NP 14

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)

2005	2006	2007	2008

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 14

AUSTRALIA PILOT

VOLUME II

South, south-east and east coasts of Australia
from Green Cape to Port Jackson
including Bass Strait and Tasmania

NINTH EDITION
2004

PUBLISHED BY THE UNITED KINGDOM HYDROGRAPHIC OFFICE

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Australia Pilot Volume II

First Edition	1918
Second Edition	1929
Third Edition	1944
Fourth Edition	1956
Fifth Edition	1969
Sixth Edition	1982
Seventh Edition	1999
Eighth Edition	2001

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PREFACE

The Ninth Edition of *Australia Pilot Volume II* 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 edition supersedes the Eighth Edition (2001), which is cancelled.

Information on climate 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:

Australian national charts and Notices to Mariners
Fairplay Ports Guide 2004
The Statesman's Yearbook 2004
Whitaker's Almanack 2004
The Ports of Australia and New Zealand, Sixteenth Edition 2003
Port Handbooks produced by Port Authorities
Lloyds Ports of the World 2004

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The United Kingdom Hydrographic Office
Admiralty Way
Taunton
Somerset TA1 2DN
England
18th November 2004

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PREFACE

to the Eighth edition (2001)

The Eighth Edition of *Australia Pilot Volume II* has been prepared by Captain K.J. Bolden, Master Mariner, and contains the latest information received by the United Kingdom Hydrographic Office to the date given below.

This edition supersedes the Seventh Edition (1999), which is cancelled.

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

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

Australian national charts and Notices to Mariners
Fairplay Ports Guide 2001–2002
Lloyds Maritime Guide 2001–2002
The Statesman's Yearbook 2001
Whitaker's Almanack 2001
The Ports of Australia and New Zealand, Fifteenth Edition 1999
Port Handbooks produced by Port Authorities
Lloyds Ports of the World 2001
United States Sailing Directions Publication 120 (2001)

Dr D W Williams
United Kingdom National Hydrographer

The United Kingdom Hydrographic Office
Admiralty Way
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England
6th December 2001

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EXPLANATORY NOTES

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

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

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

CD–ROM

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

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

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References to hydrographic and other publications

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

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

Admiralty List of Lights should be consulted for details of lights, 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		

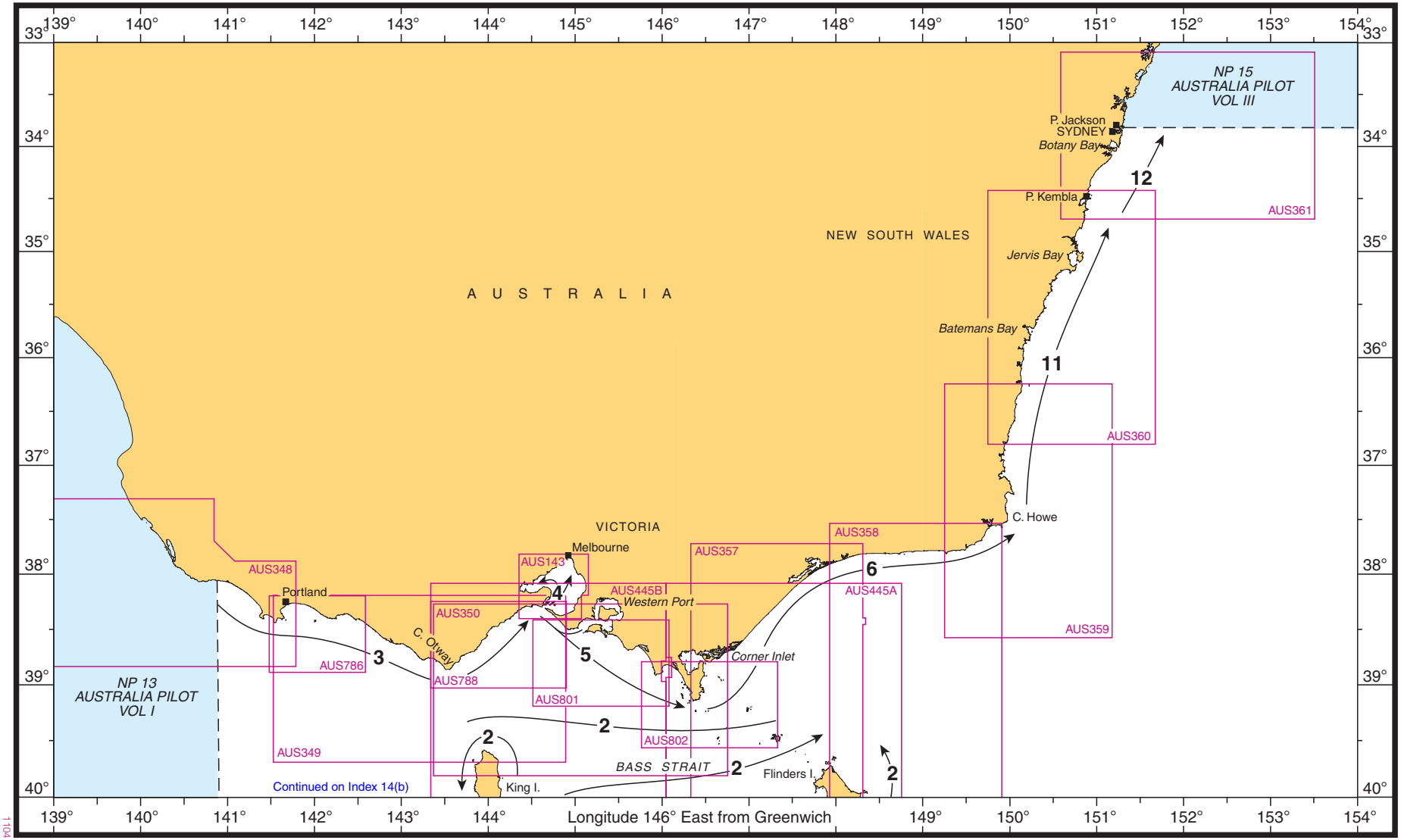
Vessels and cargo

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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Chapter Index Diagram



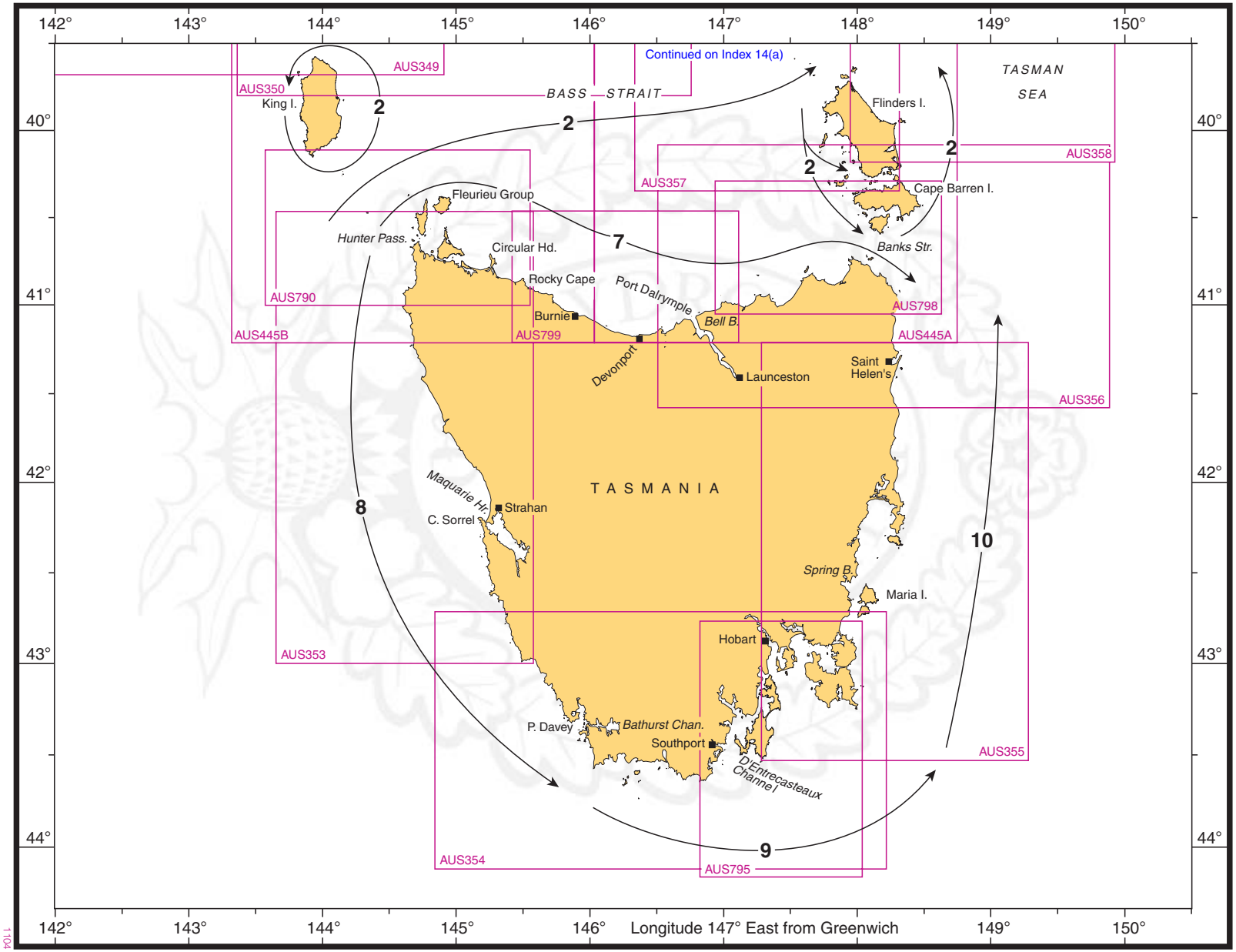
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Chapter Index Diagram



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LAWS AND REGULATIONS APPERTAINING TO NAVIGATION

While, in the interests of 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 the 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.*

AUSTRALIA PILOT VOLUME II

CHAPTER 1

NAVIGATION AND REGULATIONS
COUNTRY AND PORTS
NATURAL CONDITIONS

NAVIGATION AND REGULATIONS

LIMITS OF THE BOOK

Charts 4601, Aus 422, Aus 423

Area covered

1.1

1 This volume contains Sailing Directions for the waters along the coasts of Victoria and New South Wales and for the waters around Tasmania. The limits are defined by lines joining the following positions:

38°03′S, 140°52′E (Green Point);
53°00′S, 141°00′E;
53°00′S, 160°00′E;
33°50′S, 160°00′E;
33°49′S, 151°18′E (North Head).

NAVIGATIONAL DANGERS AND HAZARDS

Overhead cables

1.2

1 Overhead cables are mentioned in the text where the clearance beneath them may be a hazard to navigation. Some of these cables carry high voltages and sufficient clearance must be allowed when passing underneath them.

See *The Mariner's Handbook* for information on safety clearances and the radar responses to be expected.

Former mined areas

1.3

1 Minefields laid in the waters of Australia during the 1939–1945 war have been swept and have been used safely by shipping for many years. Due to the lapse of time, the risk from mines to navigation through the areas affected, whether swept or not, is now considered no greater than the ordinary risks of navigation. Even in swept waters there is however a remote risk that mines may still remain, having failed to respond to orthodox sweeping methods, and a danger still exists with regard to anchoring, fishing or any form of submarine or seabed activity.

2 A former mined area exists at Pyramid Rock (39°49′S, 147°15′E) For further information see *Annual Australian Notices to Mariners.*

Unexploded ordnance

1.4

1 A number of areas exist which are considered dangerous due to the presence of unexploded ordnance on the seabed. All such areas are listed in *Annual Australian Notices to Mariners* and those considered to be significant to normal surface navigation are charted.

TRAFFIC AND OPERATIONS

Traffic

Through routes

1.5

1 Much of the overseas and interstate traffic passes through Bass Strait including traffic between the main ports of New Zealand and Europe.

Details of these through routes are given in Chapter 2.

High speed craft

1.6

1 A high speed craft ferry service operates from Melbourne, across Port Phillip and Bass Strait, to Georgetown, Tasmania. Mariners are advised to keep a good lookout. Some high speed craft may generate large waves, which can have a serious impact on small craft and

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their moorings close to the shoreline and on shallow off-lying banks. For further details see *Annual Summary of Admiralty Notices to Mariners* No 23.

Fishing

1.7

1 Commercial and recreational fishing takes place off the coasts covered by this volume. A significant amount of this involves lobster and cray fishing.

Fish farms, areas in shallow water where fish are artificially bred, are found in the waters covered by this volume.

Exercise areas

Firing practice and exercise areas

1.8

1 Military exercises and firing practices take place from time to time off the SE coast of New South Wales and S of Cape Otway, in Bass Strait. In view of the responsibility of range authorities to avoid accidents, exercise areas are not generally shown on charts or described in the text of this volume.

2 General remarks about the existence of exercise areas are given in the relevant geographical chapters. Warnings of firing practices and exercises are promulgated either by local notices to mariners, coast radio stations, or both. Full details on exercise areas are given in *Annual Australian Notices to Mariners.*

Submarine exercise areas

1.9

1 The Australian Exclusive Economic Zone (1.71) is a permanently established Australian submarine exercise area. Submarines may be met on the surface at night, particularly near Sydney and Jervis Bay. Notice of exercises is given only in exceptional circumstances and therefore all vessels should keep a good lookout for submarines.

The Mariner's Handbook, and *Admiralty* and *Annual Australian Notices to Mariners* give general information on the characteristics of submarines and visual signals used to denote their presence.

Marine exploitation

Oil and gas fields

1.10

1 Oil rigs and platforms may be encountered off the Australian coast. Production platforms and associated structures including tanker moorings, storage tankers and platforms on pipelines, generally display Mo (U) lights, aircraft obstruction lights and sound fog signals. These installations are usually protected by Safety Zones which may extend up to 500 m from their outer edges. Many of these structures are interconnected, and connected to the shore, by submarine pipelines; see 1.33.

2 Vessels must navigate with caution when passing close to offshore installations and structures. The Australian Government have declared a restricted area around the group of major production platforms in Bass Strait; see 6.8.

CHARTS

General information

1.11

1 The area covered by this volume lies within the Australian area of charting responsibility. Details of arrangements between the United Kingdom and Australian Hydrographic Offices are given in *The Mariner's Handbook*.

The charts are based on modern echo sounding surveys although some include a proportion of lead and line soundings from earlier surveys. All the main ports and many of the smaller ones are covered by Australian large scale charts or plans.

2 With few exceptions the requirements for coastal navigation and entry into main ports are provided by those Australian charts which have been adopted into the British Admiralty chart series.

Unadopted charts

1.12

1 On some Australian charts the limits of unadopted charts may be shown. These are not normally referred to in the text, but in certain areas which are not covered by adopted charts, and where adopted charts show insufficient detail for navigation, these Sailing Directions have been written using them. The text has been written on the assumption that mariners wishing to navigate in these areas will have provided themselves with suitable charts on which to do so. For the following areas mariners are advised to obtain the appropriate charts as follows:

Chart No	*Area*
Aus 148	Kent Group
Aus 150	Western Port — E side
Aus 164	Approaches to Devonport, Devonport and Ulverstone
Aus 170	Maria Island to Cape Sonnerat including Spring Bay
Aus 176	Port Davey including Bathurst Harbour
Aus 177	Macquarie Harbour
Aus 178	Plans in Tasmania (Sheet 2)
Aus 179	Plans in Tasmania (Sheet 1)
Aus 181	Corner Inlet and Port Albert
Aus 182	Plans in Victoria–SE Coast
Aus 191	Plans in New South Wales (Sheet 3)
Aus 192	Twofold Bay
Aus 193	Jervis Bay and approaches
Aus 203	Parramatta and Lane Cove Rivers
Aus 789	King Island
Aus 800	Furneaux Group
Aus 806	Gabo Island to Montague Island
Aus 807	Montague Island to Jervis Bay
Aus 808	Jervis Bay to Port Jackson

2 These charts are not issued by the Hydrographic Office, but are available from agents for Australian charts or from the publisher at the following address:

Australian Hydrographic Service, 8 Station Street, Wollongong, NSW 2500.

Datums

1.13

1 **Vertical.** Datums throughout this volume are usually the approximate level of Indian Spring Low Water or the level of LAT. The level in use is generally given on all medium and large scale charts. The relationship between these datums and those used in old surveys has not necessarily been determined.

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Chart datums and their relationship with Admiralty tidal predictions are discussed in *The Mariner's Handbook.*

2 **Horizontal.** The datum mainly used on Australian charts is Australian Geodetic Datum (1966). Older charts are based on local datums. Some modern Admiralty, Australian and International series charts of the area are now based on World Geodetic System Datum (1984) (WGS84), and this datum is being adopted on most new charts and new editions.

3 Most charts carry a caution on the shift to be applied to satellite derived positions before they are plotted. In the absence of such a caution it should not be assumed that such a shift is negligible.

Differences in graduation may be apparent when transferring positions from one chart to another. When in doubt it is advisable to transfer positions relative to common charted features rather than to geographical co-ordinates.

AIDS TO NAVIGATION

Lights

1.14

1 Navigational lights are the responsibility of The Commonwealth, State or Harbour Authorities.

Major lights are those with a nominal range of 15 miles or more. Light-structures only are described in this volume; for further details of the lights see the relevant *Admiralty List of Lights*.

Landmarks

1.15

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

Buoyage

IALA Maritime Buoyage System

1.16

1 The IALA Maritime Buoyage System Region A (red to port) is in use throughout the area covered by this volume.

For full details of the system see *The Mariner's Handbook* and *IALA Maritime Buoyage System.*

Radar reflectors are not charted; it can be assumed that most major buoys are fitted with radar reflectors.

Special buoys

1.17

1 Oceanographic instruments, normally marked by light-buoys (special), are frequently positioned off the coasts of New South Wales, Victoria and Tasmania. Details are promulgated in *Australian Temporary Notices to Mariners*. Some buoys in more permanent locations are charted. Vessels are not to use these buoys as moorings.

Ocean Data Acquisition System (ODAS) Buoys

1.18

1 ODAS buoys (special) may be encountered within the area covered by this volume. These buoy systems, which vary considerably in size, are used for environmental research purposes; they are marked "ODAS" with an identification number. The large systems should be given a clearance of at least 1 mile, and in the case of vessels towing underwater gear this distance should be increased to 2½miles.

2 As the buoys have no navigational significance, and as they are liable to be moved or withdrawn at short notice, they are not normally mentioned in the text of the book.

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

PILOTAGE

General

1.19

1 Pilotage is compulsory at all Australian ports within the area covered by this volume where a pilotage service is provided, except where the master holds an exemption certificate. Vessels under 35 m LOA, Commonwealth and Foreign naval, military and air force vessels, are also exempted.

Pilot services and boarding places

1.20

1 Information on pilotage procedures at individual ports is given in the text at the port concerned. Full details are given in *Admiralty List of Radio Signals Volume 6(4).*

Guidance on the embarkation and landing of pilots by boat and by helicopter is given in *The Mariner's Handbook*. Information on any local additional requirements should be obtained before hand. The main requirements for boarding a pilot are as follows:

2 a) Ladders to be clean and fitted with spreaders at intervals.

b) Two clean manropes 28 mm diameter but not more than 32 mm to be made securely fast to the ship but not fast to the ladder at any point. Manropes are to be without knots and be no longer than the ladder.

3 c) Heaving line for mail and pilot's bag.

d) Tripping lines and boatropes not to be used.

e) At night a bright shaded light clearly illuminating the ladder, to be in position before the pilot launch approaches.

Caution. Some ports will not accept the use of a pilot hoist.

RADIO FACILITIES

Electronic position fixing systems

Satellite navigation systems

1.21

1 **Global positioning system.** The Navstar Global Positioning System (GPS), a military satellite navigation system owned and operated by the United States Department of Defence, provides world wide position fixing.

The system is referenced to the datum of World Geodetic System 1984 (WGS84) and therefore positions obtained must be adjusted, if necessary, to the datum of the chart being used.

2 **Global Navigation Satellite System.** The Russian Global Navigation Satellite System (GLONASS) is similar to GPS in that it is a space-based navigation system which provides world wide position fixing.

The system is referenced to Soviet Geocentric Co-ordinate System 1990 (SGS–90) and as for GPS positions must be adjusted, if necessary, to the datum of the chart being used.

3 **DGPS.** Differential GPS compares the position of a fixed point, referred to as the reference station, with

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positions obtained from a GPS receiver at that point. The resulting differences are then broadcast as corrections to suitable receivers to overcome the inherent and imposed limitations of GPS.

Within the area covered by this volume DGPS data is broadcast from Cape Schanck Lighthouse (38°29′·5S, 144°53′·2E), providing coverage for the approaches to Port Phillip, from Mallacoota (37°34′·1S, 149°44′·0E), and from Glenfield (33°59′·2S, 150°58′·7E), near Sydney, providing coverage in the approaches to Botany Bay and Sydney.

4 **Caution.** Satellite navigation systems are under the control of the owning nation which can downgrade the accuracy to levels less than that available from terrestrial radio navigational systems. Therefore satellite based systems should only be utilised at the user's risk.

For full details on the above systems see *Admiralty List of Radio Signals Volume 2*.

Other radio aids to navigation

1.22

1 There are several racons in the area to aid both offshore navigation and entry into harbours. See *Admiralty List of Radio Signals Volume 2* for details. Those aids which are pertinent to coastal and inshore navigation are included within the navigational text.

Radio stations

1.23

1 For full details on all radio stations which transmit in the area covered by this volume see *Admiralty List of Radio Signals Volumes 1(2) and 6(4)*.

Radio navigational warnings

NAVAREA X warnings

1.24

1 The area covered by this volume lies within the limits of NAVAREA X. Details of warnings and a list of those in force are issued by the MRCC, which is part of the Australian Maritime Safety Authority. NAVAREA X warnings are broadcast through:

a) National coast radio stations.
b) SafetyNET (Enhanced Group Calling International SafetyNET).

For broadcast details see *Admiralty List of Radio Signals Volumes 3(2) and 5*.

Coastal navigation warnings

1.25

1 Coastal navigational warnings are issued by the MRCC and are broadcast through:

a) National coast radio stations.
b) SafetyNET (Enhanced Group Calling International SafetyNET).

For broadcast details see *Admiralty List of Radio Signals Volumes 3(2) and 5*.

Local warnings

1.26

1 Local warnings cover the area within the limits of jurisdiction of a harbour or port authority and may be issued by those authorities. They may be issued in the national language only and supplement the coastal navigational warnings by giving information which the ocean-going ship may normally not require. For broadcast details see *Admiralty List of Radio Signals Volumes 3(2) and 6(4)*.

Radio weather services

METAREA X warnings/bulletins

1.27

1 The World Meteorological Organization (WMO) has established a global service for the broadcast of high seas weather warnings and routine weather bulletins, through the Enhanced Group Calling International SafetyNET Service. METeorological service AREAS (METAREAS) are identical to the 16 NAVAREAS within the World-Wide Navigational Warning Service (WWNWS).

2 Each METAREA has a designated National Meteorological Service responsible for issuing high seas weather warnings and bulletins. The designated authorities are not necessarily in the same country as the NAVAREA co-ordinators. Weather Warnings and routine bulletins are broadcast through:

a) National coast radio stations.
b) SafetyNET (Enhanced Group Calling International SafetyNET).

For broadcast details see *Admiralty List of Radio Signals Volume 3(2)*.

Meteorological broadcasts by radio-facsimile

1.28

1 The area covered by this volume lies within the radio-facsimile broadcast coverage area of Australian coast radio-facsimile stations. For broadcast details see *Admiralty List of Radio Signals Volume 3(2)*.

National weather services

1.29

1 The Australian Commonwealth Bureau of Meteorology issues national weather warnings and weather bulletins through:

a) National coast radio stations.
b) SafetyNET (Enhanced Group Calling International SafetyNET).

For broadcast details see *Admiralty List of Radio Signals Volume 3(2)*.

Telephone/telefax weather information services

1.30

1 Weather information for the area covered by this volume is available through the telephone and telefax. For details see *Admiralty List of Radio Signals Volume 3(2)*.

Internet weather services

1.31

1 Weather information for the area covered by this volume is available through the Internet from the Australian Commonwealth Bureau of Meteorology. For details see *Admiralty List of Radio Signals Volume 3(2)*.

Radio medical advice

1.32

1 Mariners may obtain medical advice by radio through the International Radio-Medical Centre (CIRM) in Rome.

For further information, and for details of the coast radio stations see *Admiralty List of Radio Signals Volume 1(2)*.

INTERNATIONAL REGULATIONS

Submarine cables and pipelines

1.33

1 Mariners are warned that every care should be taken to avoid anchoring or trawling in the vicinity of submarine cables or pipelines on account of the serious consequences which would result from fouling them. See *The Mariner's*

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Handbook for information on the *International Convention for the Protection of Submarine Cables*, together with advice on the action to be taken in the event of fouling a cable or pipeline.

2 In Australia, compensation for anchors or fishing gear which have been sacrificed outside territorial waters in order to avoid injuring a submarine cable may be claimed under *The Commonwealth Submarine Cables and Pipeline Protection Act of 1963*; see *Annual Australian Notices to Mariners*.

3 **Caution.** Gas from a damaged oil or gas pipeline could cause an explosion, or some other serious hazard. Pipelines are not always buried and their presence may effectively reduce the charted depth by up to 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 *Annual Australian Notice to Mariners* No 14 and *The Mariner's Handbook*.

Pollution

1.34

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

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

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

Traffic Separation Schemes

1.35

1 See IMO publication *Ship's Routeing* for general provisions on ship's routeing. The following TSS in the waters covered by this volume are IMO adopted and regulations for navigating in these schemes are contained in Rule 10 of *International Regulations for Preventing Collisions at Sea (1972)*.

Off Wilson's Promontory in the vicinity of 39°15′S, 146°30′E.

Off the oil development field in the vicinity of 38°44′S, 148°15′E.

AUSTRALIAN REGULATIONS

Environment protection

Dumping waste at sea

1.36

1 *Environment Protection (Sea Dumping) (Australia) Act 1981* applies to Australian flag vessels anywhere and to all vessels within Australian waters. For the purposes of the *Act*, Australian waters includes the Australian Fishing Zone (1.71).

2 The Act regulates both loading and deliberate disposal of waste, including dredge spoil, by dumping into the sea from ships, aircraft or platforms. It does not apply to wastes arising from the "normal operation" of ships, aircraft or platforms. Operational discharges from ships come under the control of legislation which implements *MARPOL (Prevention of Pollution from Ships)*.

See *Annual Australian Notices to Mariners* for further details.

Disposal of garbage at sea

1.37

1 *Protection of the Sea (Prevention of Pollution from Ships) Act 1983* implements *MARPOL 73/78*. Annex V of *MARPOL 73/78* regulates the disposal of operational garbage from ships and applies to Australian flag vessels anywhere and to all vessels within Australian waters, including the Australian Economic Zone (1.71).

Despite any discharges that may be permitted offshore, it is preferable that all waste is returned to disposal facilities ashore.

Further details are given in *The Mariner's Handbook* and in *Annual Australian Notices to Mariners*.

2 **Ballast.** The discharge of cargo tank ballast is normally prohibited within 200 miles of the Australian coast. Only ballast from segregated clean ballast tanks may be discharged to sea within this area.

Oily waste disposal. The availability of shore reception facilities for oily waste is included in the information given on ports and harbours in the text of this volume.

Pollution reports

1.38

1 Protocol I of *MARPOL 73/78* contains comprehensive requirements and recommendations for ship reporting of incidents involving harmful substances. Australian implementation of the protocol imposes obligations on all vessels navigating within Australian waters to report incidents involving the following:

2 A discharge or probable discharge of oil, or noxious liquid substances carried in bulk, resulting from damage to the ship or its equipment, or for the purpose of securing the safety of the ship or saving life at sea *(Harmful Substances Report)*.

A discharge or probable discharge of harmful substances in packaged form, including those in freight containers, portable tanks, road and rail vehicles and ship-borne barges *(Marine Pollutants Report)*.

3 Damage, failure or breakdown of a ship of 15 metres in length or above which:

(i) affects the safety of the ship; including but not limited to collision, grounding, fire, explosion, structural failure, flooding, and cargo shifting; or

(ii) results in impairment of the safety of navigation; including but not limited to failure or breakdown of steering gear, propulsion plant, electrical generating system, and essential navigational aids.

4 An operational discharge in excess of that permitted under *MARPOL 73/78 (Harmful Substances Report)*.

Reports should be sent to The Group Manager, Marine Environment Protection Services of the Australian Maritime Safety Authority, via the Australian MRCC through the nearest coast radio station.

Detailed formats for pollution reports in Australian waters are given in *Admiralty List of Radio Signals Volume 1(2)* and in *Annual Australian Notices to Mariners*.

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Transfer operations at sea

1.39

1 The practice of transfers at sea is commonplace in some designated areas of the world, where special precautions are taken to counter the associated risks of collision and pollution. Except within established port limits, no areas have been designated off the Australian coast for such purposes and the practice of using random locations to suit commercial requirements is viewed with concern.

2 The Australian Maritime Safety Authority, as the Commonwealth authority responsible for maritime safety and for the prevention of pollution from ship sources, is anxious to ensure that all necessary precautions are taken whenever a ship-to-ship transfer of persons, cargo or other goods is undertaken at sea in the vicinity of the Australian coast. To this end it is requested that early advice be forwarded to the Authority if such operations are intended.

3 Notifications for this purpose should be directed to the Australian Maritime Safety Authority, Canberra, or to any of the Authority's regional offices. Information provided should include the date and place of the proposed transfer, identity and full details of the ships to be involved, the purpose of the transfer, whether other craft (such as tugs) are to be in attendance and what equipment is to be provided to assist in manoeuvring and cargo transfer.

Port entry

Port regulations

1.40

1 A copy of the port regulations should be obtained before, or on arrival at any port.

Accident or damage

1.41

1 The following extracts from *The Navigation Act (Australia), 1912-1958, Provision 268(1)* apply to any ship on passage to a port in Australia, or in Australian waters.

Where a ship to which provisions of the Act apply:

Has sustained or caused an accident occasioning loss of life or serious injury to a person, or:

2 Has sustained an accident or has otherwise received damage, or a defect in the ship or its boilers, machinery or equipment has been discovered, and the accident, damage or defect has affected, or is likely to affect:

(i) the seaworthiness or safety of the ship, or;

(ii) the efficient operation or the safety of the boilers, machinery or fixed equipment of the ship, or;

(iii) the efficiency or completeness of the life-saving appliances or other safety equipment of the ship, or;

3 Has been in a position of great peril, either from the action of some other ship or from danger of wreck or collision; or:

Has been stranded or wrecked; or:

Has fouled or done any damage to a pipeline or submarine cable or to a lighthouse, lightship, beacon, buoy or other marine mark, not being a lighthouse, lightship, beacon, buoy or marine mark to which section 19B of the *Lighthouses Act 1911 - 1957* applies; or:

4 Having left a port in Australia, has put back to that port or another port in Australia.

Then the Master of the ship shall, as soon as practicable, having regard to the means of communication available to him, report the happening to such person as is prescribed and shall, if so requested by or on behalf of that person, furnish a report in writing to that person in the prescribed form.

Smoking and the use of lights and fires in ships

1.42

1 The attention of Masters and agents of ships visiting Australian ports is drawn to the *Navigation (Cargo - Hazards Prevention) Regulations, Statutory Rules 1959, No 97,* and amendments thereto, made under *The Commonwealth Navigation Act, 1912-58.* Copies of these regulations may be obtained from any Mercantile Marine Office in Australia.

Flammable cargo

1.43

1 Special regulations are in force with regard to flammable cargo. These have been made under *The Commonwealth Navigation Act, 1912-58,* and are contained in the regulations quoted at 1.42.

Safety inspections are carried out on all tankers visiting Australian ports, prior to any transfer of cargo.

Signals to be shown by vessels with flammable liquids on board are given at 1.64.

Explosives

1.44

1 Special regulations under the *Marine (Dangerous Goods) Regulations, 1990,* are in force in Australian ports regarding the loading, carriage and discharge of explosives.

All vessels having explosives onboard exceeding 15 kilograms in weight of gunpowder, or 3 kilograms in weight of any other explosive, shall on approaching a port hoist the appropriate signal from *The International Code of Signals*. This signal shall then continue to be shown until the explosives have been landed, or until the vessel has cleared the port or anchorage.

2 Details of designated explosive anchorages, explosives handling berths, and limits beyond which such vessels may not proceed, are given in the text for ports and harbours where these facilities exist.

Ports and navigable rivers — New South Wales

1.45

1 **Speed limits** of between 4 and 8 kn are in force on many of the rivers and lakes of New South Wales.

Conduct on passing certain vessels:

A vessel approaching a dredger, or other vessel employed on works in the river, is to reduce to a speed not exceeding 4 kn over the ground from at least 275 m before passing, to 45 m beyond the dredger or other vessel.

2 A red flag shown at the entrance to a dock indicates docking or undocking operations in progress. All vessels approaching must proceed at dead slow speed from at least 275 m before passing, to 45 m beyond.

3 A vessel approaching a river ferry crossing shall, when between 5 and 2½ cables from the ferry, sound a prolonged warning blast on her whistle or siren, and slow down. If the ferry is underway, the vessel should pass astern and, if practicable, stop engines while doing so. Ferries are forbidden to leave the shore after a vessel has sounded a prolonged warning blast, until that vessel has passed.

4 **Ferry navigation lights.** Ferries and other vessels working on wires or chains in ports or across navigable rivers display at each end an all round red light, not less

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than 3 m above the deck and visible at a distance of one mile, and a similar green light, not less than 1 m above the red light at the forward end of the vessel, to indicate the direction of travel.

Naval waters

1.46

1 Regulations applying to naval waters of the Commonwealth of Australia are embodied in the *Control of Naval Waters Regulations:* see Appendix I.

Quarantine

General information

1.47

1 The following extracts from the *Quarantine Act* of the Commonwealth of Australia are for the guidance of vessels arriving in Australian waters.

17. The following vessels shall be subject to quarantine:

a) Every overseas vessel until pratique has been granted or until she has been released from quarantine;

2 b) Every vessel (whether an Australian vessel or an overseas vessel) on board which any quarantinable disease, or disease which there is reason to believe or suspect to be a quarantinable disease, has broken out or been discovered (notwithstanding that pratique has been granted or that she has been released from quarantine); and

c) Every vessel which is ordered into quarantine by a quarantine officer.

3 20. The master of an overseas vessel arriving in Australia shall not, unless from stress of weather or other reasonable cause, suffer the vessel to enter any port other than a port declared to be a first port of entry.

The following extract from *Statutory Rules No 85 of 1935,* made under the *Quarantine Act,* is inserted for the guidance of vessels arriving in Australian waters. The master of every vessel should take care to obtain a copy of these rules at the first port of call in Australia:

4 "... 6. The hours of clearance of vessels subject to quarantine shall be from sunrise to sunset. Provided that an authorised quarantine officer may, at any hour between 0500 and 2359, during the months from November to March (inclusive) and between 0600 and 2200 during the remaining months of the year, if so directed by the Chief Quarantine Officer, inspect and clear any vessel. In certain cases these hours may be extended by special permission of the Chief Quarantine Officer."

Radio pratique

1.48

1 The Australian Quarantine and Inspection Service (AQIS) requires all vessels arriving in Australia from overseas, or which have been in contact with overseas vessels or sea installations, to submit a Quarantine Pre-Arrival Report for Vessels (Pratique) (QPAR) to AQIS.

The QPAR details the condition of the vessel, including human health, cargoes and ballast water management and must be submitted to AQIS by the vessel's Master or agent 12 to 48 hours prior to the vessel's arrival in Australia.

2 If this report is not submitted to AQIS, the vessel will be met by a quarantine officer on or shortly after arrival to complete quarantine formalities. This will cause delays to the vessel and will incur additional AQIS charges.

Vessels will require written permission to discharge any ballast water in Australian ports or waters.

3 Masters are also required to complete two other AQIS forms:

(a) The AQIS Ballast Water Uptake/Discharge Log.

(b) The Aqis Ballast Water Treatment/Exchange Log.

For further details of the above reports see *Admiralty List of Radio Signals Volume 1(2).*

4 On receipt of satisfactory information in the request for radio pratique, the Quarantine Officer may grant pratique by radio. This may be followed by an inspection when the vessel arrives at the berth. The granting of pratique to a vessel does not release it from being subject to quarantine. Goods require separate clearance.

Should radio pratique not be granted, the vessel must remain outside the quarantine limit at the port of entry until boarded and cleared by the Quarantine Officer.

Ports of entry

1.49

1 The following are first ports of entry within the area covered by this volume.

Victoria: Portland (3.20), Geelong (4.77), Melbourne (4.124) and Hastings (5.33).

New South Wales: Twofold Bay (11.16), Port Kembla (12.19), Botany Bay (12.64), Sydney (12.117).

Tasmania: Stanley (7.27), Port Latta (7.33), Burnie (7.48), Devonport (7.79), Port Dalrymple (7.127), Hobart (9.95), Spring Bay (10.28).

Refuse disposal

1.50

1 All animal waste, organic refuse, galley scraps and quarantinable waste arising whilst a vessel remains in or near a port must be made available for collection by an authorised collector. Arrangements should be made through ships' agents.

Importation of animals and plants

1.51

1 Strict prohibitions against the import of certain animals, insects, plants and some animal products, e.g hides, bristles, bone-meal etc., into Australia are in force. Animals may only be imported into Australia through certain ports.

Protection of historic features and areas

Historic shipwrecks

1.52

1 Under the *Historic Shipwrecks Act 1976* all shipwrecks in Australian waters aged 75 years or more are protected. Except in accordance with a permit it is then prohibited to damage, destroy, interfere with or dispose of an historic shipwreck or historic relic, or remove an historic shipwreck or historic relic from Australia, from Australian waters, or from the waters above the continental shelf of Australia.

2 In addition to the above, the following wrecks and associated relics which are less than 75 years old and which lie in the area covered by this volume are also protected.

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New South Wales:

Merimbula (1928) in position 35°00′·3S, 150°49′·7E.
Commodore (1931) in position 32°55′·4S, 151°52′·0E.

3 **Victoria:**

SS *Casino* (1932) in position 38°44′·6S, 143°40′·8E.
Cambridge (1940) in position 39°09′·9S, 146°29′·7E.
City of Rayville (1940) in position 38°51′·0S, 143°39′·0E.
SS *Coramba* (1934) in position 38°32′·0S, 145°09′·0E.
SS *Kanowna* (1929) in position 39°19′·0S, 146°10′·0E.
Ships' Graveyard in positions 38°23′·5S, 144°21′·5E, 38°23′·5S, 144°36′·8E, High Water Line at 144°36′·8E, and 38°23′·5S, 144°36′·8E.

4 Protected zones are also established around a number of declared historic wrecks. A permit is required for access to a protected zone for any purpose, whether related to the wreck or not. Further details are published in *Annual Australian Notices to Mariners*. Shipwrecks surrounded by protected zones in the area covered by this volume were as follows.

5 **New South Wales:**

Lady Darling (1880) in position 36°19′·1S, 150°10′·1E.
Duckenfield (1889) in position 33°43′·2S, 151°19′·4E.

Victoria:

Clonmel (1841) in position 38°44′·7S, 146°40′·6E.

Marine Protected Areas

1.53

1 Australia has established a number of Commonwealth, State and Territory Marine Protected Areas (MPA), which comprise any area of intertidal or subtidal terrain, together with its superjacent waters and associated flora and fauna, which has been reserved by legislation to protect part or all of the enclosed environment for conservation, scientific, educational or recreational purposes.

Various restrictions, which include prohibition of general navigation, may apply within the protected areas.

Details of MPA's, prohibited activities and managing authorities are given in *Annual Australian Notices to Mariners*.

Ship-helicopter transfers

1.54

1 1. Ship-helicopter transfers are a frequently used method of transferring personnel and goods to and from ships in the Australian area.

2. *Australian Marine Orders Part 57 — Helicopter Operations (MO 57)* applies to ships registered in Australia and to foreign ships when operating in the Australian coastal sea. *MO 57* requires an owner of a ship to provide equipment, training of the ship's crew, instructions and such arrangements as are necessary for the safe transfer of persons and goods between a helicopter and a ship.

2 3. Arrangements, equipment, instructions and training that comply with the *Australian Code of Safe Practice for Ship-Helicopter Transfers* or the *International Chamber of Shipping Guide to Helicopter/Ship Operations* (to the extent that it is not inconsistent with the *Australian Code of Safe Practice for Ship-Helicopter Transfers)* will be regarded as meeting these requirements of *MO 57*.

3 4. The *Australian Code of Safe Practice for Ship-Helicopter Transfers* is published by the Australian Maritime Safety Authority, Canberra, and is available from any AMSA Ship and Personnel Safety Service Office.

Further information is given in the *Annual Australian Notices to Mariners.*

SIGNALS

Uniform port signals

General information

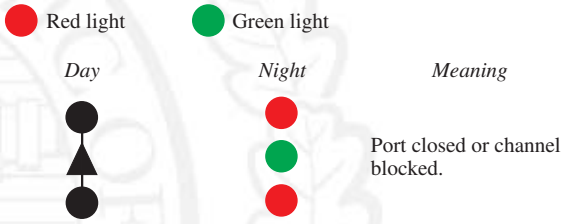
1.55

1 Uniform port signals, endorsed by The Association of Australian Ports and Marine Authorities, are for use by port authorities where provision is made for advising mariners of navigational information. The signals, if displayed, shall be shown from shore installations except that the Port Closed or Channel Blocked signal may be displayed also by a vessel blocking the channel.

These signals are not all in general use by port authorities, but where they are known to be in operation a statement referring to them is made in the text dealing with the port concerned.

Port traffic signals

1.56



Port Traffic Signals (1.56)

Storm signals

1.57

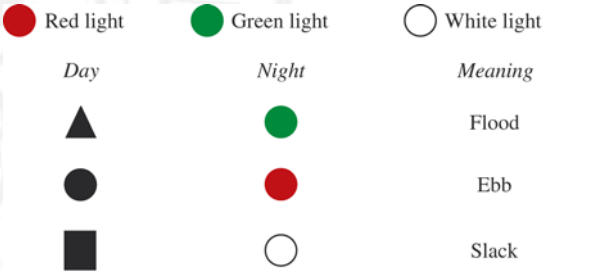


Storm Signals (1.57)

Tide signals

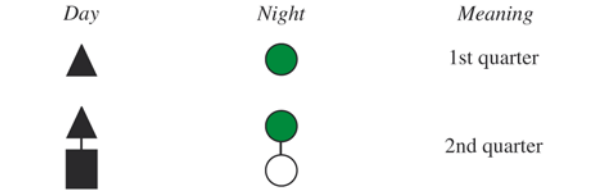
1.58

1 To be shown from the masthead:

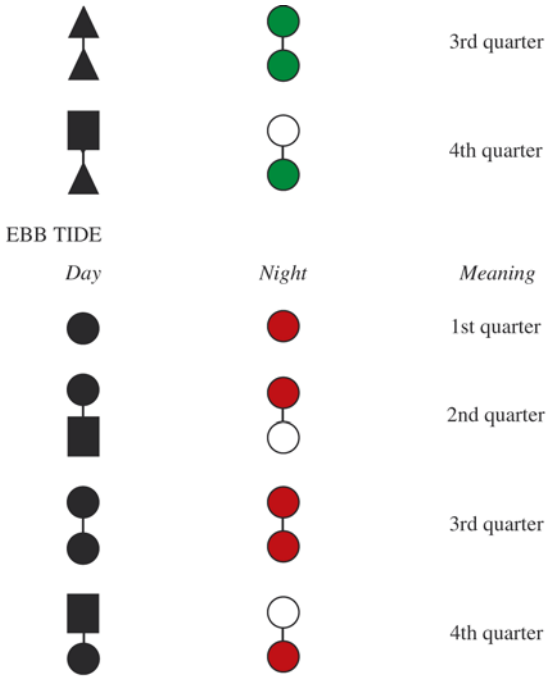


QUARTER TIDE SIGNALS - When shown with other signals they will be shown on the mast below the crosstrees or the normal positions of crosstrees. Quarter tide signals are NOT exhibited with depth signals.

FLOOD TIDE



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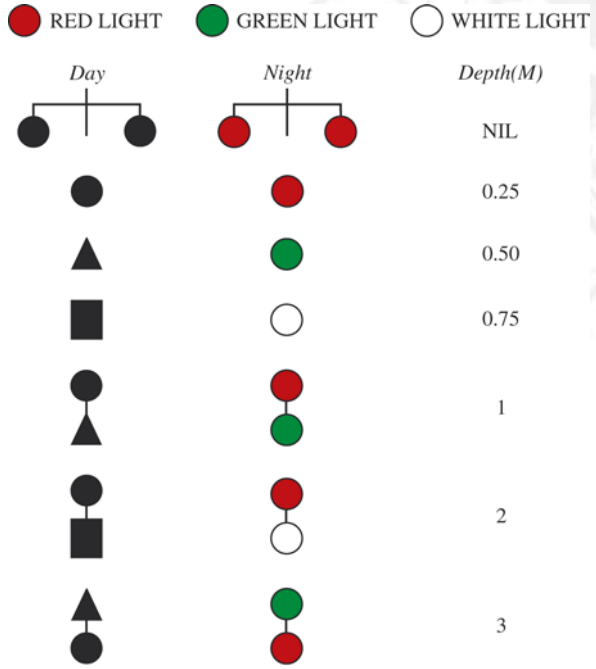


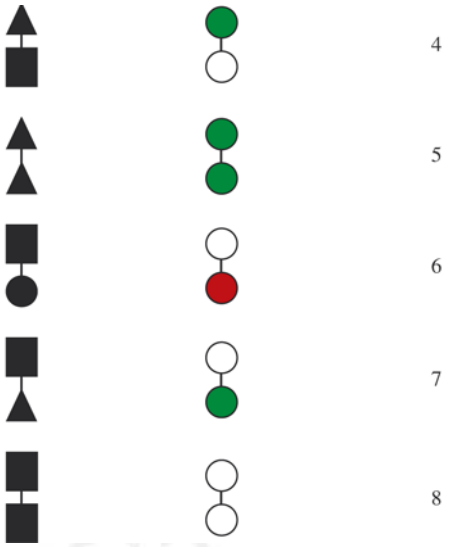
Tide Signals (1.58)

Depth signals

1.59

1 Depth signals are shown at the yardarm; whole metre signals being shown at the opposite yardarm to decimal signals. The signals indicate the depth in metres above local port datum, which may differ from chart datum. Depth signals are not displayed with quarter tide signals.





Depth Signals (1.59)

Datum signal

1.60

1 To indicate that yardarm depth signals are to be subtracted. If shown at the same time as navigational signals, it will be shown 2 m below the tide and navigational signals.

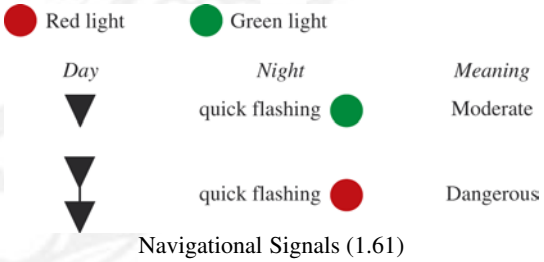


Datum Signals (1.60)

Navigational signals

1.61

1 To indicate danger on the bar, strong tidal currents or freshet in river, and shown 2 m below the masthead. Not shown when conditions are normal.



Navigational Signals (1.61)

Dredger signals

1.62

1 Signals shown by dredgers conform to those described in *International Regulations for Preventing Collisions at Sea (1972)*.

Submarines

1.63

1 Signals in use for operations connected with submarines are given in the *Annual Summary of Admiralty Notices to Mariners*.

Other signals

1.64

1 The following visual and sound signals, additional to those laid down in *The International Code of Signals* and *International Regulations for Preventing Collisions at Sea* should be used by vessels in Australian ports:

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Signal	*Meaning*
By day: red square flag with white circular centre. By night: red all round light.	Flammable liquid(s) onboard: see 1.43.
By day: berthing/unberthing flag signals as may be prescribed in Port Authority bye-laws. By night: two all round lights, green over red, disposed vertically 2 m apart.	Vessel navigating within pilotage waters of certain ports requires priority or right of way.
Sound signals prescribed for New South Wales rivers.	see 1.45.
Navigation lights - ferries - New South Wales.	see 1.45.

Courtesy flag

1.65

1 The correct courtesy flag to be flown in Australian ports is the Australian National Flag:



Courtesy Flag (1.65)

DISTRESS AND RESCUE

General information

Global Maritime Distress and Safety System

1.66

1 The GMDSS enables SAR authorities on shore, in addition to shipping in the immediate vicinity of a vessel in distress, to be rapidly alerted to an incident so that assistance can be provided with the minimum of delay. The sea area covered by this volume lies within the SAR Regions of Australia.

