchorage may be obtained in depths of 48 m (26 fm). Not to be confused with the village of Oransbari, which lies at the head of a small bay on the S side of the point, the settlement is a collecting point for forest products. Logs and forest products are loaded into waiting vessels from the anchorage. A small jetty, 50 m in length, with depths alongside of 5 m at MLWS, extends a short distance from the shore and is used by barges; a stacking shed stands on the shore.

2 The settlement has access to the main road linking Manokwari with Ransiki (1°31′S, 134°12′E), a town with an airstrip on the coast farther S.

Anchorages

Andai
7.230

1 Anchorage may be obtained off the village of Andai (0°56′S, 134°01′E) which lies at the mouth of a small river about 6 miles SSW of Manokwari. There are depths of about 45 m (24 fm) in the anchorage.

Rapaowi
7.231

1 Anchorage may be obtained in a depth of 11 m (36 ft) about 7 cables SE of the entrance to a boat passage through the coastal reef abreast of Rapaowi (1°31′S, 134°12′E), a village.

Momi
7.232

1 Anchorage may be obtained off the village of Momi (1°36′S, 134°09′E) in which there is a thriving lumber industry. The best berth lies off the village in depths of 55 m (30 fm), mud and sand.

Teluk Mawi
7.233

1 Anchorage may be effected within a swept area in Teluk Mawi which is entered between Tanjung Syeri (1°38′S, 134°07′E) and Tanjung Runaki, a bare sloping point, 3 miles SSW. The best berth lies about 3 cables S of Tanjung Syeri in a depth of 58 m (32 fm), sand and coral.

Yende Roadstead
7.234

1 Anchorage for moderate-sized vessels may be obtained, in a depth of 46 m (25 fm), off Yende (2°22′S, 134°32′E), a village lying 1¾ miles E of the W point of Pulau Roon (7.205). The anchorage is best approached from W through a passage passing S of Pulau Rariei (2°21′S, 134°31′E); the N approach is not recommended without local knowledge. A 9 m (30 ft) patch lies about 1 mile WNW of the entrance to the W passage.

Teluk Yoppingar
7.235

1 Anchorage may be obtained in a depth of 50 m (27 fm) within Teluk Yoppingar, which is entered W of Tanjung Busurua (2°28′S, 134°38′E) (7.212). The best berth lies in the E part of the bay as there are depths of less than 5 m (16 ft) off the W side. A 9 m (30 ft) patch lies nearly 2 miles WNW of Tanjung Busurua.

Teluk Umar
7.236

1 Teluk Umar is entered between Tanjung Woibi (2°55′S, 134°41′E), a low point overgrown with mangroves, and

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Tanjung Mangguar, 10 miles ENE. The bay is dominated by Puncak Yauer (7.208).

Anchorage may be obtained anywhere in the bay; the depths close offshore are from 29 to 49 m (16 to 27 fm). A bright white patch at Tanjung Yarior (2°59′S, 134°44′E) can be seen from outside of the bay; when bearing not more than 180° it will lead W of an 8·5 m (28 ft) shoal 1½ miles NE of the point.

Small craft anchorages and landings

Pulau Miosauri
7.237

1 Pulau Miosauri (0°44′S, 133°59′E) (7.209) is an island on the coastal bank 3 miles SE of Tanjung Saweba with an islet, covered with vegetation, 5 cables NW of it. Small local craft may obtain an anchorage between the islet and the mainland.

Selat Rumberpon
7.238

1 Selat Rumberpon separates the island of Rumberpon (7.205), lying with its N end 8 miles ESE of Tanjung Runaki (1°41′S, 134°06′E) (7.233), from the W shore of Teluk Irian. The strait is obstructed by several islets and reefs at its S end between which the fairway is about 1½ cables wide and deep; but the channel is tortuous and demands local knowledge.

The reefs are usually marked by discoloration; tidal streams are weak in the strait.

Purup
7.239

1 A navigable channel only suitable for small craft exists between Pulau Purup (2°02′S, 134°09′E), a hilly and wooded island lying 3 miles S of the S entrance to Selat Rumberpon, and the mainland close W. The water in this channel is generally muddy and any fringing reefs are not marked by discoloration.

Teluk Karuani
7.240

1 Landing may be effected at Karuani (2°14′S, 134°08′E), a village at the head of Teluk Karuani. The bay is entered directly W of Tanjung Rewu Asa, a steep, wooded and rocky point.

Mamisi and Itiobi
7.241

1 Landing may be effected at Mamisi (2°18′S, 134°10′E), a village. Landing may also be effected at Itiobi, a village lying 4 miles S of Mamisi. Karang Yawar Sirimbisore, a dangerous rock, lies 3 miles SSW of Mamisi and 1 mile N of Itiobi.

Chart 2467

Teluk Windesi
7.242

1 Landing may be effected at Windesi, a village situated 2½ miles WNW of Tanjung Ronsore (2°26′S, 134°15′E), a high prominent point from N and NW. The roadstead lying off the village, is sheltered from N and W by a coastal reef.

A pier at the village extends over the fringing reef, with depths of 3 m alongside its head.

Chart 3249

Teluk Watiriraro and Teluk Korio
7.243

1 Landing may be effected at the head of Teluk Watiriraro (2°31′S, 134°17′E), a narrow inlet. Landing may also be effected at the head of Teluk Korio, a narrow inlet 4½ miles S.

Ambuni
7.244

1 Landing may be effected at Ambuni (2°52′S, 134°28′E), a village situated at the entrance to a small river at the head of Teluk Wandammen.

Bawe
7.245

1 Landing may be effected at Bawe (2°59′S, 134°43′E), a village at the head of Teluk Umar. Landing may also be effected at Armini a village 1½ miles farther W. There is often a N swell here, in which case an easier landing may be effected at Yaratuar, another village 2½ miles farther W of Bawe.

TELUK IRIAN — SOUTH EASTERN SIDE

General information

Chart 3249 (see 1.34)

General description
7.246

1 Between the E end of Pulau Sorenarwa and the mainland, Pulau Kurudu (1°51′S, 137°00′E) (7.251) splits the waterway into two straits. Selat Dombo lies E of the island and Selat Kurudu lies W of it. The coastal area S of Selat Dombo, as far as Tanjung Worisanua (2°13′S, 136°25′E), consists mainly of low-lying, marshy, mangrove-covered terrain, locally known as Warupen, through which several rivers enter the sea.

2 Pegunungan Kamusopedai Besar, a range of mountains rising inland from Tanjung Worisanua, stretches E and W and parallel with the coast. Continuing W and S, the coastal region is low-lying, with occasional outcrops of high ground, bordered by a narrow strip of sand overgrown with casuarina trees and interspersed with the wide mouths of several rivers. Pegunungan Kamusopedai Kecil, a lower range of hills with three peaks, lies about 30 miles E from Tanjung Kamengsenu (2°42′S, 136°01′E) (7.254).

There are no ports of importance; only local trade is carried out along this side of the bay.

Topography
7.247

1 Between Tanjung Dombo (1°54′S, 137°06′E) and Sungai Kariferi, 12 miles SE, thence WSW to Tanjung Worisanua, a distance of about 53 miles, the coast is low, marshy, and overgrown with mangroves which are submerged at HW. Much of the water fronting the coast is subject to silting from the many rivers entering the sea in this area. As the tidal streams are weak on this side of the bay there is little movement of deposits farther S. With coastal erosion a particular problem, especially during the NW monsoon, there are few landmarks other than those well inland.

2 Pulau Naufi (2°13′S, 136°15′E), a reef-fringed island, hilly and wooded, lies 10 miles W of Tanjung Worisanua and provides an excellent landmark.

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Between Tanjung Worisanua and Pulau-pulau Moor, about 62 miles SW, the coast remains low and sparsely populated. Pulau-pulau Moor (2°56′S, 135°44′E), which consists of two large islands Pulau Nutorutomorja (Nuto Rutomorja) and Pulau Ratewo, with an islet between, are both densely wooded and inhabited. Pulau Utaina, the islet, is low but with high trees; it is uninhabited.

Flow

7.248

1 Tidal streams on the E side of Teluk Irian are known to be weak and irregular; except in Selat Kurudu (7.251) where streams can be strong, in particular at springs; setting SW with rates of up to 3½ kn. S of Selat Dombo the most perceptible current sets N at a rate of 1 kn. See 7.153.

Local weather

7.249

1 Between Tanjung Dombo (1°54′S, 137°06′E) and the head of the bay, during the SE monsoon, rain squalls are repeatedly experienced especially over the land. Although during this monsoon the wind is generally E to SE barely reaching 5 kn, W winds can occur however. The sea state is usually calm in both monsoons. During the NW monsoon there is sometimes a considerable sea on the plateau upon which Pulau-pulau Moor (2°57′S, 135°43′E) lie, but this dies down quickly when the wind drops.