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

General arrangements for search and rescue

1.67

1 AusSAR is a discrete business unit of the Australian Maritime Safety Authority. It is located in Canberra and is responsible for both aviation and maritime search and rescue. When a ship or aircraft is in distress in the Australian Search and Rescue Region (SRR), assistance may be given by ships in the vicinity and/or the following authorities:

2 Australian Maritime Safety Authority (AMSA) through AusSAR, specifically the Rescue Co-ordination Centre Australia (RCC Australia), is responsible for SAR for all civil aircraft, for merchant ships outside port limits and small craft beyond the capacity of local SAR resources. RCC Australia co-ordinates aircraft and surface vessels involved in SAR operations within the Australian SRR. RCC Australia is also the Australian Mission Control Centre (AUMCC) for the COSPAS/SARSAT International Satellite System for Search and Rescue. RCC Australia is manned continuously and may be contacted through any Australian Coastal Radio Station or Inmarsat.

3 Coastal Radio Stations (CRS), which keep watch on the International RTF distress frequencies.

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

Royal Australian Navy (RAN) is responsible for SAR in respect of naval ships and shipborne aircraft, but may provide assistance to other SAR authorities.

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

An Australian Government protocol is in place, for commercial shipping rescuing persons at sea in or adjacent to the SRR, which includes guidance on the processes to be followed in landing people who have been rescued at sea.

Ship reporting systems

Australian Ship Reporting System (AUSREP)

1.68

1 To facilitate search and rescue procedures for ships in distress, an Australian Ship Reporting System (AUSREP) is operated by the Australian Maritime Safety Authority through AusSAR, specifically RCC Australia, for all ships in waters adjacent to the Australian continent. The E limit of the AUSREP region is the meridian of 163°00′E. Participation in the AUSREP scheme is mandatory for the following vessels:

2 All Australian registered ships engaged in trade or commerce interstate or overseas while in the AUSREP area.

Ships not registered in Australia but engaged in the coasting trade between Australia and an external territory, or between external territories, while in the AUSREP area.

Ships not registered in Australia but demised under charter parties to charterers whose residencies or principal places of business are in Australia, while in the AUSREP area.

3 Foreign ships, other than the above mentioned vessels, from their arrival at their first Australian port until their departure from their final Australian port; they are encouraged, however, to participate from their entry into the AUSREP area until their final departure from it.

Australian fishing vessels proceeding on overseas voyages while in the AUSREP area. The term ‘overseas voyage’ is defined in Section 6(1) of *The Navigation Act (Australia) 1912.*

4 Suitably equipped small craft on passage of 200 miles or more between different ports.

Small craft participation in AUSREP is dependant upon carriage of approved communications and on prior registration with the Rescue Co-ordination Centre Australia in Canberra.

Full details of the AUSREP system are given in *Admiralty List of Radio Signals Volume 1(2)* and *Annual Australian Notices to Mariners*.

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AMVER

1.69

1 AMVER is operated by the United States Coast Guard, is an international maritime mutual assistance organization which provides important aid to the development and co-ordination of search and rescue efforts in many offshore areas of the world. Participation in the system is voluntary and additional to participation in the Australian Ship Reporting System (AUSREP).

Details are given in *Admiralty List of Radio Signals Volume 1(2)*.

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COUNTRY AND PORTS

AUSTRALIA

General description

1.70

1 Australia, the official name of which is Commonwealth of Australia, is an independent country and the smallest continent in the world, situated entirely in the S hemisphere. It has a total land area of about 7 692 300 square km and is divided into six states and two territories. This Pilot covers the three states of Victoria, New South Wales and Tasmania.

2 The country is bounded N by Timor and Arafura Seas, NE by Coral Sea, E by the S Pacific Ocean, and S and W by the Indian Ocean. The capital city is Canberra which, in 2004, had an estimated population of about 323 100.

National limits

1.71

1 In general, Australia claims a territorial sea with an outer limit of 12 miles measured from the territorial sea baselines; a contiguous zone with an outer limit of 24 miles from the territorial sea baseline; an exclusive economic zone and fishing zone with an outer limit of 200 miles from the territorial sea base line. The fishing zone limits are similar but not identical to the limit of the exclusive economic zone.

2 Australia regulates fishing by vessels of all nationalities in the waters of the Australian Fishing Zone and the external territories, but excluding the Australian Antarctic Territory.

The Exclusive Economic Zone applies around the Australian mainland and islands including all external territories.

3 For full details of Maritime Jurisdiction, copies of the *Commonwealth of Australia Gazette* and the relevant *Acts* should be consulted; copies may be purchased from Australian Government Publishing Service bookshops, or be examined at Australian diplomatic and consular offices. See also *Annual Australian Notices to Mariners* and *The Mariner's Handbook*.

History

Discovery and exploration

1.72

1 The true discoverers of Australia were the aborigines who reached the N coasts of the continent in two distinct races about 20 000 years ago. The first race to arrive may have been the Tasmanoids, coming from New Guinea or other islands in Melanesia. The second race, the Australoids, coming probably from S India, pushed the Tasmanoids before them into the SE part of the continent at a time when it was still connected to Tasmania or close enough for it to be reached by canoe. At any rate the Tasmanoids settled in Tasmania, where they remained isolated until the coming of the Europeans with whom they were unable to compete. By the end of the nineteenth century they had become extinct as a pure race; however half-caste descendants still live on the islands in Bass Strait.

2 Chinese junks may have visited N Australia in the thirteenth century or even earlier and there is ample evidence that Malay fisherman, from what is now Indonesia, were frequent visitors to obtain trepang, a form of edible sea slug, for some hundred years before the arrival of the first European. In addition Portuguese or even Arab seaman may have reached the coasts of Australia before 1600, but no written evidence has survived. The depiction of a continent named Java-la Grande (or variations of that spelling) to the S of Sumatera on sixteenth century maps of the Dieppe school of Hydrography have been sited as evidence for a Portuguese discovery of Australia.

3 However, it was the Dutch who were the first Europeans to sight and report the existence of Australia and to land on the continent. In 1606 Captain Jansz was sent from Java in the yacht Duyfken to explore the S coast of New Guinea. During this voyage Jansz sailed S to the W coast of what is now Cape York Peninsula and explored the E side of Gulf of Carpentaria as far S as Cape Keerweer, where some of the crew were attacked by aborigines. Jansz returned to Java reporting a barren and inhospitable land; he failed to discover Torres Strait. Later in 1606 the Spanish explorer Torres, in the *San Pedrico* and *Los Tres Reyes*, successfully passed through the strait which now bears his name. Torres had accompanied Quiros on a voyage from Peru to Vanuatu (The New Hebrides) where they became separated. Torres then sailed W in compliance with the expedition's orders, thus discovering and passing through Torres Strait before finally reaching Manila. His report lay hidden in Spanish archives for many years and though the strait began to appear on charts in the eighteenth century its existence remained in doubt until Lieutenant James Cook sailed through it in 1770. The exact route Torres took through the strait was still being debated in 1980.

4 It was also the Dutch who were the first Europeans to sight the coast of Western Australia, when in 1616 Dirk Hartog in the *Eendracht* of Amsterdam sighted and explored the W coast between 21°45′S and 28°00′S, including Shark Bay. The coast N of Shark Bay was named after his vessel and some of the islands in the bay itself after members of his crew.

5 In 1619, Houtman, who founded the Dutch East India Company, was nearly wrecked in the *Dordrecht* and *Amsterdam* on the islets and rocks, now known as Houtman Abrolhos. On this voyage the land S of Shark Bay was named Edel's Land after the ships' supercargo. In 1629 Houtman Abrolhos was the scene of the wreck of the Dutch East Indiaman *Batavia*, under the command of Captain Pelsaert. However, the first European ship identified as wrecked off the Australian coast was the British East Indiaman *Tryal*, which was lost on Tryal Rocks in the Monte Bello Islands in 1622.

6 Also in 1622 the Dutch ship *Leuwin* rounded the SW cape of Australia which was named Cape Leuwin in 1801 by Matthew Flinders during his survey. In 1624 the Dutch ship *Gulden Zeepaard* cruised the S coast of Australia as far as the head of Great Australian Bight; the lands sighted were named after Pieter Nuyts, an important Dutch official who was on board.

7 In 1642 Anthony Van Diemen, Governor of the Dutch East Indies, sent Abel Janszoon Tasman in the *Heemskerck* and *Zeehaen* on a voyage of exploration during which Tasman discovered Tasmania, which he named Van Diemen's Land, the name by which the island was known until the mid nineteenth century. Tasman then became the first European to visit New Zealand and Fiji before returning to Batavia N of New Guinea.

8 The golden age of Dutch exploration ended in 1697 when Swan River was entered by Vlaming in the *Geelvink*.

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By this time most of the S, W and N coasts of Australia had been explored and charted to a certain extent. New Holland, the Dutch name for the continent, had also become generally accepted.

9 The first Englishman to visit Australia was William Dampier who landed on its N coast in 1688 reporting that "The inhabitants of this country are the miserablest people in the world". Dampier returned again in 1699 in command of HMS *Roebuck* and explored part of the NW coast, giving his name to the land in the vicinity of King Sound, and naming Roebuck Bay after his ship.

10 In 1770, Lieutenant James Cook, returning to England in HMS *Endeavour* after observing the transit of Venus in Tahiti, made a landfall on the coast of Australia at Point Hicks, now in the state of Victoria, thereafter exploring and charting the whole of the E coast as far as Cape York. Cook hoisted the Union Flag in Botany Bay in April 1770, claiming possession for the British Crown of New South Wales, the name given by Cook to the coast he had explored.

11 Formal possession of New South Wales was eventually taken by the British in Botany Bay on 26th January 1788 by Captain Arthur Phillip. Phillip, on board HMS *Sirius*, was in command of a fleet of naval vessels and transports, now known as "The First Fleet" which had been sent from England to Botany Bay to establish a convict settlement. This site proved unsuitable and instead, Phillip moved his fleet to Sydney Cove, Port Jackson, a few miles up the coast, where on 7th February 1788 the British colony was set up. A subsidiary settlement was set up shortly afterwards on Norfolk Island (see *Australia Pilot Volume III*).

12 The settlement of Port Jackson stimulated further exploration and between 1795 and 1799 Mr George Bass, Surgeon RN, and Lieutenant Matthew Flinders, both of HMS *Reliance*, explored the coasts adjacent to Port Jackson. Bass Strait was discovered by and named after the former officer, and Tasmania circumnavigated by the latter. Flinders returned to Australia in 1801 in command of HMS *Investigator* and surveyed the S and E coasts of Australia and Gulf of Carpentaria.

13 On the S coast Flinders forestalled the French explorer Nicholas Baudin commanding the *Geographe*, *Naturaliste* and *Casuarina*, who explored parts of the S, W and N coasts of Australia between 1801 and 1803, one of several distinguished Frenchmen who made useful contributions to the charting of Australia. There was an unexpected meeting between Flinders and Baudin in what Flinders aptly named Encounter Bay, situated about 25 miles E of Backstairs Passage in S Australia.

14 Lieutenants James Grant and John Murray carried out some useful surveys in HMS *Lady Nelson* between 1800 and 1802. Under the command of the former officer the *Lady Nelson* was the first ship from Europe to sail through Bass Strait, and with Murray in command, Port Phillip was discovered in 1801 and named by Governor King after the first Governor. Earlier in 1791 Captain George Vancouver in HMS *Discovery* had discovered and named King George Sound in Western Australia.

15 Finally, between 1817 and 1822, Lieutenant Phillip Parker King in the colonial schooners *Mermaid* and *Bathurst* surveyed the NE, N and W coasts of Australia. It can be said on the completion of King's survey that the outline of Australia as shown on modern maps had been finally determined. The work of such surveyors as Wickham, Stokes, Blackwood, Stanley, Yule and Denham, who followed King, filled in the missing details.

Settlements

1.73

1 The first settlement in Western Australia was made in 1827 at Albany in King George Sound. The official claim of British Sovereignty over all Australia was made in the same year. A settlement on the banks of Swan River was founded in June 1829 by Captain Stirling; the first stone of Perth, the capital of Western Australia, was laid in the same year.

2 The first settlement in Tasmania, then administered as part of New South Wales, was made in 1803. Tasmania became a separate colony in 1825. Melbourne was founded in 1835, at the head of Port Phillip, and became the capital of Victoria in 1851 when that colony too became separated from New South Wales.

3 Queensland was first settled in 1824 at Redcliff Point, Moreton Bay, but this site was found to be unsuitable and the settlement was moved to near the present site of Brisbane. Queensland was separated from New South Wales in 1859 and proclaimed a separate colony. South Australia was founded in 1836.

Naming of the continent

1.74

1 At the time of the initial settlement of Australia in 1788, the name of New Holland continued to be used for the W part of the continent and New South Wales for the E part. However, in 1804 Flinders wrote to Sir Joseph Banks suggesting the name of Australia for the continent as a whole. This suggestion did not meet with Bank's approval at the time nor again in 1814 when Flinders repeated the suggestion in the printed account of his voyage, which therefore was published with the title A Voyage to Terra Australis. Flinder's charts also carried the name Terra Australis, though his small scale chart of the continent was titled General Chart of Terra Australis or Australia. The name Australia gradually became accepted and by the time King's charts were published in 1825 only this name was used in the titles. The names Terra Australis and New Holland persisted in legal documents for a few more years.

Government

Constitutional development

1.75

1 In 1901 the British colonies of New South Wales, Victoria, South Australia, Queensland, Western Australia and Tasmania were granted the status of self-governing states and federated to form the Commonwealth of Australia, the states retaining many of their former constitutions. At the time of federation Northern Territory was a corporate part of South Australia, but in 1911 it formally came under the control of the Commonwealth Government. In 1978 Northern Territory became a self-governing territory within the Commonwealth of Australia and in 1969 the Coral Sea Islands Territory was established.

Federal capital

1.76

1 The Australian Capital Territory was set up in 1911 as an enclave within the territory of New South Wales, but it was not until 1927 that the federal capital of Canberra was completed and the seat of government transferred there.

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System of government

1.77

1 The Federal Government of the Commonwealth of Australia is vested in the Federal Parliament, which consists of the Sovereign, represented by the Governor-General, a Senate and a House of Representatives. Senators and members of the House of Representatives are elected by compulsory universal suffrage.

2 In each of the six states there is a State Government whose constitutional powers and laws continue, subject to changes embodied in the Australian Constitutions and subsequent alterations and agreements, as they were before federation. These Governments are similar to the Federal Government being lead by the Sovereign, represented by a Governor and an upper and lower house of Parliament, except in Queensland where the upper house was abolished in 1922.

3 The legislative powers of the Federal Government include taxation, finance, defence, external affairs, service and execution of the civil and criminal process. The State Governments deal with education, health, hospitals, law and order and public safety, and public undertakings such as railways, water and sewage.

Population

1.78

1 In 2004 the estimated population of the country was 20 275 700.

Language

1.79

1 English is the official language used throughout the Commonwealth of Australia.

Victoria

General description

1.80

1 The state of Victoria has an area of 227 420 square km and in 2004 had an estimated population of 5 012 300. The Government of Victoria is composed of a Governor and a legislature of two houses, the Upper House having 38 members, and the Lower House 66 members.

2 The coastline of Victoria forms the E part of the S coast of the continent of Australia and extends from the meridian of 141°00′E, W to Cape Howe (37°30′S, 149°59′E). The state is separated from South Australia, on the W side, by the 141st meridian, and on the N side from New South Wales by Murray River, from its intersection with that meridian, to its source, and thence by a line to Cape Howe.

Physical features

1.81

1 Great Dividing Range, a broad irregular mountain chain, extends W across Victoria from Australian Alps. These mountains are highest in the E part where they attain elevations from about 1200 m to nearly 2000 m. There is also a S continuation of Australian Alps near the E end of Great Dividing Range, at a much lower level, crossing Gippsland, and terminating in Wilson's Promontory, the most S granitic mountain range of the continent. There is no connected system of coastal ranges. In the NE corner of this State are vast sandy and sparsely grassed plains intersected by belts of scrub and forests.

2 With the exception of Murray River, navigable rivers are few. Those which have their source on the S side of the watershed flow directly to the sea, whilst those which rise on the N slopes are tributaries of Murray River. Particulars of the rivers which flow into the sea, within the area covered by this volume, will be found in the text. In dry summers many of the rivers dwindle down to small streams or detached pools. There are many shallow lakes, both fresh and saline, including Gippsland Lakes, which are navigable from the sea.

Flora

1.82

1 The largest trees indigenous to State of Victoria belong to the eucalyptus genus; wattles or acacia, evergreens, blackwood or acacia melanoxylon and lightwood or acacia implexa, are found throughout this state. Native cherrywood, tri-tree, myrtle, beech, and banksia or honeysuckle, comprise the most widely distributed of other native trees. Various kinds of fern trees are also numerous.

Fauna

1.83

1 The largest indigenous animal encountered in Victoria is the kangaroo, known by the distinctive names of kangaroo, wallaby and paddymelon. Other species include the rat-kangaroo, opossum, wombat, porcupine or ant-eating echida, bandicoot, native bear and native cat. There are several kinds of bat, the largest of which is the flying fox.

2 Different kinds of birds are numerous, the largest being a ground bird, the emu, of the ostrich family. There are several kinds of eagles and hawks, also cranes, black swan, laughing jackass, lyre birds or native pheasants, also various kinds of parrots and cockatoos of beautiful and brilliant plumage.

3 Snakes are found in all parts of the State, and most are venomous, particularly the tiger snake and death adder, as also the brown, black and copper-head snakes; lizards and goannas are also common. The insect world is variously and widely distributed.

Industry and trade

1.84

1 Gold and other minerals are found along the NE and central mountain chains. There are coal areas in the SE part of Victoria. Latrobe Valley, about 90 miles from Melbourne, has one of the largest known coal deposits in the world. Commercial reserves of natural gas and oil were found off Ninety Mile Beach in 1965 in the E part of Bass Strait. The oil drilling platforms are connected to the coast by submarine gas and oil pipelines, and thence overland to Western Port and Melbourne.

2 Agriculture is an important part of Victoria's economy producing wheat, oats, barley, meat, livestock and dairy produce. Wine and raisins are also produced and there are extensive orchards and apiaries.

Manufacture is increasing rapidly and a large number of factories have been established.

3 There is a considerable fishing industry with crayfish, shark, and barracouta fishing vessels operating from the major and small ports along the coast.

The principal exports consist mainly of agricultural, pastoral products, petroleum products, non-ferrous metals and iron and steel. The principal imports are road vehicles, general industrial and electrical machinery and parts,

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chemicals, textile yarns, fabrics, made-up articles and related products.

Tasmania

General description

1.85

1 The island of Tasmania, known also as the Jewel of the South and Apple Isle, lies S off the SE part of the continent of Australia, from which it is separated by a distance of about 120 miles by Bass Strait. The N boundary of the numerous islands included in this State, of which King Island and Flinders Island are the largest, is the parallel of 39°13′S. Included in the territory belonging to Tasmania is Macquarie Island (54°37′S, 158°54′E), a description of which will be found in *The Antarctic Pilot*. Tasmania has an area of about 68 400 square km, of which about 400 000 acres are cultivated farmland. In 2004 the estimated population was 483 600.

2 The Government of Tasmania is composed of a Governor and two legislative chambers, the Legislative council of 19 members, and the House of Assembly with 35 members.

Physical features

1.86

1 Tasmania is probably the most thoroughly mountainous island in the world; The Great Western Tiers, the highest mountains, attain an elevation of over 1500 m. The W and S parts of this island are particularly remarkable for bold and commanding scenery.

Rivers are numerous, some of them being navigable for part of their course. The main ones are River Leven, River Tamar, Arthur River, Gordon River, Huon River and River Derwent.

2 There are several mountain lakes near the sources of these rivers; Great Lake, at an altitude of 1025 m, is the largest. Others are Lake Sorell, Lake St Clair, Lake Echo, Arthurs Lake and Woods Lake.

Flora

1.87

1 The large trees indigenous to the island of Tasmania are the blue gum or eucalyptus gobulas, stringy bark or eucalyptus microrrhyncha, Huon pine, myrtle, wattle, blackwood and King William pine. In the mountain glens tree ferns of large size are very plentiful.

Fauna

1.88

1 The larger animals indigenous to the island of Tasmania are the kangaroo, wallaby, native hyena, native devil which is peculiar to the island, wombat, platypus, opossum and tiger cat. Some of the smaller animals are the kangaroo rat, bandicoot and native cat.

There are many species of land and aquatic birds. Among the former are black and white cockatoos, eagles, hawks, jays and magpies and among the latter, black swans, herons, penguins, petrel, pelicans, gulls and cormorants.

2 Among the reptiles, the tiger snake, copperhead and whip are all venomous. There are also lizards, iguanas, scorpions, centipedes and tarantulas. Insect life is very prevalent with nearly 1500 species having been found.

The bays contain excellent fish, particularly the trumpeter, found on the S side of the island. Salmon, flathead, trevally, garfish, barracouta, kingfish, perch, flounder, gurnard and bream are also to be found. The production of oysters on the E coast is of some importance. There are various species of whales, seals and porpoises in the neighbouring seas.

Industry and trade

1.89

1 The primary industries of Tasmania are agricultural, pastoral and mining. Fruit, potatoes, hops, oats, peas, turnips, barley and wheat are the principal crops. Large numbers of sheep are reared being celebrated for their general excellence and for their wool; cattle, pigs and a small number of horses are also reared.

2 The mining industry produces zinc, copper, tin, silver, lead, gold and other minerals. Timber is felled and milled in great quantities and a certain amount of coal is produced. Metal extraction and fruit growing are the most important export industries.

Tasmania has low cost hydroelectric power which enables economic production of electrolytic zinc, ferro-manganese, aluminium, calcium carbide, newsprint and fine papers.

3 The principal exports consist mainly of agricultural, pastoral products, fruit, fish, non-ferrous metals and iron and steel, newsprint and aluminum. The principal imports are road vehicles, general industrial and electrical machinery and parts, petroleum products, textile yarns, fabrics, made-up articles and related products.

New South Wales

General description

1.90

1 The coast of New South Wales forms the S part of the E coast of Australia and extends from Cape Howe (37°30′S, 149°59′E) to Danger Point (28°09′S, 153°24′E) (see *Australia Pilot Volume III*). The State is bounded on the S by the N boundary of Victoria and to the W it is separated from South Australia by the meridian of 141°E.

2 To the N it is divided from Queensland by MacPherson Range, W from the sea to Great Dividing Range, thence the boundary runs SW to the junction of Dumaresq River and Severn River. Thence it is bounded by the former river and MacKintyre River and Barwon River to 149°E, whence, W, the parallel of 29°S has been adopted as the dividing line.

3 New South Wales has an area of 800 640 square km and in 2004 had an estimated population of 6 771 100.

The Government of New South Wales is composed of a Governor and two houses of Parliament, the Legislative Council or Upper House with 60 members, and the Legislative Assembly or Lower House with 94 members.

Physical features

1.91

1 New South Wales may be divided into five natural divisions, the coastal district, the table lands, the W declivity, the inland river district, and the W plains.

The coastal district is a comparatively narrow strip of well-watered, undulating land extending back for about 30 miles to the table lands of Great Dividing Range.

2 The table lands are a high plateau traversing the entire length of New South Wales, furrowed by precipitous valleys and frequently presenting, on their seaward sides, nearly sheer escarpments. This high plateau extends from about 30 to 200 miles from the coast, and W of it there is a gradual fall to the great central plains.

3 The W declivity extends from the W edge of the table lands to the head-waters of the inland rivers, and covers some 97 280 square km of broken upland and down

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country, peculiarly adapted for the breeding of choice merino sheep, the best stud strains in the country coming from this division.

4 The inland river district, the S part of which is generally known as the Riverina, consists of a well-watered expanse of varied down and plain country, the greater part of which is adapted both to sheep breeding and agriculture, particularly the growing of wheat.

The W plains are purely pastoral, save in specialised districts, where vast mineral deposits have made the names of Broken Hill and Cobar famous as the sites of valuable mines of silver, lead, copper and gold (see *Australia Pilot Volume III*).

5 All the rivers of New South Wales, with three exceptions, have their sources in Great Dividing Range, and flow thence to the sea by the E or W watershed. The great rivers of the W watershed are Darling River, Lachlan River and Murrumbidgee River, which unite with Murray River and flow into Lake Alexandrina, in South Australia, and thence to the sea.

6 The rivers of the E watershed flow directly to the sea. The principal ones are Shoalhaven River, Hawkesbury River, Hunter River, Manning River, Macleay River, Clarence River and Richmond River. All these rivers are partially navigable by light-draught vessels, but have bars at the entrance that are more or less difficult or dangerous.

7 The largest lake in New South Wales is Lake George, situated on the table land of Great Dividing Range at an elevation of about 650 m; there is no outlet for its water which is saline. Of several other lakes only Lake Illawarra and Lake Macquarie are connected with the sea.

Geology

1.92

1 The mountainous ranges and table lands of New South Wales consist mainly of the older Palaeozoic formations pierced and rent by intrusive igneous rocks of various ages. The settled districts of the E coast lie mostly on rocks of the carboniferous formation, or on newer deposits of Mesozoic age, while the great W plains and valleys are almost wholly Tertiary sandstone, or more recent deposits, with intervening areas covered by overflows of igneous trap rock. Granite rocks of various kinds are abundant, and syenite forms the summit of Kosciusko (36°30′S, 148°15′E), 2236 m high, the highest mountain in Australia. Gold occurs in granite, in quartz veins and in beds of iron pyrites. The carboniferous rocks cover an immense area and are largely coal-bearing, so that the coalfields are among the most extensive in the world; these deposits are of Palaeozoic formation and correspond to the coal of England. No active volcano exists in the State.

Flora

1.93

1 Among the indigenous trees and shrubs of New South Wales are the acacia, eucalyptus or gum-tree, cedar, casurina or she-oak, honeysuckle, fig-tree, cabbage-tree palm, salt bush and mallee scrub; ferns of large size are numerous. Wild flowers grow in profusion, of these the waratah or native tulip, the Christmas bush and varieties of rock lily are some of the most striking.

Fauna

1.94

1 Among the animals indigenous to New South Wales are the kangaroo, wallaby, paddymelon, bandicoot, wombat, opossum, koala or native bear, native cat, platypus and native hedgehog. Bats are very numerous from the flying fox, of large size, to the flying mouse.

Among the birds is the parrot, of which there are over 60 species, the eagle, owl, great kingfisher or laughing jackass, magpie, native pheasant, bush and wild turkey, emu, lyre and bower bird, and native companion.

2 Snakes are very numerous, the death adder and yellow snake being the most dangerous. There are also many kinds of lizard and a peculiar long-necked tortoise is found in the swamps of some of the rivers. Leeches abound in most of the creeks and lagoons, and insects are prolific.

Among the fish are the bream, mullet, whiting, snapper, jewfish, flathead, garfish, Murray cod and perch; crustaceans abound and the Sydney oysters are much prized.

Industry and trade

1.95

1 The most important products of New South Wales are the vast numbers of sheep, large numbers of cattle, horses, pigs and poultry which are reared. Wheat, maize, oats, rice potatoes, tobacco, sugar cane, fruit and vegetables are grown and wine is made.

Large quantities of coal are mined. In addition to coal, silver, iron, zinc, copper and tin are mined and a certain amount of gold is produced. There are a large number of factories.

2 Trawling operations are carried out S from Port Stephens (32°42′S, 152°10′E) (see *Australia Pilot Volume III*), across the E entrance to Bass Strait, to Tasmania.

The principal exports are wool, iron and steel, food stuffs, coal, minerals, machinery, chemicals, hides and skins. The principal imports are machinery, motor vehicles, textiles, crude petroleum, chemicals, paper products, aircraft and parts, iron and steel, medical instruments and drugs, plastic materials, newsprint and foodstuffs.

PRINCIPAL PORTS

1.96

Place and position	*Remarks*
Victoria	
Portland (3.20) (38°21′S, 141°37′E)	Medium sized commercial and fishing port.
Geelong (4.77) (38°07′S, 144°22′E)	Major commercial port.
Melbourne (4.124) (37°50′S, 144°55′E)	Major commercial port.
Hastings (5.33) (38°20′S, 145°15′E)	Oil terminal and steel industry port.
Tasmania	
Stanley Harbour (7.27) (40°46′S, 145°18′E)	Minor commercial port and fishing port with a ferry terminal.
Port Latta (7.33) (40°51′S, 145°24′E)	Iron ore exporting port.
Burnie (7.48) (40°03′S, 145°55′E)	Medium sized commercial port
Devonport (7.79) (41°11′N, 146°22′E)	Small commercial port with ferry terminal.
Port Dalrymple (7.127) (41°09′, 146°50′E)	Medium sized commercial port.

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Place and position	*Remarks*
Hobart (9.95) (42°50′S, 147°20′E)	Major commercial port.
New South Wales	
Port of Eden (11.16) (37°05′S, 149°56′E)	Small commercial port; exports woodchips; imports petroleum products.
Port Kembla (12.19) (34°28′S, 150°54′E)	Major commercial port; exporting coal and steel products; importing ore.
Botany Bay (12.64) (34°00′S, 151°13′E)	Major port complementing Sydney.
Sydney (12.117) (33°50′S, 151°15′E)	Major commercial port; the main port of Australia.

PORT SERVICES — SUMMARY

Docking facilities

1.97

1 Ports with docking facilities and, where available, the size of the largest vessel that can be accommodated, are given below. Further detail is given at the cross reference.
Portland. Slipway; lift up to 300 tonnes (3.42).
Geelong. Slipway; lift up to 1000 tonnes (4.102).
Melbourne. Dry dock; maximum size 7500 tonnes (4.159).
2 Devonport. Slipway; lift up to 450 tonnes (7.94).
Launceston. One dry dock and a synchrolift; maximum size 2160 tonnes (7.159).
Hobart. Slipway; lift up to 1200 tonnes (9.129).
Sydney. One dry dock; small floating dock; several slipways; maximum size 110 000 dwt (12.177).

Other facilities

Salvage services

1.98

1 Sydney (12.177).

Degaussing range

1.99

1 Jervis Bay (11.109).

Compass adjustment

1.100

1 Portland (3.42).
Port Welshpool (6.53).
Port Albert (6.78).
Gippsland Lakes (6.107 and 6.111).
Hobart (9.129).
Saint Helen's (10.53).
Sydney (12.177).

Deratting

1.101

1 Deratting and deratting exemption certificates:
Portland (3.42).
Geelong (4.102).
Stanley (7.32).
Port Latta (7.38).
Burnie (7.67).
2 Devonport (7.94).
Port Dalrymple (7.147).
Launceston (7.159).
Hobart (9.129).
Port Kembla (12.44).
Port of Botany Bay (12.96).
Sydney (12.177).
Hastings (5.41).
3 Exemption certificates only:
Melbourne (4.159).

Measured distances

1.102

1 Within the area covered by this volume there are measured distances at:
Melbourne, Rickett's Point (4.110).
Hobart (9.116).
Sydney (12.105).

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NATURAL CONDITIONS

MARITIME TOPOGRAPHY

Seabed

1.103

1 The area covered by this volume is characterised by a narrow continental shelf and steep continental slopes beyond which lie Tasman Basin, in the E half of the area, and the Southern Ocean in the W.

The shelf is in general about 15 miles wide but broadens to 120 miles in Bass Strait, a structural depression separating Tasmania from SE Australia. Except for mud zones N of Tasmania the shelf is mostly covered by calcareous sands.

2 The continental slopes of the coast of New South Wales have gradients of 20° and are furrowed with submarine canyons down which terrigenous sediments have been transported to occupy the sea floor. These sediments are masked in the 1000 to 4500 m zone by an abundant deposition of calcareous sediment.

3 Tasman Basin is defined by the 4000 m contour and forms a natural structure and oceanographic unit, bounded on the SW by South Tasmania Ridge and East Tasman Plateau, which runs SE and E from Tasmania respectively. The floor of the basin is marked by a number of seamounts. Gascoyne Seamount (36°40′S, 156°12′E) is the shoalest seamount which has been located to date; it has a least depth of 87 m over it. In the deepest parts of the sea floor the sediments consist principally of red and brown clays. The volcanic seamounts may have contributed a proportion of the volcanic ash found in the sediments.

CURRENTS

General remarks

1.104

1 Currents in the area of this volume are of low constancy and have little seasonal change. Diagram 1.104.1 shows average currents during June to August (S winter) and diagram 1.104.2 average currents during December to February (S summer).

2 These currents form two main flow patterns, Southern Ocean Current and East Australian Coast Current. To the S of Australia, Southern Ocean Current gives an overall drift to the E, but large departures from the depicted average may occur on occasions. Similar variability can be expected in that part of East Australian Coast Current within the area covered by this volume, despite the fact that further N this current is a strong feature with high constancy and fast rates.

Southern Ocean Current

1.105

1 Southern Ocean Current sets E around the globe in latitudes, sometimes referred to as “The Roaring Forties”, which are associated with strong winds. Observations are sparse in the S parts of the area covered by this pilot, but there is no reason to suppose that current characteristics differ from those nearer Australia. Thus over any long period of time there would be an overall drift to the E but for shorter intervals currents mays set in any direction.

2 The N limit of this current varies somewhat seasonally. During the S summer Great Australian Bight lies under the influence of the subtropical highs rather than that of the disturbed W winds, and the currents, still very variable, set more to the NW than E (compare Diagrams 1.104.1 and 1.104.2).

3 Through Bass Strait currents most commonly set E in keeping with the general flow of Southern Ocean Current. However, sets in any direction may occur at all seasons, and rates as high as 2 to 3 kn have been reported, some of them onshore, around the coats of S Australia, Tasmania and King Island.

East Australian Coast Current

1.106

1 East Australian Coast Current is a clearly defined strong and narrow system of currents off the coast of Queensland, from about 22° to 32°S, but further S the flow is much weakened by branches separating towards the E to join the general flow in that direction over the open ocean. Thus in the area of this volume the S setting current off the coast of New South Wales represents the depleted tail of the main system of East Australian Coast Current. The rates here, as further N, vary somewhat seasonally, being rather higher during the S summer than during the winter.

2 The manner in which the current departs from the coast to join the general flow to the E in the open ocean is more complex than that depicted in the diagrams. As the flow departs it sets up a series of meanders which often become so pronounced as to produce complete cut-off eddies, typically 50 to 100 miles across. Thus, although the average set is to the SE, over short distances, sets may vary considerably and may in fact reverse direction. Rates which are generally low, may reach 1 to 2 kn in the tortuous flow formed by such branches off East Australian Coast Current.

TIDES AND TIDAL STREAMS

1.107

1 Throughout the area covered by this volume there is considerable diurnal inequality in the tides. On the E coast of New South Wales, the range is from 1 to 1·5 m; on the shores of Bass Strait it is from 2 to 2·5 m. Elsewhere it is less than 1 m.

In Bass Strait the tidal streams set generally W on the rising and E on the falling tide. In the narrow channels between the islands and close off headlands, rates of up to 3 kn are attained. Elsewhere the rate seldom exceeds 1 kn.

2 In other areas the tidal streams offshore are mostly over-shadowed by East Australian Current and Southern Ocean Currents. Strong streams may, however, be experienced close inshore off headlands and at harbour entrances, notably at the entrance to Port Phillip and Western Port; details of these are contained in the relevant parts of the book.

SEA AND SWELL

General remarks

1.108

1 For general information on sea and swell see *The Mariner’s Handbook*.

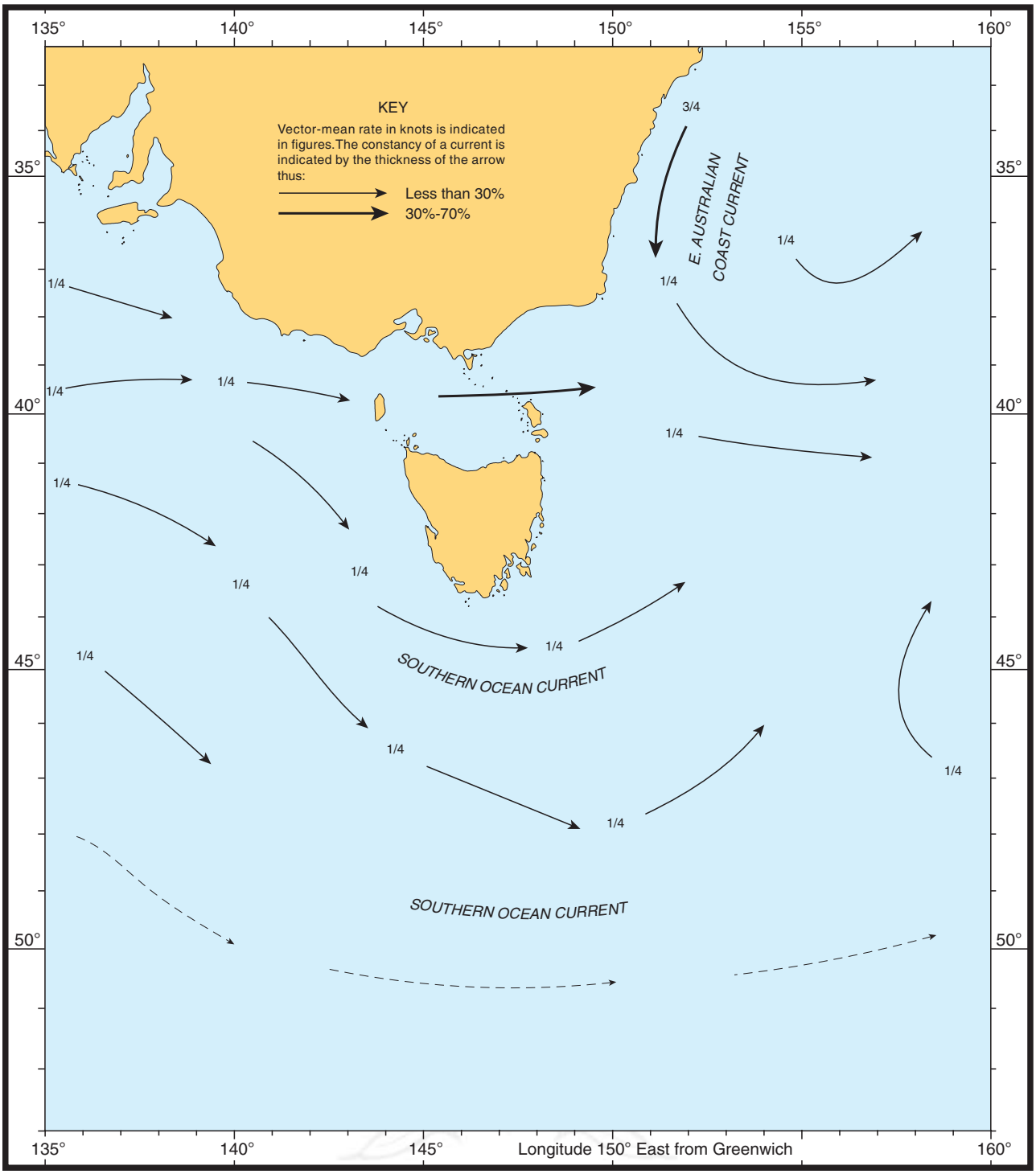
Sea conditions

1.109

1 Sea waves are generated locally by the wind and can be very variable in direction, especially when weakening tropical cyclones affect the N of the area covered by this volume.

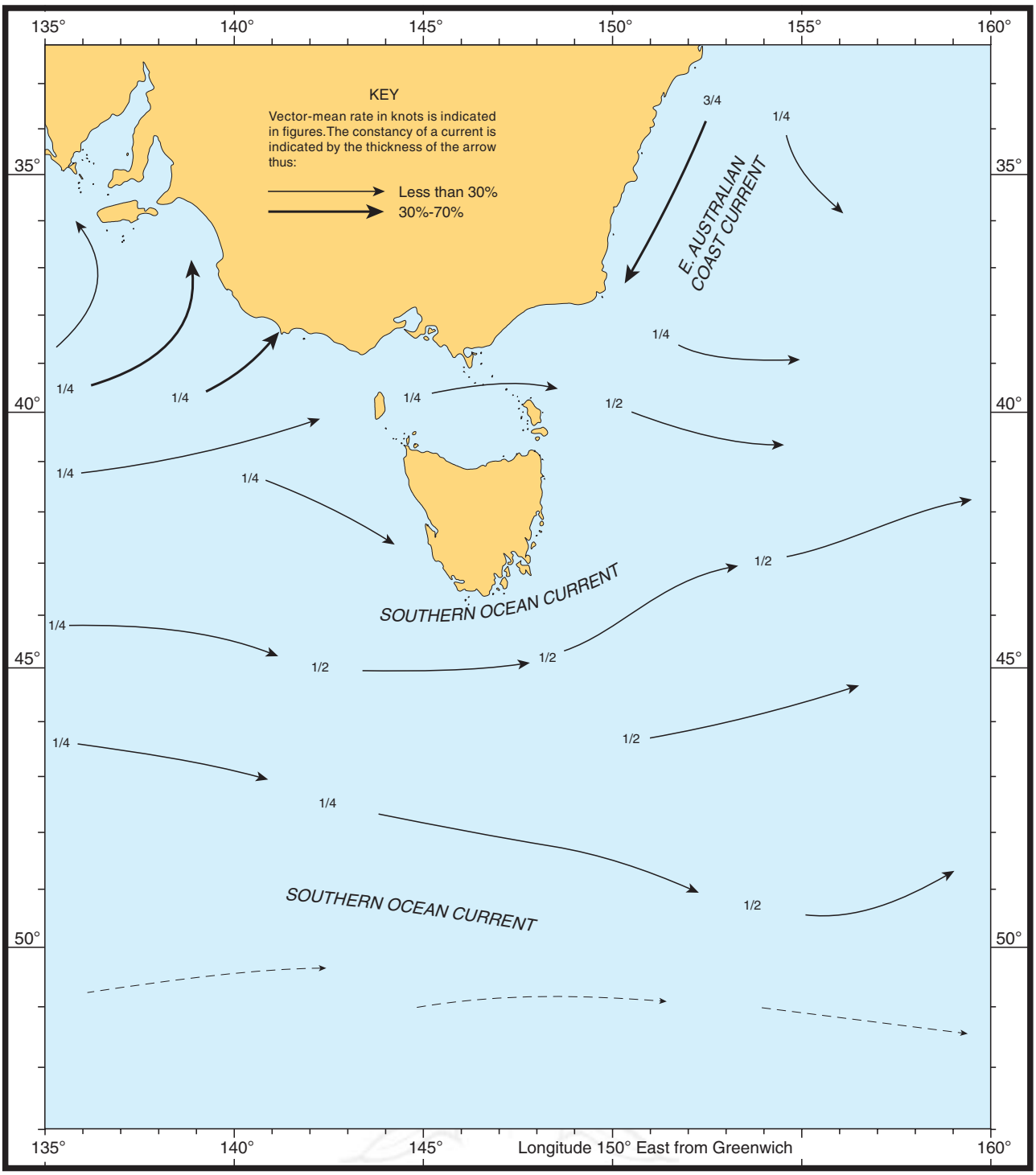
Over the open sea the frequency of reported combined sea and swell waves of 3·5 m and over, in January, is around 5 to 10% of occasions in the central and E part of Bass Strait but about 10% in the W. The frequency steadily

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Vector-mean currents JUNE to AUGUST (Southern Winter) (1.104.1)

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Vector-mean currents DECEMBER to FEBRUARY (Southern Summer) (1.104.2)

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increases from around 20% just to the S of Tasmania to about 42% at 53°S. In August, the frequency of waves of 3·5 m and over is around 10 to 20% in Bass Strait and increases to around 50% of occasions at 53°S.

Swell conditions

1.110

1 Diagrams 1.110.1 and 1.110.2 give swell roses for January and July. The roses show the percentage of observations recording swell from a number of directions and for various ranges of wave height. The swell roses for January are based on limited data for the area S of 45°S and should therefore be used with caution. Insufficient data is held to produce meaningful swell roses for July in the area S of 45°S.

2 In summer, the swell is predominately from the SW but becomes more W to the south of 45°S but with an increasing frequency of swells from other direction in the extreme NE of the area and to the S of 45°S. Swell heights of 4·5 m and over are reported around 5 to 10% of occasions in the NW and 5% in Bass Strait and the NE, and steadily increase to around 15 to 20% in the S. In winter, the swell remains predominately from the SW to the N of about 45°S and W to the S of 45°S. Swell heights of 4·5 m increase to around 5 to 10% of occasions in Bass Strait and probably steadily increase to around 30 to 35% in the extreme S of the area.

SEA WATER CHARACTERISTICS

Salinity

1.111

1 For an explanation of salinity as applied to sea water, see *The Mariner's Handbook*.

Within the area covered by this volume, general salinity values of between 34·0 and 35·5 can be expected throughout the year with the value of the isohalines increasing regularly towards the N. Inshore areas to the NW may experience values in excess of 36·0 in February.

Density

1.112

1 For an explanation of density as applied to sea water, see *The Mariner's Handbook*.

In summer (February) density values of between 1·02425 g/cm^3 in the N and 1·02655 g/cm^3 in the S can be expected. The trend of the isopicnals across the area is generally from WNW to ESE, apart from the NE portion of the area where they turn towards the ENE.

2 In winter (August) values range from between 1·02500 g/cm^3 in the N to 1·02700 g/cm^3 in the S. Similarly, the isopicnals generally trend from WNW to ESE, apart from the NE portion of the area where they turn towards the ENE.

Sea surface temperature

1.113

1 Diagrams 1.113.1 to 1.113.4 give the average sea surface temperature distribution for February, May, August and November. The highest temperatures occur in February and March and the lowest in August and September. The isotherms lie very roughly W to E; a marked ridge in the isotherms some 150 miles off the E coasts shows the presence of the warm S-going current flowing parallel with the New South Wales coastline. Within this current temperatures are 1° to 2°C higher than in the same latitude near the coast.

2 On most occasions (about 90%) the actual sea temperatures are within 3°C of the appropriate monthly average. Prolonged S winds result in subnormal temperatures and sustained N winds in above normal temperatures.

Mean temperatures of the sea surface are usually slightly higher than those of the over-lying air; this difference is around 0·5°C in most months. In May, June and July, however, greater differences occur, especially NE of Cape Howe where they may be more than 2°C.

ICE CONDITIONS

1.114

1 The pack ice of the Antarctic does not extend as far N as the S limits of this pilot.

Icebergs, however, can occasionally be expected in the S parts of the area at any season of the year. A single iceberg has been sighted as far N as 35°S in Great Australian Bight, but sightings N of 42°S must be very rare.

CLIMATE AND WEATHER

General information

1.115

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.

Routine weather reports, forecasts and warnings of hazardous weather, that cover the area, are regularly broadcast; for details see 1.27 and *Admiralty List of Radio Signals Volume 3(2)*.

General conditions

1.116

1 The climate over this area ranges from the mainly fine, warm subtropical climate of the more N parts in summer to the cooler and highly changeable conditions experienced in the S in winter associated with boisterous W winds of the temperate zone of the S hemisphere. In summer when these W winds are less strong even the more S parts enjoy spells of fair anticyclonic weather.

2 The greatest range of temperature occurs on the mainland S coast from near 40°C, in places, in the summer months of January and February to around 0°C on cold winter nights in July.

Rainfall on these coasts is adequate for a wide range of agriculture and is reasonably reliable in occurrence. Sea fog is infrequent and any land fog affecting ports and harbours is only moderately frequent and is usually shortlived.

3 Gales, force 8 and above, are rather frequent off the more S coasts of the mainland and around the coasts of Tasmania, but the frequency falls off NE-wards. The bad weather is usually associated with frontal systems of E-moving lows.

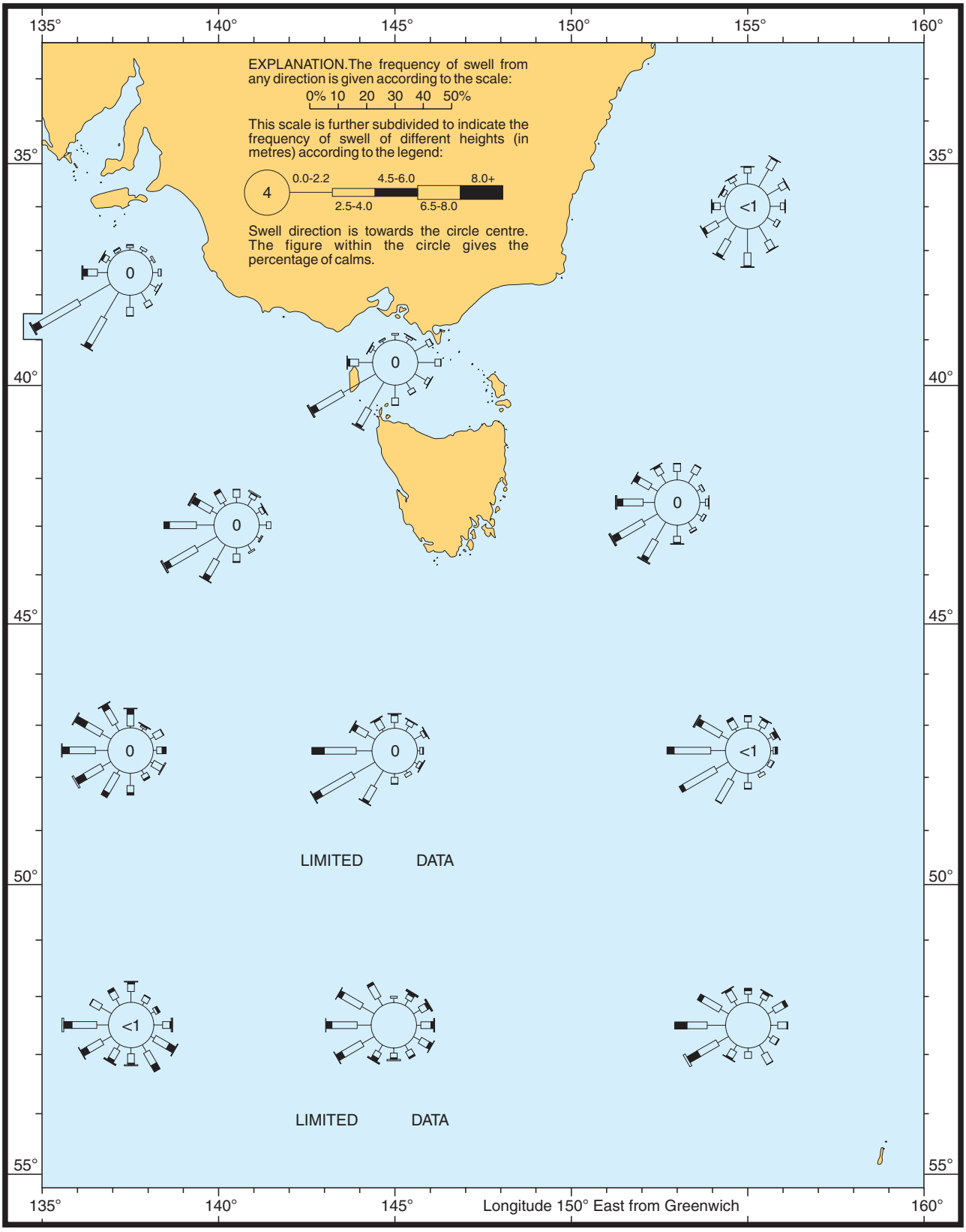
Tropical storms, can on infrequent occasions, move near the extreme NE of these waters, travelling on SE to SW tracks. On rarer occasions they can penetrate into the area but as they move and accelerate away SE or S they usually lose much of their vigour and degenerate into middle latitude depressions with associated fronts.

Pressure

1.117

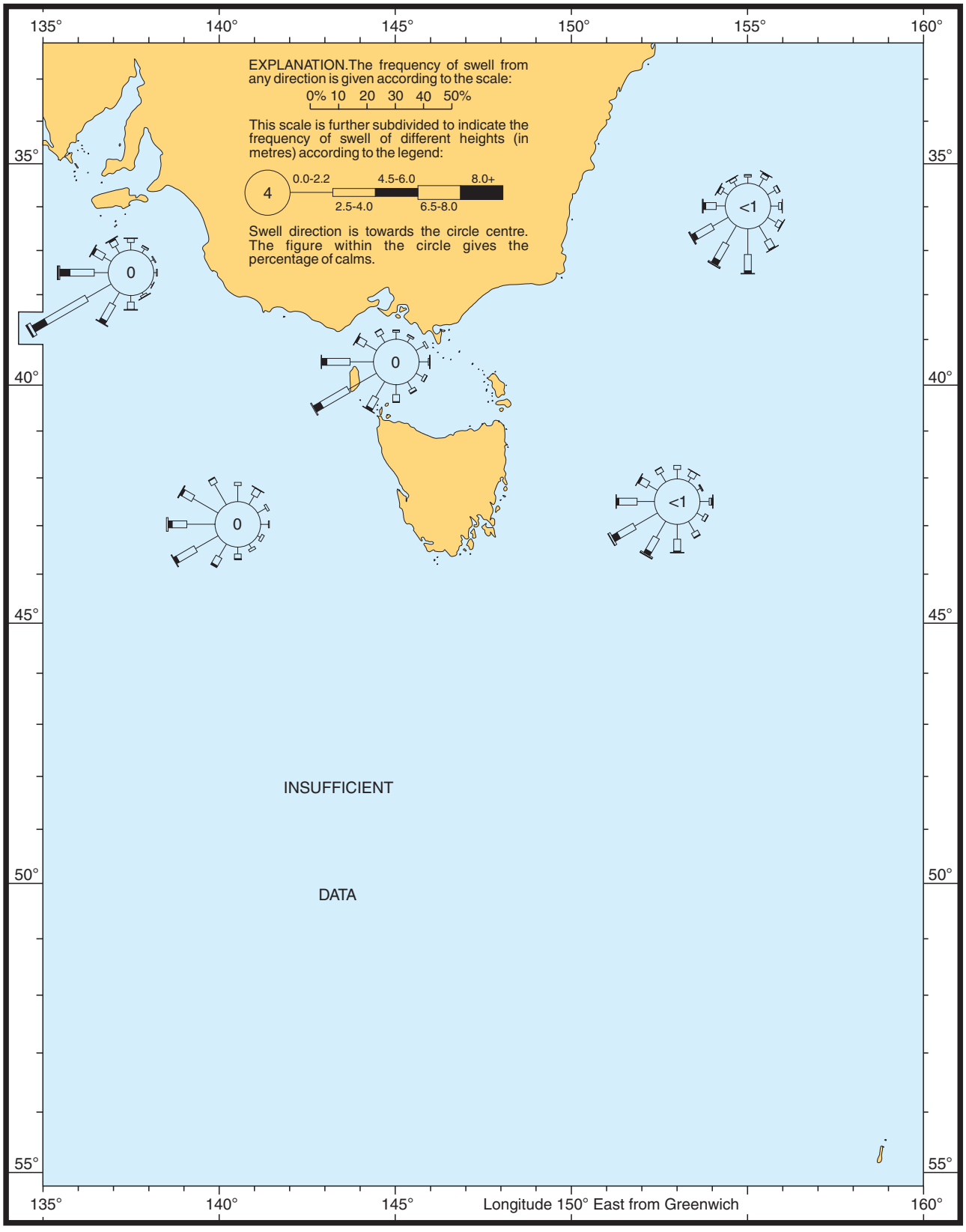
1 Diagrams 1.117.1 and 1.117.2 give the average barometric pressure distribution for January and July.

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Swell distribution JANUARY (1.110.1)

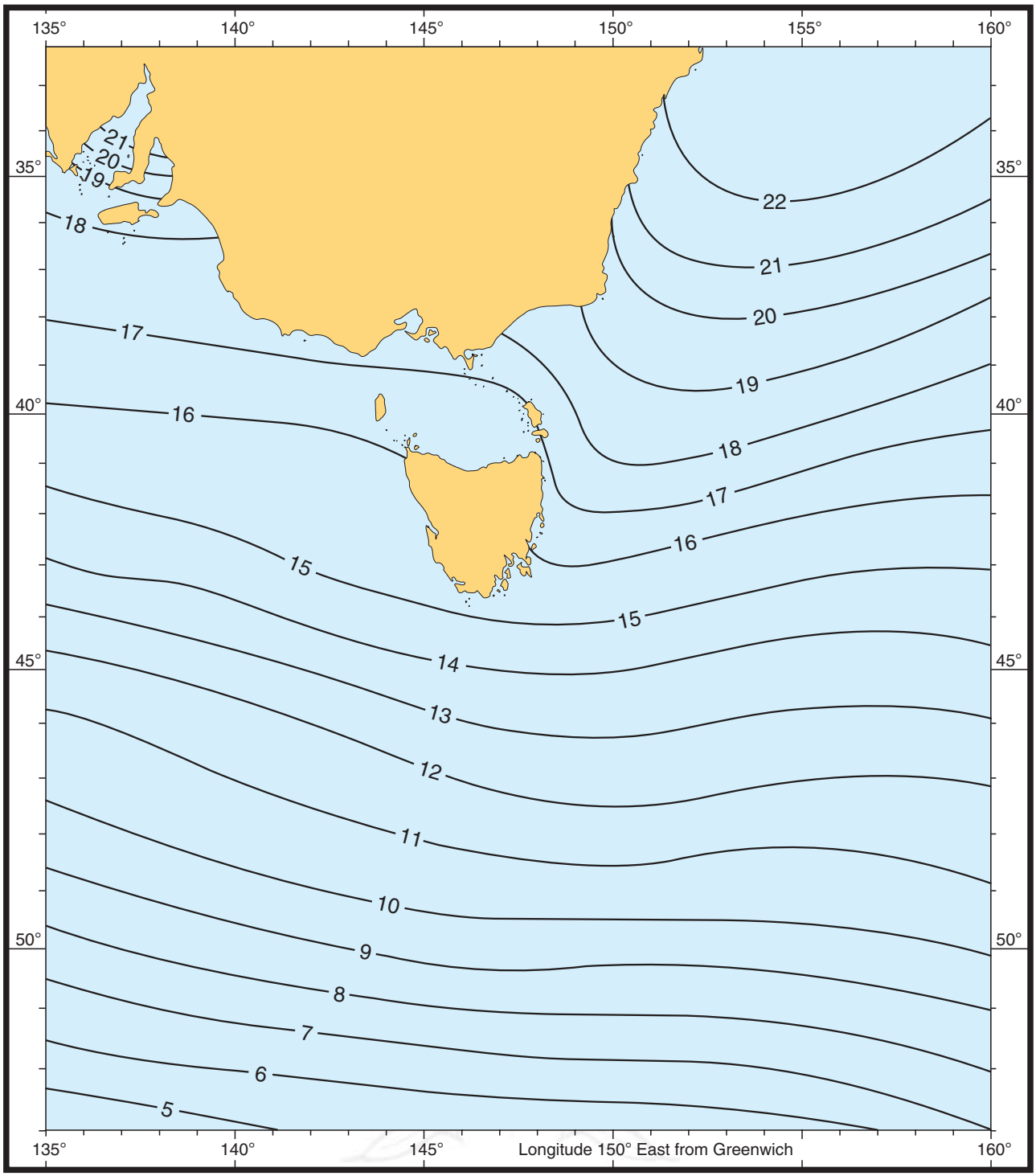
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Swell distribution JULY (1.110.2)

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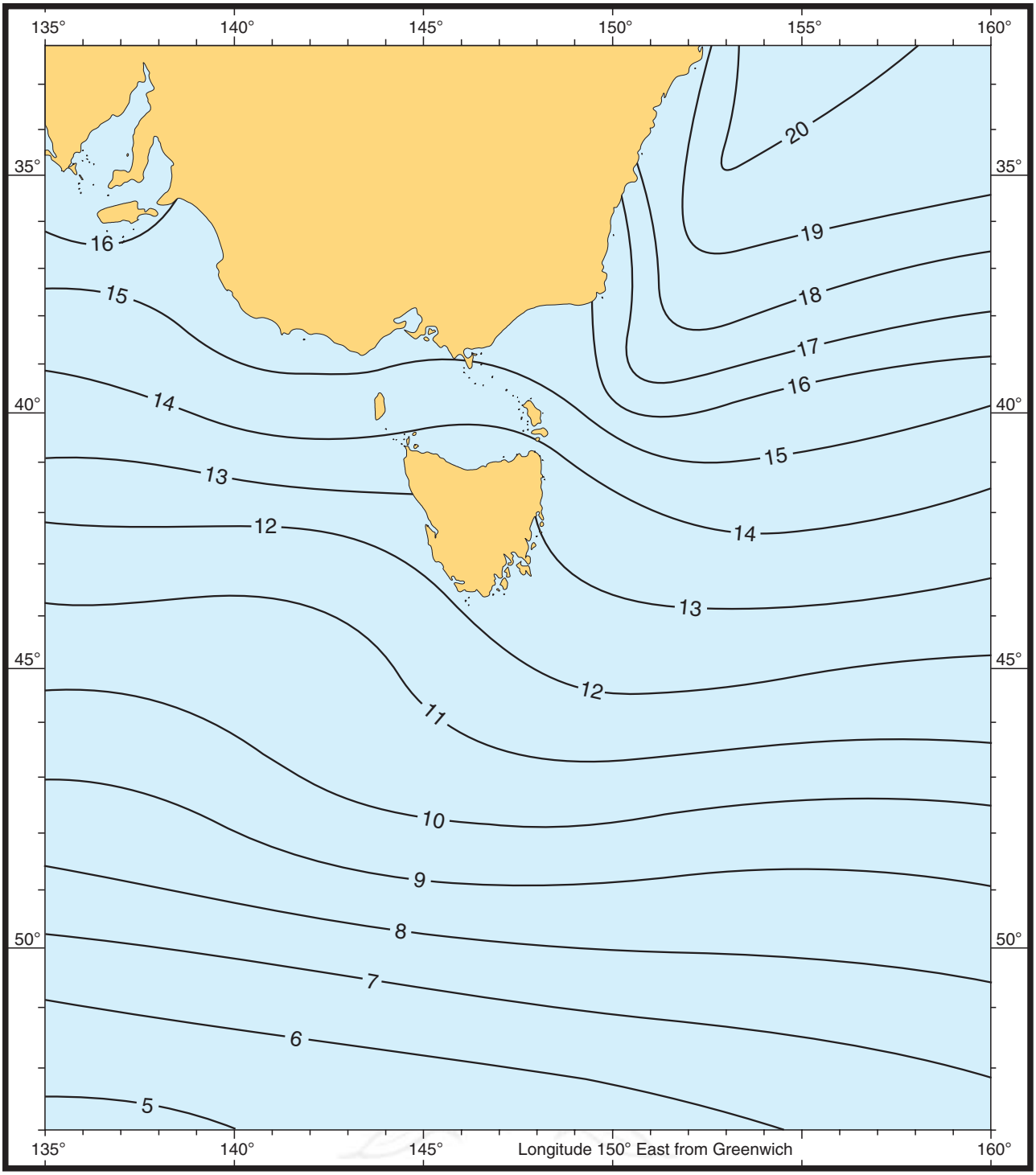
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Mean sea surface temperature (°C) FEBRUARY (1.113.1)

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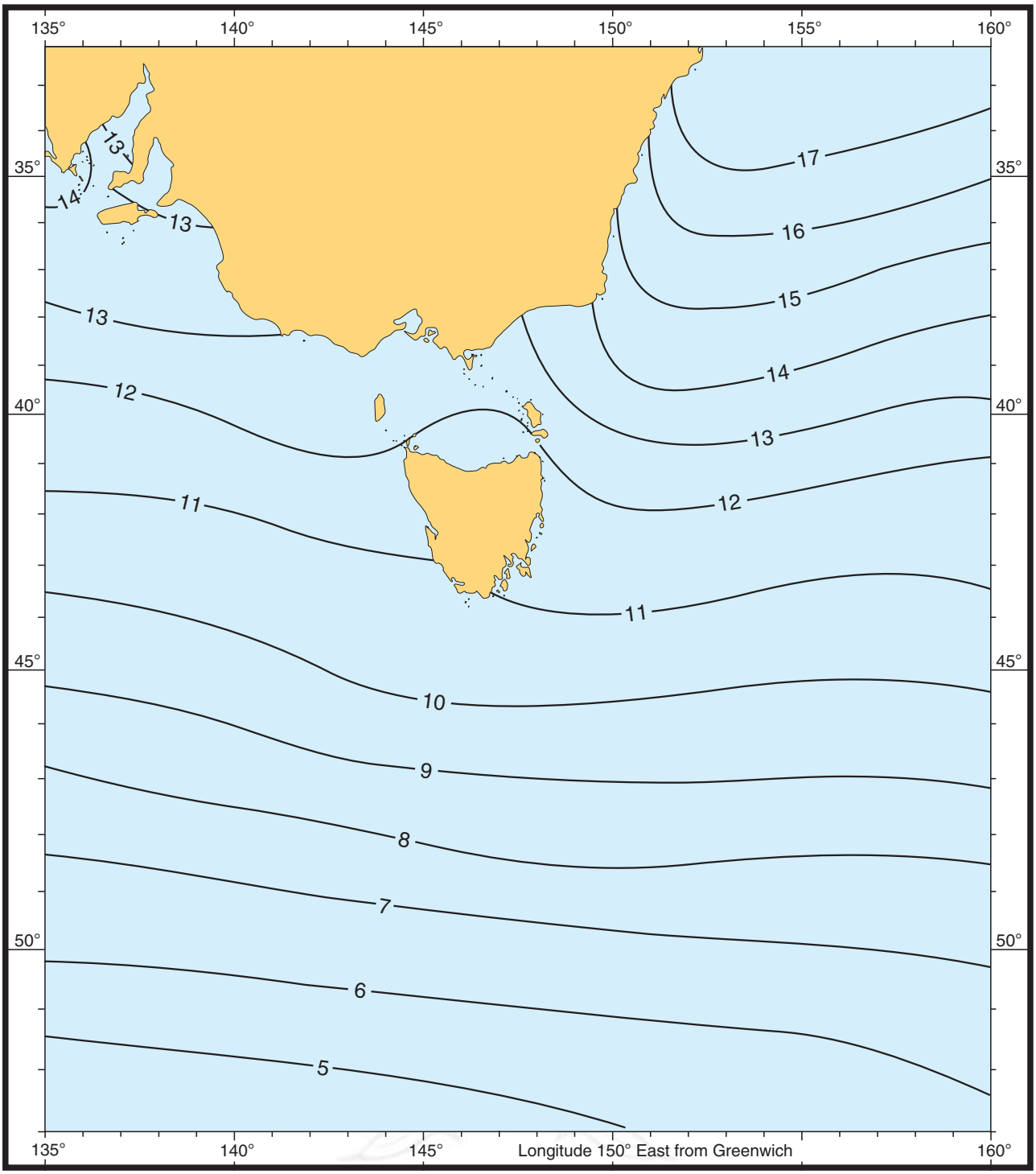
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Mean sea surface temperature (°C) MAY (1.113.2)

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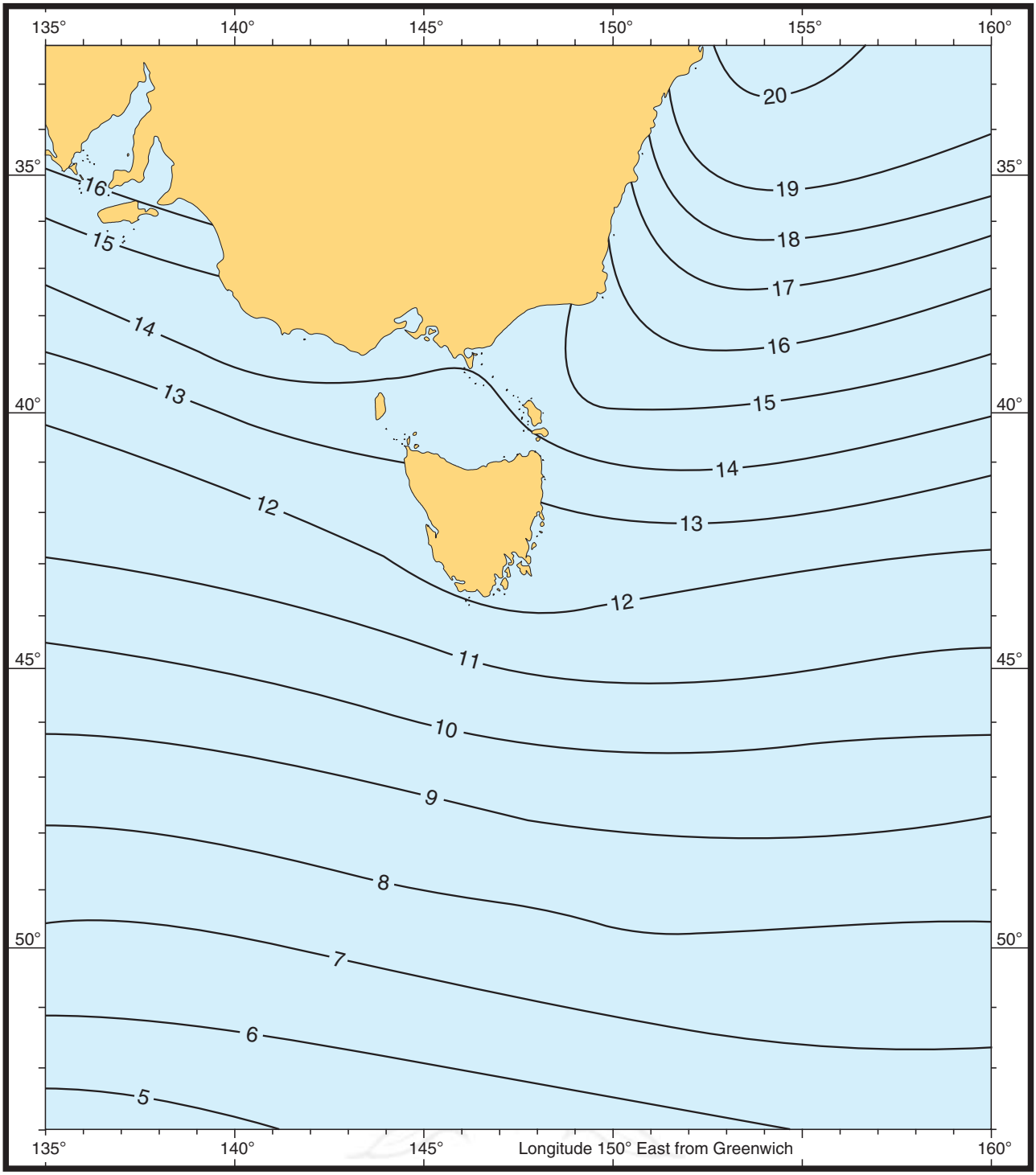
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Mean sea surface temperature (°C) AUGUST (1.113.3)

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Mean sea surface temperature (°C) NOVEMBER (1.113.4)

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The subtropical high pressure belt is a feature on all the average monthly pressure charts and marks the region then affected by the almost continuous procession of E-moving anticyclones separated by troughs of low pressure or shallow depressions. This high pressure belt is one of the controlling influences on weather and climate. The belt shifts its axis seasonally some 10° of latitude from its most S limit, around 38°S, at the end of January and in February, to its N limit, of about 28°S, in August. Consequently this feature affects some part of the region, whatever the season. The axis of the belt lies roughly W to E and the central pressure fluctuates also with the season, being lowest around 1013 hPa in January and February and highest 1020 hPa or more from May through August.

2 To the S of the high pressure belt the pressure gradient increases progressively S. The corresponding fresh winds form part of the wind system known as The Roaring Forties. As the high pressure belt retreats N in winter so these winds extend N to affect most of these coasts for a time, but they retreat S again with the approach of summer.

Tropical storms

1.118

1 The waters covered by this volume lie outside the tracks taken by tropical depressions, especially the more dangerous tropical storms and hurricanes. However, on rare occasions the centres pass near the NE coastal waters and the strong winds associated with these storms can then affect those waters. These tropical storms usually form between 10° and 20°S to the E of the Queensland coast, though some come from Gulf of Carpentaria *(Australia Pilot Volume V)* and reach Coral Sea from the W. Their initial movement is on a SE to SW track and they usually keep N and E of a line extending SE from the coast just N of Sydney. They tend to lose their vigour as they move S of 30°S and they accelerate away SE as they reach more S latitudes.

2 Sometimes tropical depressions originating off NW Australia reach Great Australian Bight after travelling overland and they then approach the coasts of Victoria and Tasmania from the W. During the overland movement the depressions become much weaker, though some strengthening occurs as they move again over the sea.

Depressions

1.119

1 The deeper depressions of the Southern Ocean, giving gale or storm force winds, move from W to E on tracks which are well to the S of these coasts, though frontal troughs linked to these depressions continuously affect the area, being more pronounced in the S than in the N. There are occasions when deep, vigorous depressions invade these waters and such depressions fall into two types.

Depressions in the first category, sometimes known as southern depressions, approach SW Australia from the W or SW and follow a track between NE and SE. Most of these move SE keeping S of Tasmania but in winter some may pass through Bass Strait.

2 Depressions of the second type are those which form off the E coast or intensify there, having moved across from the N. At this stage they are slow moving but subsequently move off S or SE. These can intensify sufficiently to cause gale force winds, accompanied by high seas, rain and low cloud, giving rise to some of the worst conditions affecting these coasts, especially those of New South Wales.

Fronts

1.120

1 The depressions moving across the area have the normal warm and cold fronts associated with middle latitude depressions elsewhere. The cold fronts are usually the more violent. The warm fronts are relatively weak and are at times rainless due to the dry air drawn into the warm sector.

2 Near the S coasts of Australia the "Southerly Buster" is a well-known phenomenon; it is the name given to the line squall which quite often accompanies the passage of a cold front. In a matter of minutes hot, N winds in advance of the front, blowing from the continental interior, give way to cold blasts from the S. The corresponding fall in temperature is dramatic, reaching 15°C or more on occasions. Since the cold front is aligned roughly NNW to SSE its E progress along the coast of Victoria proceeds steadily. On reaching the vicinity of Cape Howe, however, the change in the orientation of the coastline causes the line squall to advance extremely rapidly along the New South Wales coast. The weather then in advance of the front changes from hot and dry to damp weather with mist or drizzle brought along by NE winds.

3 The "Southerly Buster" is often accompanied by a long line of roll cloud extending from horizon to horizon, a familiar feature of line squalls in other parts of the world.



Southerly Buster (1.120)

(Photograph – N. V. Villarin, Brussels)

Winds

Average distribution

1.121

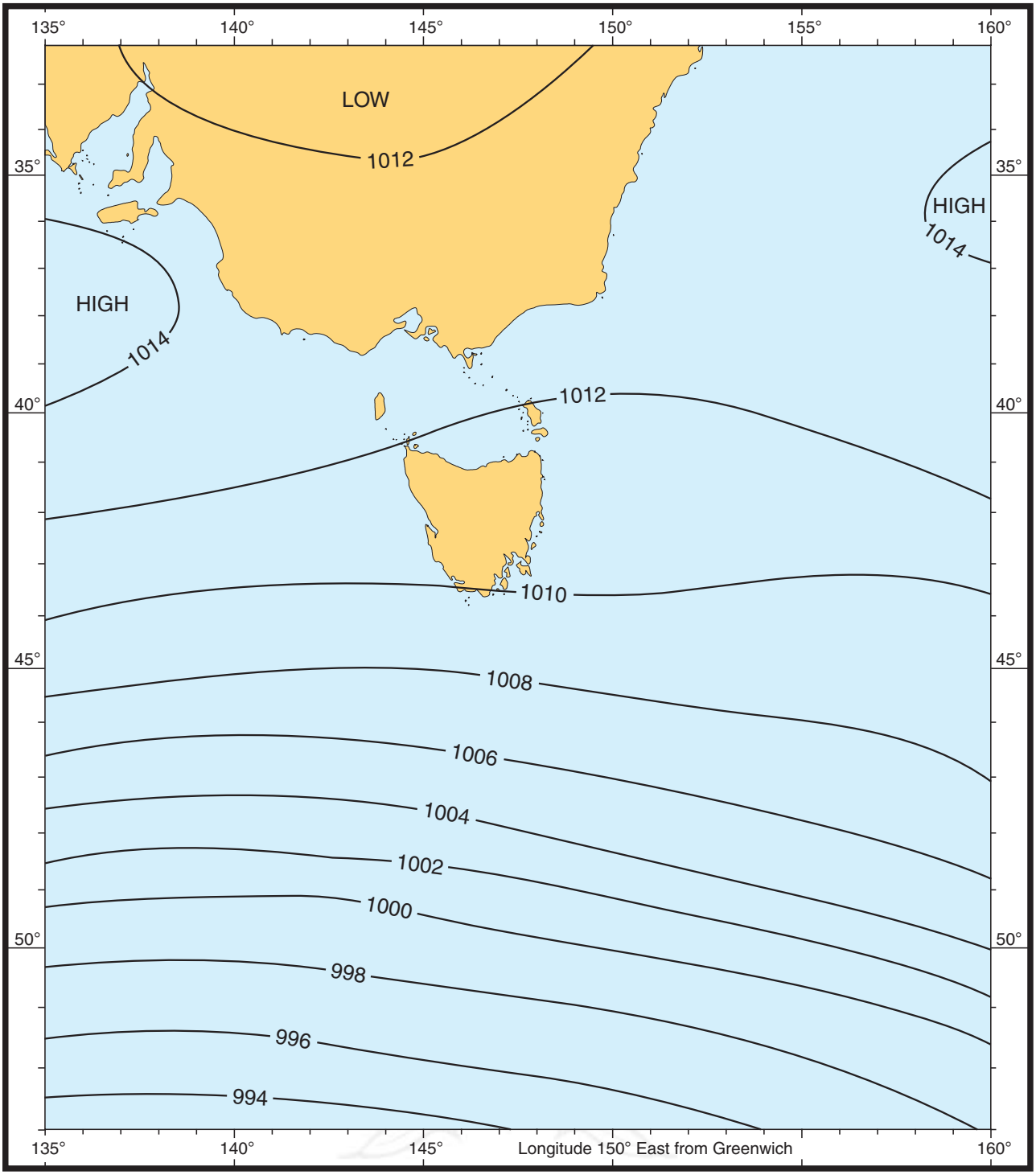
1 The frequency distribution of wind force and direction at sea for January, April, July and October are shown in Diagrams 1.121.1 to 1.121.4 by wind roses, based on ship observations.

2 During most of the winter half-year, April to September, the predominant winds blow from between SW and N over most of these waters. To the E of 150°E and N of 40°S, however, the winds in autumn and early winter are mostly from between SE and W; during the rest of the winter the winds are mostly between S and W. In the N part of these waters the frequency of N winds is also quite high. Most of the winds are moderate to strong in winter, averaging force 4 to 7.

3 During the summer half-year wind directions vary considerably and, over much of these waters, there is little evidence of one dominant direction; infrequent directions are:

Off S coast of Victoria — winds with a N component.

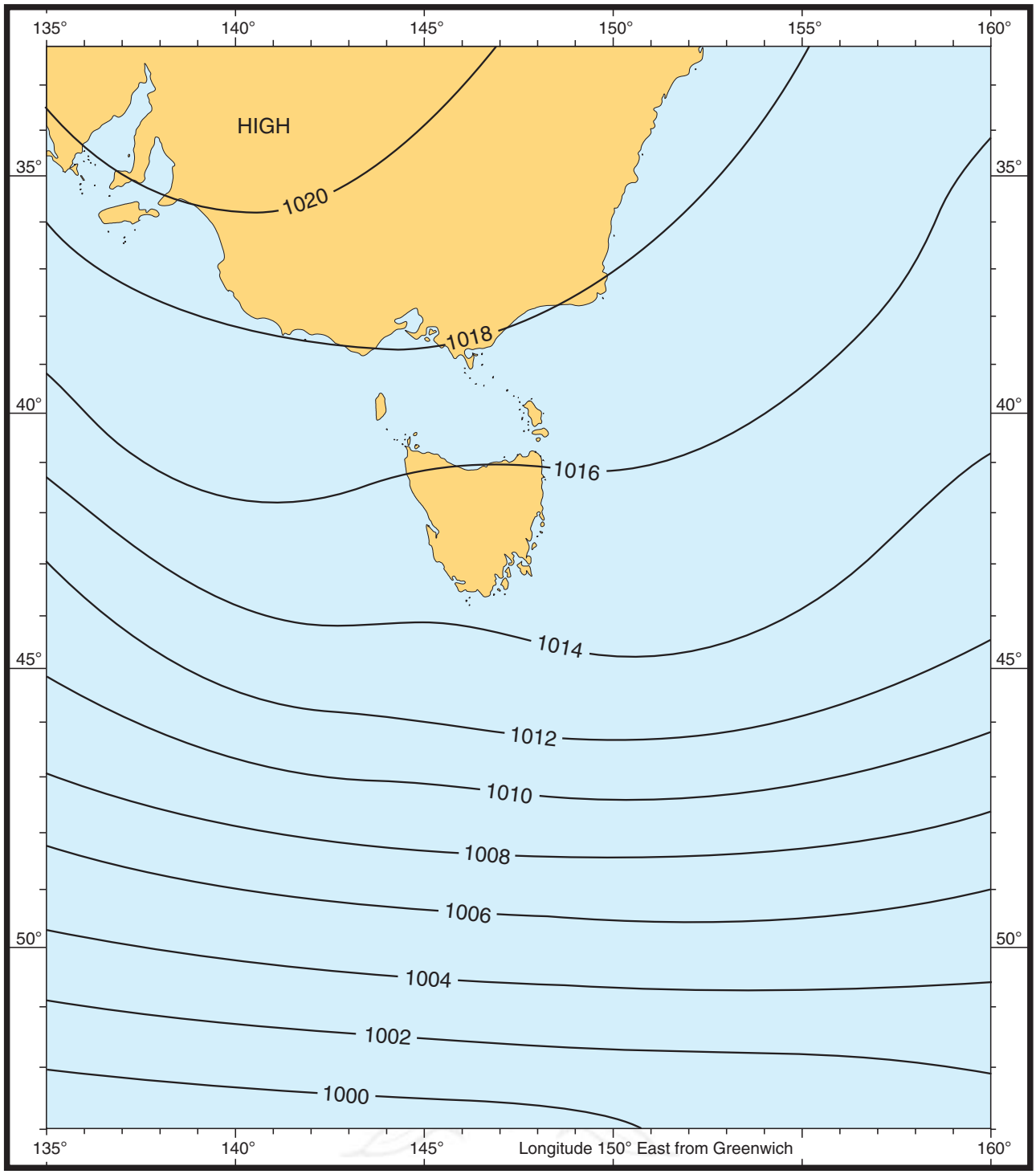
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Mean barometric pressure (hPa) JANUARY (1.117.1)

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Mean barometric pressure (hPa) JULY (1.117.2)

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Off E coast of New South Wales — W and NW winds.

Off W coast of Tasmania — NE and E winds.

Off E coast of Tasmania — N and NE winds.

The average strength in summer is force 4 to 5.

4 Throughout the whole year the wind seldom blows from any one direction for more than a few days at a time. This is largely due to the almost continuous procession of highs and lows crossing the area from E to W. On average the interval between successive anticyclones is about a week. Typically the N winds which blow for a time, as the anticyclone retreats E, gradually increase until the passage of the cold front trough; colder S winds set in behind these troughs and then decrease gradually as the succeeding high spreads across.

Wind shift sequence

1.122

1 South of the anticyclone belt the normal sequence of wind is, from W, then veering NW with the approach of the trough, backing sharply SW at its passage, followed by a slow reversion to W winds.

North of the belt the sequence is, from E, backing NE with the approach of the trough, veering SE as the trough moves E, followed by a slow reversion to E winds.

2 Frequently, more especially in winter, depressions rather than the weak pressure troughs move across between successive highs and then the wind sequence will depend on the particular track which the depression takes relative to the observer.

Coastal winds

1.123

1 Wind regimes over the open sea are modified progressively when closing the coasts, as described in *The Mariner's Handbook*. The two main effects are topographic and thermal. The former includes diversion of flow, round and over land barriers and also the intensification of winds in narrow channels. The second main effect includes the daily alternation of land and sea breezes arising from the differing thermal properties of land and sea. The first effect is responsible for the high gale frequency in Bass Strait due to W or E winds.

2 Sea breezes have a marked effect in summer when pressure gradients are usually weaker. Some of these effects on parts of the coast can be seen in the wind distribution tables for morning and afternoon in the Climatic Tables at the end of the chapter.

On the E coasts the summer NE winds are for the most part associated with fine weather. Occasionally, stronger NE winds occur resulting from high pressure over Tasman Sea and lower pressure over land. The weather is then overcast and gloomy with rain; these conditions are referred to as "the black north-easters".

3 Tornadoes, which are relatively small but violent vortices, are reported on very hot, thundery occasions over land; they can give localised gale force winds within a radius of a few hundred feet of the vortex. Recent research on the tornado shows that tornadoes may be more frequent and relatively more intense than previously thought; not all tornadoes, however, are extremely violent.

4 The waterspout, the marine counterpart of the tornado, has been reported at times in coastal waters. Several tornadoes or waterspouts may occur during the same day when conditions favour their formation.

Gales

1.124

1 The wind roses give an indication of the frequency of gales from specific directions. Gales, force 8 and above, are more frequent in winter than in summer and then the most likely directions are between W and N in the W waters, between SW and NW off Victoria and Tasmania, and between S and W off the E coasts of the mainland, the frequency decreasing to the N.

The frequencies are lower in summer, most gales blowing from between S and W; in waters well E of Tasmania NW and N gales occur. Again the frequencies fall off N along the mainland coast.

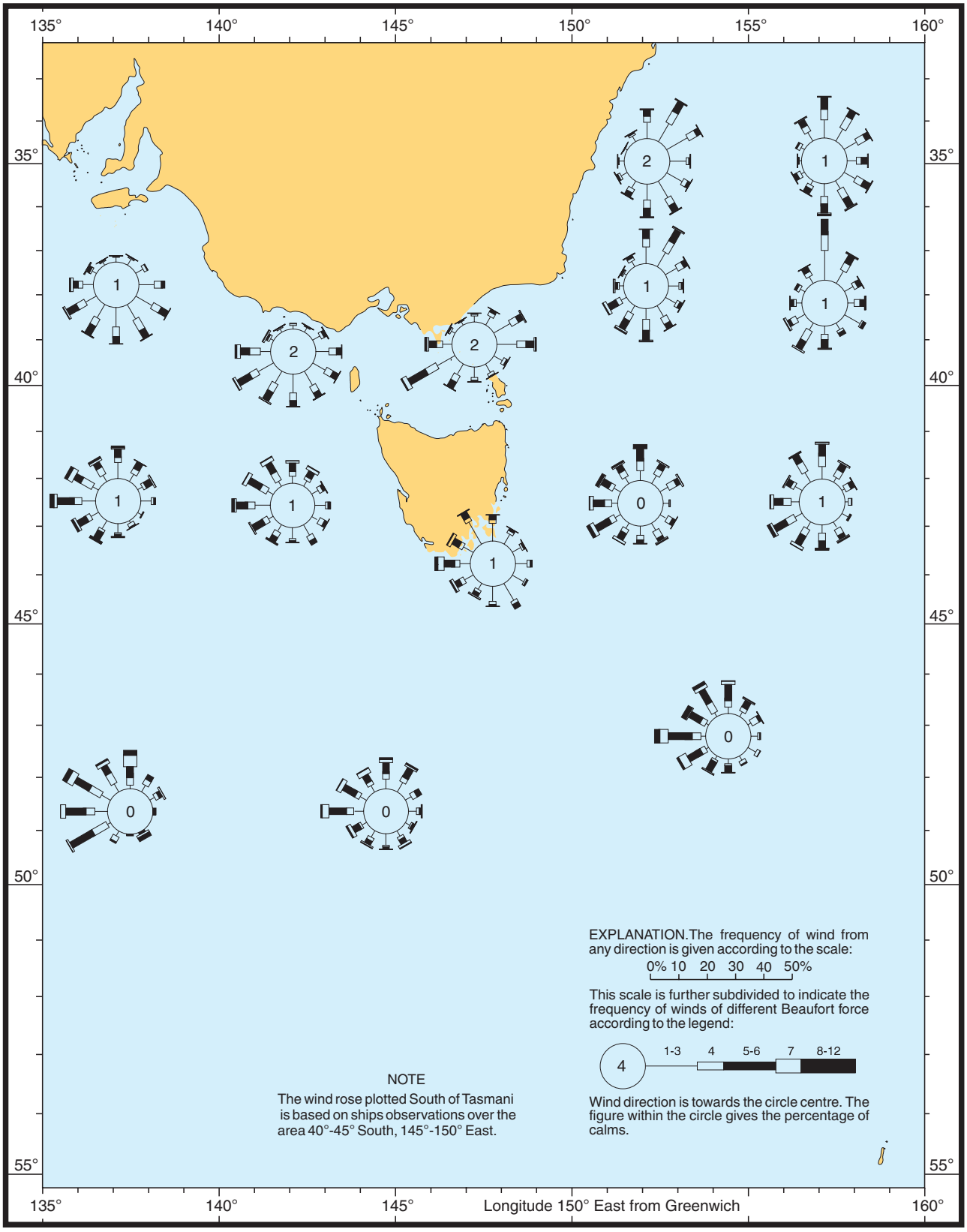
2 The following table, based on ship observations, gives the monthly percentage frequency of gales for 5° latitude and longitude squares N of 45°S, but for larger areas S of 45°S where data is rather sparse.

Monthly percentage frequency of gales

(force 8 and above, based on ship observations)

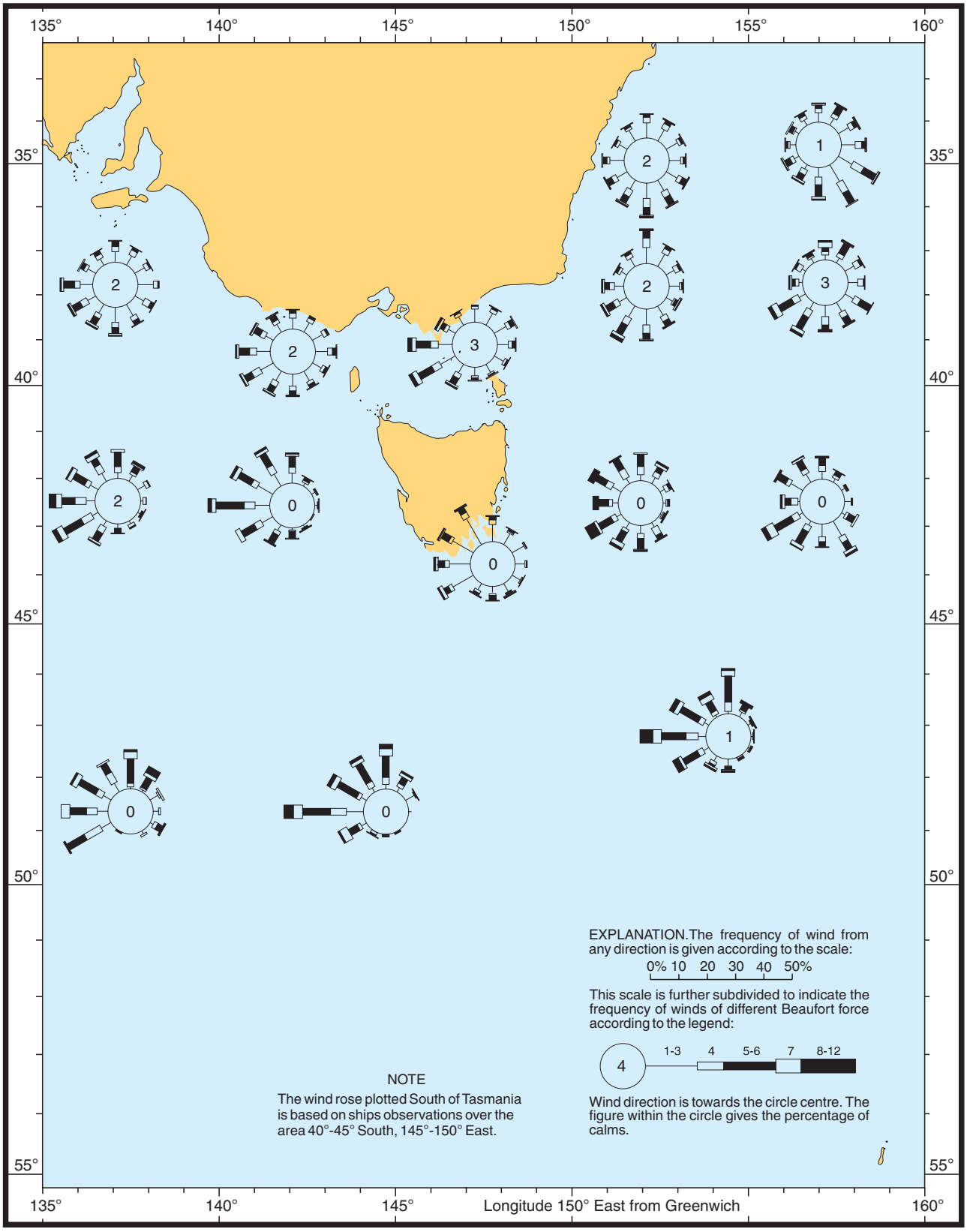
Lat S	*Long E*	*J*	*F*	*M*	*A*	*M*	*J*	*J*	*A*	*S*	*O*	*N*	*D*	*Period of observations (years)*
30°/35°	150°/155°	1	1	2	2	3	5	4	3	2	3	1	1	2
30°/35°	155°/160°	1	1	1	3	5	8	7	5	7	4	1	2	4
35°/40°	135°/140°	1	2	1	2	3	4	6	5	5	4	3	1	3
35°/40°	140°/145°	2	2	2	2	3	4	5	6	4	3	3	2	3
35°/40°	145°/150°	2	2	2	4	4	5	4	2	4	3	4	2	3
35°/40°	150°/155°	3	3	4	4	5	8	7	5	5	4	3	3	4
35°/40°	155°/160°	1	1	1	5	8	6	11	11	9	6	4	3	5
40°/45°	135°/140°	7	5	2	7	8	5	7	7	13	6	3	7	6
40°/45°	140°/145°	3	7	3	4	5	8	6	12	12	10	8	7	6
40°/45°	145°/150°	3	3	4	3	3	8	9	12	6	8	5	3	5
40°/45°	150°/155°	7	6	7	11	4	9	9	12	11	7	5	7	8
40°/45°	155°/160°	4	4	4	5	4	4	2	9	7	10	2	4	5
45°/53°	135°/140°	6	5	4	6	9	9	9	13	10	7	7	12	8
45°/53°	140°/150°	4	10	5	9	9	10	7	8	13	13	6	8	8
45°/53°	150°/160°	6	8	9	12	8	13	7	9	14	5	13	6	9

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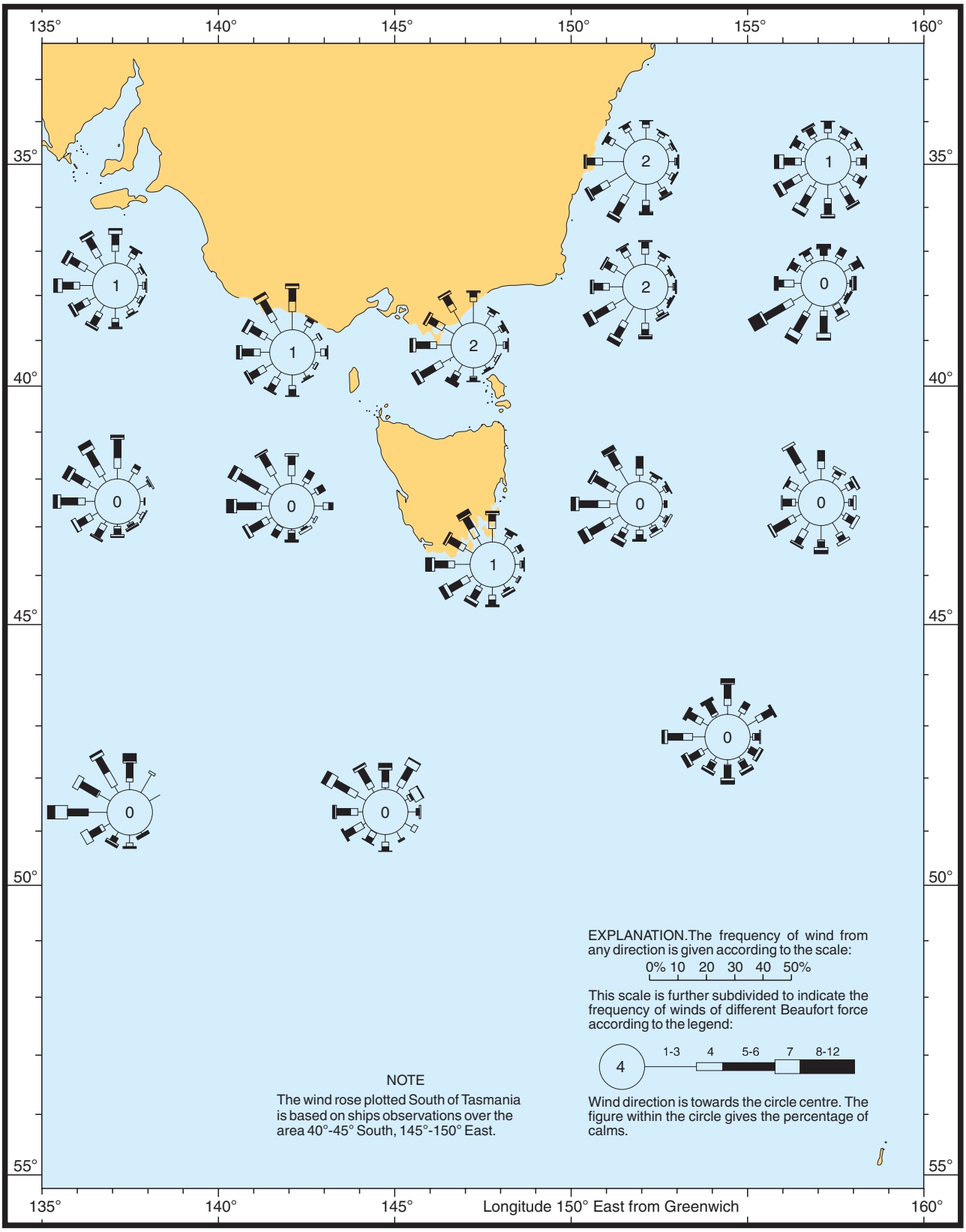
Mean wind distribution JANUARY (1.121.1)

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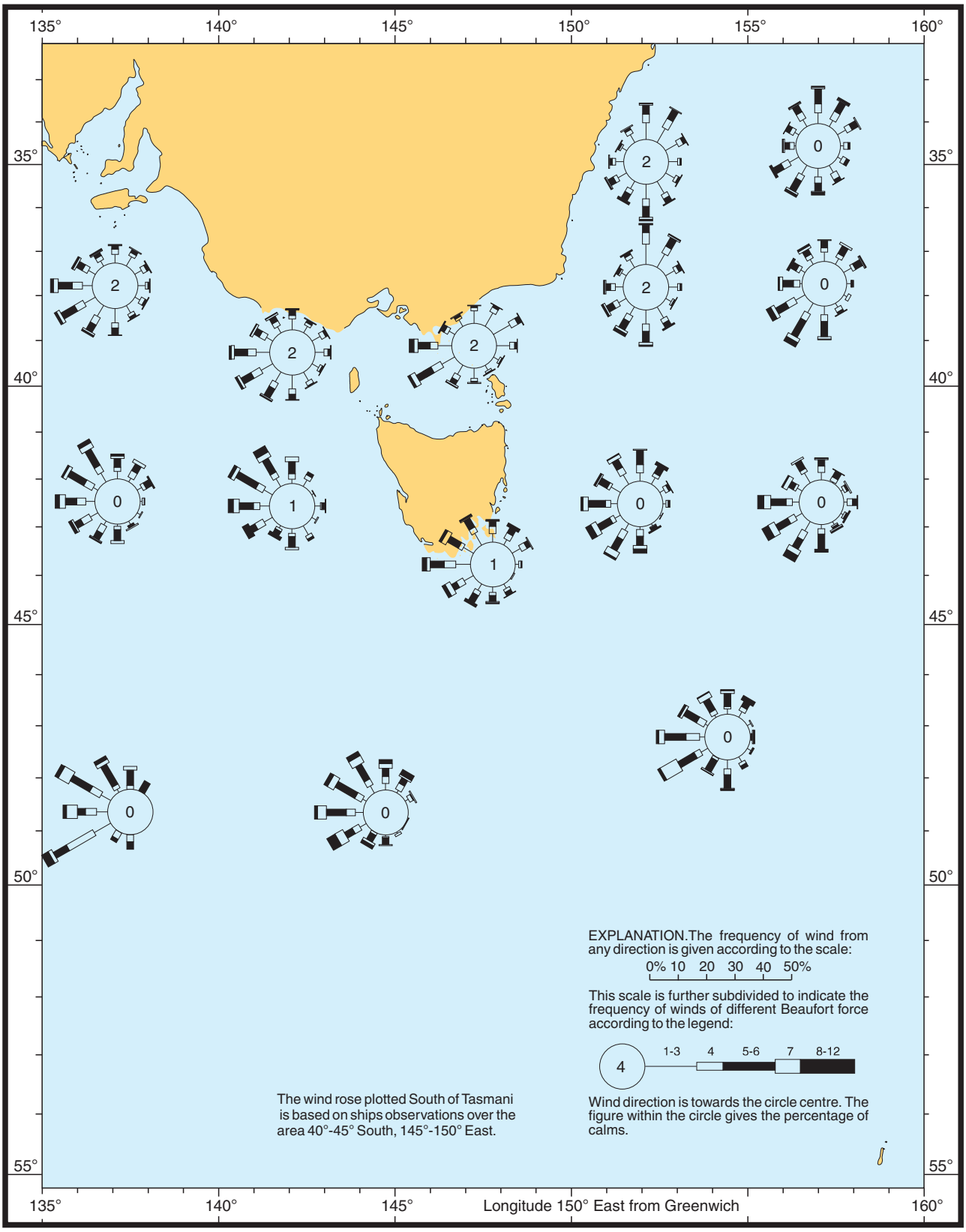
Mean wind distribution APRIL (1.121.2)

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Mean wind distribution JULY (1.121.3)

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Mean wind distribution OCTOBER (1.121.4)

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Storms

1.125

1 These very strong winds, force 10 and above, can occur around tropical storms moving on SE tracks near NE waters during the hurricane season (see 1.118). Rather more frequently, mostly during winter and spring, middle latitude depressions can also become sufficiently intense to produce storms as they move E to SE over the S half of the area of this volume.