Between May and June in the bay S of Selat Dombo the rainfall is considerable, occurring mostly at night.

Principal marks

7.250

1 **Landmarks:**

Pulau Naufi (2°13′S, 136°15′E) (7.247).

Mambai (2°19′S, 136°40′E), prominent, with a round topped tree on its summit, rising at the W end of Pegunungan Kamusopedai Besar.

Vandori, another peak, rising 5 miles E of Mambai, is also prominent.

Tolateri (2°25′S, 136°52′E), the W domed-peak of two peaks, is prominent.

2 Summit of Pegunungan Kamosopedai Besar (7.246), which rises 8 miles E of Tolateri, is the highest point in the area and is prominent from a great distance.

Sanoringga (2°25′S, 136°20′E), a hill near the coast, is prominent.

Summit of Pegunungan Kamosopedai Kecil (2°36′S, 136°31′E) (7.246) which is readily identifiable from a distance.

3 **Major light:**

Pulau Naufi Light (white beacon) (2°13′S, 136°15′E) displayed from the N extremity of the island.

Tanjung Kamengsenu Light (2°42′S, 136°01′E).

Directions

Selat Kurudu

7.251

1 Selat Kurudu, the strait lying between the E extremity of Pulau Sorenarwa at Tanjung Rainbawi (1°47′S, 136°54′E) and Pulau Kurudu, a hilly and wooded island, is deep and clear and is the usual entry route into the bay from E. A light (white diamond on white metal framework tower, 16 m in height) is displayed from Tanjung Rainbawi. The least depth in the S approach to the strait is 16 m (52 ft) but there is a 9 m (30 ft) patch lying 10 miles S of Tanjung Rainbawi. From N the strait is best approached from between N and NE.

2 On passing Tanjung Kori, the W point of Pulau Kurudu, the track leads between WSW and SW to a position N of Pulau Naufi. The strait is navigable at night with clear weather; soundings in this instance are a good guide.

From S the passage through Selat Kurudu should be made in reverse from Pulau Naufi.

A vessel with a draught in excess of 7 m (23 ft) should enter or depart Teluk Irian via Selat Kurudu.

7.252

1 **Side channel.** Selat Dombo, the strait lying between the mainland and Pulau Kurudu, is 2 miles wide. Depths vary between 11 and 53 m (36 ft and 29 fm) but in the S approach there is a least depth of 7 m (23 ft). The fairway lies N-S. From N the track leads S until abreast of Tanjung Dombo (1°54′S, 137°05′E) (7.247), thence WSW to a position N of Pulau Naufi.

7.253

1 **Useful mark:**

Summit of Mabri (1°51′S, 137°14′E) (7.282) when approaching the straits from N or S.

Pulau Naufi to the approaches to Nabire

7.254

1 From a position NW of Pulau Naufi (2°13′S, 136°15′E) (7.247) the track towards Nabire initially leads SW thence S, to a position W of Pulau Jaunan (3°06′S, 135°32′E) (7.259), passing:

NW of Tanjung Kamengsenu (2°42′S, 136°01′E), which is identifiable by a hill rising up behind it. A light (7.250) is displayed from the point, thence:

NW of Ujung Auri (2°47′S, 135°57′E) a low, wooded headland, thence:

2 NW of a dangerous rock (2°54′S, 135°43′E) lying 1 mile N of the N coast of Pulau Nutorutomorja, thence:

NW of the fringing reef surrounding Pulau Nutorutomorja (2°56′S, 135°42′E) (7.247), thence:

NW of the rocks fringing Pulau Kopataar (3°05′S, 135°35′E) (7.259), thence:

NW of a dangerous rock lying 8 cables N of Pulau Jaunan, thence:

NW and W of Pulau Jaunan from where a light (7.263) is displayed.

3 **Caution.** The water from the many rivers entering the sea along this coast discolours the sea up to 6 miles offshore. Small vessels and small craft should be particularly cautious when sailing closer inshore; large trunks of trees, stuck in the mud, are often encountered and may make navigation dangerous within depths of about 10 m (33 ft).

(Directions continue for Nabire at 7.263)

Anchorages

East of Tanjung Worisanua

7.255

1 Anchorage may be obtained, in a depth of about 45 m (24 fm), near Tanjung Worisanua (2°13′S, 136°25′E) (7.247), and off any part of the Warupen (7.246) shore in any convenient depth, over a bottom of mud and sand. Quiet berths during the NW monsoon are off the mouth of Sungai Kal, which enters the sea 3 miles SSE of Tanjung Waba (2°11′S, 136°31′E) and off Sungai Wonti, 7 miles farther ESE.

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South of Tanjung Worisanua

7.256

1 Between Tanjung Worisanua (2°13′S, 136°25′E) and Tanjung Kamengsenu, 38 miles SSW, anchorage may be obtained anywhere off the coast in depths of about 35 m (19 fm). Such depths however, are relatively close to the shore and anchorage should be of a temporary nature; in any case there is no shelter here during the NW monsoon.

Small craft

Sungai Waipoga

7.257

1 Sungai Waipoga (2°41′S, 136°04′E), the largest river on this stretch of coast, enters the sea 2 miles NE of Tanjung Kamengenu. It is about 2 cables wide and, in its lower reaches, has depths of over 20 m (11 fm) in the rainy season. It has a shallow bar, which may be crossed by small craft at or near HW. Landing may be effected at the village of Asori, which lies about 5 miles within the entrance. The village is connected by a road to settlements many miles inland; the road virtually lies parallel with the river leading SE to the high slopes of the Central Highlands (6.10).

HEAD OF TELUK IRIAN

General information

Chart 3249 (see 1.34)

General description

7.258

1 The head of Teluk Irian, S of Latitude 3°S, mostly comprises a coastline of low-lying ground backed in the E by Pegunungan Legare, a range of hills, and in the W by higher ground with several high peaks near the shore. In the W part there are a considerable number of offshore islands and much of this area has not been completely surveyed.

2 In the E, Pulau-pulau Mamboor (3°06′S, 135°35′E) (7.259), a collection of islands, lie about 4 miles offshore. Like most of the other coastlines fronting the bay, there are numerous rivers entering the sea. Nabire (3°21′S, 135°30′E) (7.264), the main town and only port in the area, lies near the head of the bay.

Topography

7.259

1 On the SE shore, Teluk Rarewarai, a small bay, is fronted by Pulau Nusariwe (3°03′S, 135°47′E) which itself lies close NE of a prominent peninsula of which Ujung Rarewa is its W extremity. Pulau Nusi (3°09′S, 135°39′E), a high and wooded islet 7 miles SW of Ujung Rarewa, lies about 5 cables offshore; it is difficult to identify against the coastal hills behind.

2 Pulau-pulau Mamboor, a collection of islands, islets and rocks, lies 4 miles NW of Pulau Nusi. Pulau Jaunan (3°06′S, 135°32′E), an islet covered with vegetation, is the W-most islet of the group; dangerous rocks lie N of it. Pulau Numini, an islet, lies 2 miles E of Jaunan with Pulau Kopataar, an island, N of it. Pulau Waider, an islet covered with high trees, lies on the edge of a reef about 7 cables W of Kopataar. Pulau Awaar, the E-most and highest island of the group, lies 2 miles E of Kopataar; Pulau Roin and Pulau Her lie close S and SW respectively of Awaar.

3 On the SW coast, Teluk Kwatisore (7.273) is entered between Tanjung Maniburi (3°13′S, 134°57′E) and a point 1¾ miles SW. A chain of islets extend N from the coast 14 miles SE of Tanjung Maniburi; they include Pulau Nuburi (3°17′S, 135°06′E), the S islet, which is sandy, PulauNu Saruvanni, a sandy islet covered with vegetation, about 5 miles N, and Pulau Karei, with two very bright sandy patches, 7 miles farther N; Pulau Nutabari (Nu Tabari), a reef-fringed islet from where a light (yellow beacon) is displayed, lies 3 miles E of Karei. Pulau Kumbur (3°01′S, 135°04′E), low and covered with vegetation, and the most N islet, lies 6 miles N of Pulau Karei.

Tidal streams

7.260

1 The streams are generally weak and irregular. Off Nabire, the stream sets E with an in-going stream and NW with an out-going stream with a rate of about ½ kn in each direction.