2 The following table, based on ship observations, gives the monthly frequency of storms for the same sea areas as the preceding table. In most months the frequency is 1% or less, but the frequency increases with increasing latitude and reaches 5% in 1 or 2 months.

Monthly percentage frequency of storms

(force 10 and above, based on ship observations)

Lat S	*Long E*	*J*	*F*	*M*	*A*	*M*	*J*	*J*	*A*	*S*	*O*	*N*	*D*	*Period of observations (years)*
30°/35°	150°/155°	+	+	+	+	+	1	1	1	+	+	+	+	+
30°/35°	155°/160°	+	+	0	+	1	1	1	1	1	+	+	1	1
35°/40°	135°/140°	0	+	0	+	+	+	+	1	+	1	+	0	+
35°/40°	140°/145°	+	0	+	+	+	+	1	1	1	1	1	+	+
35°/40°	145°/150°	0	0	+	1	+	1	1	+	+	+	+	+	+
35°/40°	150°/155°	+	1	1	1	1	1	2	1	1	+	+	+	1
35°/40°	155°/160°	+	0	0	+	2	1	1	1	3	2	1	+	1
40°/45°	135°/140°	1	1	+	1	2	1	1	1	1	1	0	+	1
40°/45°	140°/145°	1	1	1	+	1	3	0	3	2	5	2	+	1
40°/45°	145°/150°	0	+	+	+	1	2	2	3	1	2	1	+	1
40°/45°	150°/155°	1	1	1	3	1	2	1	1	2	2	+	1	1
40°/45°	155°/160°	1	+	+	0	0	1	0	0	2	2	0	1	1
45°/53°	135°/140°	0	0	1	1	1	2	0	3	3	3	0	0	1
45°/53°	140°/150°	1	2	1	2	+	2	1	+	3	5	1	1	1
45°/53°	150°/160°	+	1	1	1	2	1	2	0	1	1	2	1	1

+ indicates less than 0·5%

Cloud

1.126

1 Average cloud amounts in all months are around 4 to 5 oktas, based on ship observations. The least cloud occurs in the NE in winter and the highest average amounts around Tasmania in June and July and also in November and December. From June to September there is less cloud NE of Cape Howe than to the SW.

2 The cloud sequences over much of this area are typical middle latitude frontal clouds, modified however, as the fronts move E, for the air drawn into the warm sectors changes from the rather dry continental air over S coasts of Victoria to the moister maritime air to the SE of New South Wales.

During the anticyclonic intervals broken stratified clouds are usual. When large cumulus and cumulo-nimbus clouds occur they are often masked by large amounts of low cloud.

Precipitation

Rain

1.127

1 The reputation of Australia for unreliable rainfall does not apply to this area, where rainfall is adequate and fairly regular.

Over most mainland coasts average annual rainfall totals are 750 to 1000 mm. Locally, near Apollo Bay (3.80) the average is around 1500 mm, whilst near Sale (6.85) it is below 500 mm. North of Batemans Bay (11.68) totals exceed 1000 mm and there is more than 1500 mm around Wollongong (12.45).

2 In Tasmania about 1500 mm falls on average in the SW but amounts decrease E and N to less than 500 m in the NE.

Actual yearly totals range from about 40% below average to 50 to 80% above average, an indication of the variability as well as the reliability of the rainfall.

Thunderstorms

1.128

1 Thunderstorms are more frequent around Sydney than elsewhere; in this area there are about 20 to 30 such storms annually, most of which occur during the summer months. The number decreases to the S and is about 10 days per year on the S coast of Victoria, more or less evenly distributed throughout the year. Torrential rain can occur during these storms, causing flash floods.

2 Over Tasmania the number of days with thunder ranges from about 10 days on the W coast to around 5 days annually on the E coast.

Snow

1.129

1 Snow is occasionally experienced near sea level on the coasts of Tasmania and may occur, though less frequently, on the coasts of Victoria. Snowfalls however have little practical importance over low lying ground but high ground, above about 1100 m in Tasmania and above 1400 m in Victoria, is frequently snow covered for long periods in winter.

Fog and visibility

1.130

1 Fog, defined as visibility of less than 1000 m, does not occur frequently at sea, being reported in less than 2% of ship observations in all months. Lowest frequencies are usually in June and July. This sea fog drifts at times over the coasts though it often retreats seaward during the day on such occasions.

2 Fog over land tends to be most frequent in the winter half year (March to August), due to radiation cooling

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during the long winter nights. The fog is more likely to occur, affecting ports and approaches, around dawn, dispersing in most cases after a few hours. Near big cities, smoke and industrial pollution increase the probability of fog and can delay its dispersal considerably. At times, patches of radiation fog formed overnight, drift out over coastal waters of estuaries and ports.

3 Fog occurring at coastal stations is partly of sea fog and partly of land fog origin. The monthly maximum occurs in winter on coasts sheltered from the sea (Melbourne), and in summer where coasts are very exposed, for example at Gabo Island (37°34′S, 149°54′E) and Wilson's Promontory.

Poor visibility (less than 10 km), is generally more frequent in summer than in winter and has a higher incidence in the S than in the NE. In the NE only 2% of ship observations record poor visibility whereas off S Victoria and NW Tasmania poor visibility accounts for 20 to 30% of ship observations in summer (February).

4 Serious deterioration of visibility can occur during periods of heavy rain but is usually over within an hour or less. More prolonged deterioration may occur due to thick haze from bush fires or from the large quantities of dust raised by winds during drought. The following tables shows the monthly percentage frequency of fog and poor visibility for 5° squares of latitude and longitude.

Monthly percentage frequency of fog
(visibility less than 1000 m, based on ship observations)

Lat S	*Long E*	*J*	*F*	*M*	*A*	*M*	*J*	*J*	*A*	*S*	*O*	*N*	*D*	*Period of observations (years)*
30°/35°	150°/155°	+	1	+	+	+	+	+	+	+	0	+	+	+
30°/35°	155°/160°	+	+	+	0	+	0	+	+	+	+	0	1	+
35°/40°	135°/140°	1	1	+	+	+	0	+	+	+	1	1	1	+
35°/40°	140°/145°	+	2	+	1	+	+	+	+	+	+	1	1	1
35°/40°	145°/150°	2	3	1	1	+	+	0	+	+	1	1	1	1
35°/40°	150°/155°	1	+	+	0	+	0	+	0	+	1	+	1	+
35°/40°	155°/160°	1	1	1	+	0	0	0	0	0	+	+	2	+
40°/45°	135°/140°	3	0	0	1	3	0	3	0	1	0	1	0	1
40°/45°	140°/145°	1	+	1	+	0	1	0	0	1	1	1	+	1
40°/45°	145°/150°	1	+	1	1	+	+	0	1	0	+	1	+	1
40°/45°	150°/155°	1	0	1	1	0	0	0	0	0	2	3	3	1
40°/45°	155°/160°	3	4	1	+	0	0	0	0	1	1	1	3	1
45°/53°	135°/140°	3	3	1	0	8	1	0	4	0	0	0	2	2
45°/53°	140°/150°	5	4	5	3	3	1	2	5	5	3	4	1	3
45°/53°	150°/160°	3	6	5	5	2	2	6	3	+	3	2	2	3

+ indicates less than 0·5%

Monthly percentage frequency of poor visibility
(visibility less than 10 km, based on ship observations)

Lat S	*Long E*	*J*	*F*	*M*	*A*	*M*	*J*	*J*	*A*	*S*	*O*	*N*	*D*	*Period of observations (years)*
30°/35°	150°/155°	9	7	5	4	5	4	6	6	8	9	11	9	7
30°/35°	155°/160°	6	5	3	2	2	5	3	2	5	5	4	5	4
35°/40°	135°/140°	4	5	4	3	4	3	3	3	3	4	6	8	4
35°/40°	140°/145°	9	14	5	7	5	4	3	6	3	6	7	6	6
35°/40°	145°/150°	14	16	7	7	5	6	5	4	5	8	8	8	8
35°/40°	150°/155°	11	9	6	6	3	3	4	4	7	8	10	8	7
35°/40°	155°/160°	13	5	5	4	2	3	6	3	5	6	7	9	6
40°/45°	135°/140°	19	11	9	5	11	5	17	9	8	7	15	9	11
40°/45°	140°/145°	13	17	10	5	4	5	4	9	13	11	10	9	9
40°/45°	145°/150°	8	15	9	5	5	5	5	5	8	10	11	15	9
40°/45°	150°/155°	9	13	12	9	3	7	4	6	10	8	11	12	9
40°/45°	155°/160°	12	16	17	7	6	7	5	5	16	7	7	15	11
45°/53°	135°/140°	16	15	18	9	24	15	10	8	21	14	6	14	14
45°/53°	140°/150°	15	17	18	23	19	8	7	18	23	18	19	9	16
45°/53°	150°/160°	19	15	15	19	9	13	21	21	14	15	17	11	16

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Air temperature

1.131

1 The average monthly temperature is highest in February, ranging from about 22°C in NE waters to around 15°C off S Tasmania. The lowest temperatures are in July when the corresponding range is from 15°C off Sydney to just under 10°C off S Tasmania. The biggest month to month changes occur in spring, before the February maximum, and in autumn before the July minimum.

2 Although the highest mean daily maxima reach around 25°C, spells of very hot weather occur from time to time with day maxima of 40°C or more. Considerable temperature changes occur with changes of wind, offsetting the regular daily and seasonal variations. In general N winds result in above average, and S winds in below average temperatures.

3 On coasts, during the summer, winds off the land cause high temperatures and winds off the sea low temperatures; in winter the reverse applies. The onset of sea breezes, which are pronounced in summer, also result in lower air temperatures in the middle of the day.

4 These factors make the daily summer temperature very sensitive to wind direction. The wind changes accompanying the normal E procession of anticyclones and low pressure troughs over areas such as Melbourne can, in a short time, replace scorching N winds and 40°C temperatures from the interior, by cool S winds from the ocean and a rapid fall of temperature in excess of 10°C. Falls of 15 to 17°C have been reported within a period of several minutes.

5 Ground frost occurs in winter months, mainly in the S mainland and in Tasmania. Screen temperatures fall to 0°C infrequently in S Victoria in winter (July through August), and rather more often in Tasmania.

Humidity

1.132

1 Relative humidity is very sensitive to wind direction. Well away from land S winds may be expected to be drier than N winds because the former are progressively heated in their passage over increasingly warm waters.

Near the mainland coasts a more important factor is whether the winds are from land or sea; offshore winds are usually dry, and onshore winds moist.

2 Near the S coasts of the mainland, in summer, there is a particularly marked contrast between the very low humidities (20% on occasions) accompanying hot, N winds and the high humidities during onshore winds.

Average relative humidity varies according to the time of day, being highest when air temperature is lowest, and lowest in mid-afternoon when the temperature is at its highest.

3 In Tasmania and along the S coast of Victoria the seasonal humidity trend is similarly inverse to temperature, with the highest in winter and the lowest in summer. On the E coast of the mainland highest humidity occurs in late summer and is at its lowest in spring (September to October). The highest values at about 0900 occur in February to June, according to locality.

Climatic Tables

1.133

1 The climatic tables (1.134 to 1.146) give long term averages of climatic data for several land stations (Diagram 1.133) near the coast. These values refer to the actual position in which the weather has been observed and do not necessarily apply to relatively nearby ports and harbours, nor especially, to the open sea. The statistics should therefore be treated with caution. The following brief comments list differences between conditions over the open sea and those at the nearest reporting station:

2 Wind speeds tend to be greater and gales more frequent over sea than on land.

Cloud amounts at sea may be quite different from those on shore.

Precipitation on coasts becomes less applicable the farther the distance seaward.

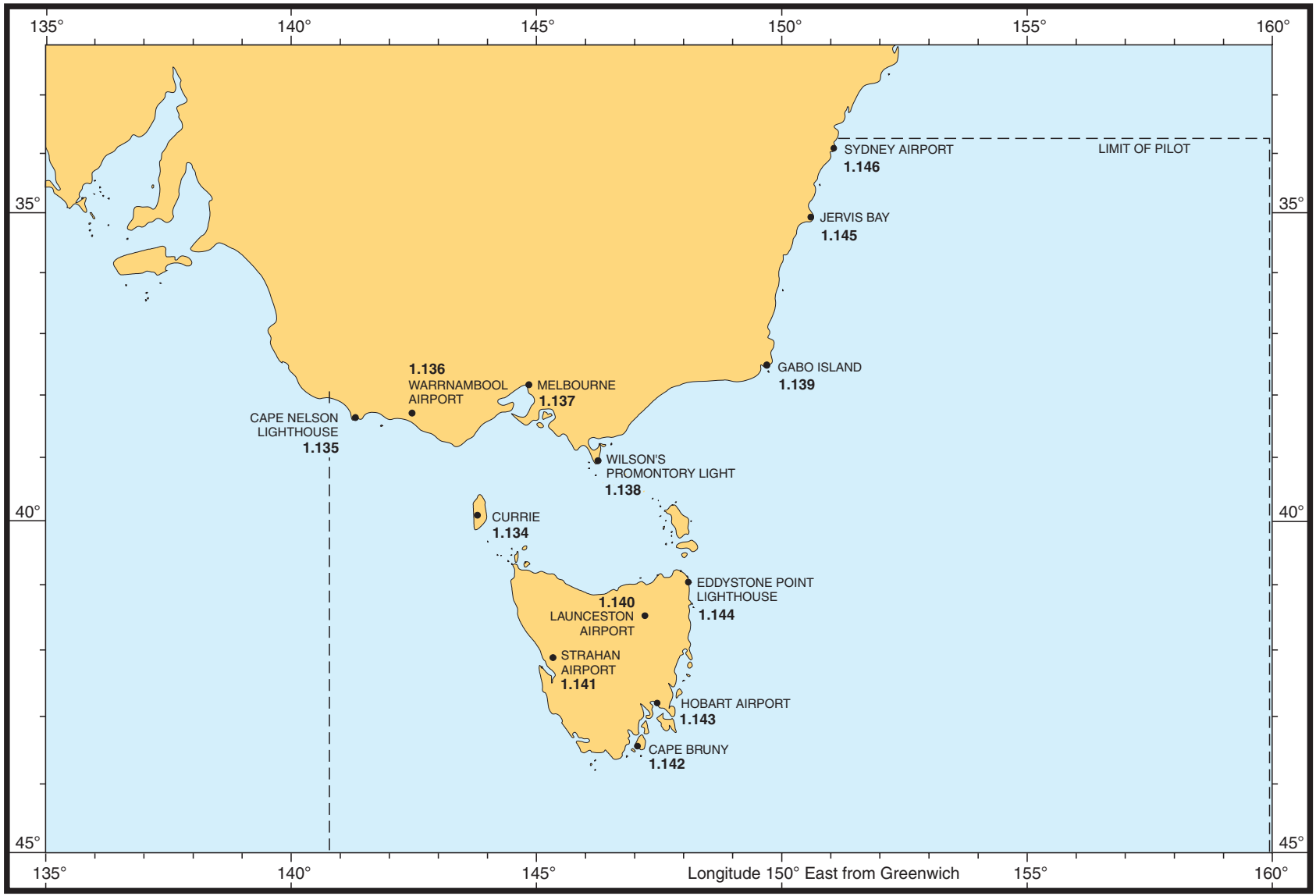
3 Sea fog is largely associated with mild winds blowing over cold waters, whereas fog inland is usually of radiation type formed by overnight cooling; when it is foggy in a sheltered harbour or inlet it is often clear at sea and vice versa.

4 Temperatures over the sea are less variable than over land. In winter, temperatures are usually higher over the sea, especially at night. In summer it is usually cooler over the sea with only a small daily range.

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

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Location of climatic stations (1.133)

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1.134

WMO No 94851

CURRIE KING ISLAND (39° 56′ S, 143° 51′ E) Height above MSL – 24 m

Climatic Table compiled from 15 years observations, 1983 to 1997

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																	Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0600	1500	0900	1500	Average fall	No. of days with mm or more	0900									1500												
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0900	1500	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1013	–	–	–	–	85	69	6	6	–	–	7	9	13	3	27	16	20	3	2	3	8	8	1	27	19	30	5	⊕	12	13	1	⊕	1
February	1015	–	–	–	–	87	67	6	5	–	–	7	15	17	6	26	13	12	2	2	7	12	12	4	26	14	21	5	0	11	12	⊕	⊕	⊕
March	1018	–	–	–	–	84	69	6	6	–	–	6	16	13	7	25	16	11	2	5	4	12	12	3	26	19	18	5	⊕	11	13	1	⊕	⊕
April	1019	–	–	–	–	85	73	6	6	–	–	11	12	11	7	20	12	17	5	4	11	7	9	2	26	14	24	6	1	10	12	1	⊕	⊕
May	1019	–	–	–	–	84	77	6	6	–	–	12	12	11	3	15	12	19	12	5	11	9	9	3	15	12	26	14	2	10	11	1	⊕	⊕
June	1018	–	–	–	–	86	77	6	6	–	–	14	13	9	4	12	13	19	11	4	16	8	6	3	17	15	25	11	1	11	12	1	⊕	⊕
July	1016	–	–	–	–	84	76	6	6	–	–	14	12	7	3	11	13	23	13	4	17	6	4	3	13	14	29	12	3	11	12	1	⊕	⊕
August	1015	–	–	–	–	84	76	6	6	–	–	15	10	4	3	14	12	27	11	4	13	5	4	1	16	15	29	16	⊕	13	13	1	⊕	1
September	1015	–	–	–	–	85	73	6	6	–	–	15	10	7	2	19	16	21	9	2	12	6	3	1	19	17	31	11	1	12	12	1	⊕	⊕
October	1014	–	–	–	–	85	72	6	6	–	–	12	10	7	4	20	15	24	7	1	8	10	6	2	19	13	33	8	1	13	13	2	0	⊕
November	1014	–	–	–	–	84	70	6	6	–	–	7	10	12	4	25	16	20	5	1	6	10	9	1	23	18	26	5	⊕	13	14	1	0	1
December	1013	–	–	–	–	87	71	6	6	–	–	5	13	15	6	25	14	19	2	1	4	13	13	2	24	19	20	5	⊕	12	14	1	⊕	1
Means	1016	–	–	–*	–§	85	73	6	6	_	_	11	12	10	4	20	14	19	7	3	9	9	8	2	21	16	26	8	1	12	13	_	_	_
Totals	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	12	⊕	4
Extreme values	_	_	_	–†	–‡	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
No. of years observations	15	_				15		15		_		15									15									15		15	15	15

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

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

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1.135

WMO No 94826

CAPE NELSON LIGHTHOUSE (38° 26′ S, 141° 33′ E) Height above MSL – 45 m

Climatic Table compiled from 8 years observations, 1990 to 1997

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																		Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0600	1500	0900	2100	Average fall	No. of days with mm or more	0900									2100									0900	1500	Gale	Fog	Thunder
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm					
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1014	20	14	34	11	78	68	6	5	–	–	7	8	14	16	16	13	15	10	2	2	5	20	20	15	10	21	6	2	12	13	⊕	⊕	1
February	1015	21	15	32	12	80	71	6	5	–	–	6	10	26	19	13	11	9	6	1	2	8	20	25	21	11	10	4	⊕	12	10	⊕	1	1
March	1018	19	14	31	10	77	69	5	5	–	–	8	14	13	14	14	15	14	7	3	4	9	18	19	16	11	14	8	1	11	11	0	1	⊕
April	1020	17	11	28	8	77	68	6	4	–	–	23	6	7	4	16	14	18	11	2	10	9	13	8	15	14	19	11	1	11	11	0	⊕	⊕
May	1022	16	11	24	6	81	72	6	5	–	–	21	5	8	4	12	13	13	20	3	21	7	9	9	12	9	18	11	5	11	10	0	⊕	⊕
June	1020	14	9	18	4	81	72	6	5	–	–	22	8	8	6	9	13	14	21	1	22	7	9	7	8	14	17	14	1	12	12	1	1	⊕
July	1018	13	8	16	3	81	73	6	5	–	–	29	5	3	3	7	13	19	21	1	23	7	4	1	8	13	18	23	3	13	11	1	1	⊕
August	1017	14	8	17	4	80	71	6	5	–	–	20	8	3	1	9	17	20	21	1	17	7	5	3	6	15	30	15	1	14	14	1	1	⊕
September	1015	15	9	20	5	80	70	6	5	–	–	16	7	7	6	7	15	17	23	2	14	6	11	5	14	13	24	10	4	13	14	⊕	⊕	1
October	1018	17	10	28	6	77	67	6	5	–	–	13	9	10	7	12	14	22	9	3	6	11	9	9	16	15	23	8	3	12	13	⊕	⊕	1
November	1014	18	11	30	7	75	65	6	5	–	–	8	9	9	6	15	16	27	8	2	5	6	16	6	15	16	29	5	1	12	13	⊕	⊕	⊕
December	1014	18	12	32	9	76	67	6	5	–	–	9	7	22	15	16	9	14	5	3	3	5	15	23	15	18	17	2	1	12	13	⊕	⊕	⊕
Means	17	17	11	35 *	3 §	78	69	6	5	_	_	15	8	11	8	12	13	17	14	2	11	7	12	11	13	14	20	10	2	12	12	_	_	_
Totals	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	3	5	4
Extreme values	_	_	_	41 †	1 ‡	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
No. of years observations	8	8				8		8		_		8									8									8		8	8	8

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

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

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1.136

WMO No 94832

WARRAMBOOL AIRPORT (38° 17′ S, 142° 26′ E) Height above MSL – 74 m

Climatic Table compiled from 8 to 17 years observations, 1960 to 1997

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																		Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0600	1500	0900	1500	Average fall	No. of days with 0.25mm or more	0900									1500												
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0900	1500	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1014	22	12	39	7	88	63	5	5	34	7	12	10	11	10	17	16	11	11	2	7	2	3	10	44	21	10	3	⊕	9	12	⊕	1	2
February	1015	21	14	34	7	87	59	5	4	35	9	13	12	16	14	20	5	8	10	4	4	2	1	11	52	16	7	4	2	8	12	⊕	2	1
March	1019	20	10	34	6	89	61	5	5	45	10	16	13	7	9	16	12	9	11	8	5	4	⊕	11	44	23	9	3	1	7	11	0	1	1
April	1020	18	8	28	4	88	65	6	6	56	13	32	7	6	3	12	8	12	15	6	9	3	3	9	28	23	16	8	2	7	10	0	2	1
May	1021	15	7	22	3	91	72	6	6	75	17	33	9	3	3	7	5	13	19	7	18	3	4	6	22	15	13	14	4	6	9	⊕	3	⊕
June	1020	14	6	17	1	93	79	6	6	75	17	35	12	4	4	7	5	8	20	5	22	7	5	9	10	16	15	13	2	8	10	⊕	2	1
July	1018	13	4	17	1	91	77	6	6	79	20	32	6	3	1	4	4	8	36	5	24	5	1	2	10	14	20	20	4	8	10	⊕	1	⊕
August	1017	14	5	19	2	92	77	6	6	79	20	30	7	1	2	7	5	12	32	4	16	3	3	4	10	17	24	20	2	10	12	⊕	⊕	2
September	1016	16	6	24	3	91	73	6	6	70	16	25	11	4	4	9	13	13	18	5	13	7	4	3	24	20	18	10	1	9	11	⊕	1	2
October	1017	17	7	26	4	89	73	6	6	62	17	18	10	7	4	12	13	14	16	5	6	6	2	8	24	29	15	9	1	10	11	⊕	⊕	1
November	1014	18	8	30	5	89	68	6	6	51	13	10	9	8	3	20	11	18	17	4	8	5	2	4	34	29	14	4	1	9	12	0	1	1
December	1014	20	9	35	5	91	67	6	5	41	11	11	9	13	11	20	11	12	8	4	5	4	3	9	42	24	8	4	1	8	12	0	1	1
Means	1017	17	8	39 *	0 §	90	70	6	6	_	_	22	10	7	6	12	9	11	18	5	12	4	3	7	28	20	14	10	2	8	11	_	_	_
Totals	_	_	_	_	_	_	_	_	_	702	170	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	⊕	15	13
Extreme values	_	_	_	44 †	−2 ‡	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
No. of years observations	8	8		17		8		8		_		8									8									8		8	8	8

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

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

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1.137

WMO No 94868

MELBOURNE (37° 49′ S, 144° 58′ E) Height above MSL – 35 m

Climatic Table compiled from 8 to 30 years observations, 1960 to 1997

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0600	1500	0900	1500	Average fall	No. of days with 0.25mm or more	0900									1500											
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0900	1500	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1013	26	15	39	9	74	49	5	4	47	9	10	12	14	7	15	16	12	7	7	10	5	5	6	35	28	5	6	1	6	8	0	⊕	3
February	1014	26	15	38	9	75	49	5	4	46	8	11	12	24	9	10	10	10	4	10	9	5	5	4	36	31	6	5	⊕	5	8	0	⊕	1
March	1018	24	14	35	7	78	49	5	5	44	9	9	11	21	5	7	14	18	5	10	9	5	4	6	30	39	5	2	⊕	5	8	⊕	1	1
April	1020	21	12	29	5	77	51	5	5	53	13	17	13	19	1	4	9	20	6	11	18	7	2	1	32	25	9	5	1	5	7	0	1	1
May	1021	17	9	23	3	81	60	6	6	68	15	20	12	17	2	1	3	15	10	21	21	8	5	2	20	22	13	4	3	4	7	0	1	⊕
June	1021	14	7	18	1	82	64	6	6	43	15	26	14	14	3	1	6	16	11	9	23	11	7	4	15	16	16	7	2	5	7	⊕	2	⊕
July	1019	14	6	17	0	79	60	6	6	49	17	20	20	13	1	1	4	15	13	14	25	9	5	1	11	19	19	9	2	5	8	⊕	1	⊕
August	1018	15	7	20	1	76	53	5	6	57	17	32	13	11	1	1	4	19	12	6	31	5	1	2	13	21	17	10	⊕	6	9	⊕	⊕	⊕
September	1016	17	9	25	2	79	55	6	6	53	15	20	11	9	3	5	13	20	11	7	19	7	2	3	22	22	15	9	2	7	8	0	1	⊕
October	1015	20	10	29	3	74	50	6	5	65	15	16	10	14	6	9	20	17	6	3	16	3	2	2	31	28	15	2	⊕	7	9	0	1	1
November	1013	22	12	34	6	73	47	6	5	57	13	10	7	13	6	7	20	22	9	5	10	5	3	2	36	27	13	4	1	7	8	0	⊕	2
December	1013	24	14	37	8	75	49	6	5	58	11	8	10	13	12	12	17	18	3	8	11	2	3	7	38	30	5	3	⊕	6	9	0	⊕	2
Means	1017	20	11	41 *	10 §	77	53	6	5	_	_	17	12	15	5	6	11	17	8	9	17	6	4	3	27	25	11	6	1	6	8	_	_	_
Totals	_	_	_	_	_	_	_	_	_	640	157	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	⊕	8	11
Extreme values	_	_	_	46 †	−3 ‡	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
No. of years observations	24	30				24		24		30		24									24									24		8	8	8

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

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

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1.138

WMO No 94893

WILSONS PROMONTORY LIGHT (39° 07′ S, 146° 25′ E) Height above MSL – 89 m

Climatic Table compiled from 15 to 30 years observations, 1960 to 1997

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																		Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0600	1500	0900	1500	Average fall	No. of days with 0.25mm or more	0900									1500												
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0900	1500	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1013	21	14	34	10	79	69	6	5	47	10	7	14	17	1	3	11	40	7	2	3	15	17	2	2	7	51	4	0	20	23	10	2	2
February	1014	20	15	31	11	80	71	6	5	51	10	8	20	21	2	2	8	32	6	3	3	19	23	2	3	10	34	6	1	19	20	7	2	1
March	1017	19	14	29	10	79	73	6	6	73	13	8	18	17	1	3	10	35	5	2	4	19	18	2	4	12	36	3	⊕	19	20	8	2	1
April	1019	16	12	24	8	74	72	6	6	86	16	10	16	11	2	4	7	37	9	3	5	15	14	2	4	7	45	6	1	18	19	7	2	1
May	1020	14	11	20	7	76	74	6	6	100	18	12	15	8	1	4	6	41	11	3	7	16	11	1	4	12	38	10	3	18	18	6	1	1
June	1018	13	9	17	6	78	75	6	6	116	19	17	10	9	3	4	5	35	15	3	13	10	10	3	3	6	45	8	3	18	18	8	1	1
July	1016	12	8	16	5	77	74	6	6	111	20	19	11	5	3	3	6	39	12	3	12	11	8	3	3	7	43	11	3	18	18	7	1	1
August	1015	12	8	18	4	74	71	6	6	114	19	16	12	5	2	1	8	40	15	2	11	10	7	⊕	2	7	52	9	2	19	20	9	⊕	1
September	1014	14	9	21	5	77	72	6	6	93	18	10	15	8	2	3	7	41	12	2	8	12	10	1	2	7	52	7	1	20	21	8	1	1
October	1014	15	10	24	6	76	71	6	6	93	17	9	16	10	3	2	9	44	7	⊕	5	14	11	2	2	7	52	6	⊕	21	22	10	2	1
November	1013	16	11	26	7	77	71	6	6	76	15	7	18	11	4	2	10	43	5	2	3	15	12	2	4	7	53	3	1	21	22	9	2	2
December	1012	19	12	31	9	81	72	6	6	58	12	5	18	18	3	3	9	39	4	1	2	17	19	2	4	7	44	5	⊕	21	22	10	3	2
Means	1015	16	11	36 *	4 §	77	72	6	6	_	_	10	15	12	2	3	8	39	9	2	6	15	13	2	3	8	45	7	1	19	20	_	_	_
Totals	_	_	_	_	_	_	_	_	_	1018	187	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	99	19	15
Extreme values	_	_	_	41 †	2 ‡	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
No. of years observations	15	20				15		15		30		15									15									15		15	15	15

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

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

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1.139

WMO No 94933

GABO ISLAND (37° 34′ S, 149° 54′ E) Height above MSL – 15 m

Climatic Table compiled from 15 to 30 years observations, 1960 to 1997

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																		Mean wind speed		Number of days with		
												0900									1500												
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0600	1500	0900	1500	Average fall	No. of days with 0.25mm or more	N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0900	1500	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1014	21	16	28	11	88	77	5	4	69	10	8	23	6	1	3	22	34	1	3	5	25	12	4	13	38	3	⊕	0	15	20	4	⊕	2
February	1015	22	17	26	12	89	78	5	4	58	10	14	22	7	3	5	13	29	3	4	6	30	17	3	11	31	3	⊕	0	13	19	3	1	1
March	1018	21	16	26	11	88	77	5	5	75	11	7	23	5	2	4	13	36	6	4	5	28	14	3	10	33	6	⊕	1	14	20	3	⊕	1
April	1020	19	14	25	10	88	78	5	5	92	13	10	14	6	1	2	9	42	9	7	5	25	11	3	9	36	10	⊕	2	13	17	3	⊕	1
May	1021	17	12	21	8	85	77	5	5	96	15	9	9	3	⊕	3	8	44	19	5	4	24	6	4	12	29	18	1	4	12	15	2	⊕	⊕
June	1019	15	10	18	6	86	76	5	5	88	16	7	8	3	1	4	5	47	22	3	5	18	5	4	7	30	26	3	3	13	15	3	⊕	⊕
July	1018	14	8	18	5	83	75	5	5	92	15	11	7	2	1	2	8	45	20	5	6	21	5	1	7	29	24	1	6	13	16	3	⊕	⊕
August	1017	14	9	19	5	83	74	5	5	81	14	9	10	1	1	2	9	45	18	5	4	22	9	⊕	9	36	16	1	3	14	17	4	⊕	⊕
September	1014	16	10	22	6	86	78	5	5	76	13	6	17	2	2	4	15	44	6	5	2	25	7	3	10	41	9	⊕	1	15	20	5	⊕	1
October	1015	17	11	23	7	86	77	5	5	71	15	8	22	4	2	4	22	31	3	6	3	27	9	5	13	35	7	⊕	1	15	20	6	⊕	1
November	1014	18	13	26	9	88	79	5	3	86	13	8	25	4	3	5	21	29	2	4	5	27	10	3	14	37	4	⊕	1	16	21	5	1	2
December	1013	20	15	25	10	89	80	5	5	82	12	8	25	9	1	4	24	24	1	4	6	26	15	2	12	35	4	⊕	1	16	21	4	1	2
Means	1017	18	13	30 *	4 §	87	77	5	5	_	_	9	17	4	2	3	14	37	9	5	4	25	10	3	10	34	11	1	2	14	18	_	_	_
Totals	_	_	_	_	_	_	_	_	_	966	157	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	45	3	11
Extreme values	_	_	_	41 †	1 ‡	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
No. of years observations	15	30				15		15		30		15									15									15		15	15	15

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

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

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1.140

WMO No 94968

LAUNCESTON AIRPORT (41° 32′ S, 147° 12′ E) Height above MSL – 171 m

Climatic Table compiled from 10 to 30 years observations, 1960 to 1997

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																	Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0600	1500	0900	1500	Average fall	No. of days with 0.25mm or more	0900									1500												
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0900	1500	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1013	23	10	31	5	85	47	4	5	34	8	22	3	4	22	13	4	4	24	4	22	2	3	10	6	8	8	40	2	8	11	0	1	1
February	1015	24	11	31	5	86	49	5	5	35	6	22	5	3	28	14	1	3	16	9	20	2	1	16	10	5	5	40	1	6	10	0	1	1
March	1018	21	9	29	3	87	46	5	4	46	8	19	6	4	18	17	4	3	17	13	24	4	1	12	8	5	9	34	2	6	10	0	2	⊕
April	1018	18	7	24	0	89	56	5	5	52	10	20	2	3	17	16	4	3	22	13	25	2	3	8	10	6	8	34	6	7	10	0	2	1
May	1020	14	5	19	–1	91	64	5	5	64	13	21	2	1	9	16	7	2	19	23	25	1	1	10	8	6	4	36	9	5	9	0	5	⊕
June	1018	11	3	16	–2	91	71	5	5	59	15	16	⊕	2	12	23	5	2	22	19	21	2	2	15	13	10	6	27	6	5	8	0	5	⊕
July	1016	11	2	15	–2	91	71	5	5	75	17	20	1	2	10	15	9	2	27	15	26	2	3	14	10	5	7	29	4	6	9	0	5	⊕
August	1014	12	3	17	–2	90	64	5	5	78	15	29	3	1	8	12	3	2	27	16	25	1	2	9	7	4	10	36	5	7	11	0	3	⊕
September	1014	14	4	21	–1	89	59	5	5	60	14	24	4	3	16	12	5	3	26	6	23	1	3	12	8	7	9	36	2	8	11	0	2	1
October	1013	16	5	24	1	88	54	5	5	56	14	22	4	3	11	10	3	6	34	8	25	2	1	6	4	6	15	38	3	8	12	0	2	⊕
November	1012	19	7	27	3	87	52	5	5	47	11	23	5	2	18	9	5	5	30	4	21	2	2	10	5	5	11	43	1	8	12	0	1	1
December	1012	21	9	31	4	85	46	5	5	52	10	25	5	3	20	13	3	7	19	6	22	2	3	9	7	3	14	39	⊕	8	12	0	1	1
Means	1015	17	6	33 *	–3 §	88	57	5	5	_	_	22	3	3	16	14	4	3	24	11	23	2	2	11	8	6	9	36	3	7	10	_	_	_
Totals	_	_	_	_	_	_	_	_	_	658	141	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	0	30	6
Extreme values	_	_	_	38 †	–8 ‡	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
No. of years observations	10	30				10		10		30		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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1.141

WMO No 94956

STRAHAN AIRPORT (42° 09′ S, 145° 17′ E) Height above MSL – 20 m

Climatic Table compiled from 15 years observations, 1983 to 1997

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																		Mean wind speed		Number of days with		
												0900									1500												
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0600	1500	0900	1500	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	0900	1500	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1013	21	11	33	4	85	64	5	5	–	–	12	12	5	14	10	11	14	14	9	4	1	1	2	9	26	35	21	⊕	8	12	⊕	0	⊕
February	1015	21	11	30	5	87	62	5	5	–	–	16	22	6	15	7	10	7	7	12	6	1	1	3	17	25	31	16	1	7	11	0	⊕	0
March	1018	20	10	28	5	89	64	6	5	–	–	11	21	7	15	6	9	10	5	17	6	2	⊕	6	18	23	30	16	⊕	6	10	0	⊕	0
April	1018	16	9	23	3	89	72	6	7	–	–	21	22	8	12	5	6	9	7	11	10	2	0	7	18	18	20	25	1	7	10	⊕	⊕	⊕
May	1019	14	8	19	1	89	76	6	6	–	–	24	20	3	8	4	5	9	10	17	17	1	1	9	13	14	15	26	4	7	9	⊕	0	⊕
June	1017	12	5	16	–1	88	76	6	6	–	–	22	18	6	10	5	7	10	9	14	21	4	1	13	15	9	18	16	3	7	9	⊕	⊕	⊕
July	1014	12	5	16	–1	87	76	6	6	–	–	23	21	5	9	4	5	9	10	14	22	4	⊕	12	13	8	17	21	3	7	10	⊕	⊕	⊕
August	1014	13	6	17	1	86	72	6	6	–	–	27	16	3	9	5	5	12	12	11	18	2	1	4	13	12	22	29	1	9	11	⊕	⊕	⊕
September	1014	14	5	20	1	87	67	6	6	–	–	21	17	5	12	7	9	10	15	5	11	4	⊕	3	12	21	25	24	⊕	9	12	⊕	⊕	⊕
October	1014	16	7	26	1	87	65	6	6	–	–	18	12	4	13	9	7	16	16	5	5	2	⊕	2	8	21	31	31	⊕	10	13	⊕	⊕	⊕
November	1012	17	8	29	3	84	61	6	6	–	–	16	9	4	14	9	12	17	13	5	5	2	⊕	2	14	19	31	24	⊕	9	13	⊕	⊕	⊕
December	1012	19	9	30	3	86	62	6	6	–	–	12	8	5	16	13	11	15	13	7	4	2	⊕	2	11	29	32	20	⊕	8	12	⊕	⊕	⊕
Means	1015	16	8	34 *	–1 §	87	68	6	6	_	_	18	16	5	12	7	8	12	11	11	11	2	⊕	6	13	19	26	22	1	8	11	_	_	_
Totals	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	⊕	⊕	⊕
Extreme values	_	_	_	36 †	–4 ‡	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
No. of years observations	15	15				15		15		_		15									15									15		15	15	15

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

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

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1.142

WMO No 94967

CAPE BRUNY (43° 30′ S, 147° 09′ E) Height above MSL – 55m

Climatic Table compiled from 15 years observations, 1983 to 1997

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																		Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0600	1500	0900	1500	Average fall	No. of days with mm or more	0900									1500												
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0900	1500	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1011	–	–	–	–	79	68	6	5	–	–	25	4	2	3	7	14	32	9	4	4	5	10	11	22	16	27	4	1	13	16	3	⊕	1
February	1014	–	–	–	–	82	68	6	5	–	–	27	7	6	4	6	12	25	8	5	6	4	13	12	22	18	21	3	1	12	15	2	⊕	1
March	1017	–	–	–	–	82	70	6	5	–	–	30	3	4	3	7	12	27	9	5	9	4	10	14	19	20	20	3	2	12	15	2	⊕	⊕
April	1017	–	–	–	–	82	72	5	5	–	–	37	5	2	3	6	8	25	11	2	14	6	8	10	15	13	26	5	3	12	14	2	1	⊕
May	1017	–	–	–	–	81	73	6	6	–	–	33	3	2	2	5	11	25	18	1	21	5	4	5	8	14	28	11	5	13	12	2	⊕	⊕
June	1015	–	–	–	–	84	74	6	6	–	–	39	3	⊕	1	8	11	23	12	2	27	4	3	3	6	12	30	10	6	13	13	3	1	⊕
July	1013	–	–	–	–	84	74	6	6	–	–	42	3	1	3	6	8	20	15	3	27	6	4	3	9	10	24	11	6	12	12	2	1	⊕
August	1011	–	–	–	–	79	71	6	6	–	–	36	3	1	2	6	12	23	15	2	18	4	4	6	10	16	29	10	4	13	14	3	⊕	⊕
September	1011	–	–	–	–	80	69	6	6	–	–	29	5	2	2	6	14	26	12	3	12	4	8	7	16	17	30	5	1	13	16	3	⊕	⊕
October	1011	–	–	–	–	80	70	6	6	–	–	20	3	2	4	6	15	28	16	4	7	5	6	15	20	19	25	5	⊕	14	18	4	⊕	⊕
November	1011	–	–	–	–	78	69	6	6	–	–	20	6	4	3	10	14	29	11	2	5	6	9	14	22	18	22	4	⊕	14	17	4	⊕	⊕
December	1011	–	–	–	–	81	70	6	5	–	–	18	7	8	4	10	13	28	9	4	4	9	12	13	24	19	18	2	⊕	12	17	2	1	⊕
Means	1013	–	–	–*	–§	81	71	6	6	–	–	30	4	3	3	7	12	26	12	3	13	5	7	9	16	16	25	6	3	13	15	–	–	–
Totals	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	32	4	2
Extreme values	–	–	–	–†	–‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	15	–				15		15		–		15									15									15		15	15	15

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

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

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1.143

WMO No 94975

HOBART AIRPORT (42° 50′ S, 147° 29′ E) Height above MSL – 27 m

Climatic Table compiled from 15 to 30 years observations, 1960 to 1997

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																		Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0600	1500	0900	1500	Average fall	No. of days with 0.25mm or more	0900									1500												
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0900	1500	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1012	22	12	35	7	75	51	5	5	41	11	15	5	1	6	8	9	14	35	6	8	8	4	34	17	8	13	9	⊕	8	13	⊕	⊕	1
February	1014	22	12	33	7	78	52	5	5	39	9	14	3	2	3	8	8	11	41	9	7	7	2	41	17	7	11	8	⊕	7	12	0	⊕	1
March	1017	21	11	30	6	78	53	5	5	45	11	14	3	1	3	5	9	11	45	9	7	8	2	37	18	10	12	7	2	7	11	0	⊕	⊕
April	1017	18	9	26	3	79	57	5	5	44	13	11	3	1	2	5	8	9	54	7	10	5	2	29	13	11	12	16	2	7	10	⊕	⊕	⊕
May	1018	15	6	22	2	80	61	5	5	46	15	9	1	1	2	3	5	9	61	10	11	5	1	18	9	7	15	29	5	7	8	⊕	1	⊕
June	1017	13	4	17	0	83	63	5	5	37	16	11	1	⊕	1	4	6	12	55	9	12	4	1	8	9	12	13	33	9	7	8	⊕	⊕	0
July	1014	12	4	17	−1	81	63	5	5	60	17	15	1	⊕	1	4	6	10	54	8	16	3	2	9	9	10	11	34	6	7	8	0	⊕	0
August	1012	13	4	18	1	78	58	5	5	60	17	14	1	1	⊕	2	8	7	60	7	16	3	1	14	12	9	15	28	2	8	10	0	⊕	0
September	1012	15	6	20	1	80	57	5	5	50	15	15	3	1	3	5	11	10	50	4	12	4	5	22	15	9	13	19	1	9	11	0	1	⊕
October	1012	17	7	24	2	76	54	5	5	58	17	13	3	1	3	8	9	12	45	6	9	6	2	26	15	8	17	16	1	9	12	⊕	⊕	⊕
November	1011	19	9	29	4	74	52	5	6	53	15	15	5	1	4	10	9	13	37	6	6	8	4	30	15	10	15	11	⊕	9	12	⊕	⊕	⊕
December	1011	20	11	31	5	75	52	6	5	54	13	10	10	2	7	11	10	11	32	6	4	10	4	31	23	6	12	8	⊕	8	13	⊕	⊕	1
Means	1014	17	8	37 *	−1 §	78	56	5	5	_	_	13	3	1	3	6	8	11	48	7	10	6	3	25	14	9	13	18	2	8	11	_	_	_
Totals	_	_	_	_	_	_	_	_	_	587	169	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	⊕	2	3
Extreme values	_	_	_	41 †	−3 ‡	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
No. of years observations	15	30		10		15		15		30		15									15									15		15	15	15

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

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

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1.144

WMO No 94983

EDDYSTONE POINT LIGHTHOUSE (40° 59′ S, 148° 20′ E) Height above MSL – 13 m

Climatic Table compiled from 15 years observations, 1983 to 1997

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0600	1500	0900	1500	Average fall	No. of days with mm or more	0900									1500											
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0900	1500	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1013	20	14	–	–	88	72	5	4	–	–	13	5	7	7	27	5	19	11	5	20	12	13	10	11	2	17	14	⊕	12	16	1	⊕	1
February	1015	21	14	–	–	85	72	5	5	–	–	14	8	7	11	23	5	15	9	7	22	11	15	8	16	2	13	13	2	12	15	1	⊕	1
March	1017	20	12	–	–	86	73	5	4	–	–	10	6	6	5	25	7	19	12	11	23	12	10	8	16	2	14	14	2	11	14	1	⊕	1
April	1018	18	10	–	–	87	76	5	5	–	–	13	4	3	5	20	7	24	15	9	20	11	8	10	10	4	19	17	2	11	13	1	⊕	⊕
May	1019	15	9	–	–	88	77	4	5	–	–	6	2	2	4	18	9	32	19	9	15	6	6	8	11	3	28	21	3	11	13	1	⊕	⊕
June	1018	14	8	–	–	88	78	5	5	–	–	8	2	2	6	17	9	33	17	6	13	5	2	9	16	3	32	16	2	11	14	⊕	0	0
July	1015	13	7	–	–	89	79	4	5	–	–	9	1	4	3	14	10	30	21	9	16	3	6	7	16	3	25	20	4	11	14	1	⊕	⊕
August	1014	14	7	–	–	88	76	4	5	–	–	9	2	3	1	17	10	32	20	8	17	3	5	5	13	2	27	26	2	12	16	1	0	⊕
September	1014	15	7	–	–	89	75	5	5	–	–	14	1	4	5	22	6	25	16	7	21	6	7	8	17	2	19	19	1	13	15	1	⊕	⊕
October	1014	17	9	–	–	89	73	5	5	–	–	17	5	4	3	20	4	24	18	5	23	9	7	5	9	1	26	20	1	14	17	1	⊕	⊕
November	1012	19	10	–	–	89	73	5	5	–	–	16	5	4	6	24	3	23	13	6	19	10	9	11	9	1	24	15	2	13	16	1	⊕	1
December	1012	20	11	–	–	88	73	5	5	–	–	14	4	9	11	20	5	24	9	5	20	10	12	11	11	1	20	15	⊕	13	17	1	1	1
Means	1015	17	10	–*	–§	88	75	5	5	_	_	12	4	5	5	20	7	25	15	7	19	8	8	8	13	2	22	18	2	12	15	_	_	_
Totals	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	11	1	5
Extreme values	_	_	_	–†	–‡	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
No. of years observations	15	15				15		15		_		15									15									15		15	15	15

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

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

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1.145

WMO No 94940

JERVIS BAY (35° 05′ S, 150° 48′ E) Height above MSL – 85 m
Climatic Table compiled from 15 years observations, 1983 to 1997

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																		Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0600	1500	0900	1500	Average fall	No. of days with mm or more	0900									1500												
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0900	1500	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1013	–	–	–	–	87	71	5	4	–	–	25	9	4	10	23	15	3	8	4	15	30	8	17	22	1	4	1	1	7	11	⊕	1	2
February	1015	–	–	–	–	85	71	5	4	–	–	23	11	5	8	28	10	3	6	5	16	27	10	16	24	2	2	2	2	8	11	1	⊕	2
March	1018	–	–	–	–	84	70	5	4	–	–	23	9	4	8	23	13	9	8	3	13	28	7	13	27	3	3	2	2	8	11	⊕	1	1
April	1019	–	–	–	–	81	71	5	4	–	–	14	7	4	7	25	9	10	22	2	18	16	7	16	26	5	7	4	1	9	10	1	⊕	1
May	1021	–	–	–	–	81	70	5	5	–	–	13	4	2	5	15	14	16	29	2	14	10	3	10	31	7	11	14	1	9	9	1	1	⊕
June	1019	–	–	–	–	79	66	4	4	–	–	8	2	1	3	14	11	23	38	1	12	4	2	5	29	7	20	18	3	10	10	1	⊕	⊕
July	1018	–	–	–	–	78	63	4	4	–	–	11	2	⊕	1	10	10	26	39	1	13	7	1	6	24	7	18	20	3	10	10	1	⊕	⊕
August	1017	–	–	–	–	75	61	3	3	–	–	13	3	1	4	11	8	24	36	2	14	14	3	11	20	4	20	12	3	10	12	2	⊕	⊕
September	1015	–	–	–	–	79	63	4	4	–	–	13	4	1	2	20	9	20	28	2	12	19	6	13	24	3	13	10	1	9	13	2	1	1
October	1016	–	–	–	–	81	67	4	4	–	–	18	10	3	6	24	9	11	18	2	15	25	9	13	2	2	10	5	1	9	12	1	1	1
November	1014	–	–	–	–	83	70	5	5	–	–	19	14	3	7	29	9	7	10	2	15	29	8	14	22	2	5	5	⊕	9	13	1	⊕	3
December	1012	–	–	–	–	87	72	5	5	–	–	22	12	3	12	25	8	6	8	4	14	31	7	16	24	1	4	2	1	8	13	⊕	1	2
Means	1016	–	–	–*	–§	82	68	5	4	–	–	17	7	3	6	20	10	13	21	3	14	20	6	12	24	4	10	8	2	9	11	_	_	_
Totals	_	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	11	6	13
Extreme values	_	–	–	–†	–‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	15	_				15		15		_		15									15									15		15	15	15

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

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

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1.146

WMO No 94767

SYDNEY AIRPORT (33° 57′ S, 151° 11′ E) Height above MSL – 3 m

Climatic Table compiled from 10 to 30 years observations, 1960 to 1997

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0600	1500	0900	1500	Average fall	No. of days with 0.25mm or more	0900									1500											
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0900	1500	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1014	26	19	36	15	84	60	5	4	131	13	12	9	4	9	27	7	6	13	14	3	35	16	19	22	1	2	1	1	6	11	⊕	⊕	3
February	1015	26	19	36	15	83	61	5	4	126	13	9	7	5	12	24	9	5	10	19	1	29	19	19	28	1	1	2	1	6	11	⊕	⊕	2
March	1017	25	18	31	13	85	60	5	4	164	14	9	5	4	9	20	11	10	14	19	3	25	20	20	22	2	3	2	3	6	10	⊕	1	1
April	1019	23	15	29	10	83	59	4	4	133	13	5	2	3	4	13	9	20	23	21	2	24	13	17	24	4	8	4	4	5	9	⊕	1	1
May	1021	20	12	26	7	84	59	4	4	101	13	5	⊕	1	4	6	8	21	34	20	6	11	8	11	26	7	10	8	13	5	7	⊕	1	1
June	1020	18	9	22	5	81	57	4	4	140	12	6	1	1	2	6	8	27	34	15	7	4	3	8	27	11	14	14	12	6	8	⊕	1	⊕
July	1019	17	8	22	4	78	52	3	4	56	11	7	⊕	1	1	2	7	29	40	14	8	6	3	7	22	10	21	13	11	6	8	⊕	1	⊕
August	1018	18	9	26	5	76	48	3	3	99	11	7	1	1	2	4	11	30	35	11	4	17	7	11	19	6	21	11	3	6	10	⊕	1	1
September	1017	20	11	28	6	76	50	4	4	65	11	9	1	2	3	13	12	25	26	9	5	21	11	16	20	3	14	7	2	7	11	⊕	⊕	1
October	1016	23	14	33	9	76	53	4	4	88	12	9	7	3	5	23	11	12	22	8	4	32	14	15	18	4	9	4	1	8	12	⊕	⊕	1
November	1014	24	16	35	11	80	56	5	4	116	12	14	8	4	8	23	8	10	15	11	2	32	19	20	18	2	4	3	⊕	7	12	⊕	⊕	4
December	1013	25	18	35	13	80	56	5	4	85	13	14	12	4	8	26	5	9	14	9	4	33	16	20	18	2	5	3	⊕	7	13	⊕	⊕	3
Means	1017	22	14	39 *	4 §	80	56	4	4	_	_	9	4	3	6	15	9	17	23	14	4	22	12	15	22	5	10	6	4	6	10	_	_	_
Totals	_	_	_	_	_	_	_	_	_	1304	148	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	⊕	6	18
Extreme values	_	_	_	45†	2‡	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
No. of years observations	24	24		10		24		24		30		24									24									24		24	24	24

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

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

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1.147

METEOROLOGICAL CONVERSION TABLE AND SCALES

Fahrenheit to Celsius

°Fahrenheit

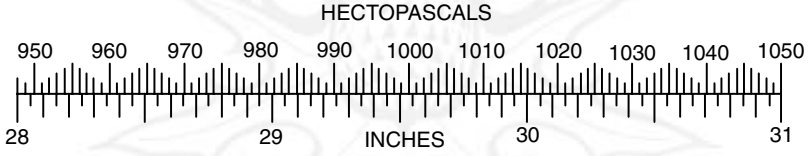
	0	1	2	3	4	5	6	7	8	9
°F				Degrees Celsius						
−100	−73·3	−73·9	−74·4	−75·0	−75·6	−76·1	−76·7	−77·2	−77·8	−78·3
−90	−67·8	−68·3	−68·9	−69·4	−70·0	−70·6	−71·1	−71·7	−72·2	−72·8
−80	−62·2	−62·8	−63·3	−63·9	−64·4	−65·0	−65·6	−66·1	−66·7	−67·2
−70	−56·7	−57·2	−57·8	−58·3	−58·9	−59·4	−60·0	−60·6	−61·1	−61·7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

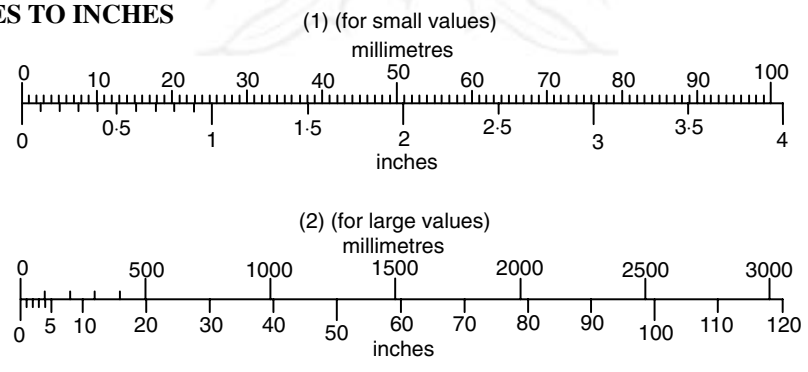
°Celsius

	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



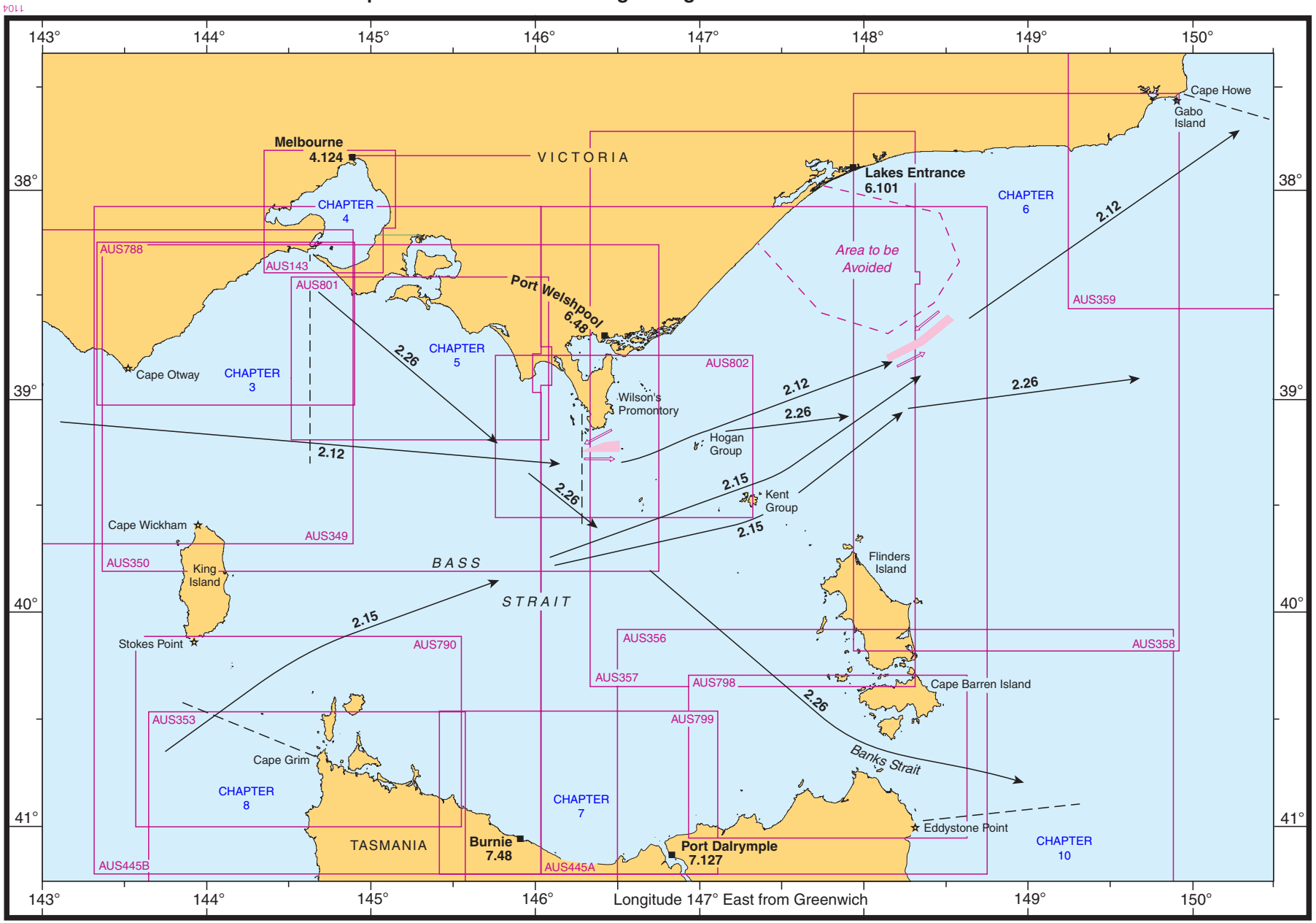
MILLIMETRES TO INCHES



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Chapter 2 - Bass Strait including through routes and offshore islands



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CHAPTER 2

BASS STRAIT INCLUDING THROUGH ROUTES AND OFFSHORE ISLANDS

GENERAL INFORMATION

Charts Aus 445a, Aus 445b, Aus 422

Scope of the chapter

2.1

1 The chapter covers Bass Strait and its offshore islands and provides general information and directions for vessels proceeding through Bass Strait.

The chapter is divided into the following sections:

Through routes (2.10).
King Island (2.32).
Furneaux Group (2.64).

Description

2.2

1 Bass Strait, which separates Australia from Tasmania, lies between Cape Otway (38°51′S, 143°31′E) and Point Hicks (37°48′S, 149°16′E) on the N side. The S side of the strait lies between Cape Grim (40°41′S, 144°41′E), the NW point of Tasmania, and Eddystone Point (41°00′S, 148°21′E), the NE point of that island.

There is a deep fairway through Bass Strait but the middle of its W entrance is obstructed by King Island and the E entrance is obstructed by many islands and rocks, Furneaux Group being the principal one; it lies in the SE part of that entrance and is separated by Banks Strait from the NE part of Tasmania.

2 The bottom in the strait is mostly of sand and shells in the NW and greater part of the strait but more of mud, marl and ooze in the SE part.

The N shores of Bass Strait are described in Chapters 3, 5 and 6. The S shore, formed by the N coast of Tasmania, is described in Chapter 7.

Fishing

2.3

1 Shark and crayfish fishing fleets operate up to 90 miles from the coast between positions 37°30′S, 140°00′E and 37°00′S, 149°55′E. Shark fishing vessels employ long lines, the ends of which are marked by flagged buoys.

High speed craft

2.4

1 See 1.6.

Marine exploitation

2.5

1 Although the main area (6.8) for oil and gas production lies in the NE part of Bass Strait, exploration has been carried out in other parts as follows:

In the vicinity of 39°50′·3S, 145°28′·3E and 39°57′·8S, 145°15′·3E, where there are submarine wellheads, about 60 miles E of King Island.
SW of Cape Otway (38°51′S, 143°31′E).
Production platform in position 39°50′·8S, 145°49′·0E.

Production platforms and wellheads should not be approached within 500 m. For remarks on safety zones and submarine pipelines see 1.10 and 1.33.

Submarine gas pipelines

2.6

1 Gas pipelines are laid across Bass Strait between 41°02′S, 146°54′E and 38°22′S, 147°12′E, and also between 39°51′S, 145°49′E, and 38°34′S, 145°29′E, as shown on chart *Aus 422*.

Submarine cables

2.7

1 A submarine cable is laid across Bass Strait between Waratah Bay (38°50′S, 146°05′E), Victoria, and Jacob's Boat Harbour (40°56′S, 145°37′E), Tasmania. Anchoring is prohibited within 1 mile either side of this cable. A cable is also laid between Venus Bay (38°39′S, 145°42′E), Victoria and Stanley (40°44′S, 145°18′E), Tasmania (see 5.80).

For regulations concerning submarine cables see 1.33.

Rescue

2.8

1 See 1.66 and *Admiralty List of Radio Signals Volume 5*.

THROUGH ROUTES

GENERAL INFORMATION

Charts Aus 445a, Aus 445b, Aus 422

Scope of the section

2.9

1 In this section are described the principal through routes in Bass Strait.

Routes

2.10

1 The following routes are described:

East-bound route passing N of King Island (39°50′S, 144°00′E) and S of Wilson's Promontory to the E coast of Australia or Tasman Sea (2.12).
East-bound route passing S of King Island and thence N of Furneaux Group to the E coast of Australia or Tasman Sea (2.15).
East-bound routes from Melbourne to New Zealand (2.26).

Principal marks

2.11

1 Details of many of the principal coastal features, landmarks and lights have been omitted but cross references to paragraphs in other chapters where these will be found have been given. The extent to which these marks will be of use depends upon the actual route taken and the visibility at the time. Where the mariner's chosen route passes close to the coast additional marks may be sighted

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in which case the appropriate text in the relevant geographical chapter should be consulted.

NORTH OF KING ISLAND AND SOUTH OF WILSON'S PROMONTORY

Chart Aus 349, Aus 445a, Aus 445b, Aus 422

Route

2.12

1 This route, which is the best for entering Bass Strait from the W, passes between King Island (39°50′S, 144°00′E) and Cape Otway (38°51′S, 143°31′E), and thence across the NW part of Bass Strait, to join the offshore route to Cape Howe (37°30′S, 149°59′E), which passes through the TSS off Wilson's Promontory (39°00′S, 146°25′E).

Tidal streams

2.13

1 For information on the tidal streams off Wilson's Promontory see 6.9.

Directions

2.14

1 From the W make a landfall off Moonlight Head (38°46′S, 143°14′E) or Cape Otway, 14 miles SE, making due allowance for the winds and currents, particularly during the prevalence of S or SW gales. In thick weather a vessel should keep in depths of over 73 m (40 fm). The channel between King Island and Cape Otway is clear of dangers.

The route then leads E through Bass Strait, to make a second landfall off Wilson's Promontory, then passes through the appropriate Traffic Separation Lane and follows the directions given at 6.12 which lead to Cape Howe, passing SE of an Area to be Avoided (6.8).

SOUTH OF KING ISLAND AND NORTH OF FURNEAUX GROUP

General information

Chart Aus 790, Aus 445a, Aus 445b, Aus 802, Aus 357

Route

2.15

1 This route passes through the SW entrance to Bass Strait which lies between the S end of King Island (39°50′S, 144°00′E) and Fleurieu Group (40°30′S, 144°50′E) of islands off the NW coast of Tasmania. It then leads NE across Bass Strait to pass either side of Kent Group and thence to Cape Howe (37°30′S, 149°59′E), passing SE of an Area to be Avoided (37°30′S, 149°59′E) (6.8).

That part of the route from Kent Group to Cape Howe is also suitable for vessels proceeding from ports on the N coast of Tasmania to the E coast of Australia or the Pacific Ocean.

Caution

2.16

1 This route is not recommended as much of the area between King Island and Hunter Island has not been fully surveyed and those soundings that have been taken indicate fairly uniform depths which give little indication of approach to dangers; numerous unexamined detached shoals have been reported in this channel and there may be undiscovered dangers. Extreme caution is required in adverse weather, consequently the safer passage between King Island and Cape Otway is to be preferred.

Flow

2.17

1 Tidal streams in mid-channel between King Island and Fleurieu Group set NE and SW with a rate of 1 to 3 kn. Further E, but W of the offlying dangers W of Fleurieu Group the tidal streams attain a rate of 2 to 3 kn, the NE-going stream running with the in-going tide.

Tidal streams near Kent Group set SW and NE. In fine weather they turn at HW and LW but their duration is greatly influenced by the wind. In bad weather there are heavy tide rips off the salient points of the group.

Currents in the channel between King Island and Fleurieu Group are variable and are probably masked by the tidal streams except after winds of long duration.

Principal marks

2.18

1 **Landmarks:**

Black Pyramid (40°29′S, 144°20′E), a dark-looking islet with a round summit. It is the most prominent of the smaller islets of Fleurieu Group and the first seen by vessels from the W. The islet is steep-to within 1 mile S, E and N and appears to have no off-lying dangers.

2 Curtis Island (39°28′S, 146°39′E), the largest island in Curtis Group, is the most remarkable feature of Bass Strait. The island has two peaks with the S peak, square topped, being the highest; the N peak has a bare granite summit. The sides, and especially the S end of the island, are precipitous.

Bass Pyramid (39°49′S, 147°15′E) a bare square-topped mass of granite, often mistaken for a vessel under sail.

3 South West Island (39°31′S, 147°08′E); a light (white GRP hut, 2 m in height) is displayed from its W side.

Disused lighthouse (39°30′S, 147°19′E) standing on the S side of Deal Island (2.23).

Wright Rock (39°36′S, 147°32′E), a remarkable granite rock resembling a huge head and shoulders.

Major light:

Craggy Island Light (white GRP hut, 2 m in height) (39°41′S, 147°40′E).

Directions

Between King Island and Fleurieu Group

2.19

1 If it is necessary to enter Bass Strait by the SW entrance then the best route leads from the vicinity of 40°35′S, 144°05′E, passing:

SE of Bell Reef (40°23′S, 144°05′E). This reef is dangerous as the sea breaks over it only infrequently, even with a heavy swell. Thence:

Clear of a group of unexamined shoals (40°28′S, 144°13′E), lying 6 miles W of Black Pyramid. The shallowest was reported (1983) to have a depth of 25·7 m over it. Thence:

2 Close NW of Black Pyramid (40°29′S, 144°20′E) (2.18), thence:

SE of Reid Rocks (40°15′S, 144°10′E) (2.48), thence:

NW of Albatross Islet (40°23′S, 144°39′E) (7.13), thence:

Across Bass Strait towards Kent Group.

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Passage north-west of Kent Group

2.20

1 From a position about 4 miles S of Sugarloaf Rock (39°31′S, 146°39′E) the route leads NE, passing (with positions from Sugarloaf Rock):

SE of Sugarloaf Rock, the S-most islet of Curtis Group; a small rock, 2·4 m high, lies off its N side. Thence:

2 SE of Cone Islet (1½ miles N) which is rocky and lies in the middle of Curtis Group. Two rocks lie close together 2½cables N of this islet; Passage Rock, the inner one, is 2 m high and the other rock dries. A remarkable leaning pinnacle rock, 25 m high, lies among other rocks off the S side of Cone Islet. And:

3 SE of Curtis Island (3 miles N) (2.18), the main island of Curtis Group; a landing may be made close to its N point but only in fine weather. Clarendon Rock, a steep-to and dangerous rock, lies 8 cables ESE of the NE point of Curtis Island; the sea breaks over it in heavy weather but generally it is difficult to distinguish. Thence:

SE of Devil's Tower (9¾ miles NNE) (6.12).

4 The route then continues NE, passing (with positions from South West Island (39°31′S, 147°08′E)):

NW of South West Island (2.18) from where a light is displayed; depths of 10 m or less extend nearly 4 cables S of the island. Judgement Rocks lie 6 cables N of South West Island; the N and largest of these rocks is Big Rock. Thence:

SE of a detached shoal (16½ miles NNW) with a depth of 6·3 m over it, lying 2 miles S of Hogan Group (6.17), thence:

5 NW of Kent Group (2.22) with its nearest danger being North Rock (9 miles NE) lying on the N side of Erith Island. There are two smaller rocks ½cable S of North Rock. A light (white GRP hut, 4 m in height) is displayed from North East Island (12½miles NE), the NE-most island of Kent Group.

The route then leads out into open water from where course can be shaped for Cape Howe (37°30′S, 149°59′E) (6.16) or into Tasman Sea.

Chart Aus 357

Passage south-east of Kent Group

2.21

1 From a position about 12 miles W of Bass Pyramid (39°49′S, 147°15′E) the route leads NE, passing (with positions from Bass Pyramid):

NW of Bass Pyramid (2.18); it is usually surrounded by tide rips except when there is no wind. Thence:

SE of South West Island (18½ miles NNW) (2.18), thence:

2 NW of Wakitipu Rock (9 miles NE) which is steep-to; the position of this rock may be discerned by the disturbed sea over it, when it is not breaking. Thence:

SE of Deal Island (20¼miles N), the largest island of Kent Group (2.22), thence:

3 NW of Wright Rock (19¼miles NE) (2.18); the rock should be given a berth of at least 1 mile as the depths within that distance are irregular. Endeavour Reef, which dries and is usually marked by heavy breakers, lies 2½ miles SE of Wright Rock, and Beagle Rock, which is steep-to, lies 2¾miles farther E. Tidal streams in the channel between Endeavour Reef and Beagle Rock attain a rate of 2 kn; in strong breezes there are usually heavy tide rips near these dangers. And:

4 SE of an isolated shoal (22½ miles NNE), with a depth of 11 m (36 ft) over it, lying 2½miles SE of North East Island (2.23).

The route then leads out in to open water from where course can be shaped for Cape Howe (37°30′S, 149°59′E) (6.16) or into Tasman Sea.

5 **Useful marks:**

South West Island Light (39°31′S, 147°08′E) (2.18).
North East Island Light (39°27′S, 147°23′E) (2.20).

Kent Group

Chart Aus 148 (see 1.12)

General information

2.22

1 Kent Group (39°28′S, 147°19′E) consists of four islands and a few above-water rocks.

Caution. Mariners should navigate with caution around these islands as much of the area is inadequately surveyed. Unidentified shoals, reefs and other navigational hazards may exist within these areas.

Description

2.23

1 **Erith Island**, the N island of this group, consists of several granite cones, the highest attaining an elevation of 148 m at its N end. The island is irregularly shaped and deeply indented. A grassy, fertile valley, in which rabbits and wallaby are found, extends across the island between West Cove on the SE side of the island and Wallibi Cove on the NW side.

2 **Dover Island** lies close S of Erith Island to which it is connected at LW. Its highest point is Phillpot Peak, 223 m high, standing 4 cables ENE of West Bluff, its SW point.

Deal Island, the largest of Kent Group, is formed of a series of large granite cones, some of which are covered to their tops with scrub. The highest, 288 m high, rises from South Bluff (39°30′S, 147°19′E), the S point of the island; the tower of a disused lighthouse stands near this summit.

3 The sides of the island are generally precipitous, especially its S side, and are indented by numerous bays. Squally Cove, 7 cables NE of South Bluff, and Winter Cove, on the S side of East Bluff, 3 miles NE of South Bluff, are the most important of a series of coves which indent the E side of Deal Island; on the W side of the island, East Cove (2.25) and Garden Cove are the most significant.

4 Garden Cove, 1 mile NNE of East Cove, was named from the gardens established here by the former lighthouse keepers. The cove, which has an airstrip at its head, is fully open to the N. Hat Rock lies close N of the W entrance point of the cove and Pulpit Rock and another rock, 5 m high, lie close off the N end of Deal Island, 4 cables E of the E entrance point to the cove.

5 **North East Island**, the smallest island of the group, lies 1 mile NNE of East Bluff, the E point of Deal Island. A light (2.20) is displayed from the N side of the island.

Anvil Rock, a remarkable rock, lies 2 cables NNW of the NW point of the island with another rock, 104 m high, between it and the island. An isolated patch (position approximate), with a depth of 2·3 m over it, was reported (1959) to lie 8 cables NNE of North East Island.

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Murray Pass

2.24

1 Murray Pass separates Erith Island and Dover Island from Deal Island SE; the pass is 5 cables wide with depths of 30 to 57 m. It affords access to the anchorages in West Cove (2.25) and East Cove (2.25).

Caution. Tidal streams attain rates of 2 to 5 kn in the pass often causing a very turbulent sea. In bad weather there are heavy tide rips at the entrances to the pass.

Anchorages and jetty

2.25

1 Only two, West Cove and East Cove, of the many bays which indent the sides of the islands of Kent Group afford safe anchorage and both are in Murray Pass.

West Cove (39°27′·5S, 147°17′·8E), on the SE side of Erith Island, gives protection from all but NE gales and as an anchorage is preferable to East Cove. However the cove is obstructed by an historic wreck on its NE side and there is also a stranded wreck lying at the head of the cove. For further information on historic wrecks see 1.52.

2 **East Cove** (39°28′·4S, 147°18′·5E), on the W side of Deal Island, affords good shelter in E and S winds but is dangerous in a SW gale. The bottom is uneven, the holding ground not good and during the strength of the tidal streams the swirls and eddies come well into the cove.

A sandy beach lies at the head of East Cove where there is a boat house and a jetty with a depth of 3·2 m at its head; the jetty was used to service the lighthouse, now disused, at the S end of Deal Island.

MELBOURNE TO NEW ZEALAND

General information

Charts 4601, Aus 350, Aus 445a, Aus 445b, Aus 356

Routes

2.26

1 This sub-section describes briefly the through routes from Melbourne to New Zealand. For further details on these routes and routes from Hobart to New Zealand see *Ocean Passages for the World*.

Tidal streams

2.27

1 For information on the tidal streams off Wilson's Promontory see 6.9; for Banks Strait see 7.179.

Directions

Melbourne to Auckland

2.28

1 Routes leading E to Auckland pass:
- Along the coastal route from the entrance (38°18′S, 144°38′E) to Port Phillip to Wilson's Promontory (39°00′S, 146°25′E), described in Chapter 5, thence:
- Through the appropriate Traffic Separation Lane off Wilson's Promontory, described in Chapter 6, thence:

2 Across Tasman Sea to a position midway between Three Kings Islands (34°10′S, 172°06′E) and Cape Maria Van Diemen (34°29′S, 172°39′E), thence:

Coastwise to Auckland (36°50′S, 174°45′E).

Melbourne to Wellington

2.29

1 Routes leading E to Wellington pass:
- Along the coastal route from the entrance (38°18′S, 144°38′E) to Port Phillip to Wilson's Promontory (39°00′S, 146°25′E), described in Chapter 5, thence:
- Through the appropriate Traffic Separation Lane off Wilson's Promontory, described in Chapter 6, thence:

2 Across Tasman Sea to Cape Farewell (40°30′S, 172°41′E), thence:

Through Cook Strait to Wellington (41°17′S, 174°51′E).

Melbourne to Bluff

2.30

1 Routes leading SE to Bluff pass:
- Along the coastal route from the entrance (38°18′S, 144°38′E) to Port Phillip to Cape Liptrap (38°55′S, 145°55′E), described in Chapter 5, thence:
- SW of the TSS off Wilson's Promontory (39°00′S, 146°25′E), thence:

2 SW of Bass Pyramid (2.18), thence:
- SW of the SE side of Furneaux Group, described at 2.70, thence:
- Through Banks Strait, described at 2.86 and 7.176, thence:
- Across Tasman Sea to Foveaux Strait and Bluff (46°36′S, 168°21′E).

KING ISLAND

GENERAL INFORMATION

Chart Aus 789 (see 1.12)

Scope of the section

2.31

1 Routes around King Island are described, together with the harbours and anchorages.

Grassy Harbour (40°04′·3S, 144°03′·3E) lying on the S coast is the main port for the area.

Description

2.32

1 King Island (39°50′S, 144°00′E) named after an early governor of New South Wales, is under the jurisdiction of Tasmania. The island has a population of about 3000.

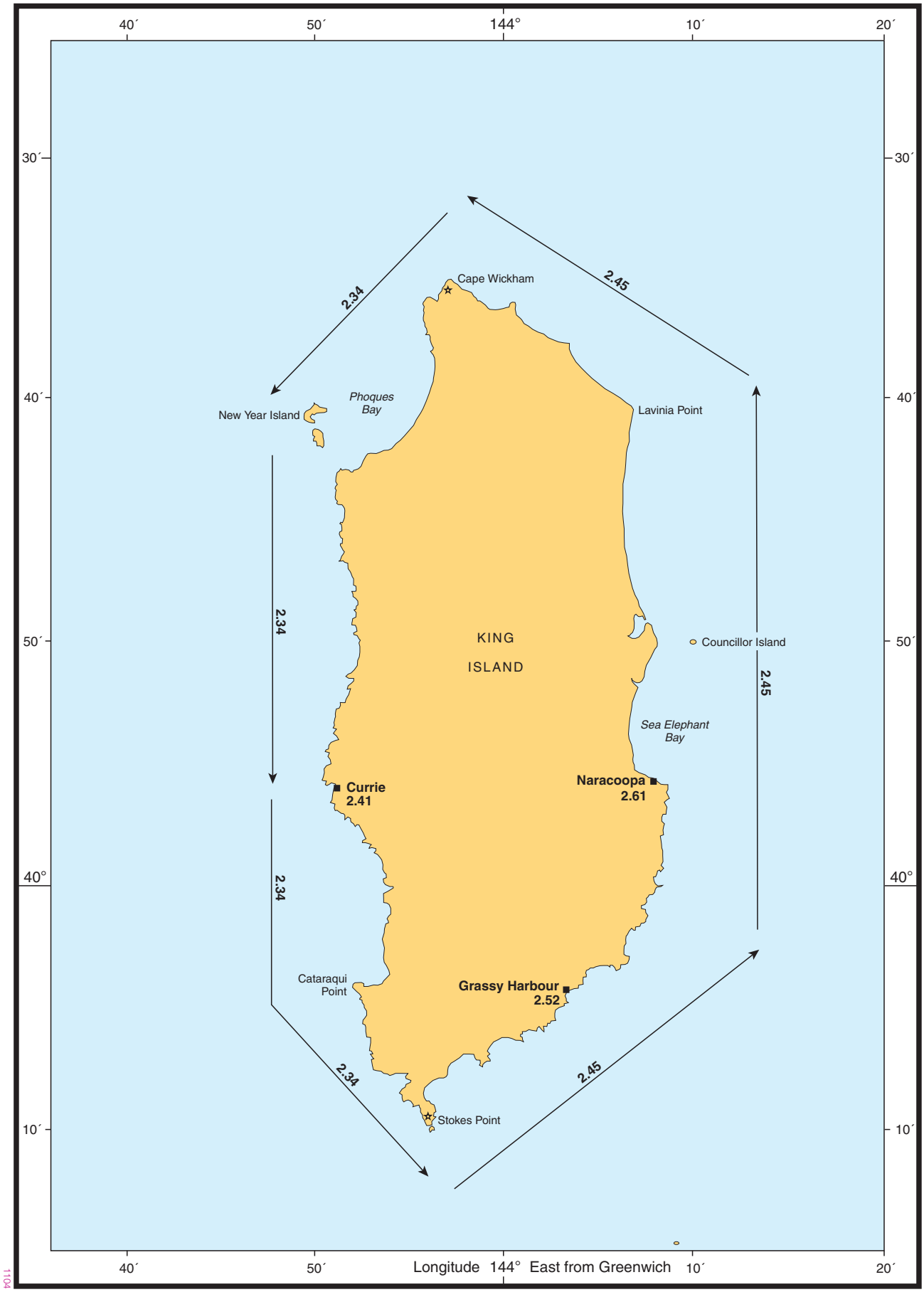
The first settlers, officially nomadic sealers, were mainly occupied in salvage from nearly 60 vessels wrecked round the coast, after which many of the capes and points are named. Some of the bays and rivers are named after the nineteenth-century whalers and sealers.

2 At one time the island was the largest producer in the world of scheelite from which tungsten is refined, the ore being mined from open cuts; the mines are now closed. The island also has rich pastures and a growing tourist trade. The main export from the island is agricultural products and livestock; imports include fertilisers and manufactured products.

3 There is regular communication by sea with Tasmania and Victoria. Commercial vessels call at Grassy Harbour (2.52) on the SE coast of the island. Small vessels may call at Currie (2.41) on the W coast, the principal town of the island, but during W winds when berthing here is not

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King Island



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possible they berth at Naracoopa Jetty (2.61) on the E coast.

Historic wrecks

2.33

1 Along the W coast of King Island described in this section there are historic wrecks. For further details see 1.52.

WEST SIDE

General information

Chart Aus 789 (see 1.12)

Route

2.34

1 From a position about 5 miles N of Cape Wickham (39°35′S, 143°57′E) the coastal route leads initially SW for 12 miles to the vicinity of New Year Island (39°40′S, 143°50′E), thence S for 25 miles to Cataraqui Point (40°04′S, 143°51′E), passing W of Currie Harbour, and then SE, for a further distance of 12 miles, to a position about 5 miles S of Stoke's Point (40°09′S, 143°55′E).

Topography

2.35

1 Between Cape Wickham (39°35′S, 143°57′E) and Stoke's Point (2.40), the S point of the island, the coast fronts densely timbered hills from 90 to 120 m high.

Part of this coastline between Whistler Point (39°43′S, 143°51′E) and Peerless Point (2.40), 12 miles S, is of uniform appearance broken at intervals by the mouths of small rivers and indented by small bays with off-lying rocks, some drying and others above water.

2 Between Peerless Point and Cataraqui Point (2.40), 8 miles S, the coast is indented and rocky. Thence to Surprise Point (2.44), 3½miles farther SE, the coast continues bold and cliffy decreasing to about 30 m high within about 2 miles of Stoke's Point.

Tidal streams

2.36

1 Off Cape Wickham (39°35′S, 143°57′E) very strong tidal streams are occasionally encountered; they are much affected by the wind. With gales from W the rate of the E-going stream may be increased from the normal 2 kn at springs to 5 kn close inshore; its strength decreases farther offshore. Gales from E increase the rate of the W-going stream.

Near New Year Island and Christmas Island, 8 miles SW of Cape Wickham, the tidal streams turn, in fine weather, at HW and LW but are greatly affected by the prevailing wind.

Principal marks

2.37

1 **Landmarks:**

Cape Wickham (39°35′S, 143°57′E), formed by granite cliffs about 60 m high, rises gradually to Wickham Hill, 91 m high, 1 mile S. A tower (elevation 125 m) stands on the hill. Cape Wickham Lighthouse (white masonry tower and lantern, 48 m in height) stands 6 cables SW of the cape.

2 Two towers (39°55′S, 143°51′E), close N of the town of Currie.

Major lights:

Cape Wickham Light — as above.

King Island Aero Light (metal tower, 9 m in height) (39°53′S, 143°53′E).

Currie Harbour Light (39°56′S, 143°50′E) displayed from the S side of the harbour.

Directions

(continued from 2.51)

Cape Wickham to New Year Island

2.38

1 From a position about 5 miles N of Cape Wickham (39°35′S, 143°57′E) the track leads SW, passing (with positions from Cape Wickham):

NW of Navarine Reef (1¾ miles NNE) which is awash at HW; the sea always breaks on it. A rock awash lies 1 cable NE of the reef. Thence:

2 NW of Cape Wickham (2.37), from where a light is displayed; it is fringed by dangerous rocks. To the N of the cape the uneven bottom and strong tidal streams (2.36) cause the sea to break much farther offshore than the below-water rocks which extend about 1 cable from the point. An area of uneven bottom, with a least depth of 11 m 9 cables NW of Cape Wickham, lies between The Harbingers and Cape Wickham; crayfishing vessels frequent this area. Thence:

3 Either side of The Harbingers (4 miles WNW). East Harbinger is a group of rocks below water over which the sea generally breaks. The group is steep-to with deep water between it and West Harbinger, 1¼miles SW. West Harbinger is a drying reef which appears as a flat-topped boulder on which the sea always breaks. And:

NW of Cape Farewell (1½miles SW). Victoria Cove, a break in the below-water rocks which fringe this coast, lies 5 cables E of the cape; the cove is exposed NW. Thence:

4 NW of Phoques Bay (5 miles SSW), entered between Cape Farewell and New Year Island, which lies on the outer part of the coastal bank extending 3 miles NNW from Whistler Point (9 miles SSW). Below-water rocks, over which the sea breaks, extend 7 cables from the shores of the bay for 2 miles S of Cape Farewell, thence Yellow Rock Beach, which is sandy, extends to within 1¼miles of Whistler Point; there is good landing in nearly all weathers at the S end of the beach near where Yellow Rock River enters the sea. Thence:

5 To a position W of New Year Island (8 miles SW). The island is crescent-shaped, rising to a summit, 27 m high. A detached rock, lies 3 cables off the W side of the island and rocks, some of which dry, extend 4 cables from the S and SW sides.

New Year Island to Peerless Point

2.39

1 **Caution.** Cape Wickham Light (2.37), is obscured up to 19 miles SW of New Year Island, within a narrow sector on the line of bearing 048°.

From a position W of New Year Island (39°40′S, 143°50′E) the track then leads S, passing (with positions from New Year Island):

2 W of Christmas Island (1 mile S), separated from New Year Island by a narrow channel with a least depth of 3·2 m in it. The island is less than 20 m

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high with Asses Ears, a remarkable rock, standing at its N end. Thence:

3 W of a channel (1¾miles SSE) which passes between the S end of Christmas Island and Whistler Point. Channel Rocks, above water, lie on the NW side of the channel and Elizabeth Rock, which dry, lie at its E end. Both groups of rocks lie among reefs and rocks above water. All these dangers are covered by kelp and, as the sea breaks over them, passage between them should only be made in case of real necessity. Thence:

4 W of Whistler Point (2½miles SSE); a prominent patch of sand lies 1½miles S of the point. Between Whistler Point and Peerless Point, 12 miles S, rocks below water extend 7 cables offshore with much foul ground outside them. Tidal streams and a W swell often raise a breaking sea over this ground leading those without local knowledge to imagine rocks everywhere. Thence:

5 W of a rock (10½ miles S), with a depth of 11 m over it, on which the sea breaks occasionally. On the shore, 3½miles ENE of the rock, lies a conspicuous sandpatch with a sandy beach at its foot. Thence:

W of Waterwitch Reef (13 miles S), a group of dangerous rocks over which the sea breaks heavily, thence:

To a position W of Peerless Point (14½ miles S).

(Directions for Currie Harbour are given at 2.41)

Peerless Point to Stoke's Point

2.40

1 From a position W of Peerless Point (39°55′S, 143°50′E) the track continues S, passing (with positions from Currie Harbour Light (39°56′S, 143°50′E)):

W of a rock (1¾ miles W), with a depth of 5·5 m over it, fronting the entrance to Currie Harbour (2.41), thence:

W of a 3 m patch (2 miles SSW), lying at the end of a rocky spit, with depths over it of less than 10 m, extending 1¼miles SW of Waterwitch Point (7 cables S); the point is fronted by foul ground. Thence:

2 W of British Admiral Reef (2½ miles S), nearly awash, which lies on a foul area about 1 mile in extent over the central part of which the sea always breaks. A 5·1 m patch, over which the sea breaks at times, lies about 3 cables NW of the reef. Sunken Rocks, which dry, lie between the reef and the shore and foul ground lies between these rocks and Waterwitch Point to the N. Thence:

3 W of Cataraqui Point (8 miles S) which forms the SW side of Fitzmaurice Bay (2.43). The point is bold and cliffy, with a 51 m high hill standing close within. The point is named after a vessel wrecked on it in 1845 with the loss of nearly 400 passengers and crew; Australia's worst maritime disaster.

4 The track then leads SE, passing:

Surprise Bay (11½ miles SSE) in which there is anchorage (2.44) for small craft. Tidal streams near the bay are influenced by the wind. And:

Clear of, according to draught, a rock (14 miles S) with a depth of 18·3 m over it, thence:

5 To a position about 5 miles S of Stoke's Point (14 miles SSE), from where a light (white concrete tower and lantern, 9 m in height) is displayed. The point is very low and resembles a group of boulders, over and outside of which the sea constantly breaks. The sea also breaks heavily over foul ground which extends up to nearly 5 cables offshore for about 2 miles NNW of the point. Stoke's Point should be given a wide berth for a few rocks below water extend about 1½cables S of it and the low point appears more distant than it is because of a hill gradually rising to 44 m about 7 cables N of it.

(Directions continue at 2.48)

Currie Harbour

Chart Aus 178 plan Currie Harbour (see 1.12)

General information

2.41

1 **General description.** Currie Harbour (39°56′S, 143°51′E) lying in a small bay, entered 5 cables S of Peerless Point, affords shelter for small craft. The town of Currie, the largest on King Island, has a population of about 700.

Climatic table. See 1.133 and 1.134.

Directions. The harbour is entered on the alignments of the following leading lights and beacons:

2 The alignment (106½) of the middle pair of leading lights (39°55′·6S, 143°50′·7E), standing on the E shore, lead initially from a position about 1 mile SW of Peerless Point to a position close S of a patch, with a depth of 3·4 m over it, thence:

The alignment (093½) of the N set of leading lights (39°55′·5S, 143°50′·7E), standing on the E shore, lead E, passing N of Kelp Rock, a shoal, with a depth of 1·0 m over it, thence:

3 The alignment (134¾) ahead, of the S set of leading lights (39°55′·7S, 143°50′·7E), standing on the E shore, and a pair of beacons (orange), about 500 m E of the N entrance point, in line bearing 314¾, astern, lead SE to the head of the jetty.

Caution. Craft with a draught of 1 m or more must follow these alignments closely as the bay is obstructed by reefs and shallow patches lying close to the track.

4 **Berth.** The harbour contains a jetty, 168 m long, with depths of 1·8 to 3·0 m alongside, protecting a small inner harbour in the SE part of the bay. It has been reported that a new jetty is to be built.

Facilities: hospital; post office; boat ramp and slipway.

Anchorages

Chart Aus 789 (see 1.12)

Franklin Road

2.42

1 Anchorage may be obtained in Franklin Road (39°40′S, 143°51′E), E of New Year Island and Christmas Island, in depths of about 13 m, but this anchorage is exposed to the W.

Fitzmaurice Bay

2.43

1 Fitzmaurice Bay (40°03′S, 143°52′E), close ENE of Cataraqui Point (2.40), affords good anchorage in E winds, in a depth of 18 m, off a sandy beach on which there is usually a heavy surf.

This bay should be used with caution and a good watch should be kept on the wind which may shift very suddenly from E through N to NW and W.

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Currie Harbour from SW (2.41)
(Original dated 1998)

Surprise Bay
2.44

1 **General information.** Surprise Bay (40°07′S, 143°54′E) is used as anchorage by small vessels and fishing craft. It is well protected in all weathers by the rocks in the entrance.

The bay is entered SE of Surprise Point, 3¾ miles S of Cataraqui Point (2.40). A rock above water, with submerged rocks around it, lies near the middle of the bay; the sea breaks over these rocks.

Caution. Local knowledge is required for entry and in strong W winds the bay should not be entered.

Tidal levels. Mean maximum range about 1·1 m, mean minimum range about 0·3 m. See *Admiralty Tide Tables*.

EAST SIDE

General information

Chart Aus 789 (see 1.12)

Route
2.45

1 From a position about 5 miles S of Stoke's Point (40°09′S, 143°55′E) the coastal route leads initially NE for 20 miles to the vicinity of Cumberland (39°59′S, 144°08′E), thence N, for 20 miles, to Lavinia Point (39°40′S, 144°06′E), passing E of Councillor Island, thence NW, for a further distance of 16 miles, to a position about 5 miles N of Cape Wickham (39°35′S, 143°57′E).

Depths
2.46

1 The area SE of Stoke's Point (2.40) has been inadequately surveyed; see note on the chart.

Principal marks
2.47

1 **Landmarks:**

Tower (elevation 193 m) (40°02′S, 144°01′E).

Oil tanks (silver painted) (39°55′S, 144°07′E) at Naracoopa.

Cape Wickham (39°35′S, 143°57′E) (2.37).

Major light:

Cape Wickham Light (39°35′S, 143°57′E) (2.37).