Local weather

7.261

1 See 7.249. At Nabire the worst months for poor weather conditions are November and December.

Landmarks

7.262

1 Puncak Yauer (2°58′S, 134°48′E) (7.208); visible in the W approach to Nabire.

Tanjung Womosisore (3°06′S, 134°50′E), a light green point and very prominent, lies at the E end of a small peninsula, connected to the mainland by a narrow isthmus, 5½ miles SSW of Tanjung Yauer. It is visible in the W approach to Nabire outside of the chain of islands.

2 Distinctive high round-topped tree stands about 1 mile SW of the E extremity of Pulau Nusariwe (3°03′S, 135°47′E) (7.259). One of the few prominent features in the E approach to Nabire.

Hill, rising up from Ujung Rarewa (3°05′S, 135°44′E) (7.259); visible in the E approach to Nabire.

Peak, with a sharp summit, rising 4 miles E of Pulau Nusi (3°09′S, 135°39′E) (7.259), is prominent.

Directions

(continued from 7.210 or 7.254)

7.263

1 From a position W of Pulau Jaunan (3°06′S, 135°32′E) (7.259) from where a light (white metal framework tower, 10 m in height) is displayed, the track to Nabire leads S passing:

W of Ujung Kimbo (3°14′S, 135°34′E), a low headland. A light (white metal framework tower, 20 m in height) is displayed from a position 5 cables NE of the headland on the E side of Teluk Kimi (7.272).

W of Tanjung Nabaruo (3°19′S, 135°33′E), a low point, from which the coastal bank extends 2 miles W from the point.

(Directions for Nabire are given at 7.267)

Nabire

General information

7.264

1 **Position.** Nabire (3°21′S, 135°30′E), a town and small port, lies near the head of Teluk Irian.

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Function. Nabire gives access by road to Wamena (4°07′S, 138°57′E), a town in Baliem Valley. The main exports are forest products. The port is regularly visited by the large passenger ferries connecting with Banyuwangi (Jawa), Biak or Jayapura; there is also an oil berth.

In 1997 the town had a population of about 15 000.

2 **Topography.** The land around the town is low-lying and monotonously overgrown with hills rising up behind it. There are several coconut plantations at Nabire. The main road out of the town leads N along the coast as far as Makini (3°07′S, 135°45′E) before turning inland.

Approach and entry. Nabire is approached from either N, NW or coastal through the various islands situated on each side of Teluk Irian.

3 **Traffic.** In 2003 the port was used by 11 vessels with a total of 80 894 dwt.

Port Authority. Port Administrator (Kakanpel), Jalan Pelabuhan, Nabire. Irian Jaya.

Oil Terminal: Pertamina, Jalan Frans Kaisiepo, Nabire.

Limiting conditions

7.265

1 **Tidal levels.** See *Admiralty Tide Tables.* Mean spring range about 1·6 m, mean neap range about 0·8 m.

Maximum size of vessel handled: 7500 dwt, having a length of 120 m, and draught of 8 m.

Arrival information

7.266

1 **Port radio.** Communications with the port should initially be made through Biak (PKY2) or Sorong (PKY4). There is a port radio service offered by Pertamina (PKY21). For details of services see *Admiralty List of Radio Signals Volumes 1(2)* and *6(4)*.

Outer anchorage. Anchorage may be obtained off the port in a depth of about 30 m (16 fm) and about 1 mile offshore.

Pilotage is not compulsory.

Tugs are not available.

Directions

7.267

1 On approaching the port from either N or NW vessels may be requested to anchor if a berth is not available. Berthing at both the oil terminal and the port quay is usually a port-side approach.

Berths

7.268

1 The quay at Nabire has a length of 70 m with depths of 7 m at MLWS. The quay fronts sheds and open storages.

The oil berth, lying about 1 mile E of the town, is a T-head jetty, with two dolphins, 50 m long at its head, which extends about 300 m NW from the shore; there is a depth of 8·5 m alongside the berth. Two mooring buoys lie 100 m abreast of the berth to assist vessels on departure.

Port services

7.269

1 **Facilities:** limited; medical assistance.

Supplies: fuel by road tanker at the town quay; limited fresh water; provisions.

Communications. There is an airport at Nabire with connections to Manokwari, Biak or Jayapura.

Anchorages

Teluk Rarewarai

7.270

1 Anchorage may be obtained within Teluk Rarewarai (7.259), which is entered directly E of Tanjung Warisano (3°02′S, 135°48′E), the reef-fringed, wooded, NE point of Pulau Nusariwe (7.259). The entrance to the bay is about 4 cables wide between fringing reefs on both sides, making local knowledge necessary. The best berth, in a depth of 28 m (15 fm), mud, lies between Tanjung Warisano and a rocky point, 5 cables S.

Off Pulau Nusi

7.271

1 Anchorage may be obtained in a depth of 35 m (19 fm), between the mainland and Pulau Nusi (3°09′S, 135°39′E) (7.259). This is a safe anchorage but local knowledge is necessary. The approach is from W; a reef over which there is a least depth of 0·3 m (1 ft) in the E approach renders it unsafe.

Teluk Kimi

7.272

1 Anchorage may be obtained by small vessels in Teluk Kimi, a cove on the N side of Ujung Kimbo (3°14′S, 135°34′E) (7.263), in a depth of 17 m (56 ft), sand. The bay is fringed by a mudbank but is open and easy to enter from NW; a shoal over which there is a depth of 0·2 m (1 ft) lies on the E side of the bay and about 2 cables inside.

Teluk Kwatisore

7.273

1 Anchorage may be obtained within Teluk Kwatisore, a reef-fringed bay on the SW coast, which is entered W of Tanjung Manibura (3°13′S, 134°57′E) (7.259). Depths in the bay are about 48 m (26 fm), mud, in the centre with ample swinging room. However, there are numerous detached reefs situated in the approaches to the bay making local knowledge essential. Much of the coast S of the bay has not been surveyed.

Small craft

Sungai Bumi

7.274

1 Sungai Bumi enters the sea close W of Tanjung Bumi (3°22′S, 135°26′E), a low, wooded point with mangroves; the river may be entered by small craft on HW.

Sungai Wanggar

7.275

1 Sungai Wanggar enters the sea 5½ miles WSW of Tanjung Bumi (3°22′S, 135°26′E). The river may be entered by small craft at HW. Although a deep channel leads to the entrance, a bar restricts access into the river. The village of Wanggar lies on the E bank close within its entrance.

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COASTAL PASSAGES — SELAT DOMBO TO THE IRIAN JAYA/PAPUA NEW GUINEA BORDER

GENERAL INFORMATION

Charts 3249, 3250

Scope of the section

7.276

1 Within this section are described:

The coastal passage leading NE from the entrance to Selat Dombo to Tanjung Narwaku (1°28′S, 137°55′E).

Sungai Mamberamo.

The coastal passage leading along the N coast of Irian Jaya to the border with Papua New Guinea.

Also included are the harbours and anchorages associated with the coastal passages.

Routes

7.277

1 A through route leading between Selat Sagewin and the border with Papua New Guinea is described at 7.13.

In the E approach to Selat Kurudu and Dombo, described at 7.251 and 7.252, respectively, vessels should maintain a distance of at least 5 miles off the coast, from as far E as a position N of Tanjung Narwaku (1°28′S, 137°55′E).

2 The passages leading E from Selat Sorenarwa to Tanjung Narwaku are described at 7.171 or 7.172.

Between Tanjung Narwaku and the border with Papua New Guinea (at 141°E) the coastal route passes between Pulau-pulau Kumamba (1°38′S, 138°46′E) and the mainland, thence a track to seaward of the offshore islands and dangers to the approaches to Jayapura is recommended.

Topography

7.278

1 From Selat Dombo (1°50′S, 137°05′E) (7.252) at the E end of Teluk Irian to the Irian Jaya/Papua New Guinea border at 141°E, the coast is low and monotonous with a continuous line of trees behind the beach. In places this line is broken by small clumps of casuarina trees or coconut plantations and by the mouths of the rivers. Behind this there is generally a wide plain, which rises into hilly land, formed by spurs from the high mountains inland.

The entire area is sparsely populated.

Natural conditions

7.279

1 **Flow.** The tidal streams are only noticeable off the mouths of the rivers; elsewhere there is a monsoon current setting E during the NW monsoon and W during the SE monsoon. This current is weak close to the coast between Tanjung Tanahmerah (2°24′S, 140°21′E) (7.294) and the entrance to Teluk Yos Sudarso (Jos Sudarso) (7.296), 27 miles ESE; however, there is sometimes a W-going or E-going stream from 2 to 3 kn after strong E or W winds respectively. The greatest rate experienced in the open sea varies between 1½ to 2½kn.