Directions
(continued from 2.40)

Stoke's Point to Cumberland
2.48

1 From a position about 5 miles S of Stoke's Point (40°09′S, 143°55′E) the track leads NE, passing (with positions from Stoke's Point):

SE of Stoke's Point (2.40), thence:

SE of Stanley Rocks (2¾ miles E) and Seal Rock (1½miles E), which fronts Seal Bay (2.59) in which there is an anchorage. Stanley Rocks lie at the E end of foul ground; in stormy weather the sea breaks over the whole area between Stanley Rocks and Seal Rock. And:

2 NW of Reid Rocks (12 miles SE), which lie on a bank of foul ground. Reid Rock, a small dark mass, is the NW and highest rock. South Reid Rock lies 1¾ miles S of Reid Rock near the S end of the bank. Thence:

3 SE of Black Point (3 miles NE) and Seal Point, 5 cables NE. Black Point consists of a black rock about 9 m high over which stands a hummock 34 m high; N of the point the coast fronts a higher range of prominent sandy hummocks. A rock

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awash lies 5 cables E of Black Point with submerged rocks between it and Seal Point. Thence:

SE of an isolated rock (4½ miles NE), with a depth of 9·1 m over it, thence:

4 SE of Red Hut Point (5 miles NE). Mount Stanley, the highest point of King Island, stands 3½miles NNW of the point. A rock, above water, lies 2 cables SE of this small point. Thence:

SE of North Brig Rock and South Brig Rock (6 miles NE), which lie on a shoal 1¼ miles ESE of Red Hut Point. North Brig Rock stands on the N part of the shoal and resembles a brig under sail. South Brig Rock, remarkable for its black appearance, lies on the S part of the shoal; the sea breaks 1 cable off the S side of the rock and there are some detached rocks S of it.

2.49

1 Thence the track continues NE, passing (with positions from Stoke's Point):

SE of Sandblow Point (7½miles NE), the SW entrance point of Grassy Harbour. Between this point and North Brig Rock several rocks, mostly above water, lie about 3 cables offshore. Thence:

SE of Grassy Harbour (8¼ miles NE) (2.52). A light (white tripod) is displayed from the head of the harbour's main breakwater which terminates on Grassy Island. Thence:

2 SE of Grassy Bay (9 miles NE) (2.60), thence:

SE of Bold Head (10½ miles NE), backed by a hill of the coastal range, 192 m high, and thickly wooded, thence:

SE of City of Melbourne Bay (12¼miles NE), thence:

3 To a position ESE of Cumberland (14 miles NE) from where a light (white GRP hut, 4 m in height) is displayed. Between Cumberland and Bold Head, 4½miles SSW, and Cumberland and Fraser Bluff, 3 miles N, the coast is indented and almost steep-to, being backed by a continuation of the thickly wooded ranges behind Sea Elephant Bay; small sandy beaches vary its rocky character.

(Directions for Grassy Harbour are given at 2.56)

Cumberland to Lavinia Point

2.50

1 From a position E of Cumberland (39°59′S, 144°08′E) the track then continues N, passing (with positions from Cumberland Light):

E of Fraser Bluff (3 miles N), close S of the S entrance point of Sea Elephant Bay, thence:

E of an isolated shoal (3¾miles NNE), with a reported (1966) depth of 9·1 m over it, and:

2 Either side of another shoal (6 miles NE) (unexamined), with a reported (1943) depth of 10 m over it, thence:

Across the approaches to Sea Elephant Bay (6 miles N) (2.61), passing either side of Elephant Shoal (8 miles NE), which has a least depth of 6·3 m over it near its N end. In strong winds Elephant Shoal should be given a wide berth for the sea breaks over it heavily. Thence:

3 E of Councillor Island (9½ miles N), lying at the outer end of a bank which extends 1¼miles E of Cowper Point; rocks above and below water extend about 2½ cables SSW of the island. A channel, with a depth of 5·1 m, leads between Councillor Island and Cowper Point. A light (white GRP hut, 2 m in height) is displayed from the SE side of the island. Thence:

4 E of Sea Elephant Reef (10½ miles N) which dries; foul ground extends 5 cables N and S of the reef. Sea Elephant River enters the sea 2¼ miles W of the reef; it is a small stream accessible at HW to small craft with a draught not greater than 0·9 m. Thence:

5 E of Nine Mile Beach (14 miles N) behind which stands Sea Elephant Hill; the beach stretches from Cowper Point to Lavinia Point and is backed by low, sand hummocks. Sea Elephant Hill is double-topped and thickly wooded; a swamp lies between this hill and the coastal sand hummocks. Thence:

6 To a position ENE of Lavinia Point (39°40′S, 144°06′E); the point is low and sandy.

Caution. On passing SE of Lavinia Point, Cape Wickham Light is visible briefly between the sandhills on a line of bearing 300°. However the visibility of the light cannot be relied on until it bears less than 294°.

Lavinia Point to Cape Wickham

2.51

1 From the position ENE of Lavinia Point (39°40′S, 144°06′E) the track then continues NW, passing (with positions from Lavinia Point):

NE of Lavinia Point (2.50); a conspicuous sand patch stands 1½ miles NW of the point. Thence:

NE of Lavinia Beach (2 miles NW), which is sandy; behind the beach lie two lakes, the N most being named Lake Martha Lavinia. Thence:

2 NE of Boulder Point (3¾ miles NW); the point is formed by a large granite boulder from where a spit, with a depth of 2.9 m over it, extends 8 cables N. Vessels may anchor off the point; see 2.62. Thence:

NE of White Beach (5 miles NW), a sandy beach; a conspicuous sand patch stands 1 mile W of Boulder Point behind the beach. Thence:

3 NE of Disappointment Bay (7¼ miles NW) which is entered between Rocky Point and Doughboy Rock, 1¾miles WNW. Rocky Point is fringed with rocks and a 40 m high hill rises 5 cables SSW of it. Thence:

NE of Doughboy Rock (8 miles NW). This above-water rock lies on the outer end of a drying reef extending 3 cables offshore. Thence:

4 NE of Navarine Reef (9 miles NW) (2.38). There is a passage between Doughboy Rock and Navarine Reef, with irregular depths of 20 to 31 m, but it is not recommended as strong tidal streams often cause a race within it. Thence:

To a position about 5 miles N of Cape Wickham (39°35′S, 143°57′E) (2.37). Between the cape and the vicinity of Boulder Point, 5½ miles SE, the coast is backed by hills about 50 m high.

(Directions continue at 2.38)

Grassy Harbour

Chart Aus 178 plan of Grassy Harbour (see 1.12)

General information

2.52

1 Grassy Harbour (40°04′·3S, 144°03′·3E) is situated on the SE side of King Island close S of Grassy Bay, being separated from the bay by Jetty Point. The harbour is

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Grassy Harbour approaches from SSW (2.52)
(Original dated 1998)



Grassy Harbour from S (2.52)
(Original dated 1998)

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entered between Grassy Island (40°04′·2S, 144°03′·7E) and Sandblow Point, 5 cables WSW. Omagh Reef lies in the middle of the entrance. Entry into the harbour is made passing E or W of Omagh Reef.

Port limits extend to a radius of 3 miles centred on 40°04′·2S, 144°03′·6E.

Limiting conditions

2.53

1 **Controlling depth.** Entry W of Omagh Reef crosses an area with depths of less than 10 m. In the Inner Harbour turning area, the least depth is 6·1 m.

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

Arrival information

2.54

1 **Port radio.** For details see *Admiralty List of Radio Signals Volume 6(4)*.

Pilotage. Compulsory for vessels over 35 m LOA.

Prohibited anchorage. Anchoring is prohibited in an area between Main Breakwater and Inner Breakwater, as shown on the chart.

Harbour

2.55

1 The harbour consists of Inner Harbour situated in the NE part of the bay. It is protected on its SE side by Main Breakwater which extends about 650 m from Jetty Point (40°03′·9S, 144°03′·9E) to Grassy Island; Grassy Island Light (2.49) is displayed from the head of Main Breakwater. The W side of Inner Harbour is protected by Inner Breakwater, which has a berth on the inside of it; a light is displayed from the head of Inner Breakwater. The entrance to Inner Harbour is 1 cable wide.

2 In Inner Harbour there is a turning area, 183 m in diameter; the centre of this area is marked by a pair of beacons (40°03′·8S, 144°03′·6E), in line bearing 345°, standing on the N shore of Inner Harbour, and a pair of beacons (40°03′·9S, 144°03′·9), in line bearing 063°, standing on the Main Breakwater. The S edge of the shallow water at the head of Inner Harbour is marked by a pair of beacons (orange) (40°03′·9S, 144°03′·8E), in line bearing 071°.

3 On Main Breakwater at its inner end stand three beacons (40°03′·9S, 144°03′·9E). These beacons along with another beacon standing at the end of Jetty Point, acting as a common rear beacon, mark the sides and middle of the entrance channel. The N-most beacon and Inner Breakwater Light along with the common rear beacon, in line bearing 063°, marks the NW side; the S-most beacon and the common rear beacon, in line bearing 045°, marks the SE side.

Directions for east entrance

2.56

1 **Caution.** It is reported that both pairs of leading lights can only be seen from a distance of about 1 mile.

2 **East Entrance Leading Lights:**

Front light (orange triangle point up) (40°04′·0S, 144°03′·0E).

Rear light (orange triangle point down) (35 m from front light).

From a position about 6 cables SE of Grassy Island (40°04′·2S, 144°03′·7E) the alignment (310°) leads NW, passing (with positions from Grassy Island Light):

3 NE of an isolated shoal (3½ cables S), with a depth of 9·8 m over it, thence:

SW of a 1·2 m patch (1 cable S) lying on the S edge of the bank surrounding Grassy Island, thence:

NE of Omagh Reef (2 cables SW), which has a least depth of 2·5 m over it at its SE end, thence:

4 SW of the W edge of the bank surrounding Grassy Island.

The track then alters sharply to starboard on to the alignment (052°) of the middle beacon (40°03′·9S, 144°03′·9E) on Main Breakwater with the common rear beacon on Jetty Point. This leading line then leads NE, passing (with positions from Grassy Island Light):

5 SE of Frog Rock (2½ cables WNW), an above-water rock, thence:

NW of Grassy Island, thence:

Between the head of Inner Breakwater (2 cables N) and the middle of Main Breakwater into Inner Harbour.

6 **Useful marks**

East Entrance Beacons:

Front beacon (40°04′·0S, 144°03′·1E)

Rear beacon (40°03′·8S, 144°02′·9E)

Front beacon (40°04′·0S, 144°03′·0E)

Rear beacon (40°03′·9S, 144°02′·9E)

The alignment of 310° of these beacons mark the clearing line for the E and W extremities of the East Entrance channel.

Directions for west entrance

2.57

1 **West Entrance Leading Lights:**

Front light (beacon) (40°03′·9S, 144°03′·4E).

Rear light (similar structure) (30 m from front light).

From a position about 2½ cables SE of Sandblow Point (40°04′·5S, 144°03′·0E) the alignment (011°) leads NNE for a distance of about 4 cables, passing between Sandblow Point and Omagh Reef to join the alignment (052°) of the Inner Harbour leading line, 1 cable SSE of Frog Rock (40°04′·1S, 144°03′·3E). Thence follow the directions as given for the E entrance.

Facilities

2.58

1 There is a hospital in the village of Grassy, 2 km N of Grassy Harbour.

Anchorages and bay

Chart Aus 789 (see 1.12)

Seal Bay

2.59

1 **Description.** Seal Bay (40°09′S, 143°58′E), at the S end of King Island, contains an anchorage on its SW side. The bay, fronted by Seal Rock and Stanley Rocks (2.48), is entered between Stoke's Point (40°09′S, 143°55′E) (2.40) and Black Point (2.48), 3 miles NE. Seal Rock lies at the W end of a bank of foul ground, 1¼ miles E of Stoke's Point; rocks below water and an outermost rock, which dries, extends 2 cables S from Seal Rock. The bay is obstructed by rocks, which dry, and below-water rocks which extend 1 mile ESE of Middle Point, lying midway along the sandy shore of the bay.

2 **Anchorage.** Vessels may anchor in Seal Bay in depths of about 14 m, loose coarse sand, near the centre of its SW part. There is good shelter at the NE end of the bay for small vessels during N winds, but vessels should get under way at the first sign of the wind shifting SW. Seal Bay is exposed to E winds and a vessel should get under way if the swell sets into the bay or if there is any indication of the wind shifting E.

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Grassy Bay

2.60

1 **Description.** Grassy Bay (40°03′S, 144°05′E), on the SE shore of King Island is a suitable anchorage for small vessels. The bay is entered between Jetty Point (40°04′S, 144°04′E) and a point 1½miles ENE, drying rocks front the shore of the bay and extend 1½cables WSW from the E entrance point. Grassy, a small town with a population of about 500, lies at the head of the bay.

Local knowledge is required.

Sea Elephant Bay

2.61

1 **Description.** Sea Elephant Bay (39°53′S, 144°08′E), about midway along the E shore of King Island, contains a disused jetty on its S side at Naracoopa and is suitable for anchoring. The bay is entered between Cowper Point (39°50′S, 144°08′E) and a point about 6 miles S. Its shore fronts ridges about 120 m high.

2 **Anchorage.** Good anchorage can be obtained during W gales but as the weather moderates the wind usually backs S. The bottom everywhere is sand or sand and shells, with depths of about 16 m.

Caution. Two disused submarine cables lie in the bay; their landing point is about 1 mile N of the jetty at Naracoopa near the mouth of a stream.

Boulder Point

2.62

1 During W gales small vessels may find anchoring off Boulder Point (39°37′S, 144°03′E) (2.51) of use. There is an anchorage, in depths of about 16 m on the bank, near the point, formed by sand heaped up at a junction of tidal streams. In a settled W gale this anchorage is as safe as that in Sea Elephant Bay (2.61), about 15 miles S, and handier for proceeding W when the weather moderates.

FURNEAUX GROUP

GENERAL INFORMATION

Charts Aus 358, Aus 357, Aus 356, Aus 798, Aus 422 (see 1.12)

Scope of the section

2.63

1 In this section are described the islands of Furneaux Group including Flinders Island, Cape Barren Island and Clarke Island.

Through routes in Franklin Sound and Armstrong Channel are described at 2.88 and 2.107 respectively; other routes are described in the text together with harbour and anchorages.

Lady Barron (40°13′S, 148°15′E), a small harbour lying on the S side of Flinders Island is the main port for the area.

Description

2.64

1 Furneaux Group comprises Flinders Island (40°00′S, 148°00′E), Cape Barren Island (40°24′S, 148°14′E) and Clarke Island (40°32′S, 148°10′E), the largest islands of the group, and several smaller islands, rocks and shoals extending from The Sisters off Stanley Point (39°43′S, 147°56′E), the N end of Flinders Island, for about 60 miles SSE to the dangers off Moriarty Point, the SE point of Clarke Island.

2 The W coasts of the main islands are much broken and fronted by islands, islets and rocks, the largest being Prime Seal Island and Chappell Islands. The E coasts are unbroken and the only features are Babel Island, Vansittart Island, Passage Island and Forsyth Island.

3 Duck, quail, wild pig, kangaroo and wallaby are found on the main islands and Cape Barren geese and mutton birds on the off-lying islands and islets. The chief industries are farming, fishing and fish-canning and mutton bird casking; the last being permitted between May and June. The fishing grounds are worked by fleets from Victoria and Tasmania. There is regular communication by air with Melbourne and Launceston.

Topography

2.65

1 **Flinders Island**, the largest of Furneaux Group, is mountainous on its W side. The range extends from Mount Killiecrankie (39°49′S, 147°52′E), 6½miles SSW of Stanley Point, the N point of the island, SSE to Strzelecki Peaks which stand 5 miles NNW of Pig's Head Point, the S point of the island.

The mountains are bold and abrupt on their W side but slope gradually to the lowland on the E side which is fronted by a sandy beach. The W side of Flinders Island is fronted by several islands and islets; in the lee of many of these, vessels may find shelter from the prevailing W winds.

2 The Sisters, a group of two small islands named Outer Sister Island and Inner Sister Island, lies off the N end of Flinders Island. Both islands are high having rather uneven surfaces with small patches of light scrub, heavily grassed, affording pasture for sheep. Inner Sister Island is almost divided in the middle by a deep valley; the island is used as a sheep and cattle run.

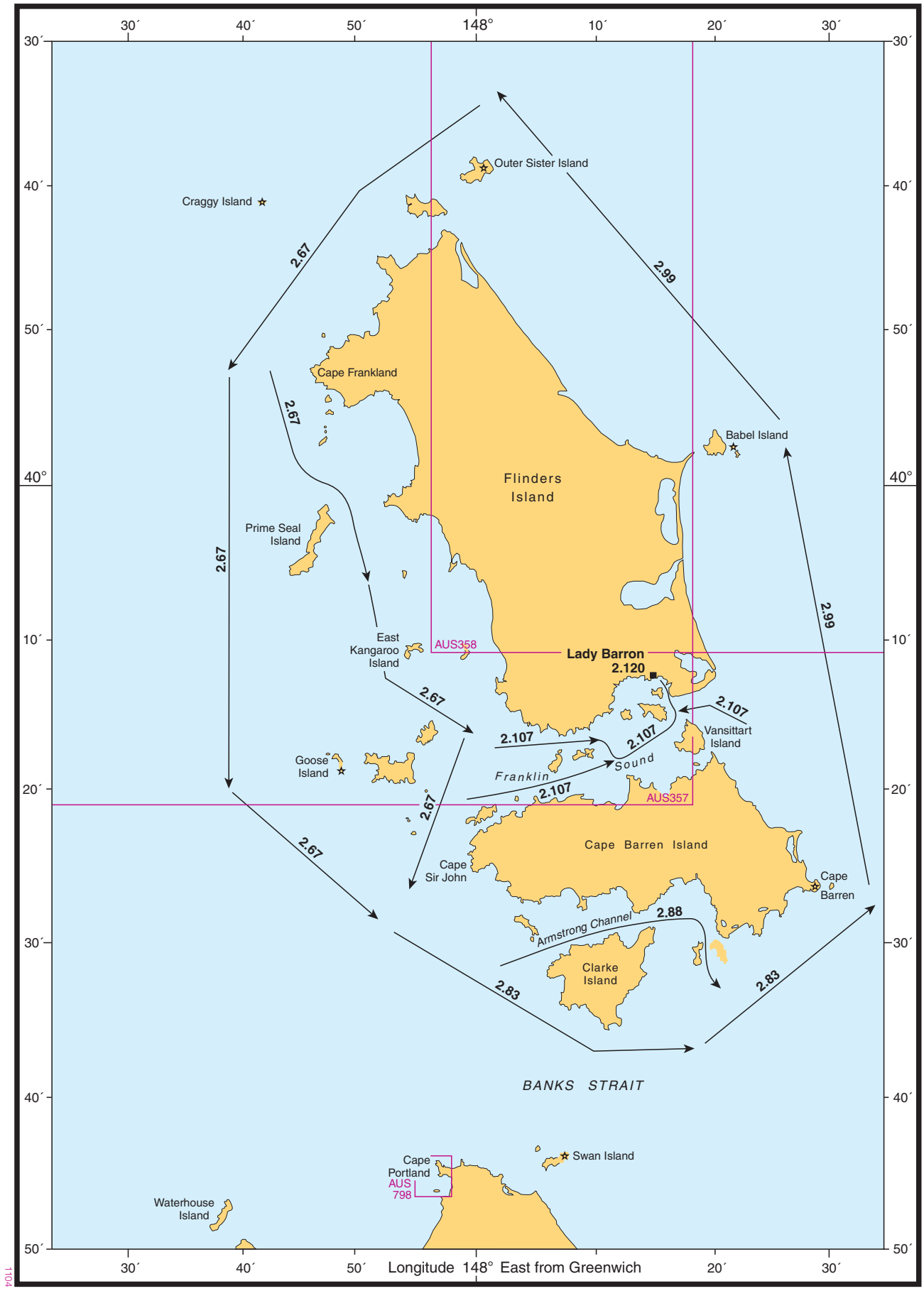
Cape Barren Island is formed of granite peaks of which the highest is Mount Munro (40°22′S, 148°07′E), round-topped and timbered, standing 6 miles ENE of the W end of the island. The other peaks on the island, in contrast to Mount Munro, are bare.

3 Four main ridges traverse the island. The first ridge extends SW from Mount Munro almost to Thunder and Lightning Bay on the SW side; a conspicuous boulder (2.85) stands at the SW end of this ridge. The second ridge extends SSW across the island and includes Double Peak, which stands 1½ miles SE of Mount Munro. The third ridge, separated from the second by a swampy valley E of it, divides the island. The fourth ridge backs the E side of the island; its highest point is Mount Kerford, a prominent peak which stands 5½ miles W of Cape Barren, the E end of the island.

4 **Clarke Island**, the S island of Furneaux Group, rises near its NW side to Home Hill, and on its SW side to Green Hill, a flat-topped hill. The S coast is backed by a plateau from which rise two conical hills, the higher near the middle of the plateau, from whence the land falls

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Furneaux Group



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gradually NE to Seal Point. The island is used as a sheep run.

Historic wrecks

2.66

1 Along the coastlines of the islands of Furneaux Group described in this section there are historic wrecks. For further details see 1.52.

WEST SIDE

General information

Chart Aus 357, Aus 798, Aus 422, Aus 800 (see 1.12)

Routes

2.67

1 **Coastal route.** From a position about 5 miles N of Outer Sister Island Light (39°39′S, 148°00′E) the coastal route leads initially SW, for a distance of about 26 miles, to the vicinity of Cape Frankland (39°53′S, 147°45′E), thence S and SE for a further 41 miles to a position about 5 miles SW of Cape Sir John (40°25′S, 147°59′E), passing W of Prime Seal Island and Chappell Islands.

Inshore route. Also described is an inshore route which leads off the coastal route, from a position NW of Cape Frankland, in a general SSE direction, passing inside Prime Seal Island and Chappell Islands, and W of Franklin Sound, to rejoin the coastal route off Cape Sir John.

Principal marks

2.68

1 **Landmarks:**

The Paps (39°53′S, 147°47′E), two conical peaks of which the higher is 206 m high, stand about 1 mile E of Cape Frankland.

Radio mast (elevation 331 m) (39°53′S, 147°49′E) standing on the N side of North West Peak, 2 miles E of The Paps.

2 Conspicuous granite boulder (40°19′S, 147°51′E) standing above Unicorn Point, the SW point of Badger Island.

Major lights:

Craggy Island Light (white GRP hut, 2 m in height) (39°41′S, 147°40′E).

Goose Island Light (white masonry tower, white lantern, 30 m in height) (40°19′S, 147°48′E).

Directions for coastal route

(continued from 2.105)

Outer Sister Island to Cape Frankland

2.69

1 From a position about 5 miles N of Outer Sister Island Light (39°39′S, 148°00′E) the track leads SW, passing (with positions from Outer Sister Island Light):

2 NW of Outer Sister Island which is the NE-most island of a group of two, the other being Inner Sister Island, 4½miles SW, known as The Sisters (2.65). Outer Sister Island Light (white GRP hut, 4 m in height) is displayed from the NE side of the island. A rocky ridge, with a depth of 5·7 m over it, lies 1½ miles W of a 0·6 m high rock close off the N point of Outer Sister Island; the tide race causes a confused sea over the ridge. Depths around The Sisters and the N part of Flinders Island are irregular. In clear weather The Sisters are visible from a distance of 30 miles. For anchorages in these islands see 2.74. Thence:

3 NW of Inner Sister Island (4½ miles SW) (2.65). A shoal, with a depth of 8·1 m over it, lies at the outer end of a shoal spit extending 1 mile NW from the NE point of this island. In the channel between The Sisters the tidal streams attain a rate of 1½kn but in Sisters Passage, the channel between Inner Sister Island and Flinders Island they attain a much greater rate, causing tide-rips and overfalls. Thence:

4 NW of Blyth Point (9½ miles SW), fringed with dangerous and above-water rocks. Palana, a village where there is a jetty, stands at the head of Blyth Bay which lies on the E side of Blyth Point. Thence:

5 SE of Craggy Rock (14½ miles SW) lying 2½miles SE of Craggy Island. The island, from the W end of which a light (2.68) is displayed, is bare and rocky; rocks extend 2 cables from its W end. A bank extends 2 miles E of the island, with irregular depths and dangerous rocks lying on it, and then S for 2½ miles to encompass Craggy Rock its S end. On this bank, 4 cables E of the island, lies a shoal, with a depth of 3·9 m over it, and an above-water rock on its N side. Thence:

6 NW of Killiecrankie Bay (13 miles SSW), which is exposed NW but affords protection from SW gales receiving some shelter from Sentinel Islet, about 3 miles SW, and from the rocks surrounding the islet. Boats may find shelter at the NE end, or among rocks in the S part of the bay. When entering or leaving the bay pass NE of Little Island, 6 m high, in the middle of the bay, in order to avoid a rock, below water, 3 cables SW of the island. Thence:

7 NW of Sentinel Island (16 miles SW); the coastline between the SW entrance point of Killiecrankie Bay and Cape Frankland, 3½miles SW is fringed with dangerous and above-water rocks. Thence:

To a position about 3 miles NW of Frankland Rock (20½miles SW), which lies 4 miles W of Cape Frankland. Frankland Rock is a drying, double rock, steep-to except on its E side. Cape Frankland is the W point of a hilly peninsula extending from the W coast of Flinders Island; it is fringed by a reef and an islet lies 5 cables N of it.

(Directions for an inshore route to Franklin Sound and Cape Sir John are given at 2.71)

Cape Frankland to Cape Sir John

2.70

1 From the position about 3 miles NW of Frankland Rock (39°52′S, 147°40′E) the track leads S, passing (with positions from Low Islets (40°08′S, 147°43′E)):

W of Frankland Rock (15¾ miles N) (2.69) and Cape Frankland, thence:

E of Warrego Rock (16½ miles NW) and W of Pasco Islands (11½ miles N) (2.71). Warrego Rock is steep-to; an isolated rock, with a depth of 9·8 m (32 ft) over it, lies 1½ miles S of Warrego Rock. Thence:

2 W of Myrmidon Rock (6¼ miles N) lying 2 miles W of Gladys Point, the N point of Prime Seal Island, thence:

W of Swire's Patch (4 miles NNW), lying W of Prime Seal Island; irregular depths extend about 1 mile N of the patch. Prime Seal Island is elongated with its highest point being a hill, 154 m

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high, at the S end; the island is used as a sheep run.

3 The track then leads SSE, passing:

WSW of Low Islets, consisting of three islets lying on a reef extending from 7 cables to 2 miles S of the S point of Prime Seal Island. Safe Passage, 5 cables wide and with 4 depths greater than 20 m in the fairway, lies between the S end of Prime Seal Island and the N end of Low Islets. Thence:

4 To a position WSW of Goose Island (10½miles SSE) (2.80); a light (2.68) is displayed from the S end of the island. Little Goose Island (2.80) lies off the NW end of Goose Island.

From the position WSW of Goose Island the track continues SE, passing (with positions from Goose Island Light (40°19′S, 147°48′E)):

SW of Unicorn Point (2¼ miles ESE), the SW point of Badger Island (2.80), thence:

5 SW of Double Rock (5 miles SE); a rock over which the sea breaks lies 4 cables NW of Double Rock. Thence:

SW of Boxen Island (6 miles SE); Double Rock and Boxen Island lie on the same shoal bank which is fringed with rocks. Thence:

SW of Big Black Reef (9 miles SE), 2·3 m in height, surrounded by foul ground, thence:

SW of Whale Rock (10¼miles SE), which dries, thence:

6 To a position about 5 miles SW of Cape Sir John (10¾miles SE). This cape, the SW extremity of Cape Barren Island, is backed by Stanley Hill, a prominent round-topped hill 162 m high, 1 mile NNE. The coast for 2 miles N of the cape is rockbound and foul up to 5 cables offshore in places. A rock, 2·3 m high, lies 9 cables SW of the cape.

(Directions for the coastal route through Banks Strait continue at 2.86)

Directions for inshore route

Charts Aus 357, Aus 179, Aus 800 (see 1.12)

Cape Frankland to Chalky Island

2.71

1 From a position about 3½ miles NW of Cape Frankland (39°53′S, 147°45′E) (2.69) the inshore track leads S, passing (with positions from South Pasco Island (39°57′S, 147°46′E)):

Between Frankland Rock (7 miles NW) (2.69) and Cape Frankland (5 miles N), thence:

W of Roydon Island (3 miles N), which is almost connected to Flinders Island by rocks above and below water, thence:

2 W of North Pasco Island (2 miles N); rocks above and below water lie within about 4 cables of its N and E points. Off its SW point lie Wyuna Rocks, three dangerous rocks, which encumber the passage between North Pasco Island and Middle Pasco Island. Thence:

W of Middle Pasco Island (1 mile N), consisting of two islets of which the N one, at 6 m, is the highest, thence:

W of South Pasco Island, which is joined to Middle Pasco Island by rocks above water.

3 The track then leads SE, for about 3½ miles, passing:

SW of the S point of South Pasco Island, thence:

SW of Marshall Bay (3½ miles E) (2.76), and:

NE of the reef (3½ miles S) extending 1 mile N of Gladys Point, the N point of Prime Seal Island (2.70). On the reef are rocks which dry, 2·5 m.

Thence the track leads SSE, passing (with positions from Gladys Point (40°01′·5S, 147°46′·5E)):

ENE of Gladys Point and the reef lying off it, thence:

4 WSW of Wybalenna Island (3 miles E) and an islet lying on a rocky bank, 7 cables SW of Settlement Point, the S entrance point of Marshall Bay. Settlement Point is hilly, abrupt and fringed with rocks. Thence:

ENE of Spit Point (1¼ miles SSE), the E-most point of Prime Seal Island; a rock, which dries, lies 3 cables SSW of this point. Thence:

WSW of a dangerous rock (reported 1989) (2¾miles ESE). Tidal streams in this part of the waterway set S and N at rates of ¾kn and 1 kn respectively. Thence:

5 Either side of an isolated shoal (reported 1997) (2¾miles SE), with a depth of 3·4 m over it, thence:

ENE of Koh-i-noor Rock (3½miles S), nearly awash, which lies on the SE end of a reef which has at its NW end a rock above water. To the S of this reef another reef fringes the SE side of Prime Seal Island. Thence:

To a position about 2½ miles WSW of Chalky Island (7¼miles SE); the island is surrounded by rocks above and below water.

Chalky Island to Mount Chappell Island

2.72

1 From the position about 2½ miles WSW of Chalky Island (40°06′S, 147°53′E) the track continues SSE, passing (with positions from East Kangaroo Island Light (40°11′S, 147°55′E)):

ENE of Low Islets (9½miles WNW) (2.70), thence:

WSW of a rock (3½ miles NNW), which dries 1·0 m, lying at the W end of foul ground extending 8 cables W of Reef Island, thence:

WSW of Little Chalky Island (3 miles NNW); a bank with rocks above water extends 1 mile SSW of the islet. Thence:

2 To a position WSW of East Kangaroo Island which is steep-to on its W side; a light is displayed from the SE point of the island.

The track then leads SE, passing:

NE of Ena Shoal (4½ miles SSW) which is steep-to, thence:

NE of Ann Islet (3 miles S) lying on a shoal bank, and:

SW of Big Green Island (3 miles E); this island lies 2½miles offshore of Flinders Island at the W end of a drying spit which separates Parry's Bay (2.79) from Fotheringate Bay S. Thence:

3 SW of Fotheringate Bay (4½miles E), entered between Big Green Island and Trousers Point, 2½miles SE. A rock, with a depth of 1·3 m over it, lies on the E side of the bay, 4 cables N of Trousers Point. Thence:

NE of a rock (4¼ miles SSE), 2 m high, lying about 5 cables ENE of the N point of Mount Chappell Island (2.80), thence:

4 Either side of Bet Shoal (4¼ miles SE) on which the sea breaks in W winds, thence:

To a position about 2 miles E of the N point (4½miles SSE) of Mount Chappell Island,

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avoiding Entrance Rock (6 miles SE) and Kilt Shoal (5½ miles SE), on the NW side of the entrance to Franklin Sound.

(Directions for Franklin Sound continue at 2.112)

Charts Aus 179, Aus 798, Aus 800 (see 1.12)

Mount Chappell Island to Cape Sir John

2.73

1 From the position about 2 miles E of the N point of Mount Chappell Island (40°16′S, 147°56′E) the track then leads SSW, passing (with positions from Boxen Island (40°23′S, 147°54′E)):

ESE of the E coast of Mount Chappell Island (6¼miles NNE) (2.80), and:

WNW of a large shoal bank (8½miles NE), in the W entrance to Franklin Sound, extending for 4 miles WNW of Anderson Island (40°18′S, 148°06′E) (2.112), thence:

2 WNW of an isolated shoal (6¾miles NE), with a depth of 6·7 m over it, thence:

ESE of an isolated shoal (5 miles NNE), with a depth of 6·8 m over it, lying 1 mile E of Little Badger Island (2.80), thence:

ESE of the E coast of Badger Island (4¼ miles N) (2.80), thence:

ESE of Beagle Island (3 miles NNE), with another islet close N, lying near the middle of a bank. A chain of rocks, above water, lies on the NW edge of the bank 5 cables N of the islet. Thence:

3 ESE of Rochfort Rock (2 miles NNE), a dangerous rock; during W winds the sea breaks over it near LW. And:

WNW of Long Island (3¾ miles ENE) lying close off the NW side of Cape Barren Island. The island is bordered by rocks and, at the E end, is connected with Cape Barren Island by a drying sand spit. On the N part of Long Island stands a remarkable granite boulder; another boulder stands near its W end. The village of Cape Barren Island, where there is a hospital, stands on the shore abreast the E end of Long Island. Thence:

4 ESE of Double Rock (8 cables NNW) (2.70) and Boxen Island (2.70), thence:

WNW of Big Black Reef (3 miles ESE), 2·3 m in height, surrounded by foul ground, and Whale Rock (4¼ miles ESE), which dries, thence:

To a position about 5 miles SW of Cape Sir John (5 miles SE) (2.70).

(Directions for the coastal route through Banks Strait continue at 2.86)

Anchorages and bays

Charts Aus 357, Aus 800 (see 1.12)

The Sisters

2.74

1 **Outer Sister Island** (39°39′S, 148°00′E). Anchorage for small craft may be obtained off the W or E sides of the island when the weather is suitable, over a rocky bottom with sand patches. Anchoring is restricted on the E side by a rock, 5 m high, lying at the W end of Shag Reef, 5 cables S of the middle of the S side of Outer Sister Island; there is a narrow channel between the rock and island.

2 **Inner Sister Island** (39°42′S, 147°55′E). Anchorage may be obtained on the W side of a sheltered bay, on the S side of the island, in a depth of 11 m. Houses front the bay and there is good landing on granite rocks on the W side of the bay.

Roydon Island

2.75

1 Anchorage for small craft in N or E winds may be obtained in a depth of 5·0 m E of Roydon Island (39°54′S, 147°46′E) (2.71), but without shelter from W winds.

Marshall Bay

2.76

1 Marshall Bay (39°57′S, 147°52′E) is entered between Bun Beetons Point (39°55′S, 147°48′E), and Settlement Point (2.71), 6½miles SSE. The bay is deep but affords no shelter from W winds.

At the N end of the bay lies Tanner's Bay, fringed by rocks above and below water, with Marriott Reef on its SE side; the reef, with many above-water rocks on it, extends about 1 mile SW from the shore. Small craft may anchor in the middle of Tanner's Bay.

2 From Marriott Reef, for 4½ miles S, Marshall Beach fronts the shore of Marshall Bay; an historic wreck lies off the middle of the beach. For further information on historic wrecks see 1.52.

At the S end of Marshall Bay lies Port Davis, a small cove. A dangerous rock lies midway between the entrance points of the cove and a similar rock, and a rock above water, lie close off the ruins of a jetty.

3 Around the shores of Marshall Bay lie the villages of Leeka, 1 mile N of the N entrance point, Lughrata at the head of the bay, and the small town of Emita, 2¾miles ENE of Settlement Point.

Prime Seal Island

2.77

1 There is a good anchorage, in a depth of 11 m, on the E side of Prime Seal Island (40°04′S, 147°46′E) (2.70), 7½cables N of Koh-i-noor Rock (2.71) and 5 cables offshore. Sheep are landed at this anchorage.

Arthur Bay

2.78

1 Arthur Bay (40°04′S, 147°55′E) is entered between the NW entrance point of Sawyer's Bay and Long Point, 4¾miles SE. Sawyer's Bay, at the N end of Arthur Bay, is fronted by foul ground up to nearly 5 cables offshore. The S side of Arthur Bay is bounded by Chalky Island (2.71) and the shallow water between the islet and Long Point. Long Point is a low peninsula from where rocks, above and below water, extend 5 cables W and a spit with depths of less than 1·8 m extends 1½ miles S.

2 Behind Arthur Bay is a range of hills, the highest summit being Brougham Sugarloaf, about 4¼miles NNE of Long Point. The village of Blue Rocks is situated about 2¼miles N of this point.

Charts Aus 800, Aus 179 (see 1.12)

Parry's Bay

2.79

1 **Description.** Parry's Bay (40°08′S, 147°59′E), entered between Long Point (40°06′S, 147°57′E) (2.78) and Big Green Island (2.72), 4½ miles S, is fronted by a drying sand bank extending up to 1½mile offshore in its N part. The NW approach to the bay is obstructed by islets and rocks lying on foul ground which extends about 4½miles SW of Long Point. The principal islets on this foul ground, with positions from Long Point, are Little Chalky Island (3½miles SW) (2.72), Reef Island (3 miles SW) (2.72), Mile Island (2¼ miles SW) and Isabella Island (2 miles S);

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Isabella Island is steep-to on its S side and faced with cliffs.

2 Pats River flows into the N part of the bay about 2 miles E of Long Point, but is only accessible to boats at HW. The town of Whitemark lies about 1¾miles SSE from the entrance to the river, and is the administrative centre of Flinders Island. About 3½miles E of Whitemark lies Darling Range, the two highest summits of which are Mount Leventhorpe, at its N end, and Counsels Peak at its S end.

The S side of Parry's Bay is obstructed by Parry's Rock lying near the N end of a reef extending about 1 mile N from the N end of Big Green Island.

3 **Anchorages.** Anchorage may be obtained in a depth of 13 m off the NE side of the East Kangaroo Island (40°11′S, 147°55′E) (2.72), 3½ miles SW of Parry's Bay, and also about 3 cables off the S side of Big Green Island, in a depth of 7·3 m.

Berth. There is a wharf off the town of Whitemark at which small vessels may berth at HW; the berth dries out at LW.

4 **Other facilities.** There is a hospital at Whitemark.

Communications. Flinders Island airfield about 1¾miles NNW of the town of Whitemark,

Chappell Islands

Charts Aus 798, Aus 179, Aus 800 (see 1.12)

General information

2.80

1 Chappell Islands (40°18′S, 147°52′E), lying in the W approaches to Franklin Sound (2.107), consists of three islands with numerous islets and rocks as follows:

2 Goose Island (40°18′S, 147°48′E), the W-most island of Chappell Islands Group, is 19 m high and composed of granite boulders with a covering of fertile soil in the valleys; a light (2.68) is displayed from the S end of the island. There are many seabird rookeries on the island. Little Goose Island lies close off the NW side of Goose Island with another islet between. The W and N sides of these islets and of Goose Island are steep-to and fringed with rocks.

3 Badger Island (40°19′S, 147°53′E), 1½miles E of Goose Island and separated from it by a deep channel, is the central and largest island of the group; it is flat, 33 m high at its NE end and sparsely wooded. Little Badger Island lies on a reef which extends 5 cables E of the E end of Badger Island.

4 Mount Chappell Island (40°16′S, 147°56′E), 1 mile NE of Badger Island, has a rounded summit 197 m high; it is a mutton bird reserve. A rock, which dries 1·1 m lies in mid-channel between Mount Chappell Island and Badger Island. Islets and rocks lie off the W and N coasts of Mount Chappell Island.

Directions for passing W of Chappell Islands are given at 2.70 and for an inshore channel passing E of the islands at 2.72.

Tidal streams

2.81

1 Tidal streams in the vicinity of Chappell Islands set as follows:

To the N of the islands the in-going stream sets WNW and to the S of the islands WSW. The out-going stream sets in contrary directions.

To the W of the islands, in the vicinity of Goose Island, the tidal streams set NW and SE, both streams attaining a rate of about 1 kn.

Anchorages

2.82

1 Anchorage may be obtained in a depth of about 18 m, sand, E of the middle of Goose Island. This is a good anchorage during W winds but being so close to the shore it is unsafe should the wind shift SE.

East of Badger Island, good anchorage may be obtained in a depth of 11 m, about 7 cables SSW of Little Badger Island.

SOUTH SIDE

General information

Chart Aus 798, Aus 800 (see 1.12)

Routes

2.83

1 From a position about 5 miles SW of Cape Sir John (40°25′S, 147°59′E) the coastal route passes through Banks Strait, leading initially SE, for a distance of about 16 miles, to the vicinity of South Head (40°36′S, 148°11′E), thence E and then NE for a further 24 miles to a position about 5 miles E of Gull Islet off Cape Barren (40°26′S, 148°29′E).

Description

2.84

1 For a description of Banks Strait and information on tides see 7.177, 7.178 and 7.179.

Principal marks

2.85

1 **Landmarks:**

Boulder (40°25′S, 148°02′E), with an elevation of 239 m, standing at the SW end of the ridge on the W side of Cape Barren Island.

Swan Island Lighthouse (40°44′S, 148°08′E) (7.181).

Major light:

Swan Island Light (40°44′S, 148°08′E) (7.181).

Directions

(continued from 2.70 and 2.73)

Cape Sir John to East Bank

2.86

1 From a position about 5 miles SW of Cape Sir John (40°25′S, 147°59′E) (2.70), the track leads SE, passing (with positions from Cape Sir John):

SW of Maroon Rock (8 cables SSE) 2·4 m high, lying in the approach to Thunder and Lightning Bay (2.92), thence:

SW of Key Island (1¾ miles ESE), which is almost connected to the shore of Cape Barren Island. Key Island Bay lies E of Key Island, with a bank having numerous boulders on it, extending W from its SE entrance point. Thence:

2 SW of Night Island (4 miles SSE) and Little Night Islet; these are the W-most obstructions in the W entrance to Armstrong Channel (2.88). Thence:

SW of Rum Island (5½miles SE), which is connected to the S point of Preservation Island (2.89) by a reef, parts of which dry, thence:

SW of Eclipse Rock (7½ miles SE), the outermost danger off the W end of Clarke Island. There is almost always a confused sea running around the

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rock. Overfalls occur about 5 miles SW of Eclipse Rock.

3 The track then follows the directions given in Chapter 7 for Banks Strait at 7.182, passing SSW of Lookout Head (40°34′S, 148°07′E) and South Head (40°36′S, 148°11′E), NNE of Swan Island (40°44′S, 148°07′E) and thence SSW of Moriarty Bank (40°36′S, 148°15′E) to a position SSW of East Bank (40°36′S, 148°19′E).

East Bank to Cape Barren

2.87

1 **Caution.** The whole area between Moriarty Bank (40°36′S, 148°15′E), the E side of Clarke Island (2.65) and Passage Island (40°30′S, 148°21′E) (2.90) is either foul or the tidal stream causes such a race, or the seas to break so heavily, as to make the whole locality dangerous.

From a position SSW of East Bank (40°36′S, 148°19′E) the track leads NE, passing (with positions from Cape Barren Light (40°26′S, 148°29′E)):

SE of East Bank (13 miles SW) (7.183), thence:

2 SE of Forsyth Island (8¾miles SW) and Passage Island (7¼ miles SW) lying in the E entrance to Armstrong Channel (2.88), thence:

SE of Cone Point (5 miles SW) on the SE side of Cape Barren Island, so called because of two remarkable cone-shaped granite rocks which stand on it, thence:

SE of a headland (2¾miles SW), marked by conspicuous sandhills, which lies midway between Cone Point and Cape Barren, thence:

SE of Jamieson Bay (1½ miles WSW), thence:

3 SE of an isolated patch (3¼ miles SE) (position approximate), reported (1973) to have a depth of 7·3 m over it, which lies 3¼ miles SE of Cape Barren; a light (white GRP hut, 4 m in height) is displayed from the cape. The cape is a rounded rocky point with numerous hillocks over it. Thence:

SE of Gull Rock (1¼ miles E), lying at the S end of a reef 5 cables long, which lies at the end of the foul ground extending E of Cape Barren. The E side of this reef is steep-to but there are strong tide-rips near it. Thence:

4 To a position about 5 miles E of Gull Islet (1 mile E), off Cape Barren. Gull Islet, which is rocky, lies near the middle of the foul ground extending 1¼miles E of the cape.

Clearing bearing:

The line of bearing (204°) of Mount William (40°54′S, 148°11′E) clears E of Moriarty Reef and East Bank.

(Directions continue at 2.104)

Armstrong Channel

Description

2.88

1 Armstrong Channel, between Cape Barren Island (40°24′S, 148°14′E) and Clarke Island (40°32′S, 148°10′E) (2.65), is seldom used owing to the numerous banks and the strong tidal streams in it, but a passage of sufficient width and depth for small vessels is scoured by the tidal streams. The bottom is rocky in the deeper parts and sandy in the bights and shoaler places.

2 There is a least charted depth of 6·2 m in the E entrance of the channel between the S ends of Forsyth Island (40°31′S, 148°19′E) and Passage Island. Sea Lion Narrows, a deeper passage leading NE of Passage Island is not recommended. The W entrance to Armstrong Channel is obstructed by Preservation Island, islets and rocks, which divide it into two passages of which the S is wider and straighter.

Local knowledge is required.

Directions

2.89

1 From a position about 1¾miles SSE of Little Night Islet (40°30′S, 148°01′E) the preferred side of Armstrong Channel leads initially ENE and then E along the Clarke Island shore, passing (with positions from Little Night Islet):

NNW of Eclipse Rock (3½ miles SE) (2.86), thence:

2 SSE of Preservation Island (2 miles ENE) and Rum Island (2½ miles E) (2.86). Preservation Island is of granite formation; this island and the rocky islets near it are the resort of numerous seabirds. Many islets and rocks extend 6 cables from its NW end. A spit, with depths of less than 5 m, extends 1½miles E from the E side of the island. Thence:

3 NNW of the NW and N side of Clarke Island (5 miles ESE); the shore of Clarke Island is fronted by a bank, with depths of less than 5 m over it, which extends up to 7 cables offshore near Middle Bank; it is fringed with many dangerous rocks. And:

SSE of a bank (5 miles ENE), with a least depth of 4·4 m over it, known locally as Preservation Bank, lying between positions about 1 mile SSW and 1 mile SW of Wombat Point (5¾miles ENE) (2.94), thence:

4 Between Allens Point, the W entrance point of Kangaroo Bay (8¼miles E), which is shallow, and Middle Bank (8 miles E), with a least charted depth of 0·7 m over it, thence:

Between Sloping Point (9½miles E), on the S side of Cape Barren Island, and Seal Point (10¼miles E), the NE-most point of Clarke Island. A dangerous rock lies close S of Sloping Point and Seal Rocks, 2·6 m high, extend 2½cables NW from Seal Point. Thence:

5 Between a sandy shoal (2.97), which lies across the entrance to Kent Bay (12½ miles ENE), and a shallow sandbank (12½ miles E), parts of which dry, which extends E and SE from Seal Point to Forsyth Island, 3 miles ESE.

2.90

1 The track then leads S to pass between Forsyth Island (40°31′S, 148°19′E) and Passage Island, 5 cables E. This part of Armstrong Channel is narrow as it leads between banks, with depths of less than 5 m over them, extending offshore from Forsyth Island and Passage Island; a bar, with a depth of 6·2 m over it, lies at the S end of the passage between the S points of the islands.

2 Sea Lion Narrows, which lie between Passage Point (40°29′S, 148°21′E) and the NE side of Passage Island, also provides a fairway for entering or leaving Armstrong Channel. This passage should only be used in case of necessity as the tidal streams in it attain a rate of 5 to 6 kn; the passage is also obstructed by several above-water rocks, lying 2 cables N of the N end of Passage Island, and a rock, which dries, lies in mid-channel.

3 **Caution.** Strong tide-rips occur off the SE end of Passage Island from which dangerous rocks extend 3 cables SE. There is also the outlying danger of Washy Rock,

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which dries 0·9 m, over which the sea breaks heavily, lying 1 mile SW of the S end of Forsyth Island.

4 **Clearing bearings:**

The line of bearing (064°) of Sloping Point (40°28′S, 148°13′E) open N of Clarke Island clears N of Eclipse Rock.

The line of bearing (348°) of the conspicuous boulder (40°25′S, 148°02′E) (2.85), 2½ miles E of Cape Sir John, open W of Rum Island clears W of Eclipse Rock.