7.280

1 **Local weather.** Between Teluk Irian and the border with Papua New Guinea, the monsoons, as in Teluk Irian, do not show the great difference between wet and dry weather which is such a strong feature for the middle and W parts of the Indonesian Archipelago.

2 Hot and muggy weather can be expected on the coasts and pleasant days and cool nights in the highlands. Variations of this occur especially in this part of Irian Jaya. The heavy showers of rain mostly fall in July, August and thereabout. In some seasons NW winds predominate during July, August and September and in others it is NE winds that predominate. These winds are not nearly as strong as in other seasons of the year and are nearly always varied in the evening by land breezes.

3 During December, January and February the NW winds are very strong day and night; they bring little rain, but cause a troublesome sea. April, May, October and November are transition months.

SELAT DOMBO TO TANJUNG NARWAKU INCLUDING SUNGAI MAMBERAMO

General information

Charts 3249, 3250 (see 1.34)

Route

7.281

1 From a position at the N end of Selat Dombo (1°50′S, 137°05′E) the route initially leads N until the 20 m (10 fm) depth contour is reached, thence NE along the coast to a position N of Tanjung Narwaku (1°28′S, 137°55′E) (7.286).

Topography

7.282

1 In this area of low-lying ground, several rivers enter the sea. The most important are Sungai Ronai (7.285), 12 miles E of Tanjung Dombo (1°54′S, 137°06′E), and Sungai Mamberamo (7.286), close W of Tanjung Narwaku (1°28′S, 137°55′E). Mabri, a hill standing 9½miles E of Tanjung Dombo, is the only high land; trees on its summit make it a good landmark.

Marine exploitation

7.283

1 An area W of the entrance to Sungai Mamberamo which extends over the coastal bank at Kairemba (1°30′S, 137°43′E), a village standing at the entrance to Sungai Idomba, is considered rich in natural gas.

Mariners should be aware when passing through the waters off this coast that mobile drilling rigs and associated attending vessels may be encountered. All should be given a wide berth.

Details on mobile oil/gas rigs are given in *The Mariner's Handbook*.

Landmark

7.284

1 Mabri (1°51′S, 137°14′E) (7.282).

Directions

7.285

1 From a position at the N end of Selat Dombo (1°50′S, 137°05′E) (7.252), or the N end of Selat Kurudu (7.251), 8 miles W, the coastal passage initially leads N until the 20 m (11 fm) depth contour is crossed; thence NE, maintaining depths of over 20 m (11 fm), to a position about 10 miles N of Tanjung Narwaku (1°28′S, 137°55′E), passing (with positions from Tanjung Mansurbabo (1°42′S, 137°18′E):

NW of Tanjung Yemdene (7 miles SW), the SW reef-fringed entrance point to Sungai Ronai, a river which eventually leads E to join Sungai Mamberamo, thence:

2 NW of Tanjung Mansurbabo, the S entrance point to Sungai Wamplu, a river which eventually leads

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SW and joins Sungai Ronai. A 8·8 m (29 ft) patch lies 5 miles WNW of the point, thence:

NW of the entrance to Sungai Idomba (29 miles NE), a river which leads to Sungai Mamberamo. Kairemba (7.283), a village, lies on the S entrance bank to the river, thence:

NW and N of Sungai Mamberamo Light (38 miles NE) (7.286), thence:

To a position N of Tanjung Narwaku (7.286).

(Directions continue for the coastal passage S at 7.293; directions for Sungai Mamberamo are given at 7.286)

Sungai Mamberamo

Charts 2467 plan of Mamberamo River, 3250 (see 1.34)

General information

7.286

1 **General description.** Sungai Mamberamo, the entrance to which lies 1½ miles W of Tanjung Narwaku (1°28′S, 137°55′E), is one of the largest rivers in New Guinea. It is formed by Sungai Tariku, flowing down from Pegunungan Sudirman (6.4) in the W, and Sungai Taritatu flowing down from Pegunungan Jayawijaya (6.80) in the E, about 160 km inland.

2 The river is navigable by small vessels, for a distance of about 80 km from its entrance, as far as Pulau Morris (1°58′S, 137°49′E), not an island but a mudbank joined to the shore, which is covered with trees and grass. Small craft are able to navigate a further 80 km as far as Marine Falls (2°23′S, 138°10′E) but this stretch of the river has rapids and whirlpools requiring local knowledge.

A deep channel leads from seaward to the river entrance close outside of which lie two patches close together, with a deep channel on each side.

The banks of the river are sparsely populated.

3 **Topography.** From Marine Falls, the river winds its way N to the sea from the interior of hilly, wooded ground to flat land, covered on either side by stretches of wild sugar-cane and dense jungle. The river bank on each side of the entrance is low-lying and mangrove-covered; Tanjung Narwaku (1°28′S, 137°55′E), the E entrance point, can be identified by a very high clump of trees on its extremity. Mudbanks extend N from each side of the river entrance.

4 **Depths.** A bar at the river entrance has a least depth of 7·5 m (24 ft), thereafter the channel is relatively deep; a second bar with a least depth of 8 m (26 ft) lies 10 miles upriver from the entrance. Danau Rombebai, a large lake, is separated from the river by a narrow embankment; however, a narrow channel leading from the lake enters the river at the village of Bonoi (1°51′S, 137°50′E). The least depth upriver from the village, as far as Pulau Morris, is 6 m (20 ft).

Debris. A good lookout should be maintained in the river for large tree trunks which are frequently carried downstream.

5 **Tidal streams.** The level of the river shows little variation at the different seasons; the greatest difference so far recorded being 4 m (13 ft) below Marine Falls. The river enters the sea as a thin layer of fresh water flowing over salt water with a rate of 2½ kn at HW and 4 kn at LW. The salt water lies in the deep channel in the approach and is unaffected by the overlying stream.

6 **Directions.** When about 4 miles N of the entrance, the track leads SSW towards the river on the alignment (202°) of the W entrance point with the inner point on the E side. When the prominent group of trees on Tanjung Narwaku bears 131° the track leads S for a short distance until abreast of the W entrance point, thence resumes SSW into the river initially maintaining the W side. Thereafter a mid-channel track should be maintained.

7 **Useful mark:**

Sungai Mamberamo Light (white metal framework tower, 16 m in height) displayed from the W entrance point is a good guide.

Anchorage may be obtained in a depth of 12 m (39 ft) E of the mainstream, off the village of Teba, situated on the E bank, 1½ miles within the river entrance. The anchorage here is clear of the ocean swell.

COASTAL ROUTE — TANJUNG NARWAKU TO THE BORDER AT 141° INCLUDING THE PORT OF JAYAPURA

General information

Chart 3250 (see 1.34)

Routes

7.287

1 From a position N of Tanjung Narwaku (1°28′S, 137°55′E) to the border with Papua New Guinea, the route leads ESE for a distance of about 200 miles, passing either side of Pulau-pulau Kumamba.

Topography

7.288

1 Between Tanjung Narwaku (1°28′S, 137°55′E) (7.286) and Arare, a village 70 miles ESE lying on the coast 4 miles WSW of Pulau-pulau Wakde (7.294), the coast is entirely flat and is bordered by a wide dark-coloured sandy beach backed by a row of high trees of even height, presenting no noticeable features except at Tanjung Verkami (1°48′S, 138°41′E), a prominent point. A number of landmarks lie inland on the higher ground.

2 Between Arare and Tanjung Kamdara (2°19′S, 140°07′E) (7.294) the coastal plain is similarly bordered by an almost continuous sandy beach backed by trees, but the slopes of the central mountains gradually rise closer in from the shore. Pegunungan Cycloop, a very high range of mountains, stretches from Tanjung Kamdara to Teluk Yos Sudarso (Jos Sudarso) (7.296) in which the city of Jayapura stands.

Between Pulau-pulau Wakde (1°56′S, 139°01′E), a group of low islets, covered with coconut palms, and Tanjung Kamdara, there are several groups of small islets.

Debris

7.289

1 Between Tanjung Narwaku (1°28′S, 137°55′E) (7.286) and Pulau-pulau Podena (7.294), a group of islands lying 112 miles ESE, large tree trunks and other debris washed down from the numerous rivers that enter the sea on this coast may be encountered.

Flow

7.290

1 **Currents.** Between Tanjung Narwaku (1°28′S, 137°55′E) and Tanjung Verkami, 54 miles ESE, there is usually a moderate ESE current experienced along this portion of the coast. However, off Tanjung Sarosse (1°42′S, 138°48′E),

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the S extremity of Pulau Armo, the set is reported to be W-going at a rate of 3 to 4 kn.

Between Tanjung Sarosse and the border with Papua New Guinea, the current sometimes sets NE at a rate of 1 kn.