Anchorages, bays and landings

Local knowledge

2.91

1 Local knowledge is required for navigating the anchorages and bays within Armstrong Channel.

Thunder and Lightning Bay

2.92

1 Thunder and Lightning Bay (40°25′S, 148°01′E) is entered between Cape Sir John (2.70) and a point 1¼miles ESE. A rock, 1·8 m high, lies midway between the entrance points.

Anchorage may be obtained by small vessels at the head of the bay with shelter from N and E winds.

Hamilton Road

2.93

1 Hamilton Road (40°29′S, 148°06′E) lies E of Preservation Island (2.89) and is protected from SW by Rum Island. Anchorage may be obtained in Hamilton Road in a depth of 7·3 m about 3 cables E of the SE end of Preservation Island; there is a depth of 5·3 m near this anchorage and an isolated shoal, with a depth of 3·5 m over it, lies close S. An historic wreck lies close off the E side of Rum Island. For further information on historic wrecks see 1.52.

2 **Caution.** After prolonged heavy W gales, a long swell rolling around the S end of Rum Island may set in suddenly; on one such occasion the surveying vessel *Victoria* was compelled to seek shelter in Kent Bay (2.97), 9 miles E.

Dyas Bay

2.94

1 Dyas Bay (40°27′S, 148°07′E), one of several bays on the S side of Cape Barren Island, is entered between Lascar Point (40°27′S, 148°05′E) and Wombat Point, 2½miles E. The W part of the bay is fronted by foul ground extending 2½cables offshore whilst the E side is fronted by a sandy beach. There are isolated depths of less than 2 m in the middle of the bay along with Shag Rock, above water, lying 8 cables WNW of Wombat Point. A granite islet, 23 m high, lies close S of Wombat Point, with a rock above water 1½cables E. Malms Rock, awash, lies 3½cables SSE of Lascar Point.

North-west side of Clarke Island

2.95

1 A cove (40°31′S, 148°07′E), with a landing place and a few buildings at its head, lies 1½ miles NE of the W end of Clarke Island. Anchorage for small vessels may be obtained in a depth of 9·1 m in this cove.

Battery Bay

2.96

1 Battery Bay (40°27′S, 148°12′E), entered 1¼miles WNW of Sloping Point (2.89), is shallow; the shore on the E side of the bay is fronted by a drying bank, and foul ground, with a rock awash on it, extends 4 cables off the NW side of the bay. The approach to the bay is obstructed by Battery Island lying midway between Wombat Point (2.94) and Sloping Point.

Kent Bay

2.97

1 Kent Bay (40°27′S, 148°17′E) is entered between Sloping Point (2.89) and Passage Point (2.90), 5½miles ESE. A sandy shoal, with a least depth of 0·7 m over it, extends from 1¾to 3½miles E of Sloping Point across the entrance to the bay and is the outermost of the shoals which obstruct it. The W side of the bay is obstructed by Kent Rock, lying on a reef off the shore, 2 miles NE of Sloping Point.

Anchorage may be obtained on the W side of the entrance to Kent Bay in a depth of 20 m, about 2½cables offshore, 1¼miles ENE of Sloping Point; depths to the SW of this position are considerably deeper.

Moriarty Bay

2.98

1 Moriarty Bay (40°35′S, 148°12′E), lying 3 miles SSW of Black Point, is a small bay in which anchoring is not recommended as it has bad holding ground over an irregular rocky bottom. Black Point is fronted by rocks above and below water.

The approach to the bay from the NE is obstructed by Low Islets, consisting of two islets lying 1¾miles SSE of Black Point; a rock drying 1·4 m, a rock below water and some rocks above water, lie 4 cables NW and N of these islets. A landing can be made at the S end of a sandy beach at the head of the bay.

EAST SIDE

General information

Charts Aus 798, Aus 356, Aus 358, Aus 800 (see 1.12)

Route

2.99

1 From a position about 5 miles E of Gull Islet, off Cape Barren (40°26′S, 148°29′E), the coastal route leads initially NNW, for a distance of 32 miles, passing ENE of the E entrance to Franklin Sound to the vicinity of Cat Island (39°57′S, 148°22′E), thence NW for a further 30 miles to a position about 5 miles N of Outer Sister Island Light (39°39′S, 148°00′E).

Topography

2.100

1 **Cape Barren Island.** The E side of Cape Barren Island, from Cape Barren (40°26′S, 148°29′E) to Puncheon Point, 11 miles NW, is formed by rocky points interspersed with sandy bays, backed by lagoons. A conspicuous sandhill, 13 m high, stands 4¼ miles SE of Puncheon Point with another, 33 m high, 2 miles farther SE.

Flinders Island. The E coast of Flinders Island, in contrast to its W coast, is mostly low and fronted by a sandy beach with regular depths of 11 m about 1 mile offshore.

2 From the SE-most point of Flinders Island to Sellars Point (2.103), 15 miles N, low swampy land, with many lagoons, lies behind the E coast. Darling Range (2.79) is the only prominent feature behind the lagoons. This part of Flinders Island abounds in kangaroo, wallaby and wild pig.

From Sellars Point to Stanley Point (2.65), 22 miles NW, the coast is fringed by stunted ti-trees, heath and gum trees,

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except at its NW end where a timbered range of hills reaches the coast at Stanley Point.

Local magnetic anomaly

2.101

1 In 1959 magnetic disturbance was reported E of Flinders Island in the vicinity of 40°10′S, 148°38′E.

Tidal streams

2.102

1 On the E side of Furneaux Group, to the N of Babel Island (39°57′S, 148°20′E), the tidal streams set N and S, parallel with the coast, and are generally regular. The streams S of Babel Island are weak and irregular.

Landmark

2.103

1 The Patriarchs (39°58′S, 148°12′E), three remarkable peaks rising from low, sandy land behind Sellars Point, the E point of Flinders Island. The NE and highest of The Patriarchs stands 4½ miles W of Sellars Point and is 234 m high, with a sharp appearance, showing up well from the SE.

Directions

(continued from 2.87)

Cape Barren to Cat Island

2.104

1 **Caution.** There have been several reports of vessels wrecked on detached dangers off this coast and mariners are cautioned in respect of these dangers which are described in the following text.

From a position about 5 miles E of Gull Islet, off Cape Barren (40°26′S, 148°29′E), the track leads NNW, passing (with positions from Cape Barren Light):

ENE of Burgess Bay (6 cables N); Cape Barren forms the SE entrance to the bay. Thence:

2 ENE of Flat Rock (2¾ miles N); several below-water rocks lie on the reef extending 4 cables NNW of Flat Rock. Thence:

ENE of Harleys Point (Harley Point on chart Aus 179) (4 miles NNW); rocks above and below water lie on the reef extending 7 cables E of the point. Thence:

3 ENE of Vansittart Shoals (10½ miles NNW), lying on the S side of the E entrance to Franklin Sound (2.107). Vansittart Shoals lie on a shoal spit extending 3¾ miles E and thence 5½ miles S from the SE point of Flinders Island. The sea breaks heavily on this spit and depths over it are subject to change. Thence:

4 ENE of Pot Boil (14 miles NNW), a reef lying on the same shoal spit as Vansittart Shoals, on the N side of the entrance to Franklin Sound, thence:

ENE of an obstruction (14½ miles N) (reported 1946), thence:

ENE of a dangerous rock (17 miles N), known locally as Lawrence Rock, position doubtful. This rock was searched for unsuccessfully by HM Surveying Vessel *Dart* in 1889 but the locality could not be thoroughly examined.

5 The track then continues NNW, passing (with positions from Cat Island (39°57′S, 148°22′E)):

Clear of Minnie Carmichael (10 miles SE), a dangerous under-water rock; this rock, reported in 1884, was searched for by HM Surveying Vessel *Myrmidon* in 1886, but no indication of shallow water could be found in the position reported. Thence:

ENE of Storehouse Island (6 cables SSE), a mutton bird reserve, thence:

To a position ENE of Cat Island; a light (white GRP hut, 4 m in height) is displayed from the summit of Cat Island.

Cat Island to Outer Sister Island

2.105

1 From a position ENE of Cat Island (39°57′S, 148°22′E) the track then leads NW, passing (with positions from Cat Island):

NE of Babel Island (close W) lying 1¾ miles ENE of Sellars Point (2.103) to which it is connected by a sandy spit that dries. The island, a mutton bird reserve, rises to a flat-topped peak; a remarkable pyramid hill, 136 m high, stands near its W end. Thence:

Clear of foul ground (8½ miles NNE) (reported 1983), thence:

2 NE of Foochow Inlet (11¼ miles WNW), a stranded wreck (12¼ miles WNW) lies 1½ miles NNW. Thence:

SW of a shoal (16½ miles N), with a reported (1988) depth of about 20·1 m over it, thence:

NE of the E end of Beagle Spit (17 miles NW), extending E for 7½ miles from the shore. It has least depths of 3 m over it, near its E and W ends. thence:

3 NE of Holloway Point (22¾ miles NW); a light (white GRP hut, 4 m in height) is displayed from the point. A salt lagoon enters the sea close S of Holloway Point and North East Rock, a dangerous rock, lies close off the point. Thence:

NE of Shag Reef (23 miles NW) (2.74) with a rock above water lying at its W end, thence:

4 NE of Outer Sister Island (24½ miles NW) from the NE side of which a light (2.69) is displayed, thence:

To a position about 5 miles N of Outer Sister Island (39°39′S, 148°00′E).

(Directions continue at 2.69)

Anchorage

Babel Island

2.106

1 With W winds there are anchorages, over a sandy bottom, N and S of the sandy spit connecting Babel Island (39°57′S, 148°20′E) with Flinders Island. Care is needed when anchoring on the N side so as to avoid the rocks N of Sellars Point; West Rock, 1·2 m high, 1¾ miles N of the point is the outermost of these rocks.

Caution. The area N and S of the spit connecting Babel Island with Flinders Island has not been surveyed.

FRANKLIN SOUND

General information

Charts Aus 356, Aus 179, Aus 800 (see 1.12)

Routes

2.107

1 Franklin Sound, about 4 miles wide between the S side of Flinders Island and the N side of Cape Barren Island, is much obstructed by islands and shallow banks between which there are tortuous, and in places, narrow channels

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requiring local knowledge for their navigation. The most important channels are as follows:

2 North channel. This is the main channel into Franklin Sound. It is entered from the W, from a position about 2 miles E of the N point of Mount Chappell Island (40°16′S, 147°56′E), and passes along the S side of Flinders Island between Pig's Head Point (40°17′S, 148°07′E) and Little Anderson Island, and thence between Great Dog Island (40°15′S, 148°15′E) and Vansittart Island, to a position off the entrance to Lady Barron.

3 South channel. From a position about 2 miles W of Ned's Point (40°21′S, 148°05′E) this channel leads ENE to pass S of Anderson Island and Tin Kettle Island to a position NNW of Apple Orchard Point (40°19′S, 148°13′E), where it joins the N channel.

4 East entrance. From the vicinity of 40°16′S, 148°28′E, in the open sea, the route leads WNW between Vansittart Shoals and Pot Boil and thence WSW, passing the N point of Vansittart Island, to a position N of Briggs Islet (40°15′S, 148°17′E) off the entrance to Lady Barron.

Topography

2.108

1 **North side of Franklin Sound.** Between Trousers Point (40°13′S, 148°01′E) and Pig's Head Point, 5 miles ESE, and thence for 3½miles to Badger Corner, the shore consists of many small sandy bights and sharply projecting points mostly formed of spurs from Strzelecki Peaks (2.65). Several rivers enter the sea along this stretch of the coast of which the most important is Big River, entered at the head of Big River Cove, 1¼ miles WNW of Pig's Head Point.

2 From Badger Corner (40°15′S, 148°11′E) to a point known locally as Sandy Point, 4 miles ENE, the coastline is indented by a bight, in the NE corner of which lies Adelaide Bay. Little Dog Island (40°15′S, 148°12′E) and Great Dog Island, 1 mile E of it, front the bight which is filled with rocks and shoals. Samphire River enters the bight 1½ miles N of Badger Corner. Petrifaction Bay is mainly swamp and forms the coast between Samphire River and the town of Lady Barron, which stands on the NW entrance point of Adelaide Bay. Vinegar Hill stands 5 cables NNE of Lady Barron.

3 Between Lady Barron and Sandy Point, 2 miles SE, the coast is fronted by rocks, above and below water, thence to the SE point of Flinders Island, 3 miles ENE, the coast is low, sandy and covered with scrub.

South side of Franklin Sound. From Bungs Point (40°23′S, 147°59′E), at the W end of Cape Barren Island to Apple Orchard Point, about 11 miles ENE, the S shore of Franklin Sound is fronted by banks, with depths of less than 5·0 m over them, and by Long Island (2.73) and Doughboy Islet (2.115). Deep Bay, a shallow bay, lies SW of Apple Orchard Point, at the head of which Lee River enters the sea.

4 From Apple Orchard Point (40°19′S, 148°13′E) to Puncheon Point, the NE-most point of Cape Barren Island, about 6 miles ENE, the coastline is indented by a large shallow bay fronted to the NNE by Vansittart Island. Dover River enters the sea at the head of this bay.

Controlling depths

2.109

1 Depths in Franklin Sound are irregular and the chart is the best guide. Least charted depth on the approaches to Lady Barron (2.120) is 3·5 m.

Tidal levels

2.110

1 See information in *Admiralty Tide Tables.* For Big River Cove (40°16′S, 148°06′E) mean maximum range is about 2·1 m, mean minimum range is about 1·6 m.

Tidal streams

2.111

1 At the E entrance to Franklin Sound the in-going streams meet, one flowing NW and the other SSW. The in-going stream sets W through the sound, and thence about WNW on the N side, and WSW on the S side of Chappell Islands; the out-going stream sets in the contrary direction. In the sound the tidal streams attain a rate of from 2 to 2½kn.

Directions for north channel

(continued from 2.72)

Mount Chappell Island to Tin Kettle Island

2.112

1 From a position about 2 miles E of the N point of Mount Chappell Island (40°16′S, 147°56′E) the track leads initially ESE, for a distance of about 4 miles, passing (with positions from Pig's Head Point (40°17′S, 148°07′E)):

SSW of a 8·6 m patch (5 miles WNW) and Entrance Rock, behind which lies Kilt Shoal (5¼miles WNW). Thence:

2 Close NNE of the outer end (4¼miles W) of sandbanks extending 4 miles WNW from Anderson Island, thence:

SSW of a series of shoals, with a least depth of 3·5 m over them, extending from 2½to 4 miles W of Pig's Head Point.

3 The track then continues E for about 5 miles, passing:

N of Oyster Rocks (2½ miles WSW) consisting of two rocks, the NE-most being the largest, thence:

N of a shoal (1½miles WSW), with a depth of 5·0 m over it, thence:

N of Little Anderson Island (1 mile S), with a bold and steep-to N face, which is connected to Anderson Island close S, by a drying sandbank, and:

4 S of Pig's Head Point from where a light (2.114) is displayed, thence:

N of the shallow spit lying 5 cables N of Tin Kettle Island (1¾ miles SE); Tin Kettle Island is almost connected to Anderson Island, 8 cables W, by a flat which dries in places. Thence:

5 To a position about 8 cables NNE of the E-most point of Tin Kettle Island, at which point the channel divides, with a middle or secondary channel leading off ENE directly to Briggs Islet. The main channel leads SE.

(Directions for the secondary channel to Briggs Islet are given at 2.114)

Tin Kettle Island to Great Dog Island

2.113

1 From the position about 8 cables NNE of the E-most point of Tin Kettle Island (40°18′S, 148°09′E) the track then leads SE for a distance of about 1½ miles, on the alignment (146°) of the beacon (topmark, triangle point up) on the middle islet, with Apple Orchard Point Light (topmark, triangle point down), (40°19′S, 148°13′E), keeping within the white sector (139°–148°) of the light, whilst passing (with positions from Apple Orchard Point Light:

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2 NE of a 1·7 m drying rock (2½ miles NW), lying on the NE side of foul ground extending E of Tin Kettle Island, and:
SW of the large bank (2 miles N) extending 3½ miles SW from Great Dog Island, thence:
3 To a position about 1½ miles NW of Apple Orchard Point Light where it is joined by the S channel (2.115). Three islets extend in a chain 5 cables NNW of Apple Orchard Point; the light is displayed from S-most one.

The track then leads ENE for 2½ miles on the alignment (066°) of two beacons (white, topmark, triangle point down), keeping within the white sector (062°–071°) of Vansittart Island Light (40°16′S, 148°17′E), passing (with positions from Vansittart Island Light):
4 SSE of the large shallow bank (3 miles WSW), with a drying patch on its SE side, and:
NNW of the shallow bay lying between Vansittart Island and Apple Orchard Point (4½ miles SW). Vansittart Island is separated from Puncheon Point by a narrow channel in which lie some islets and several rocks and shoals. Thence:
To a position 2 miles WSW of Vansittart Island Light.

5 The track then leads NNE for about 1½ miles passing between the SE point (1¼ miles NW) of Great Dog Island and Briggs Islet (9 cables NNW) to a position 7½ cables S of Dick Davey Light (40°14′S, 148°17′E), in the approaches to Lady Barron. At night keep within the white sector (008°–017°) of Dick Davey Light.

Useful marks:
6 Great Dog Island has a prominent flat-topped hill, 74 m high, standing near its W end and a conspicuous hill, 49 m high stands near the E end of the island.
Guncarriage Hill, 165 m high, is a conspicuous broad summit at the centre of Vansittart Island.

7 **Caution.** Briggs Islet, which can be passed on either side, lies at the S end of a shoal bank; a dangerous rock lies on the W edge of this bank, 2 cables NNW of the islet, close to the E limit of the white sector of Dick Davey Light.

(Directions for Lady Barron continue at 2.120)

Tin Kettle Island to Briggs Islet

(continued from 2.112)

2.114

1 From a position about 8 cables NNE of the E-most point of Tin Kettle Island (40°18′S, 148°09′E) the track leads ENE for a distance of about 4¾ miles, passing (with positions from Vansittart Island Light (40°16′S, 148°17′E)):
NNW of the large bank (3 miles WSW) extending 3½ miles SW from Great Dog Island (2.113), and:
SSE of the spit (5 miles E) extending SW of Little Dog Island, thence:
SSE of Little Dog Reef (4 miles WNW), on which stands a beacon (red, with cylindrical topmark), thence:
Close SSE of a rock (2 miles WNW), 0·6 m high, which lies off the S side of Great Dog Island, and:
2 NNW of a shoal (2 miles W), with a depth of 1·3 m over it, thence:
To a position about 4 cables SSE of the SE point of Great Dog Island at which point the track rejoins the N channel (2.113).

Useful marks:
Pig's Head Point Light (40°17′S, 148°07′E).
Apple Orchard Point Light (40°19′S, 148°13′E).
Vansittart Island Light (40°16′S, 148°17′E).

Directions for south channel

2.115

1 From a position about 3½ miles W of Ned's Point (40°21′S, 148°05′E) the track leads E, passing (with positions from Ned's Point):
N of Long Island (3½ miles WSW) (2.73), thence:
N of Doughboy Islet (1¼ miles E), and:
S of the spit (1½ miles NNW) which extends S and then W for 3 miles from Anderson Island; the spit has a least depth of 0·4 m over it. Thence:
2 N of a dangerous rock (7 cables NNW) (reported 1972), lying close NW of Ned's Reef lying on the bank which extends NNW of Ned's Point, thence:
N of Munro Bay (4 cables E), which is used by small local vessels, to a position about 1½ miles NE of Ned's Point.

The track then leads NE passing:
3 SE of Anderson Island (2½ miles NNE) and Tin Kettle Island (4 miles NE), and:
NW of the bank (2½ miles ENE), which dries in places, extending 4 miles W of Apple Orchard Point (6 miles ENE), thence:
To a position about 1½ miles NW of Apple Orchard Point Light (40°19′S, 148°13′E) where it joins the N channel.

4 **Useful marks:**
Pig's Head Point Light (40°17′S, 148°07′E).
Apple Orchard Point Light (40°19′S, 148°13′E).
Vansittart Island Light (40°16′S, 148°17′E).

(Directions continue in 2.113)

Directions for east entrance

2.116

1 **Caution.** The E entrance to Franklin Sound is obstructed by a curved spit which extends SE and S from the SE end of Flinders Island. Vessels with a draught in excess of 1·8 m should not use the entrance, except in calm conditions. Depths are also liable to change after E winds.

From the vicinity of 40°15′S, 148°28′E the track leads WNW along the line of bearing, 286½, in the white sector (286½–286¾) of Pot Boil Passage Direction Light (metal tower, 12 m in height) (40°12′·6S, 148°14′·8E), passing (with positions from the light):
2 NNE of Vansittart Shoals (8¼ miles ESE), which break heavily, thence:
NNE of the shoal bank (6 miles ESE) extending 4 miles E of Vansittart Island (4 miles SSE); the sea breaks heavily on its N edge which dries in places. And:
SSW of Pot Boil (6½ miles E), over which the sea breaks heavily, and Pot Boil Shoal which lies 7 cables S, thence:
To a position 5 miles ESE of Pot Boil Passage Light.

3 **Great Dog Island leading line:**
Great Dog Island Direction Light (orange triangular topmark, point up) (40°14′·9S, 148°15′·8E).
Rear beacon (orange triangular topmark, point down) (220 m WSW of front light).

From the position 5 miles ESE of Pot Boil Passage Light, the track leads WSW along the alignment (257¾) of these marks, keeping within the white sector

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Lady Barron from SE (2.120)
(Original dated 1998)

(253°–263°) of Great Dog Island Direction Light, whilst passing:

NNW of the shoal bank (6 miles ESE) extending 4 miles E of Vansittart Island (4 miles SSE), and:

4 SSE of the SE shore of Flinders Island, thence:

NNW of the N point of the bank extending 6 cables NNE of Briggs Islet (3¼miles SSE) (2.113), thence:

To a position 7½ cables S of Dick Davey Light (40°14′S, 148°17′E), in the approaches to Lady Barron.

(Directions for Lady Barron continue at 2.120)

Anchorages

Tin Kettle Island

2.117

1 Anchorage in depths of 8·0 to 8·9 m may be obtained S of Tin Kettle Island (40°18′S, 148°09′E).

Apple Orchard Point

2.118

1 There is an anchorage for small vessels on the E side of the three islets which extend 5 cables NNW of Apple Orchard Point (40°19′S, 148°13′E). Ram Island is the most N of these islets which give good shelter, but the tidal streams in the vicinity are strong and the anchor invariably comes up foul.

Caution. The approach to the anchorage is obstructed by a 1·6 m patch lying about 5 cables ENE of Ram Island.

Badger Corner Cove

2.119

1 From a position 1¾ miles E of Pig's Head Point Light (40°17′S, 148°07′E) (2.114), a minor channel leads ENE to Badger Corner Cove (40°15′S, 148°11′E), close N of Tommy Rews Point. The channel passes between the coastal bank and the spit extending SW from Little Dog Island and thence W of a 0·5 m drying rock, lying 2½ cables E of Tommy Rews Point, to a small boat anchorage.

Lady Barron

Chart Aus 179 plan Approaches to Lady Barron (see 1.12)

General information

2.120

1 **General description.** Lady Barron (40°13′S, 148°15′E), a small harbour situated on the S side of Flinders Island, lies at the head of Adelaide Bay. The bay is fronted by Little Green Island, which is a mutton bird reserve. The harbour, used by fishing vessels and small craft, is accessed via the channels through Franklin Sound.

Port limits extend to a radius of 3 miles centred on 40°13′·0S, 148°14′·6E.

Tidal levels. See information in *Admiralty Tide Tables*. Mean maximum range about 1·7 m, mean minimum range about 0·3 m.

2 **Port radio.** For details see *Admiralty List of Radio Signals Volume 6 (4)*.

Directions *(continued from 2.113 and 2.116)*. From a position 7½cables S of Dick Davey Light (40°14′S, 148°17′E) the track to the harbour is marked by the following leading line:

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Front light (orange triangular daymark, point up) (40°12′·6S, 148°14′·8E).

Rear light (orange triangular daymark, point down) (300 m from front light).

3 The alignment (323½) of these lights leads NW for 1¾miles into Adelaide Bay passing between Little Green Island and the islets lying close off the shore of Flinders Island. The centre of Adelaide Bay is obstructed by a shallow bank, with a least depth of 0·4 m, which extends 8 cables from the E shore of the bay. An approach to the harbour passing W of Great Dog Island and Little Green Island is marked by beacons, for which the chart is the best guide.

Local knowledge is required.

Berth. An L-shaped jetty, with a depth of 4·4 m alongside and with small craft moorings E of it, fronts the town of Lady Barron. Fishing vessels berth at the jetty.

Repairs. A slipway of 60 tonnes capacity is available.

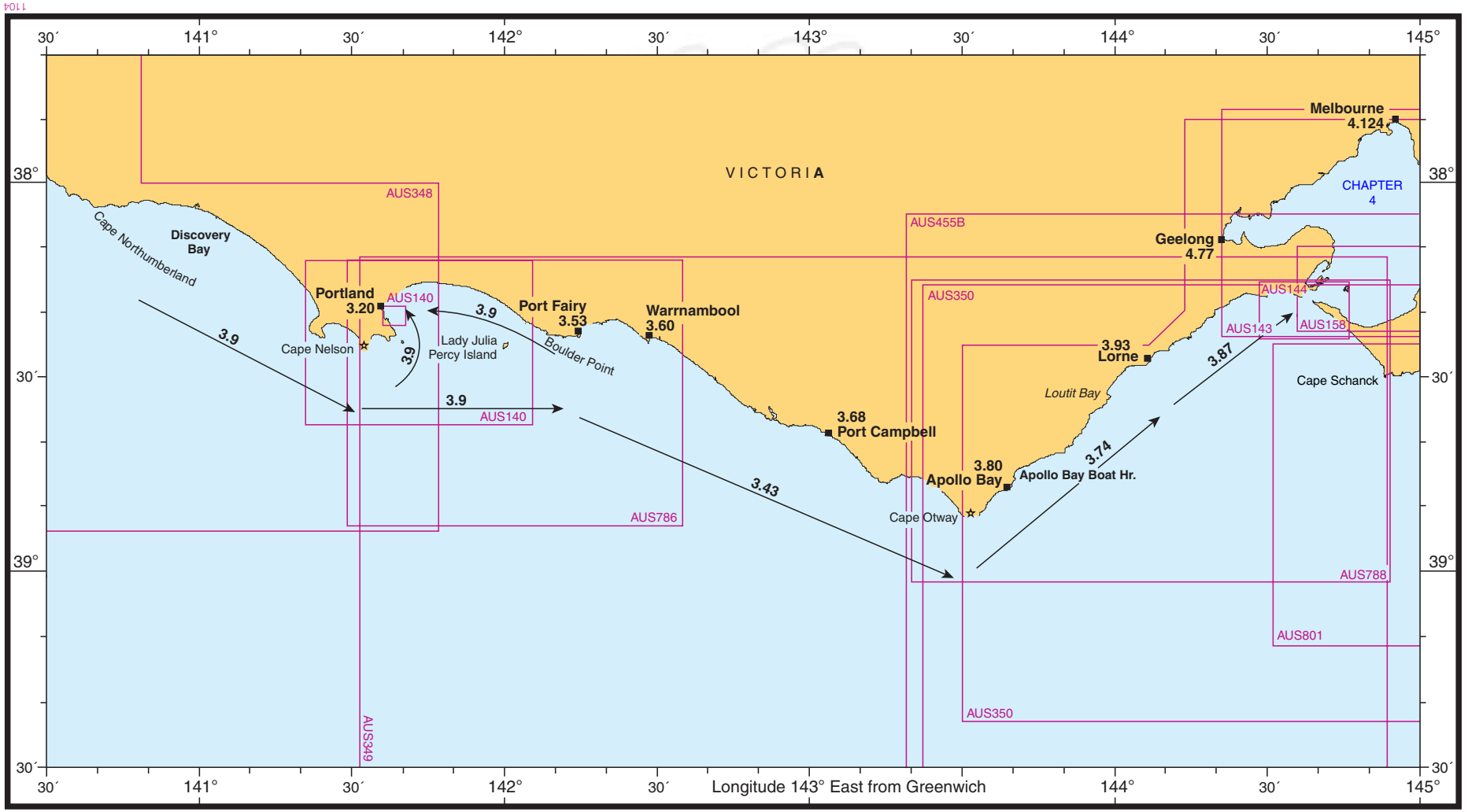
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Chapter 3 - Discovery Bay to Port Phillip Heads



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CHAPTER 3

VICTORIA — DISCOVERY BAY TO PORT PHILLIP HEADS

GENERAL INFORMATION

Charts Aus 348, Aus 349

Scope of the chapter

3.1

1 The area covered by this chapter comprises the coastline, of South Western Victoria, between Green Point (38°03′S, 140°52′E), within Discovery Bay, and Port Phillip Heads (38°18′S, 144°38′E). The description includes the port of Portland and the minor harbours of Port Fairy and Warrnambool.

It is divided into the following sections:

Discovery Bay to Cape Otway (3.6).

Cape Otway to Port Phillip Heads (3.72).

Fishing

3.2

1 A good lookout should be kept for crayfish and shark fishing vessels, which operate up to 90 miles from the coast, and also for the buoyage marking the fishing gear.

Mariners are requested, when passage permits, to transit outside the 200 m (100 fm) depth contour along the South Australia and Victoria coast between Cape Jaffa (36°57′S, 139°40′E) *(Australia Pilot Volume I)* and Cape Nelson (38°26′S, 141°32′E) (3.13).

Historic wrecks

3.3

1 Along the coastline described in this chapter there are numerous historic wrecks, as can be seen on the charts.

For further details see 1.52.

Rescue

3.4

1 See 1.66 and *Admiralty List of Radio Signals Volume 5*.

Weather

3.5

1 **General information.** South Western Victoria is influenced by the E movement of depressions in the Southern Ocean, which are virtually unobstructed, and which have a marked influence on the climate. Weather changes are thus frequent and sudden on the SW coast.

A characteristic feature is the rapid change of wind from N to SW, often in the early afternoon. This rapid change is due to either the passage of a cold front of a passing depression, or the onset of a sea breeze.

2 When a depression is approaching with its centre passing to the S, as is usually the case, a falling barometric pressure is experienced. If there is a well defined V-shaped trough, there will be a rapid backing of the wind from W to SW, with a rising barometric pressure. If the trough of the depression is not well defined then the change in the wind direction is slow with W wind and a steady barometric pressure. If the centre of the depression passes to the N, then winds veer from NE through to the SE or S.

3 **Summer (December to April)** — settled weather. In summer and early autumn, winds are chiefly from E and S, or S and W. During the periods of settled weather the sea breezes become well developed and deflect the winds towards the S during the daytime, often increasing to fresh winds in the afternoon. When a high pressure system passes, and in the rear of an anticyclone as the trough of low pressure approaches from the W, a hot N wind may develop and blow for 1 or 2 days. The W and S winds behind the cold front(s) blow strongly for hours and may reach gale force, then usually shift to the S and moderate before settled weather becomes re-established. By the end of April the weather becomes less settled.

4 **Winter (May to October).** In winter, with the frequent passage of depressions, gale force winds from W and SW may blow for 3 to 4 days and raise heavy seas. Severe gale force winds can be as frequent in spring as in winter. The frequent passage of winter depressions also creates heavy SW swells from the Southern Ocean and the swells may rise to 4 to 5 m in Portland Bay.

Spring (September to November). In the spring, strong W and SW winds prevail at most times, thus raising heavy seas and swells. Wind velocity is generally greater to the seaward.

DISCOVERY BAY TO CAPE OTWAY

GENERAL INFORMATION

Charts Aus 348, Aus 349

Area covered

3.6

1 The area covered by this section comprises:

Green Point to Boulder Point (3.9).

Portland and approaches (3.20).

Boulder Point to Cape Otway (3.43), including descriptions of Port Fairy (3.53) and Warrnambool (3.60).

Topography

3.7

1 The coast between Green Point (38°03′S, 140°52′E) in Discovery Bay and Cape Otway, 130 miles ESE, is mostly fairly high, wooded in places and backed by higher wooded land.

Glenelg River and Hopkins River are the largest of several rivers which enter the sea between Green Point and Cape Otway; neither river is of navigational importance.

Tidal streams

3.8

1 Between Discovery Bay and Cape Otway the tidal streams are uncertain, being much affected by the winds. Winds from W or SW prolong and reinforce the E-going stream; winds from E have the opposite effect.

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GREEN POINT TO BOULDER POINT

General information

Chart Aus 348, Aus 349

Route

3.9

1 From the vicinity of Green Point (38°03′S, 140°52′E) the coastal route leads in a SE direction for 40 miles to a position SSE of Cape Nelson, then E for 30 miles to a position S of Boulder Point (38°24′S, 142°09′E), crossing the entrance to Portland Bay.

Topography

3.10

1 Between Green Point (38°03′S, 140°52′E) and the mouth of Glenelg River, 5¾ miles E, the coast consists of a sandy beach fronting low sandhills.

From Glenelg River to Cape Bridgewater, 28 miles SE, the coast is a succession of sand hummocks about 45 m high, partially covered with bushes, with the sand showing in many cases and reaching the tops.

2 A range of thickly wooded hills lies between 2 and 3 miles behind the hummocks, with elevations from 90 to 160 m. A group of high, bare sand hummocks stand at the NW end of this range and between it and the coast.

Between the hill range and the hummocks lies a series of lakes, including Lake Mombeong, Swan Lake and Bridgewater Lakes. Bridgewater Lakes, of fresh water, extend N for about 3 miles from Mount Dryden (38°20′S, 141°24′E).

Climatic table

3.11

1 For Cape Nelson (3.13), see 1.133 and 1.135.

Principal marks

3.12

1 **Landmark:**

Mount Richmond (38°16′S, 141°25′E), the most prominent landmark on this stretch of the coast, stands 7 miles N of Cape Bridgewater; it has a broad flat top and is thickly wooded except on its SW flank. A beacon (metal on concrete pillar, 4·6 m in height) stands on the summit.

2 **Major lights:**

Cape Northumberland Light (38°04′S, 140°40′E) (see *Australia Pilot Volume I*).

Cape Nelson Light (white stone tower with lantern, red cupola, 32 m in height) (38°26′S, 141°32′E).

Whaler Point Light (white stone tower, 12 m in height) (38°20′·2S, 141°36′·5E).

Directions

(continued from Australia Pilot Volume I)

3.13

1 From a position SSE of Green Point (38°03′S, 140°52′E) the track leads SE, passing:

SSW of Ruby Rock, 2¾ miles SE of Green Point, the rock which dries, is covered by the red sector of Cape Northumberland Light (*Australia Pilot Volume I*). During SE and E winds the sea seldom breaks on this rock. The vicinity of Ruby Rock is a favourite crayfish ground. Thence:

2 SSW of Cape Duquesne (38°23′S, 141°22′E) and Cape Bridgewater, 2 miles farther SE. Cape Bridgewater rises to a flat summit 135 m high at the SE end of the promontory; the cape falls sheer E and S but slopes gradually W and N, over pasture land, to the 50 m contour. In clear weather the cape is visible at 25 miles and from the SW at 12 to 15 miles it appears as if covered with white sand patches. Thence:

3 SSW of Cape Nelson, 8¾ miles ESE of Cape Duquesne. The cape is irregular with jagged basalt cliffs about 60 m high rising at the back and centre to sparsely wooded, grassy hummocks; Picnic Hill, is the highest of these. A light (3.12) is displayed from the S point of Cape Nelson.

3.14

1 The track then leads E, passing (with positions from Cape Nelson Light (38°26′S, 141°32′E):

S of Cape Sir William Grant (4 miles ENE). The cape, with an elevation of 62 m, is prominent, crowned with trees and shaped like a helmet. Bald Hill, on which stands a tower (elevation of 91 m), rises 1½ miles NW of the cape. Thence:

S of Lawrence Rocks (6 miles ENE) (3.19), thence:

2 S of Lady Julia Percy Island (21½ miles E). The island is flat-topped and cliffy on all sides. It appears the same from all directions except that the S end is higher. Indifferent landing may be made, except in N winds, in a small cove on the N side at some steps cut in the rock face. Thence:

To a position S of Boulder Point (28½ miles E). The Sands, prominent white sand dunes about 90 m high, stand behind Boulder Point.

(Directions continue for the coastal route at 3.49)

(Directions for Portland are given at 3.36)

Bays, anchorages and minor harbours

Discovery Bay

3.15

1 **Description**. Discovery Bay is contained between Cape Northumberland (38°04′S, 140°40′E) and Cape Duquesne (38°23′S, 141°22′E), 38 miles ESE. The coast of this bay from Cape Northumberland to Green Point, 10 miles E, is described in *Australia Pilot Volume I* and from Green Point to Cape Duquesne at 3.10.

Glenelg River enters the bay at its head. A sandy bar at the mouth of the river is fordable at LW when the sea is smooth. Inside the bar the river is broad and deep.

2 **Useful marks:**

Mount Ruskin (38°03′S, 140°58′E) standing on the South Australia/Victoria boundary near the E end of a range of wooded hills extending about 10 miles W from Glenelg River.

Mount Dryden (38°20′S, 141°24′E), grass covered.

3 **Anchorage**. During E gales, which usually last about 3 days, small vessels may obtain temporary anchorage in Descartes Bay, in a depth of 11 m about 8 cables W of Mount Dryden. A watch should be kept for a change to the prevailing W winds.

Minor harbour. Nelson, 1 mile NE of the entrance to Glenelg River, is a village at which a few crayfish fishing vessels are based for part of the year. It is the centre of a large dairy and sheep farming area, a tourist centre and holiday resort.

Chart Aus 140

Bridgewater Bay

3.16

1 **Description**. Bridgewater Bay is entered between Cape Bridgewater (38°24′S, 141°24′E) and Cape Nelson, 6½ miles SE.

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Fisherman Cove, backed by sheer cliffs, lies on the W side of the bay about 5 cables N of Cape Bridgewater. Fishing vessels anchor close to the rocks in this cove.

From Fisherman Cove, Shelly Beach extends round the head of the bay almost to Mount Chaucer, 5½miles E, a small peaked hill with a remarkable mass of drift sand lying close W of it. The beach is sandy and popular with visitors.

2 **Caution**. A heavy swell rolls into Bridgewater Bay during S and SW winds making anchorage uncomfortable; the swell almost breaks in a depth of 37 m, on the line Cape Bridgewater to Cape Nelson, and does actually break nearly 1 mile offshore.

Nelson Bay

3.17

1 Nelson Bay is entered between Cape Nelson (38°26′S, 141°32′E) (3.13) and Cape Sir William Grant (3.14), 4 miles ENE. The coast is faced with limestone and basalt cliffs from about 30 to 60 m high, behind which the land is covered with heath, scattered clumps of trees and patches of cultivation.

Grant Bay

3.18

1 Grant Bay is entered between Cape Sir William Grant (38°24′S, 141°37′E) (3.14) and Point Danger (Danger Point), about 1½ miles ENE, which is 16 m high and abrupt. On the W side of the bay the bold basalt cliffs are scarred by quarrying; the head of the bay is rockbound with heath covered tableland above.

Larkin Hill, 33 m high, lies 7 cables W of Point Danger and is the highest point on this stretch of the coast. A fresh water stream enters Grant Bay 3 cables W of Point Danger. Little Reef, with a least depth of 3·9 m over it at its outer end, extends 5 cables SE from Point Danger.

2 The SE side of the bay is fronted by Big Reef and Lawrence Rocks. Big Reef, on which the sea breaks heavily, with a least depth of 3·9 m over it, lies 8 cables S of Point Danger. The reef is steep-to except on its N side whence irregular depths extend to the shore. The kelp on the reef is clearly visible.

Lawrence Rocks

3.19

1 **Description.** Lawrence Rocks (38°25′S, 141°40′E) comprise two prominent islets, formed of limestone and basalt, which are steep-to all round except NW of Little Rock.

The S islet consists of two parts. Bastion Rock, or Big Rock is the S and highest part and has a remarkable gannet colony on its flat summit. It is the largest breeding ground for gannets in the Southern Hemisphere. Middle Rock, the N end of the S islet, is slightly lower.

Little Rock, as the N islet is known, is 22 m high and separated from Middle Rock by a narrow boat passage.

2 **Landing place and harbour**. On the N side of Middle Rock there is a landing place on a flat rock.

A small boat harbour, formed by above-water rocks on the S side of Bastion Rock, is used by fishing vessels during N winds.

Caution. The passage between Point Danger and Lawrence Rocks is not safe; with strong winds from seaward a current sets out through the passage, sometimes attaining a rate of 3 kn, and during heavy S gales the passage breaks right across.

PORTLAND AND APPROACHES

General information

Chart Aus 140 plan of Portland, Aus 786

Position

3.20

1 The port of Portland (38°21′S, 141°37′E) stands behind the coast on the W side of Portland Bay.

Function

3.21

1 The port, an outlet for the extensive agricultural and pastoral country of the W part of Victoria, also serves a large aluminium smelter and a fertiliser plant. Fishing vessels operate from the port.

Exports consist mainly of a wide range of agricultural products, principally grain, livestock and fodder, along with woodchips and aluminium ingots. Imports include timber, phosphate rock, alumina, petroleum coke, sulphur and general cargo.

Portland, with a population of about 10 200, is the oldest settlement in Victoria.

Topography

3.22

1 In clear weather the lower volcanic peaks of the following, all positioned NE of Cape Nelson (38°26′S, 141°32′E), help to identify the coast:

Mount Eccles (29 miles NE).

Mount Napier (42 miles NE).

The coastline itself from Point Danger (38°24′S, 141°39′E) to the SE side of Portland is cliffy and rock-fringed. From Andersons Point, N of Portland, for about 1 mile NNW, the coast is faced with cliffs about 23 to 30 m high, topped with scrub.

2 Thence the coastline, backed by marram-bound sand dunes about 3 m high, bends NE to Surry River entrance (38°15′·6S, 141°42′·2E). The town of Narrawong stands on the banks of Surry River. Behind the coastline high land extends inland to form the W side of Surry River. Allestree, a fertile plain, lies between the high land and the coast.

3 Between Surry River entrance, which is fronted by a bar, and the entrance to Fitzroy River, 7 miles E, the sandy beach is backed by marram-bound sand dunes between 9 and 18 m high. Fitzroy River entrance, in which there is a depth of 0·3 m, shows up well as a break in the regular coastline.

4 From Fitzroy River entrance to Boulder Point the sandy beach is backed by grassy hummocks, broken only by the entrance to Lake Yambuk.

The entrance to Lake Yambuk, although open, is fouled by kelp-covered reefs and is impassable for boats. The town of Yambuk stands on the E bank of Shaw River near its junction with the lake where a road bridge spans the river.

Port limits

3.23

1 The port limits extend about 2 miles E from the harbour entrance, as shown on the chart.

Approach and entry

3.24

1 The main approaches to Portland Bay are either from the SW (3.36), passing SE of Lawrence Rocks (38°25′S, 141°40′E), or from the SE (3.37), passing SW of Lady Julia Percy Island (38°25′S, 142°00′E).

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An inshore approach (3.38) from the E passes between Lady Julia Percy Island and the mainland.

Portland Bay is entered between Point Danger (38°24′S, 141°39′E) and the entrance of Fitzroy River, 12½miles NE.

Traffic

3.25

1 In 2003 the port was used by 288 vessels totalling 8 479 820 dwt.

Port Authority

3.26

1 Port of Portland Pty Limited, PO Box 292, Portland, Victoria 3305.

Website: www.portofportland.com.au

Email: information@portofportland.com.au

Limiting conditions

3.27

1 **Controlling depth.** The navigable entrance to the harbour has a maintained depth of 12·1 m, but 13.0 m in the centre of the channel, as shown on the chart.

Deepest and longest berth. K.S.Anderson Wharf (3.41).

Tidal levels. See information in *Admiralty Tide Tables*. Mean maximum range about 0·9 m; Mean minimum range about 0·4 m.

Maximum size of vessel handled: 81 796 dwt, LOA 263 m, draught 12·6 m.

Arrival information

Port radio station

3.28

1 For details see *Admiralty List of Radio Signals Volume 6 (4)*.

Notice of ETA

3.29

1 Notice of ETA required is 72, 48 and 24 hours prior to arrival.

Outer anchorages

3.30

1 **General information**. Portland Bay affords good anchorage with holding ground of limestone ledges, full of holes filled with sand, blue clay or limestone pebbles and is sheltered from all except SE winds.

Waiting anchorage. Vessels awaiting a berth may find safe anchorage about 1½miles NE of Portland Main Breakwater (38°20′·7S, 141°37′·5E), centered on (38°19′·5S, 141°39′·1E), as shown on the chart.

The holding ground is good with excellent shelter from the W but anchoring is not recommended in strong E and SE weather as there may be a confused sea and swell.

2 A second charted anchorage is centered on (38°19′·4S, 141°37′·8E), as shown on the chart, 1¼miles NNE of Portland Main Breakwater head.

3 **Quarantine anchorage.** This anchorage is centered on (38°21′·5S, 141°39′·1E), as shown on the chart, 1½miles ESE of Portland Main Breakwater head.

For further information on quarantine see 1.47.

Submarine pipeline

3.31

1 **Submarine pipeline.** A pipeline is laid across the entrance to the harbour between the head of Lee Breakwater and the head of Main Breakwater.

For further information on submarine pipelines see 1.33.

Pilotage and tugs

3.32

1 **Pilotage** is compulsory. The pilot boards 1½miles ENE of the head of Main Breakwater (38°20′·7S, 141°37′·5E).

Tugs are available.

Deep-draught requirements

3.33

1 The following conditions apply to vessels with a draught in excess of 12 m:

Vessels arriving or departing with a draught in excess of 12 m are required to liaise with the office of the Harbour Master on under keel clearance safety.

Departure draughts in excess of 12·5 m and arrival draughts in excess of 12 m may be subject to delays due to the tidal conditions.

Data on precise tide condition and residuals is available from the pilot office.

Harbour

General layout

3.34

1 The port of Portland is a sheltered all-weather port enclosed by two breakwaters, Lee Breakwater giving protection from the N and Main Breakwater from the E.

The main berthing area is in No 1 Dock situated on the W side of the root of Main Breakwater. There is a berth on the inside of Lee Breakwater and facilities for fishing vessels in the SW part of the harbour. A marina is situated on the W side.

The navigable entrance to the harbour is 240 m wide.

Principal marks

3.35

1 **Landmarks** (positioned from Cape Nelson (38°26′S, 141°32′E)):

Mount Clay (15 miles NE), has a flat top with a notch in the centre; but for this notch it resembles Mount Richmond (3.12).

(Positioned from the root of Lee Breakwater (38°20′·6S, 141°36′·5E)):

Church Spire (2 cables SSW).

Water tower (60 m in height) (6 cables N).

Major Lights:

Cape Nelson Light (38°26′S, 141°32′E) (3.12).

Whaler Point Light (38°20′·2S, 141°36′·5E) (3.12).

Directions

Approach from south-west

3.36

1 From the SW, having identified Cape Nelson (38°26′S, 141°32′E) (3.13), pass a prudent distance off the cape and off Lawrence Rocks (38°25′S, 141°40′E) (3.19). When Mount Clay (3.35) is open E of Lawrence Rocks alter course N, keeping at least 1¼miles off the rocks, towards the pilot boarding ground, passing (with positions from Lawrence Rocks):

E of Point Danger (1½ miles NNW) (3.18), thence:

2 E of Pebbly Beach (1¾ miles NNW) composed of blue basalt pebbles; the beach fronts cliffs 15 to 37 m high topped with heather and scrub. Thence:

E of Blacknose Point (2 miles NNW) fronted by large boulders, thence:

E of Pivot Breakwater (4 miles NNW), faced with a rubble wall, from which Main Breakwater extends NNE.

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Portland from ENE (3.34)
(Original dated 1998)

Thence to the harbour entrance.

3 **At night** do not round Lawrence Rocks until Whaler Point Light (38°20′·2S, 141°36′·5E) (3.12) is visible. Course may then be altered N until the white sector bears between 236° and 297°.

Useful mark:

Tower (91 m in height) (38°23′·1S, 141°36′·4E) standing on Bald Hill.

(Directions continue at 3.40)

Approach from south-east

3.37

1 From the SE pass at least 1¼ miles SW of Lady Julia Percy Island (38°25′S, 142°00′E) (3.14) from where course may be shaped directly towards the pilot boarding ground.

(Directions continue at 3.40)

Inshore passage

3.38

1 The passage between Lady Julia Percy Island and the mainland is 3 miles wide and is used by vessels in N winds but local knowledge is necessary. In January 1981 HMAS *Fremantle*, passing N of the island, reported experiencing a W-going set of over 4 kn.

Caution. With winds from SE to SW a heavy swell sets in from the SW and there is a breaking sea outside the reefs.

2 From a position about 2¾ miles SW of Boulder Point (38°24′S, 142°09′E) (3.14) the track leads initially NW, passing (with positions from Boulder Point):

NE of Lady Julia Percy Island (6¾ miles WSW) (3.14), and:

SW of Mills Reef (4¾miles NW), consisting of several rocks drying about 1 m, covered with heavy masses of kelp; the reef is a popular crayfish ground for fishing vessels from Port Fairy (3.53).