2 **Tidal streams.** Along the whole coast, tidal streams are irregular and are mainly affected by the out-going streams from the numerous rivers. In and around the offshore islands along this coast the tidal streams are again irregular and have a maximum rate of 1½ kn.

Principal marks

7.291

1 **Landmarks:**

Peak (1°54′S, 138°15′E), 339 m (1110 ft) high, rising at the W end of a range of mountains, is prominent.

Tulband (2°06′S, 138°27′E), a peak 661 m (2167 ft) high, often shows prominently.

Basbassi (2°05′S, 138°49′E) is the highest peak of Pegunungan Irier, a range of mountains running N and S lying SE of Tanjung Verkami. A peak, also prominent, 610 m (2000 ft) high, stands at the N end of this range and 2 miles N of Basbassi.

2 Summit of Pegunungan Siduarsi (2°14′S, 139°10′E), 850 m (2790 ft) high, is particularly prominent from E.

Hill, 89 m (292 ft) high, standing 1½ miles SW of Tanjung Kamdara (2°19′S, 140°07′E) (7.294), forms a good landmark from W. The hill is a spur from a higher hill close S of it. A short ridge 443 m (1452 ft) high and about 2 miles S of these hills is plainly visible.

3 Peak (2°28′S, 140°19′E), 647 m (2123 ft) high, is distinctive from a good distance.

Pegunungan Dafonsero stands at the E end of this stretch of coast; the highest of its four peaks (2°27′S, 140°25′E), 1622 m (5323 ft) high, is particularly prominent.

Remor (2°31′S, 140°32′E), conical, the highest peak of Pegunungan Cycloop, is conspicuous.

Radio Masts (2°31′S, 140°44′E) marked by red obstruction lights.

4 **Major lights:**

Pulau Liki Light (white metal framework tower, 40 m in height) (1°35′S, 138°43′E); displayed from the N extremity of the island.

Pulau Armo Light (S cardinal) (1°43′S, 138°48′E); displayed from the S extremity of the island.

Pulau Yamna (Jamna) Light (white beacon) (2°01′S, 139°15′E); displayed from the NW extremity of the island.

Tanjung Kamdara Light (2°19′S, 140°07′E).

Tanjung Suaja Light (2°32′S, 140°45′E) (7.299).

Nembawewe Light (2°33′S, 140°46′E) (7.299).

Oinake Light (white structure) (2°37′S, 141°00′E).

Other aid to navigation

7.292

1 **Racon:**

Tanjung Suaja Light (2°32′S, 140°45′E) (7.299).

For details see *Admiralty List of Radio Signals Volume 2.*

Directions

(continued from 7.171, 7.172 or 7.285)

General

7.293

1 From a position not less than 10 miles N of Tanjung Narwaku (1°28′S, 137°55′E) (7.286) the coastal route generally leads ESE throughout, to the border with Papua New Guinea, passing N or S of Pulau-pulau Kumamba, a group of wooded and hilly islands 50 miles ESE of Tanjung Narwaku.

The usual route is to pass S of these islands maintaining a depth in excess of the 20 m (10 fm) depth contour.

2 Vessels passing N of Pulau Liki (1°36′S, 138°43′E), a hilly island from where a light (7.291) is displayed, and the N-most island of Pulau-pulau Kumamba, follow the directions given below from Tanjung Sarmi but farther offshore.

Caution. The passages either side of Pulau Lamsutu, an islet lying between Pulau Armo and Pulau Liki, are not recommended particularly for deep-draught vessels.

Passing south of Pulau-pulau Kumamba

7.294

1 From a position SSW of Tanjung Sarosse (1°42′S, 138°48′E), the S extremity of Pulau Armo, the S-most island of Pulau-pulau Kumamba, from where a light (7.291) is displayed, the track leads ESE, passing (with positions from Pulau Insumoar (1°56′S, 139°01′E)):

2 NNE of Tanjung Sarmi (17 miles WNW), a point at the end of a small peninsula on which there are some round-topped distinctive trees. A light (white metal framework tower, 16 m in height) is displayed from the point. Pulau Sarmi, an islet, lies 1 mile NNW of the point; Pulau Sawa, another islet, lies 1½ miles SSE of the point, thence:

3 NNE of Pulau Insumoar, a low-lying reef-fringed island covered with coconut palms. Together with Pulau Insumanai, an islet close SW, they form Pulau-pulau Wakde, thence:

NNE of Pulau Yamna (Jamna) (14½ miles ESE), a low, hook-shaped island, for the most part covered by coconut plantations and surrounded by shoals. A light (7.291) is displayed from the island. Tide-rips often mark the shoals off the island especially wind against tide, thence:

4 NNE of a 4·9 m (16 ft) shoal lying close N of Pulau Anus (32 miles ESE), a wooded island, together with Pulau Podena and Pulau Yarsun (Jarsun) form Pulau-pulau Podena. Thence the track continues (with positions from Tanjung Tanahmerah (2°24′S, 140°21′E):

NNE of Tanjung Kamdara (15 miles WNW), the high, wooded, E entrance to Teluk Kaptiau (7.309), and the W entrance to Teluk Matterer; a light (7.291) is displayed from Tanjung Kamdara, thence:

5 NNE of Tanjung Tanahmerah (Tanah Merah), a steep spur extending from the higher ground of Pegunungan Dafonsero, thence:

NNE of Pulau Kelapa (Ketapa) (16 miles ESE), a collection of rocks lying close N of a headland; a light (white beacon) is displayed from the headland, thence:

6 NNE of a 5·7 m (18 ft) shoal lying 2½ miles NNE of Tanjung Suaja (Soeadja), (26 miles ESE), the SE extremity of a high, wooded and hilly peninsula from where a light (7.299) is displayed, thence:

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NNE of a prominent white stone pyramid (2°36′S, 141°00′E) marking the border with Papua New Guinea. The pyramid can be seen from some distance seaward. A light (7.291) is displayed from Oinake, a village on the border.

7 **Useful mark:**

Holmaffin Light (1°58′S, 138°53′E) (7.306).

(Directions for passages SE of the border with Papua New Guinea are given in Pacific Islands Pilot Volume I; directions for entry to Jayapura are given at 7.300)

Inshore passage

7.295

1 A clear and deep channel lies between Pulau-pulau Podena (2°07′S, 139°30′E) and the mainland. The channel lies between Pulau Anus, the most S island of the group, and Pulau Mengge (2°13′S, 139°32′E), a low rocky islet covered with high trees, 4½ miles SSE.

Pulau Kaicebo (Kaitjebo), a sandy cay covered with vegetation, lies 3 miles farther SE of Pulau Mengge. A number of shoals lie between the two islets.

Jayapura

Charts 2467 plans of Teluk Jayapura (Hollandia Baai) and Teluk Yos Sudarso (Humboldt Baai), 3250 (see 1.34)

General information

7.296

1 **Position.** Jayapura (2°32′S, 140°43′E) previously known as Sukarnapura, also Hollandia Haven, a city and the capital of the province of Irian Jaya, is an important seaport situated within Teluk Jayapura (Hollandia Baai).

Function. The main exports from the port are forest products; crude palm oil is also exported. Imports include machinery and foodstuffs. An oil terminal lies in Teluk Imbi, 1½ miles NE of the city.

In 1997 the city had a population of 150 000.

2 **Topography.** Jayapura nestles in a valley created by Sungai Numbai, the river on which the city stands, at the head of Teluk Jayapura which is itself situated in the NW part of Teluk Yos Sudarso (Jos Sudarso), previously known as Humboldt Baai, a larger bay, entered between Tanjung Suaja (2°32′S, 140°45′E) (7.294), in the N, to Tanjung Jar (Djar) nearly 4½ miles SSE. Teluk Imbi, another bay, lies in the N part of Teluk Yos Sudarso; it is entered between Tanjung Kayubatu (Kajoe Batoe) (2°32′S, 140°44′E), a high point, and another point 8 cables E.

3 The whole area, excepting the low-lying beach area adjacent to Pulau Hamadi (2°34′S, 140°43′E), an islet, is high, hilly and mostly wooded; many of the salient points are steep and conically-shaped. A number of reefs and dangers front the entrance to Teluk Yos Sudarso, see 7.299.

In the S part of Teluk Yos Sudarso a number of shoals exist which should be taken into account when navigating in this part of the bay. In particular Cemperia (Tjemperia), 1½ miles NW of Tanjung Jar; Matabreh, 1½ miles SSW of Tanjung Suaja and Banamteku (Banamtekoe), 3½ cables farther SW.

4 A narrow passage leads into Teluk Yautefa (Jautefa) (7.303), an enclosed bay in the SW part of Yos Sudarso which has varying depths.

Port limits. A line joining Tanjung Suaja (2°32′S, 140°45′E) with Tanjung Yogur (Jogoe), 1¾ miles WSW, and the NW extremity of Pulau Madurau, an islet.

Approach and entry. The port is approached from sea through Teluk Yos Sudarso and entered through Teluk Jayapura.

5 **Traffic.** In 2003 the port was used by 164 vessels with a total of 635 709 dwt.

Port Authority. Port Administrator (Adpel), Jalan Koti II/21, Jayapura. Irian Jaya.

Website; www.portina4.go.id/jpura.htm.

Email; pelindo4@jayapura.wasantara.net.id

Oil Terminal: Pertamina, Jalan Nimboran 2–4, Jayapura.

Limiting conditions

7.297

1 **Depths**. Within the harbour and to a seaward distance of 3 miles E of Tanjung Suaja the area has been swept to a depth of 14 m; charted depths are, however, greater.

Tidal levels. Mean maximum range about 0·8 m, mean minimum range about 0·4 m. For details see *Admiralty Tide Tables.*

Maximum size of vessel handled: 10 000 dwt, having a length of 150 m and a draught of 10 m can berth at Jayapura. At the oil terminal; 15 000 dwt, having a length of 120 m and a draught 10 m can berth alongside.

Arrival information

7.298

1 **Port radio** is in operation from the port office close W of the main quay; A coast radio station also operates from Jayapura;. For details see *Admiralty List of Radio Signal Volumes 1(2)* and *6(4).*

Notice of ETA. Masters should advise the Port Authority, through their local agent, of their ETAs 72, 48 and 24 hours prior arrival. Included in the message should be the last port of call, and cargo details.

Outer anchorage. Large vessels may anchor about 1 mile SSW of Tanjung Suaja in depths of about 25 m (14 fm), sand and rock.

2 **Pilotage** is compulsory for vessels over 70 grt. The pilot boarding position lies at the entrance to Teluk Jayapura when vessels are bound for the general cargo berths, or at the entrance to Teluk Imbi when vessels are berthing at the oil terminal. On arrival in Teluk Yos Sudarso, all vessels are usually advised by radio either to anchor or to proceed inwards for a pilot.

Requests for a pilot should be made at least 6 hours prior to arrival and at least 3 hours prior to departure.

Tugs. A tug is available.

Harbour

7.299

1 **General layout.** The main berthing area lies in Teluk Jayapura. The general cargo quay, L-shaped, lies on the S side of the bay; consisting of a NE-facing quay with the harbour office at the seaward end, and a NW-facing quay, off which lies a mooring buoy, close NE.

At the town there are other berths, with lesser depths, for local craft.

Within Teluk Imbi, an oil terminal is situated on the W side of the bay, and about 5 cables inside it.

Several berths for local craft lie on the N side of Teluk Jayapura and within Teluk Imbi.

2 **Tidal streams** are weak in Teluk Jayapura, but there is nearly always a slight S-going current between Pulau Entsyau, an islet 2 cables NE of Tanjung Yogur (2°33′S, 140°43′E), and the coast, which must be allowed for when berthing.

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Local weather. The monsoons are little felt off Teluk Yos Sudarso. By day there is a sea breeze; in the evenings there is a land breeze. During June and July, squalls come suddenly from the E and must be reckoned with. Strong gusts of wind occasionally occur in the bay, probably due to the proximity of the high mountains around the bay.

3 In Teluk Jayapura variable winds predominate throughout the year. From May to August inclusive the winds are mainly E by day. During the other months they are mostly NW to NE, and generally W in the evenings. The humidity is very high.

Climatic table. See 1.159 and 1.165

4 **Major lights:**

Tanjung Suaja Light (white beacon, 20 m in height) (2°32′S, 140°45′E); displayed from Suajamoko (Soeadja Moko), a hill. Radio masts (7.291), stand 8 cables NNW of the light; a tower, with an obstruction light, stands 2 miles W and a TV tower stands 2·2 miles WSW of the light.

Nembawewe Light (2°33′S, 140°46′E).

Directions

(continued from 7.294)

7.300

1 **Approach.** From a position NNE of Tanjung Suaja (2°32′S, 140°45′E) the track leads S thence W, rounding the point at a distance of at least 2 cables in the swept channel. The track passes into Teluk Yos Sudarso between Tanjung Suaja and Nembawewe, 1¼ miles S. Nembawewe, a dangerous rock with a shoal extending SE from it, lies at the E end of a line of reefs, 1 mile long, orientated E-W, which front Teluk Yos Sudarso. Lying at the W end of these dangers is Seroibi, a dangerous rock, with Metuki, a shoal lying between Nembawewe and Seroibi. Nembawewe and the line of reefs should not be passed closer than 2 cables.

2 From a position S of Tanjung Suaja the track leads W to the entrance to Teluk Jayapura and the alignment of leading lights, or if bound for the oil terminal thence to the W side of Teluk Imbi until the alignment of leading beacons leading into that bay are reached.

3 **Leading lights:**

Front light (white triangle, point up, on white metal framework tower, red bands; 15 m in height) (2°32′·4S, 140°42′·6E).

Rear light (white triangle, point down, on white wooden post; 25 m in height) 150 m WSW of front light.

4 On the alignment (255°) of the lights, the track leads WSW into the harbour, passing NNW of the light-beacon (port hand) marking the shoals extending N from Tanjung Yogur, and passing SSE of the light-beacon marking the S extremity of the reef extending from the N side of Teluk Jayapura.

Caution. An obstruction lies in the harbour 2 cables NW of the main quay; another obstruction lies 1 cable NE of the main quay.

5 **Leading beacons:**

Front beacon (white triangle, point up, on post) (2°31′·4S, 140°43′·8E).

Rear beacon (similar structure white triangle, point down), 3 cables N of front beacon.

On the alignment (000°) of the beacons the track leads N towards the oil terminal passing between a coral reef, over which there is a least swept depth of 12 m (39 ft), lying 3 cables SE of the terminal, and the mainland.

6 **Useful marks:**

Yaremoh (Jarremoh) (2°33′S, 140°43′E), a prominent hill, on which a radio mast with obstruction lights stands.

Leimok (2°35′S, 140°41′E), a prominent hill on which a radio mast stands.

Sesekokyamokoh (Sesekokja Mokoh) (2°36′S, 140°48′E), a prominent hill which rises up from Tanjung Jar.

Berths

7.301

1 **Anchorages.** An anchorage may be obtained within Teluk Jayapura in depths of about 43 m (24 fm), mud; care should be taken to anchor clear of the obstruction (7.300) in the bay. Safe anchorage may also be obtained within Teluk Imbi.

Alongside berths. The main quay (Dermaga Umum) has a length of 141 m with depths of 8·5 m, at MLWS, alongside; a second berth (Dermaga APO) at right angles to the main quay has a length of 19 m with depths of 5.1 m, at MLWS, alongside. A third berth, with dolphins, lies adjacent to the second berth; it has a length of 110 m with depths of 12 m alongside.

2 **Oil terminal.** The terminal, within Teluk Imbi, consists of an L-shaped jetty about 30 m in length with depths of 11 m, at MLWS, alongside. A small pier extends NE from the head of the terminal berth. A 9 m (30 ft) patch lies 1 cable E of the terminal. The terminal can be readily identified from a distance by a number of oil tanks at the root of the jetty.

The terminal handles mainly product tankers.

3 **Other berths** lie at Jayapura and at various locations on the N shore of Teluk Jayapura. There are several berths within Teluk Imbi, including a naval berth. A number of local fish quays lie S of Jayapura and between it and Teluk Yautefa.

Port services

7.302

1 **Repairs:** small repairs can be effected; slipway for craft up to 250 dwt.

Other facilities: medical assistance; hospital; deratting exemption certificates issued.

Supplies: fresh water at the quays, fuel in limited quantities by road; provisions.

Communications. There is an airport at Sentani about 32 km from Jayapura. Regular flights to Biak, Manokwari and Sorong with long range connections to Makassar and Jakarta.

Small craft

7.303

1 A small craft passage leads into Teluk Yautefa (Jautefa) situated in the SW corner of Teluk Yos Sudarso. The passage is entered close S of Tanjung Pie (2°35′S, 140°43′E), a rocky and wooded point, and between it and Tanjung Ceweri (Tjeweri), a low sandy point, 2 cables SW.

The passage, which has general depths of 3 m (10 ft), passes between Metudedi (Metoe Debi), a low islet, on the S side and Pulau Insumaka (Insoemoko), an islet on the N side. Once inside the depths are deeper. A large area of sandbanks extends down the E side of the bay from the entrance. A number of villages lie on the shores of the bay; Pim, a village at the N end, is linked by road to Jayapura.

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Anchorages

Chart 3250 (see 1.34)

General

7.304

1 In the anchorages described, local knowledge or the national large scale chart is required.

Sarmi

7.305

1 Anchorage may be obtained in depths of about 10 m (33 ft), mud and sand, on either side of the peninsula on which the village of Sarmi (1°51′S, 138°45′E) stands. A swell sets into the SE anchorage during the SE monsoon. Sarmi is a small craft harbour and is regularly visited by local craft; see 7.313. A light (7.294) is displayed from the N end of the peninsula.

Vessels proceeding to the NW anchorage may use the channel between the headland and Pulau Sarmi, 1 mile NNW; proceeding to the SE anchorage, vessels should keep to seawards of Pulau Sawar, 1½ miles SSE of the headland. A small coral reef, 4 cables NW of Pulau Sawar, is marked by a buoy (starboard hand).

Holmaffin

7.306

1 Anchorage may be obtained in a depth of about 10 m (33 ft) on the coastal bank NW of the village of Holmaffin (1°58′S, 138°53′E), which lies near the head of Teluk Holmaffin, a small indentation in the coast. The holding ground is good here and is out of the strength of the streams at about 3 cables offshore. A deeper anchorage in depths of 20 m (11 fm) may still be obtained on the bank, but farther offshore care must be taken to avoid a deep gully with depths of up to 110 m (60 fm) which extends into the middle of the bight close W of the village.

A light (white beacon) is displayed from a position 8 cables ENE of the village.

Pulau-pulau Wakde

7.307

1 Anchorage may be obtained between Pulau Insumoar (1°56′S, 139°01′E) (7.294) and Pulau Insumanai, close SW, in a depth of about 12 m (39 ft) where there is no swell. The anchorage should be approached by passing W of the reef-fringed W extremity of Pulau Insumoar and between it and a coral reef 1¼ miles W.

The tidal streams between the islands are irregular but never exceed a rate of 1½ kn.

Off Pulau Yamna

7.308

1 Anchorage may be obtained close SE of the NW end of Pulau Yamna (2°01′S, 139°15′E) (7.294) in a depth of about 15 m (48 ft). The anchorage should be approached from W passing S of a coral reef, over which there is a least depth of 2·7 m (9 ft), situated 3 cables W of the NW end. Shoals lying N and E of the island are often marked by tide-rips.

A light (7.291) is displayed from the island and a prominent tree stands on its NE point.

Pulau Mademo, about 1½ miles SSW of Yamna, is also low and covered with coconut plantations.

Teluk Kaptiau

7.309

1 Anchorage may be obtained in any part of Teluk Kaptiau (Teluk Walckenaer), a bight lying between Tanjung Wiruwai (2°18′S, 139°40′E) and Tanjung Kamdara (7.294), 28 miles miles E. Several rivers discharge into this bight and there are some villages on the coast.

There is always a ground swell near the coast in this bay.

Teluk Iris

7.310

1 Sheltered anchorage with good holding ground may be obtained near the head of Teluk Iris, in depths of about 15 m (49 ft) and 3½ cables offshore. The bay is entered about 7 miles SE of Tanjung Kamdara (2°19′S, 140°07′E).

The anchorage should be approached from N passing E of Salean Segara (2°21′S, 140°12′E), a reef over which there is a least depth of 3 m (10 ft), thence W of Pulau Daidokopo (2°23′S, 140°14′E), an islet, and Pulau Kiakebo, another islet, lying closer to the coast.

Teluk Demengong

7.311

1 Safe anchorage may be obtained within Teluk Demengong which is entered 3 miles S of Tanjung Tanahmerah (2°24′S, 140°21′E) (7.294). The best berth lies close W of a small wooded islet near its head in a depth of 35 m (19 fm).

The village of Temingoh lies at the head of the bay.

Small craft

Sungai Matabori

7.312

1 Sungai Matabori, 5 miles SE of Tanjung Narwaku (1°28′S, 137°55′E) (7.286), has high trees standing on its W entrance point. The river entrance, best shown on chart 2467, is accessible to local craft at HW over a sand bar, when depths of about 3 m (10 ft) can be expected. The river gives access to a number of tributaries each of which may be navigated for some distance upriver. One of them Sungai Mansubu links with Sungai Mamberamo (7.286).

With so many rivers flowing out from Sungai Matabori, the out-going stream may attain a rate of 4 kn.

Pelabuhan Sarmi

7.313

1 A stone landing jetty with depths of a 1 m at its head, extends SSW a short distance over the coastal reef fronting the village of Sarmi (1°51′S, 138°45′E) (7.305). An obstruction lies close SW of the head of the jetty. A red-roofed building stands on the shore close E of the jetty. Sarmi is regularly visited by coastal praus. An airfield lies about 1 mile S of the village.

Sungai Tor

7.314

1 Sungai Tor (1°58′S, 138°54′E) discharges 11 miles ESE of Tanjung Sarmi (7.294). It is nearly 2 cables wide at its entrance and can be entered by small craft at HW. A dangerous spit extends about 1 mile N from the entrance. There is a strong current in the river, from which muddy water extends up to 5 miles offshore. The division between fresh and sea water is often marked by heavy ripples which often look like reefs.

The E entrance of the river may be identified by a high clump of casuarina trees (see 1.41).

Pulau Insumoar

7.315

1 Landing may be effected onto a jetty situated at a village in a small indentation on the SE side of Pulau Insumoar (1°56′S, 139°01′E) (7.294).

An airstrip lies in the N of the island.

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Sungai Biri

7.316

1 Sungai Biri (2°09′S, 139°21′E), which winds down from the high ground of Pegunungan Foya (Foja), about 40 miles S, discharges about 11 miles SE of Pulau Yamna. It is about 2½ cables wide for a good distance from its mouth and can be entered by small craft at HW.

Pelabuhan Tarfia

7.317

1 Tarfia Roads (2°20′S, 140°07′E) lie in the shelter of Tanjung Kamdara (7.294), on its SE side. Landing may be effected at Tarfia, a village abreast the roadstead. Landing may also be effected at HW at the village of Demta, 2 miles SE of Tarfia, standing at the head of Teluk Matterer. The reef-fringed shore at Demta dries at LW but a break in the reef close E allows access to the village.

Sungai Tami

7.318

1 Sungai Tami (2°37′S, 140°55′E) has very low and swampy banks and the river mouth continually shifts. The river is navigable by small craft as far as its confluence with Sungai Sekanto, 10 miles WSW of the mouth. Allowance should be made for the rapid stream, usually of about 4 kn, and for the many tree trunks which may be encountered. From seaward the mouth of Sungai Tami is easy to identify by the quantity of timber washed up on the coast, particularly W of the mouth.

2 Ujung Germania (2°37′S, 140°56′E), about 1 mile E of the entrance to the river, is the steep termination of a spur from a 310 m (1017 ft) mountain about 2 miles SE. The land E of the headland rises to a conspicuous knob 785 m (2574 ft) high, which is itself a spur of Pegunungan Bougainville.

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APPENDIX I

FORMER MINED AREAS

Description of limits

1 The Indonesian Government have declared the following areas dangerous due to mines which were laid during the World War of 1939–1945. Due to the lapse of time, navigation through these minefields, whether they have been swept or not, is considered no more dangerous from mines than any other of the usual hazards to navigation; but in the unswept areas a real danger still exists with regard to anchoring, fishing or any other submarine or seabed activity. For further information see *The Annual Summary of Admiralty Notices to Mariners No 6.*

HALMAHERA

Chart 2788

Teluk Kau

2 (1) The area bounded by the parallels of 1°07′·0N, and 1°20′·6N and by the meridians of 127°54′E and 128°10′E.

(2) **Kau Approach Channel,** 5 cables wide, has been established with centre line joining the following positions:

(a) 1°20′·6N, 128°02′·7E
(b) 1°14′·5N, 128°01′·6E

3 (3) **Lolobata Approach Channel** has been established with centre line joining the following positions:

(a) 1°20′·6N, 128°04′·1E
(b) 1°14′·0N, 128°04′·1E
(c) 1°13′·6N, 128°05′·9E
(d) 1°14′·4N, 128°07′·7E

The channel is 3¼ cables wide between (a) and (b) and 5 cables wide between (b) and (d).

(4) A channel connecting positions 2 (b) and 3 (b) above has also been established; width 5 cables.

MANGOLI

Chart 3241

4 (1) The area on the N coast bounded by the lines joining the following positions:

(a) 1°45′·7S, 125°34′·7E
(b) 1°45′·3S, 125°34′·7E
(c) 1°44′·7S, 125°30′·3E
(d) 1°47′·7S, 125°30′·2E

(2) **Teluk Vesuvius,** on the S coast: the area N of 1°54′S and E of 125°21′E.

SELAT SERAM

Chart 3242

5 Area bounded by lines joining the following positions:

(a) 3°29′S, 128°18′E
(b) 3°20′S, 128°20′E
(c) 3°27′S, 128°28′E
(d) 3°31′S, 128°30′E

SELAT KILWARU

6 The area bounded by lines joining the following positions:

(a) 3°51′·0S, 130°54′·5E
(b) 3°51′·0S, 130°54′·0E
(c) 3°53′·1S, 130°53′·0E
(d) 3°55′·5S, 130°53′·0E
(e) 3°55′·5S, 130°54′·5E

A channel has been swept clear of mines through Selat Kilwaru.

IRIAN JAYA

Chart 2102

7 **Teluk Kamrau**, the area bounded by the parallels 3°38′S and 3°40′S, between the meridians 133°38′E and the coast N of Tanjung Simora.

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APPENDIX II

ARCHIPELAGIC SEA LANES

General information

The definition, purpose and other information concerning Archipelagic Sea Lanes is contained in *The Mariner's Handbook.*

Charting of Archipelagic Sea Lanes

Admiralty charts show all adopted archipelagic sea lanes, including the axis lines and the lateral limits of the sea lanes.

Archipelagic Sea Lanes in NP 35

The following designated archipelagic sea lanes, defined by their respective axis lines, lie either wholly or partly within the waters described in this volume.

ASL IIIA (part 1) — Pacific Ocean — Molucca Sea — Ceram Sea — Banda Sea

3°27′·0N, 127°40′·5E
1°40′·0N, 126°57′·5E
1°12′·0N, 126°54′·0E
0°09′·0N, 126°20′·0E
1°53′·0S, 127°02′·0E
2°37′·0S, 126°30′·0E
2°53′·0S, 125°30′·0E
3°20′·0S, 125°30′·0E
7°50′·0S, 125°21′·2E

ASL IIIA (part 2) — Savu Sea — Indian Ocean

8°57′·0S, 123°50′·8E
9°03′·0S, 123°34′·0E
9°23′·0S, 122°55′·0E
10°12′·0S, 121°18′·0E
10°44′·5S, 120°45′·8E

ASL IIIB — Banda Sea — Selat Leti

3°20′·0S, 125°30′·0E
4°00′·0S, 125°40′·0E
8°03′·0S, 127°21′·2E

ASL IIIC — Banda Sea — Aru Sea

3°20′·0S, 125°30′·0E
4°00′·0S, 125°40′·0E
6°10′·0S, 131°45′·0E
6°44′·0S, 132°35′·0E

ASL IIID — Savu Sea —Between Sawu and Roti — Indian Ocean

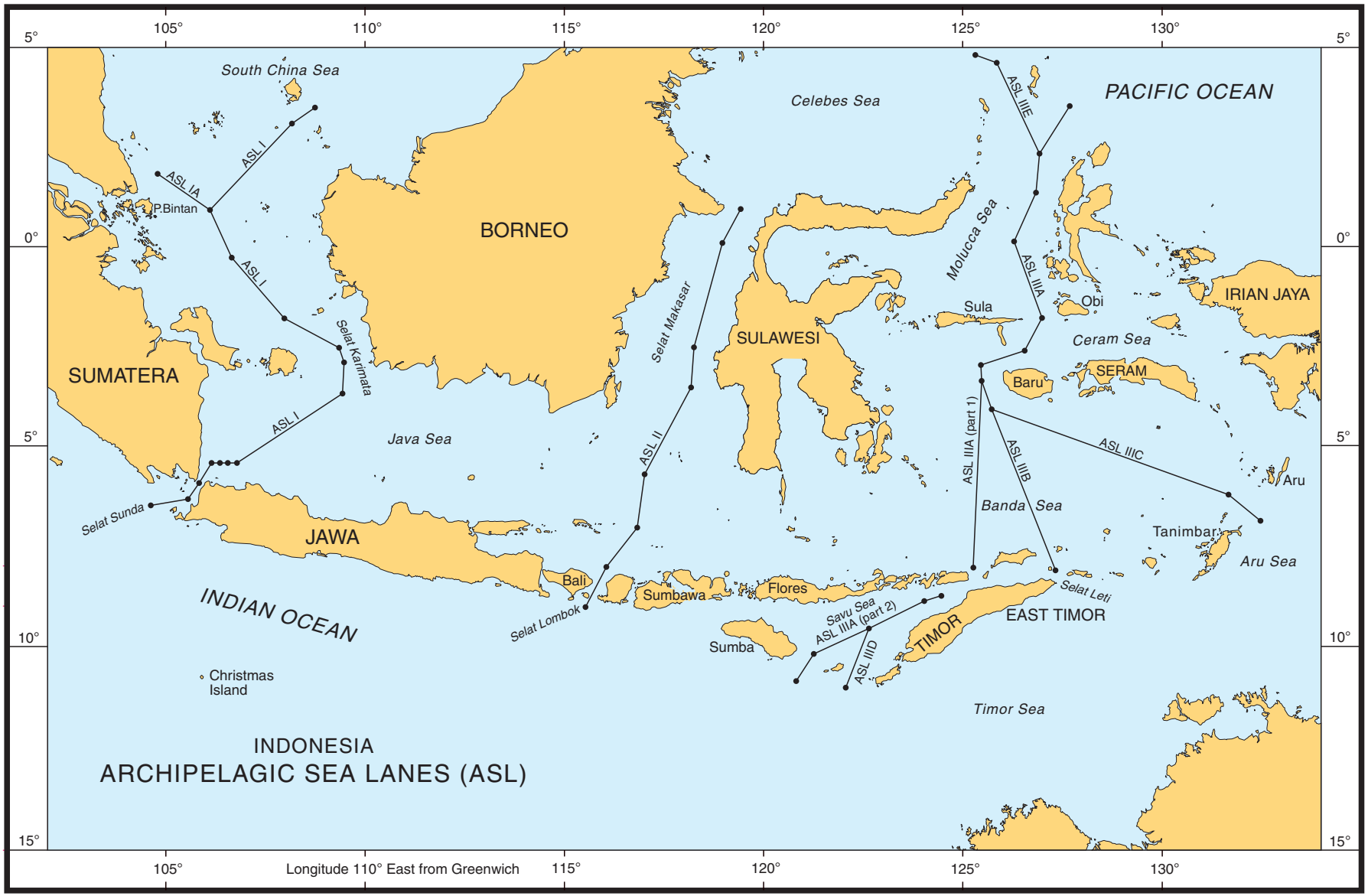
9°23′·0S, 122°55′·0E
10°58′·0S, 122°11′·0E

ASL IIIE — Celebes Sea — Molucca Sea

4°32′·2N, 125°10′·4E
4°12′·1N, 126°01′·0E
1°40′·0N, 126°57′·5E

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Distance table - Eastern Archipelago

Note: For further information and notes on distances, see *Admiralty Distance Tables Pacific Ocean* Tables 3, 12 and the Link Tables and Index Charts 1 and 3, also *Admiralty Distance Tables Indian Ocean* Tables 1a and 4 and Index Charts 1 and 4.

Amamapare	Ambon	Arus, Tanjung (8´NE of)	Balintang Channel	Jailolo, Selat	Jayapura	Kupang	Lombok, Selat	Manipa, Selat	Morotai Island (50´ N of)	North West Cape (11´ NW of)	P.-P Nanusa (18´ NE of)	Sagewin, Selat	Sermata, Pulau (20´ NE of)	Singapore	Torres Strait (3´ W of Booby I.)	Wetar, Alur Pelayaran
527																
837	402															
1876	1507	1183														
608	295	355	1268													
1234	959	1048	1736	735												
880	486	810	1935	723	1387											
1283	829	994	1849	1011	1690	486										
597	61	340	1446	234	898	489	804									
825	512	220	1050	217	828	906	1152	451								
1711	1361	1685	2810	1598	2262	889	777	1364	1781							
937	562	238	945	329	931	990	1201	501	113	1865						
609	334	455	1371	132	625	762	1065	273	322	1637	452					
487	271	640	1746	534	1198	393	827	300	751	1224	801	573				
2125	1643	1618	1578	1826	2505	1428	980	1618	1639	1628	1544	1880	1693			
575	955	1314	2353	1086	1593	1127	1591	994	1303	1839	1414	1087	773	2459		
703	303	627	1752	540	1204	183	603	306	723	1058	807	579	224	1471	988	

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