3 Thence the track leads WNW passing:

SSW of Julia Reef (38°17′S, 141°49′E); in S gales the sea breaks on this large irregular area. The reef is a favourite crayfish ground. Thence:

SSW of Minerva Reef which extends about 7 cables from the NW shore of the bay between Maretimo Beacon (38°18′·6S, 141°36′·2E) and Surry River. An uneven bottom extends over the reef and the sea breaks heavily over it at times.

Thence to the harbour entrance.

3.39

Useful mark:

Beacon (red conical) on Mount Hummock, standing 8 cables NW of The Craigs (38°22′·4S, 142°06′·5E).

Entering harbour

(continued from either 3.36, 3.37 or 3.38)

3.40

1 From a position N of the head of Main Breakwater two directional lights, situated at the S end of No 1 Dock, lead (197⅜) in their overlapping white sectors through the breakwater entrance into the harbour, passing E of Whaler Reef, a group of detached shoals lying 3 cables E of Whaler Point Light (38°20′·2S, 141°36′·5E) (3.12).

Useful marks (positioned from the root of Lee Breakwater (38°20′·6S, 141°36′·5E):

Main Breakwater Light (round concrete tower, green diagonal stripes) (7½ cables E).

Lee Breakwater Light (5½ cables E).

Berths

3.41

1 **Smelter Berth**, on W side of Main Breakwater: 205 m long, depth alongside 12·1 m. Used for the import of alumina.

K.S. Anderson Wharf (38°21′·1S, 141°37′·2E) situated on the W side of the root of the Main Breakwater contains berths Nos 1 and 2 with a combined length of 398 m.

No 1 Berth. Depth alongside is 12·1 m; maximum LOA 255 m. Used for the handling of grain and woodchips.

No 2 Berth. Depth alongside is 10·9 m. Used for handling grain, liquid pitch and sulphuric acid.

2 **No 5 Berth** on the W side of No 1 Dock; depth alongside 12·1 m, berth length 240 m. Used for handling breakbulk, ingots, logs, fertilisers, phosphate, livestock and tallow.

No 6 Berth at the head of the quay on the W side of No 1 Dock; depth alongside 12·1 m, berth length 228 m. Used for handling woodchips and breakbulk.

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3 **Fishermans Breakwater Pier**, 4 cables NW of the root of Main Breakwater; length 198 m, depth alongside 1·8 to 2·1 m. A light is displayed from the head of the pier.

Trawler Wharf, ¾ cable W of Fishermans Breakwater Pier; length 260 m, depth alongside 4·2 m.

Lee Breakwater (38°20′·7S, 141°36′·7E).

S L Patterson Tanker Berth lies about midway along the breakwater; length 76 m, depth alongside 10·5 m. Formerly a liquid bulk berth it may be used as a refuelling berth or as a fitting out or repair berth.

Port services

3.42

1 **Repairs.** Limited facilities for repairs; two slipways, situated on the W side of Wattle Creek S of Fishermans Breakwater Pier, with the largest slipway capable of handling vessels up to 300 tonnes; boat ramp close S of Marina Pier.

Other facilities. Several hospitals; deratting and deratting exemption certificates issued; compass adjusting; reception facilities for oily waste using road tankers; garbage disposal; Ro-Ro facilities at No 5 Berth.

2 **Supplies.** Fuel available by pipeline at S L Patterson Tanker Berth and by road tanker at all other berths; provisions; fresh water.

Communications. There is an airport 5 km from the port.

BOULDER POINT TO CAPE OTWAY

General information

Charts Aus 786, Aus 349, Aus 788

Route

3.43

1 From a position S of Boulder Point (38°24′S, 142°09′E) the route leads SE for about 71 miles to a position S of Cape Otway (38°51′S, 143°31′E).

Topography

3.44

1 The coast between Boulder Point and the S end of Griffith Island (38°24′S, 142°15′E), at the entrance to Port Fairy, 4¾ miles E, is low and covered with grass and a few scattered trees.

From Port Fairy to Sisters Point (38°22′S, 142°19′E), 4 miles ENE, the coast is sandy, backed by bare sand hummocks 15 m high and fringed by drying and submerged rocks extending about 5 cables offshore. Thence to Warrnambool (38°24′S, 142°29′E) the coast remains sandy, backed by grassy hummocks, 30 to 50 m high.

2 From Warrnambool to Moonlight Head, 38 miles SE, the coast is cliffy and presents an almost level appearance, the cliffs becoming higher near Moonlight Head. From Moonlight Head to Cape Otway, a further 14 miles SE, the coastline remains cliffy backed closely by hills on spurs of Otway Range.

Swell

3.45

1 Along this coast, between Boulder Point and Cape Otway, a heavy swell constantly rolls in and in many places breaks in depths of about 9 m (30 ft).

Marine exploitation

3.46

1 Minerva production wells have been established 5½miles SSW of Point Sturgess (38°37′S 143°00′E). A restricted area has been established around the wells. For remarks on safety zones see 1.10

Submarine gas pipeline

3.47

1 A submarine gas pipeline has been laid from position 38°37′S, 142°58′E to Minerva production wells, 5½miles SSW of Point Sturgess. For further information on pipelines see 1.33

Principal marks

3.48

1 **Landmarks:**

Water Tower (38°23′S, 142°13′E), which has a domed top, 3¼ miles E of Boulder Point.

2 Tower Hill (elevation 98 m (321 ft)) (38°19′S, 142°23′E), stands 7½ miles NE of Griffith Island and is the most remarkable landmark seen when approaching Port Fairy from S. The hill is not clearly visible from the W, except in clear weather, against the background of higher tableland E. From S it appears W of this tableland as a conical peak. The land is higher than the general coast, both E and W of the tableland, sloping to about the same height at each side, the W side appearing to be joined to Tower Hill.

3 Radio tower (38°19′S, 142°23′E) close NE of Tower Hill.

Mount Warrnambool (38°19′S, 142°44′E); visible in clear weather from about 5 miles offshore between Port Fairy and Warrnambool Harbour.

Flaxman Hill (38°33′S, 142°45′E), 80 m high. The Buttress, 3 cables NW of Flaxman Hill is not as high but sometimes more prominent due to its sandy appearance. These two hills are good marks on a coast otherwise lacking in features apart from its overhanging cliffs.

4 Silo (38°36′·6S, 142°52′·5E) standing on the W entrance point of Curdie Inlet.

Tower (elevation 311 m (1019 ft)) (38°45′S, 143°18′E), which is 23 m high.

Tower (elevation 593 m (1944 ft)) (38°38′S, 143°34′E).

5 Cape Otway (38°51′S, 143°31′E), forming the N point of the W entrance to Bass Strait, is a bluff cliffy cape, 76 m high, dark brown in colour, with patches of coarse sandstone, rising to sparsely wooded grassy hummocks not more than 107 m high. A light is displayed from the cape, which is easily identified by the features and by buildings near them, and by Payuter's Hill, 2½cables inland and prominent.

6 **Major lights:**

Cape Otway Light (white GRP hut, 2 m in height), (38°51′S, 143°31′E).

Warrnambool Harbour Rear Leading Light (38°23′·4S, 142°29′·1E) (3.65)

Directions

(continued from 3.14)

3.49

1 From a position S of Boulder Point (38°24′S, 142°09′E) the track leads SE, passing (with positions from Boulder Point):

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SW of Bluenose Point (1¾miles E), a narrow strip of basalt boulders about 4 m high, lying 2 cables offshore, indicated by breakers, thence:

2 SW of Griffith Island (5 miles E), fronting the entrance to Port Fairy. The island is low with a double-peaked hummock, 19 m high, near its S end; Butts Mound, 11 m high, stands 2½cables N of the N peak. Griffith Island Light (white round stone tower, 11 m in height) is displayed from the NE point of the island. Thence:

3 SW of Sisters Point (8¼miles ENE), named after two hummocks, 20 m high, of similar appearance, which stand over the point. Armstrong Bay lies 1 mile E of Sisters Point on the E side of a small sandy point fringed by boulders; the bay is nearly filled with below-water rocks but is used by fishing boats. Thence:

4 SW of Helen Rock (10½miles ENE), a pinnacle with a depth of 1·8 m over it; it is steep-to and the sea rarely breaks on it. N of Helen Rock, on the shore, lies The Cutting which fronts a narrow lagoon. Thence:

SW of the dangers in Lady Bay (15 miles E) (3.60).

3.50

1 The track continues SE, passing:

SW of Buttress Point (38°33′S, 142°45′E), thence:

SW of Bold Projection (38°34′S, 142°47′E), that part of the coast between Flaxman Hill (3.48) and Bay of Islands, 4 miles SE, so called because of its bold, indented and rugged nature. Thence:

SW of Schomburg Rock (38°37′S, 142°53′E) (3.71) lying off the entrance to Curdie Inlet. Grotto, a prominent rock, stands 1 mile ESE of Schomburg Rock; London Bridge, another prominent rock, stands about 1½ miles farther ESE on the W side of Hesse Point (38°37′·8S, 142°56′·0E). Thence:

2 SW of the entrance to Port Campbell (38°37′S, 143°00′E) (3.68). Between Port Campbell and Ronald Point, 9 miles SE, there is a remarkable group of rock stacks, known locally as The Twelve Apostles. Thence:

SW of Minerva production wells (38°43′S,142°58′E) (3.46), thence:

SW of Sow and Pigs (38°39′S, 143°04′E), which consists of a few islets and rocks, lying between 1 and 2 miles ESE of the mouth of Sherbrook River; a rock, 64 m (211 ft) high, stands 7½cables farther ESE. Thence:

3 SW of Ronald Point (38°42′S, 143°09′E), a bluff with a large mass of drift sand on its E side. Gellibrand River, with Princetown, a seaside resort, standing 2 miles above its mouth, is entered close E of Ronald Point; its narrow mouth is closed in dry seasons.

3.51

1 The track continues SE, passing:

SW of Moonlight Head (38°46′S, 143°14′E), a bold, rounded and thickly wooded headland. Several above-water rocks lie close off the headland, and from 1 to 3 miles WNW of it there are several drying ledges skirted by a few sunken rocks. Thence:

SW of Reginald Point (38°46′S, 143°16′E) with an islet close off it, thence:

2 Clear of an isolated shoal, with a depth of 10·1 m (33 ft) over it, which lies 5¼ miles S of Lion Headland (38°45′S, 143°20′E). The headland, formed of bold high cliffs, is one of the highest on the coast of Victoria. Thence:

SW of the entrance to Joanna River (38°46′S, 143°23′E); a sand islet lies in the river mouth and there are several remarkable patches of sand close by and near Rotten Point. Thence:

3 SW of Rotten Point (38°47′S, 143°24′E), a rocky point with a rock awash at HW, 2½cables S of it. The rock is covered by the red sector (109°-shore) of Cape Otway Light (38°51′S, 143°31′E) (3.48). Eagle Nest Rock lies close offshore 2 miles SE of Rotten Point with Sentinel Rocks 5 cables farther SE. Thence:

SW of the entrance to Aire River (38°48′S, 143°28′E). There is a large and conspicuous mass of drift sand close E of the river mouth. Thence:

4 To a position S of Cape Otway (38°51′S, 143°31′E) (3.48). Otway Reef lies on a bank, with depths of less than 10 m over it, which extends about 1 mile S of the cape. A detached shoal with a depth of 16·6 m over it lies 1¾ miles SSW of Cape Otway. It is advisable to round the cape at a distance of not less than 3 miles.

Caution. A heavy tide-rip extends 2 miles S of Cape Otway.

3.52

1 **Useful marks:**

Sherbrook Hill (38°38′S, 143°07′E).

Mount Chapple (38°40′S, 143°27′E), standing 12 miles NE of Moonlight Head, has a rounded summit.

(Directions continue for the coastal route at 3.77)

Port Fairy

Chart Aus 786 (see 1.12)

General information

3.53

1 **Position.** Port Fairy (38°23′S, 142°14′E) lies at the SW end of Port Fairy Bay on the W side of Moyne River.

Function. It is the centre of a rich agricultural and pastoral area, and provides facilities for a fishing fleet.

Topography. The coast of Port Fairy Bay from the entrance to Moyne River (38°23′·3S, 142°15′·1E) to Reef Point, 2 miles NE, consists of a sandy beach backed by grassy sand hummocks, fronting Belfast Lough. Moyne River enters this lough at its N end and then exits through a narrow channel to the sea. The narrow channel forms the harbour.

2 Volcanic boulders, up to about 3 m high, extend 2 cables from Reef Point and below-water rocks extend 1 cable farther S.

Port Authority. Port of Port Fairy, Griffiths Street, Port Fairy, Victoria 3284.

Controlling depth

3.54

1 The target channel depth to the wharves is 2·0 m but this can reduce to 1·2 m on occasions, owing to freshets and silting.

Arrival information

3.55

1 **Anchorages.** Anchorage may be obtained in a depth of 9·1 m, sand, 7½ cables NE of Battery Hill (38°23′·3S, 142°14′·6E) (3.56). Small vessels anchor in a depth of 5·5 m about 2½ cables closer inshore.

Vessels anchoring during a SW gale may get as close in as their draught permits.

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Port Fairy from ENE (3.53)
(Original dated 1998)

Caution. These anchorages are bad with E winds and vessels are recommended not to try and ride out a SE gale.

Local knowledge is required to enter the port, as depths at and along the river entrance are constantly changing.

Harbour

3.56

1 **General layout.** The harbour, fronting the town of Port Fairy, lies inside the entrance to Moyne River. The entrance is formed by two training moles with the S mole extending 2 cables NE from the N side of Griffith Island. Griffith Island initially forms the S bank of the river being connected to the mainland by a rubble wall which closes off Back Passage (South West Passage), a shallow, rocky and former outlet for the river, lying on the W side of Griffith Island.

2 The N limit of the harbour is marked by a footbridge crossing the river, and then 2½ cables farther N by a wooden road bridge. The river opens out N of the road bridge into Belfast Lough which lies close within the grassy sand hummocks forming the N side of Port Fairy Bay. Belfast Lough is shallow. The height of the footbridge restricts the size of vessels that can make through passage.

3 **Landmarks:**

The Sands (3.14) behind Boulder Point (38°24′S, 142°09′E).

Tower Hill (38°19′S, 142°23′E) (3.48).

Battery Hill (flagstaff) 3¼ cables W of the head of the N training mole.

Griffith Island Light (38°23′·5S, 142°15′·3E) (3.49) and buildings near it.

Chimney (38°22′S, 142°14′E).

Directions for entering harbour

3.57

1 Having identified the landmarks, approach the anchorage (3.55) keeping well clear of the reefs and foul ground off Griffith Island. From the anchorage the track then leads SW, passing (with positions from Griffith Island Light (38°23′·5S, 142°15′·3E)):

NW of a light-buoy (port hand) (4 cables N), thence:

2 Between the two training moles (2½cables NW), from the heads of which lights (metal columns, 5 m in height) are displayed. The shoal ground to the E of the track is covered by the red sector (208½–316°) of the light displayed from the E mole.

Thence keep in mid-channel to the wharves, passing NNE of Martins Point (5 cables W) from where a light (metal column, 4 m in height) is displayed.

Berths

3.58

1 There is nearly 500 m of berthing space at the wharves fronting the town of Port Fairy.

Port services

3.59

1 **Repairs:** slipway, capacity 50 tonnes, maximum beam 5·5 m; small slipway, capacity 6 tonnes.

Other facilities: hospitals.

Supplies: fuel; fresh water; provisions.

Warrnambool

General information

3.60

1 **Position.** Warrnambool Harbour (38°24′S, 142°29′E) lies on the W side of Lady Bay, 42 miles E of Portland (3.20).

Function. Warrnambool Town, Victoria's fifth provincial city with a population of about 28 500, lies along the W side of the harbour. It is the centre of a rich agricultural and pastoral district with large factories processing dairy products along with some light industry.

2 **Topography.** Warrnambool is situated on the banks of Merri River which enters the sea in Breakwater Bay, SW of the harbour, having passed through Merri River Cutting. The entrance is fronted by Middle Island (38°24′·2S, 142°28′·3E), on the W side of Breakwater Bay, with Merri Island close N. Breakwater Rock (38°24′·2S, 142°28′·5E) stands on a reef forming the E side of Breakwater Bay.

The mouth of Merri River is usually almost closed but at times floods wash the sand from its mouth allowing a large outflow of water. To the NW of the river entrance,

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Warrnambool from SE (3.63)
(Original dated 1998)

for about 8 cables, the coast is cliffy with many sand hummocks, mostly bare, standing close behind the cliffs.

3 Lady Bay extends 1½ miles NE from Breakwater Rock, and the reefs SE of it, to the mouth of Hopkins River (38°25′S, 142°31′E). A low sandy ridge extends N, NE and ENE along the coast, backed by the town of Warrnambool and by higher, well timbered land.

Port Authority. Warrnambool City Council, PO Box 198, Warrnambool, Victoria 3280.

Limiting conditions

3.61

1 **Tidal levels.** See information in *Admiralty Tide Tables*. Mean maximum range about 0·8 m.

Maximum size of vessel handled. Warrnambool Harbour is only suitable for vessels with a draught of less than 2·7 m; vessels with a greater draught should not attempt entry.

Anchorage

3.62

1 According to draught and weather conditions anchorage may be obtained where most convenient. There is a heavy scend at the anchorage even in the finest weather.

An anchorage area inside the breakwater is used only by small vessels, having been much reduced by silting; shelter from the breakwater has become less effective. Depths in the anchorage can vary from 2·7 m to 5 m.

Harbour

3.63

1 **General information.** The harbour is partially sheltered by a breakwater, built of concrete blocks, extending about 2 cables ENE from a point 1 cable NE of Breakwater Rock (38°24′·2S, 142°28′·4E), being connected to the shore by a timber viaduct. The harbour is considered to afford the best shelter during SE gales of any of the W ports of Victoria as the outer swell is broken by rocky shoal ground extending from the mouth of Hopkins River (38°25′S, 142°31′E).

2 **Caution.** It is unsafe to enter or leave the harbour during SW or S gales when the sea breaks across the entrance with great violence; in such conditions a vessel should make for Portland Bay. The harbour is not suitable for large vessels.

Climatic table. See 1.133 and 1.136.

3 **Landmarks:**

Water tower (38°23′S, 142°29′E); round stone structure with flat top.

Tower Hill (38°19′S, 142°23′E) (3.48).

Major Light:

Warrnambool Harbour Rear Leading Light (38°23′·4S, 142°29′·1E) (3.65).

Directions for entering harbour

3.64

1 **Approaches.** The main approach is made through South Channel which leads between Annabella Reef (38°24′·4S, 142°28′·7E) and the S end of shoal and rocky ground extending 1 mile S and 1¼ miles SW from the mouth of Hopkins River.

There is much kelp in the channel which has a least depth of 8·5 m on the leading line; it is unsafe in S and SW gales.

2 The harbour may also be approached from the SE by vessels with suitable draught crossing the rocky ground E of South Channel. In calm weather a vessel may cross the rocky ground in any direction but if from the SE she will be beam on to the swell.

3 An approach to the harbour can also be made from the SW by vessels of suitable draught, through South West Passage which leads between Inner Reef (38°24′·3S, 142°28′·6E), which dries, and Annabella Reef 1 cable SE. A shoal with a least depth of 0·3 m extends from the NE end of Annabella Reef into mid-channel.

Caution. If approaching at night from the SE the rear leading light (38°23′·4S, 142°29′·1E) is obscured when bearing less than 322°.

3.65

1 **Entry leading lights:**

Front light (white stone tower) (38°23′·5S, 142°29′·1E), a sector light.

Rear light (white stone structure) (130 m from front light), standing on a hill.

From a position 1 mile S of the head of the breakwater (38°24′·1S, 142°28′·8E) the alignment (008½) of these

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lights leads N, passing (with positions from the head of the breakwater):

E of a 5·8 m shoal (6 cables SSW) at the outer end of rocky ground which extends 3½ cables SSE from Middle Island. Thence:

2 Along the W edge of the rocky ground (4 cables SSE) extending 1 mile S from the mouth of Hopkins River, and:

E of Annabella Reef (3 cables SSW), over which the sea breaks heavily, to a position E of the breakwater. A light (metal column, 8 m in height) is displayed from the head of the breakwater. Annabella Reef and the dangers NW of it are covered by the red sector (340°–056°) of this light.

3 Deeper water, of not less than 10 m, can be found through South Channel by keeping the rear light structure a little more than its own width open W of the front light tower, but this leads very close to Annabella Reef.

Caution. When the sun is near the meridian the rear light is difficult to identify, but the front light tower in line with the W side of the water tower (3.63) on the N side of town may be taken as being in line with the rear light-structure.

4 **Useful marks** (positioned from the root of Warrnambool Harbour breakwater (38°24′·2S, 142°28′·6E):

Hotel (3½ cables NNW).

Pile (8 cables NE) at the end of a sewer outfall extending 1 cable SSW from the shore.

Berth

3.66

1 There is a wooden wharf on the N side of the breakwater fitted with spring buffer piles; the depth alongside varies, especially at the outer end.

Port services

3.67

Repairs: concrete hard for small craft.

Other facilities: two hospitals.

Supplies: fresh water; provisions.

Port Campbell

Chart Aus 349, Aus 141 plan Port Campbell (see 1.12)

General information

3.68

1 **Position and function.** Port Campbell (38°37′S, 143°00′E), at the mouth of Campbell Creek, 5¼ miles E of Curdie Inlet, is open directly to the SW.

A small fishing fleet works out of the port which is also a seaside resort.

Port Authority. Corangamite Shire.

Limiting conditions. Port Campbell is only suitable for vessels up to 20 m in length and 2 m maximum draught.

2 **Tidal levels.** See information in *Admiralty Tide Tables.* Mean maximum range about 1·0 m; mean minimum range about 0·2 m.

Local knowledge is required.

Current. A current usually sets SE or outward across the breakers on the E side, but is much influenced by the wind.

3 **Directions.** Port Campbell, which is entered between Sturgess Point (Point Sturgess) and West Head 3 cables W, is easily identified by Hesse Point, 2¾ miles W, and by a remarkable rock, known locally as Sentinel Rock or the Haystack (not charted), 72 m (236 ft) high, lying 1½ miles E of the port and 2 cables offshore.

4 A reef over which the sea occasionally breaks extends 2½ cables SW from West Head, and a reef, known locally as Eastern Reef and over which the sea breaks heavily, extends 7½ cables SW of East Head, close W of Sturgess Point.

A beacon (pole, triangular topmark) (1¾ cables N of Sturgess Point) is used for the outer approach to the port. Thence the alignment (020¾°) of a pair of leading beacons on the W headland at Napier Bluff (2 cables NW of Sturgess Point) leads between the reefs.

The entrance channel generally has a least depth of 5·5 m, which can be reduced by swell, with a width of about 60 m.

3.69

1 **Anchorage** may be obtained in depths of 1·8 to 6 m, sand, with patches of limestone rock.

In heavy weather there is a great drawback off the beach causing vessels to surge at anchor so that a line must be run ashore. It is the only safe anchorage between Warrnambool (38°24′S, 142°29′E) (3.60) and Apollo Bay (38°46′S, 143°40′E) (3.80).

Berth. There is a T-shaped jetty at Port Campbell with a depth of 2·7 m alongside at the head. The jetty is illuminated at night.

Supplies. Fuel, water and provisions available.

Minor bays and inlet

Chart Aus 349

Bay of Islands and adjacent Bay of Martyrs

3.70

1 Bay of Islands (38°35′S, 142°49′E) is white and cliffy with numerous islets of similar appearance, the whole presenting a striking effect.

Bay of Martyrs (38°36′S, 142°51′E), situated between Bay of Islands and Curdie Inlet, 4 miles ESE, is formed by two bays, Crofts Bay and Massacre Bay, in which are many rocky islets. The sea breaks heavily 5 cables offshore and sunken rocks probably fringe the whole of this stretch of coast off which it was not safe to sound at the time of the 1872 survey; it should therefore be given a wide berth.

Massacre Hill, with a hut on its summit, stands on the SE side of Massacre Bay.

Curdie Inlet

3.71

1 **General information.** Curdie Inlet (38°36′S, 142°53′E) is remarkable for its sandy entrance which is often closed and in which there are many drying reefs.

There is a prominent patch of sand at the W entrance point, which is the highest part of generally low land near the mouth; to the E lie other sandhills or patches which are the more remarkable in contrast with the cliffy coast on either side.

2 There are several limestone rocks close to the mouth of the inlet and W of it. Schomburg Rock, 5 m high, is the highest rock on the E side; these rocks lie about 3 cables off the E entrance point and are joined to it by a narrow neck of sand which dries in the middle. A ledge extends NW and SE from Schomburg Rock. The sea breaks heavily near and across the mouth of the inlet.

Peterborough, a popular seaside resort, stands on the W entrance point of Curdie Inlet. A road bridge spans the entrance to the inlet.

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CAPE OTWAY TO PORT PHILLIP HEADS

GENERAL INFORMATION

Chart Aus 788

Area covered

3.72

1 The area covered by this section comprises:
Cape Otway to Point Grey (3.74).
Point Grey to Port Phillip Heads (3.87).

Topography

3.73

1 The S coast of Victoria between Cape Otway and Port Phillip Heads forms the NW shore of Bass Strait. The coast is in general high and backed by thickly wooded hills which continue to within 20 miles of the entrance to Port Phillip.

CAPE OTWAY TO POINT GREY

General information

Chart Aus 788

Route

3.74

1 From a position S of Cape Otway (38°51′S, 143°31′E) the route leads NE, for a distance of about 63 miles, to a position SE of Point Grey (38°33′S, 143°59′E).

Topography

3.75

1 Between Cape Otway and Point Grey the coast is generally steep, backed by wooded hills, and rockbound. In places it is intersected by several small rivers.

Principal marks

3.76

1 **Landmarks:**
Cape Otway (38°51′S, 143°31′E) (3.48).
Conical Peak (38°42′S, 143°35′E), 10 miles NNE of Cape Otway.
Tower (38°38′S, 143°34′E) (Chart Aus 349).
Tower (38°40′S, 143°43′E).
Mount Cowley (38°33′S, 143°51′E), the highest point on this coast; a tower (68 m in height) stands on the summit.

2 **Major lights:**
Cape Otway Light (38°51′S, 143°31′E) (3.48).
Split Point Light (white concrete tower and lantern, 34 m in height) (38°28′S, 144°06′E).

Directions

(continued from 3.52)

3.77

1 From a position S of Cape Otway (38°51′S, 143°31′E) the track leads NE, passing (with positions from Cape Patton (38°42′S, 143°50′E)):
SE of Point Franklin (16¾ miles SW), low and sandy with some rocks close off it. Parker River enters the sea 7½ cables NNE of the point; a heavy surf off the river mouth usually makes it dangerous to attempt a landing. Thence:
SE of Point Lewis (14¾ miles SW), the S entrance point to Blanket Bay, thence:
SE of Cape Marengo (11 miles SW), thence:

2 SE of Hayley Point (9¾ miles SW). A prominent green hill, 36 m high, on which stand the houses of Marengo, stands close within Hayley Point. Little Henty Reef extends 4 cables E from Hayley Point. And:
SE of Henty Reef (9 miles SW), a steep-to reef over which the sea breaks heavily in moderate weather. The reef is covered by the red sector (354°–009°) of the front leading light (38°43′·6S, 143°42′·4E), W of Skenes Creek. Thence:
SE of Cape Patton which has a bold and dark appearance. It is wooded except on its grass covered W side.

3.78

1 The track continues NE, passing:
SE of Addis Bay (5 cables NNE). A ruined landing place lies close to the entrance of Kennet River at the head of the bay. Mount Meuron (190 m high), rises close within the head of Addis Bay. Thence:
SE of Point Hawdon (1¾ miles NE), thence:
SE of Point Sturt (4 miles NE). There is a ruined landing place at the mouth of Wye River 7½cables N of Point Sturt. Thence:

2 SE of Spit Backing (8¾miles NE), behind which stands two hills known as The Brothers. Thence:
To a position SE of Point Grey (11 miles NE). Point Grey is low and grassy; a drying reef extends 2 cables E from the point. Fishers Creek enters the sea 6 cables SW of Point Grey where there is a break in the coastal reef. Small craft can enter the creek at HW when there is no surf.

3.79

1 **Useful marks:**
The alignment (277°) of a pair of beacons (framework slats; front black; rear white) 3½cables SW of Hayley Point (38°47′S, 143°40′E).
The alignment (326°) of a pair of beacons (framework slats; front red; rear white) on Point Bunbury (38°46′S, 143°41′E.

2 The alignments of the two pairs of beacons intersect over Henty Reef.
Mount Saint George (38°33′·8S, 143°57′·9E), a conical grassy hill 200 m high.
Radio tower (30 m in height) standing 7 cables W of Point Grey (38°33′S, 143°59′E).

(Directions continue for the coastal route at 3.91)

Apollo Bay

Chart Aus 788 (see 1.12)

General information

3.80

1 **Description.** The port of Apollo Bay (38°46′S, 143°40′E) is situated on the N side of Point Bunbury, within Apollo Bay.

Apollo Bay lies under a high part of Otway Range and extends 2¾ miles NE to the entrance of Skenes Creek; it may be identified by the buildings of the town of Apollo Bay which backs the SW shore.

The town is a centre for tourism and fishing. A fishing fleet operates from the harbour.

Port Authority. Colac Otway Shire.

Limiting conditions

3.81

1 **Controlling depths.** Depths at the harbour entrance are constantly changing (2001); less than charted depths may exist along the line of the leads. Dredging is carried out

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Apollo Bay from NE (3.80
(Original dated 1998)

periodically and advice should always be sought from the Port Authority before attempting entry.

Tidal levels. Mean spring range about 1·7 m; mean neap range about 0·7 m.

Arrival information

3.82

1 **Port radio.** The Port Manager (3.80) can be contacted on VHF during business hours.

Anchorage may be obtained, during W or SW gales, in a depth of about 11 m from 6 to 8 cables offshore, in good holding ground, shale and holes filled with sand; 7½cables NNE of Point Bunbury (38°46′S, 143°41′E).

2 There is usually a swell in the bay, especially heavy during E or S winds, and vessels must be prepared for a wind shift to S or SE.

Prohibited anchorage. Anchorage is prohibited in the N part of Apollo Bay along the approach line of a disused submarine cable. The limits of the prohibition are shown on the chart.

Local knowledge is required.

Harbour

3.83

1 Apollo Bay Boat Harbour is formed by two breakwaters extending off the N side of Point Bunbury. A light (column, 4 m in height) is displayed from the head of the E breakwater.

Directions for entering harbour

3.84

1 **Approach from east.** An approach clear of any danger is best made from the E to the anchorage (3.82).

Approach from south. An approach to Apollo Bay can also be made from the S passing W of Henty Reef. From a position 2½miles S of Point Bunbury this approach leads NNE on the alignment of the following lights:

Front light (white mast on pyramid, 4 m in height) (38°43′·6S, 143°42′·3E), 3½cables W of the entrance to Skenes Creek.

Rear light (neon triangle, point down; 5 m in height) (5¾cables NNE of front light).

2 The alignment (017½) of these lights leads in the white sector (009°–020°) of the front leading light, passing (with positions from Point Bunbury):

ESE of Little Henty Reef (1 mile SSW) (3.77) and WNW of Henty Reef (1¾miles SE) (3.77), thence:

ESE of Mounts Bay (7½ cables SW) which lies between Hayley Point and Point Bunbury. It has a sandy beach on which there is usually a heavy surf; low hummocks from about 4 to 10 m high lie behind the beach. Thence:

3 ESE of Point Bunbury, a limestone formation. Keep at least 6 cables off this point as there is an area of foul ground SE and E of it.

Thence round Point Bunbury and head NNW towards the anchorage and the entrance to the harbour.

Entry leading lights. From the anchorage the harbour is entered on the alignment (211½) of the following lights:

Front light (post with vertical strip light) (38°45′·7S, 143°40′·4E).

Rear light (similar structure) (33 m SSW of front light).

Berths

3.85

1 Boats can moor at a timber-piled structure, with walkways about 90 m long, inside the N arm of the lee breakwater in an average depth of 2·1 m; there is also a concrete wharf, about 85 m long, inside this arm with average depths of 3·1 m alongside.

Port services

3.86

1 **Repairs:** slipway with a capacity of 50 tonnes.
Other facilities: hospital.
Supplies: fuel; fresh water; provisions.
Rescue: Apollo Bay Ocean Rescue Station.

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POINT GREY TO PORT PHILLIP HEADS

General information

Chart Aus 788, Aus 143

Route

3.87

1 From a position SE of Point Grey (38°33′S, 143°59′E) the route leads NE, for a distance of about 30 miles, to a position off the entrance to Port Phillip (38°18′S, 144°38′E).

Topography

3.88

1 The coast immediately N of Point Grey is occupied by Loutit Bay, which is described at 3.93, thence the coast continues steep and rock-fringed to Split Point which lies 7¼miles NE of Point Grey.

Between Point Addis (38°24′S, 144°15′E) and Bell's Beach, 2 miles NE, the coast is fronted by cliffs about 60 m high and thence to Half Moon Bay, 1¼miles farther NE, by cliffs about 30 m high.

Between Point Danger (38°20′S, 144°20′E) and Barwon Head, 9 miles ENE, the coast consists of low sandhills fronting undulating hills.

Foul ground

3.89

1 An area of foul ground, within which derelict vessels are scuttled and sunk, known locally as The Graveyard, lies within a radius of 1½miles centred 5 miles SW of Barwon Head (38°18′S, 144°30′E).

Principal marks

3.90

1 **Landmarks:**

Station Peak (37°57′S, 144°25′E) (4.24); visible from E of Split Point (38°28′S, 144°06′E).

Tower standing on Peters Hill (38°24′S, 144°00′E).

Radio mast (elevation 141 m) (38°25′S, 144°10′E). The mast which is 30 m in height stands 2½cables ESE of the summit of Mount Ingoldsby. The Bald Hills rise N of this mountain.

Chimney (elevation 118 m) (38°23′S, 144°11′E).

Major light:

Split Point Light (38°28′S, 144°06′E) (3.76).

Directions

(continued from 3.79)

3.91

1 From a position SE of Point Grey (38°33′S, 143°59′E) the track leads NE, passing (with positions from Point Grey):

SE of Loutit Bank (1 mile E). The bank is covered by a red sector (039°–048°) of Split Point Light (3.76). Thence:

SE of Cinema Point (4½ miles NNE), fringed with rocks, thence:

SE of Split Point (7¼miles NE). The point is reddish-brown and appears as three cliffs close together and separated by ravines. A light (3.76) is displayed from the point. Thence:

2 SE of Eagle Nest Reef (8 miles NE), awash, extending 5 cables offshore, thence:

SE of Point Roadknight (11¾ miles NE), which is low, thence:

SE of Demon's Bay (12 miles NE). Demon's Bluff, prominent, yellow and about 30 m high, fronts the N part of the bay. Anglesea River enters the bay 1 mile N of Point Roadknight; the village of Anglesea stands on the W bank of the river. Soapy Rock lies close inshore about midway between the river entrance and the point. A drying rock lies close off the river entrance. Thence:

3 SE of Ingoldsby Reefs (14 miles NE), which consist of two drying reefs, steep-to seaward and surrounded by below-water rocks over which the sea breaks heavily, thence:

SE of Point Addis (15½ miles NE). Black Rock, drying and steep-to seaward, lies 6 cables WSW of Point Addis. Point Roadknight, Ingoldsby Reefs and Black Rock are covered by a red sector (233°–249°) of Split Point Light (3.76).

3.92

1 The track continues NE, passing (with positions from Point Addis (38°24′S, 144°15′E)):

SE of Rocky Point (4¼ miles NE), fringed by rocks; a rock, with a depth of less than 1·8 m over it, lies about 2½ cables S of the point. Thence:

SE of Point Danger (5 miles NE). A reef, with a depth of less than 2 m over it, extends 3 cables E and S from Point Danger. Torquay, a town of which the houses are well visible from seaward, stands close N of Point Danger on the shores of Zeally Bay; a few small fishing boats operate from the beach, hauling up when bad weather threatens. Thence:

2 SE of Victoria Reef (5¾ miles NE), with a depth of 4 m over it, over which the sea breaks heavily at times, thence:

SE of Point Impossible (8 miles NE), thence:

SE of Ant Spit (11 miles NE) and Charlemont Reef (12 miles NE) over both of which the sea breaks heavily at times, thence:

SE of Barwon Head (13 miles NE), a scrub-covered, saddle-shaped point 37 m high, thence:

3 To a position 3½miles SSW of Point Lonsdale (38°18′S, 144°37′E) (4.24) off Port Phillip Heads. Abraham's Bosom (15 miles NE), is the local name of the bight formed by the coastline between Barwon Head and Point Lonsdale, 5½ miles E. Vessels standing off Port Phillip may seek shelter in the bight during W gales. Sand dunes about 26 m high stand along the shores of the bight. A continuous rocky bank fronting the coast of the bight extends up to 5 cables offshore.

(Directions for entering Port Phillip continue at 4.27 and for the coastal route towards Western Port at 5.11)

Minor harbours

Chart Aus 788 (see 1.12)

Lorne

3.93

1 **Description.** The port of Lorne (38°33′S, 143°59′E) lies inside Point Grey (3.78) on the S side of Loutit Bay. Loutit Bay is entered between Point Grey and the entrance to Little Stony Creek 1½ miles N.

Rocks fringe Loutit Bay from Point Grey to its head about 5 cables NW, thence a sandy beach extends over 5 cables N to the entrance of Ersking River, which almost dries. The coast between this entrance and that of Little

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Stony Creek (38°31′·6S, 143°59′·1E), 5 cables farther NNE, is steep and rock-fringed

2 Lorne is a seaside resort with saw-milling and fishing industries; an agricultural area lies N of the town. A fishing fleet operates from the port.

Port Authority. Lorne Foreshore Committee of Management, PO Box 11, Lorne, Victoria, 3232.

Tidal levels. Mean maximum range about 1·6 m, mean minimum range about 0·9 m. For details see *Admiralty Tide Tables.* Tidal information for the port may be obtained from Point Lonsdale Signal Station (38°18′S, 144°37′E) on request. For details see *Admiralty List of Radio Signals Volume 6 (4).*

Anchorage. During SW or W gales anchorage may be obtained in Loutit Bay, NW of Loutit Bank, in a depth of 9·1 m and 6 cables offshore, as shown on the chart.

3 The bank affords protection from the swell, and this anchorage is better than that at Apollo Bay (3.80), but during W gales it is necessary to be prepared for the wind to back S or SE.

Harbour. Lorne Pier extends from a small sandy beach 1½ cables W of Grey Point; there is a depth of 4 m at its head.

4 The pier is used only by small fishing boats and is not satisfactory for long term berthing due to the swell. A light (wooden mast, 4 m in height) is displayed from the pierhead.

Port services: small hospital; supplies, including fuel, can be obtained.

Chart Aus 144

Barwon Heads

3.94

1 **General information.** The port of Barwon Heads (38°17′S, 144°30′E) is situated on Barwon River. Rocky ground extends across the mouth of the river from where a spit extends 1 mile ESE with a depth of 2·7 m at its outer end.

Barwon River is navigable at all times except with onshore winds. After freshets, discoloured water extends E and W from Barwon Head.

The town of Barwon Heads, centre of a large agricultural area, stands close N of Barwon on the W bank of Barwon River.

2 A road bridge, with a vertical clearance of 1·9 m, spans the river between the town and the S end of a fairly high scrub-covered spit which forms the E side of the river mouth and extends 2 miles NE to the seaside resort of Ocean Grove (38°16′S, 144°31′E).

Port Authority. Barwon Coast Committee of Management, c/o Post Office, Barwon Heads, Victoria 3227.

Local knowledge is required owing to constantly changing depths at the river mouth and along the river. Depth at the entrance varies from 1 m to 1·5 m at LW owing to local siltation.

3 **Directions.** From seaward the town and headland appear as an island because of the low lying land. At night the town lights are prominent when Barwon Head (3.92) bears more than 315°.

Approach should be made on the alignment (296°) of the following lights leading WNW into the river, passing NNE of a buoy (port hand) moored close S of the leading line and 2 cables NE of Barwon Head:

4 Front light (38°17′·2S, 144°29′·9E), near the N entrance point of the river.

Rear light (2 cables WNW of front light), standing on the W bank above a jetty.

The channel is very narrow and mariners should proceed with caution.

Anchorage. Small craft may anchor in a depth of about 1·5 m, hard bottom, on the N side of the road bridge.

5 **Berths:**

Barwon Jetty, on the W bank of Barwon River, 4 cables NW of Barwon Head, has a T-shaped head with a depth of 1·8 m alongside. Depths at the N end of the T-section may be reduced by siltation.

Ozone Jetty, on the W bank 3 cables N of Barwon Jetty, is for pedestrian traffic only. Siltation can cause this jetty to dry alongside.

Port services. Provisions and fuel may be obtained.

Minor inlet

Chart Aus 788

Aireys Inlet

3.95

1 Aireys Inlet (38°28′S, 144°06′E) enters the sea 2½ cables W of Split Point (3.91) and extends thence 1½ miles N. A small seaside town and fishing resort, fronting agricultural and pastoral land, stands on the NE side of the inlet.

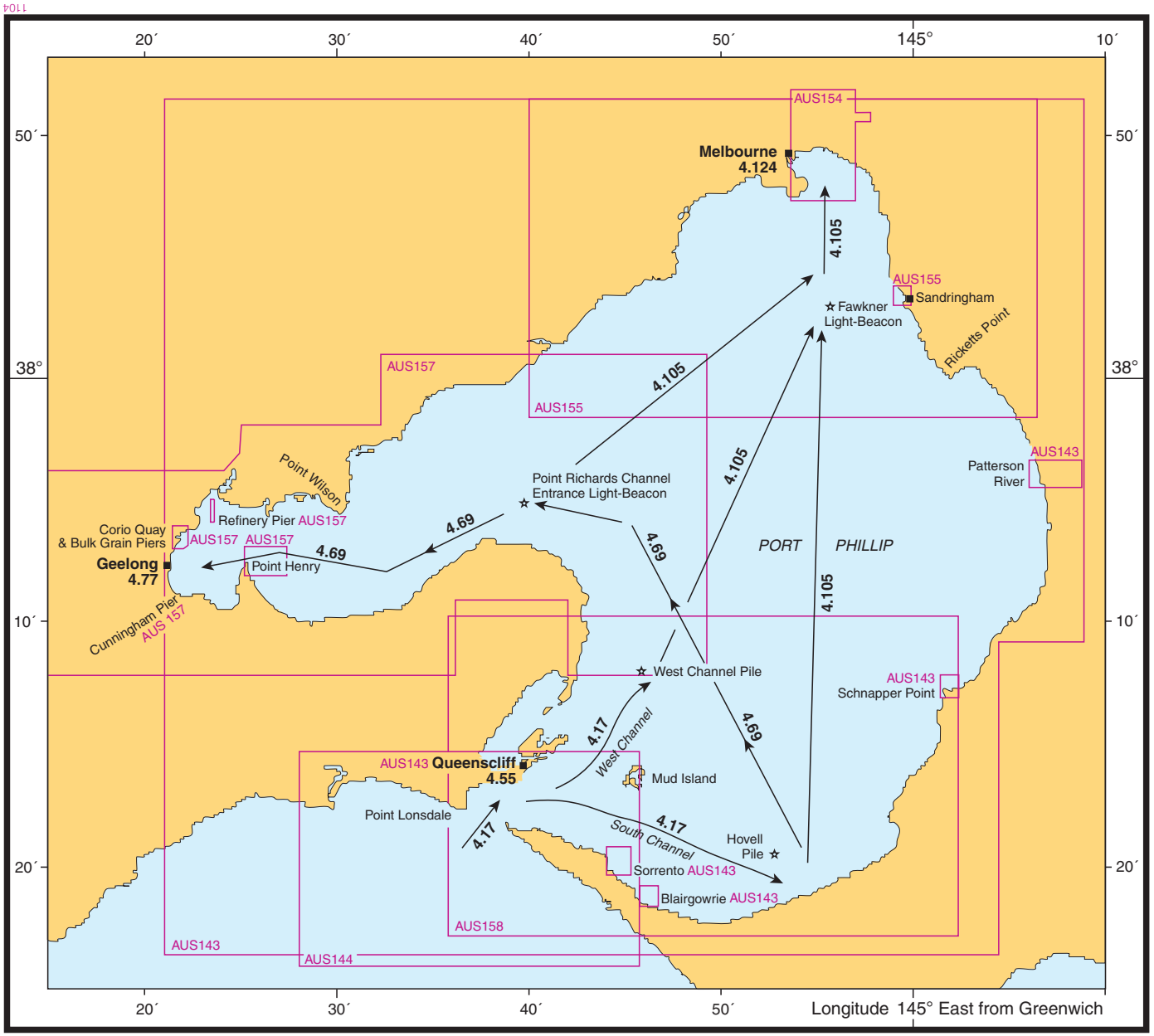
In 1985 it was reported that a sand bar blocked the entrance and that a rock shelf and isolated rocks immediately seaward prevented entry.

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NOTES

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CHAPTER 4

VICTORIA — PORT PHILLIP INCLUDING GEELONG AND MELBOURNE

GENERAL INFORMATION

Chart Aus 143

Scope of the chapter

4.1

1 The area covered by this chapter comprises the entrance (38°18′S, 144°38′E) to Port Phillip and the waters within. The chapter also includes a description of the major ports of Geelong (38°07′S, 144°23′E) (4.77) and Melbourne (37°50′S, 144°54′E) (4.124). It is divided into the following sections:

Port Phillip — Approach and entry (4.9).
Port Phillip — Western part (4.66).
Port Phillip — North and eastern part (4.103).

Description

4.2

1 Port Phillip is an extensive gulf with a length of over 30 miles to its N end. The Heads, as the outer part of its entrance is known, is bounded on its NW side by Point Lonsdale (38°18′S, 144°37′E) and Shortland Bluff, 2½miles ENE, and on the SE by Point Nepean, 2 miles ESE of Point Lonsdale.

The W side of Port Phillip is known as Western Arm in which lies the port of Geelong. The NE side contracts at its N end forming Hobson's Bay into which River Yarra flows. The port of Melbourne is situated at the head of the bay and within the entrance to the river.

Areas of responsibility

4.3

1 Victorian Regional Channels Authority is responsible for the commercial navigation channels in Port Phillip, including those within the port waters of Melbourne and Geelong. The seaward limit of its responsibility is defined by a circle of radius 3 miles centred on Point Lonsdale (38°18′S, 144°37′E).

Address: Victorian Regional Channels Authority, PO Box 1135, Geelong, Victoria 3220.

The shoreline and inshore waters outside the port waters of Melbourne and Geelong, within Port Phillip, are the responsibility of Parks Victoria.

Pilotage

4.4

1 Pilotage is compulsory for merchant vessels except for those specially exempted.

Pilots board vessels direct from fast launches, 3 to 5 miles SW of Point Lonsdale.

For further information see *Admiralty List of Radio Signals Volume 6 (4).*

High speed craft

4.5

1 See 1.6.

Historic wrecks

4.6

1 Within the area described in this chapter there are a number of historic wrecks, as can be seen on the charts.

For further details see 1.52.

Marine Protected Areas

4.7

1 Marine protected areas exist within the area covered by this chapter. For further details see *Australian Notice to Mariners No 28.*

Rescue

4.8

1 See 1.66 and *Admiralty List of Radio Signals Volume 5*.

PORT PHILLIP — APPROACH AND ENTRY

GENERAL INFORMATION

Charts Aus 144, Aus 143, Aus 158

Area covered

4.9

1 This section covers the entrance to Port Phillip and the channels within Port Phillip Heads.

Vessel Traffic Service

4.10

1 Point Lonsdale Signal Station, situated at the base of Point Lonsdale Lighthouse (38°18′S, 144°37′E), controls vessel movements at Port Phillip Heads, West Channel and South Channel. Tidal (4.16) and traffic regulation signals (Appendix II) are displayed from the station.

Vessels passing through Port Phillip Heads and the channels inside are required to maintain VHF radio communications with Point Lonsdale Signal Station.

For further details see *Admiralty List of Radio Signals Volume 6 (4).*

Traffic regulations

4.11

1 Traffic regulations for Port Phillip Heads and approaches, South Channel and West Channel, see Appendix II.

Draught limitations

4.12

1 When planning a transit through Port Phillip Heads, South Channel and West Channel mariners should take into account the following:

1. Maximum allowable draught for Great Ship Channel is 12·1 m with tide, 11·6 m without tide.
2. Maximum allowable draught for South Channel is 12·1 m with tide, 11·6 m without tide. An under-keel clearance of at least 1·5 m is required at all times.

2 3. Maximum allowable draught for West Channel is 4 m with tide, 3 m without tide. An under-keel clearance of at least 1 m is required at all times.

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4. A tidal residual (surge) of –0·3 m can occur under certain meterological conditions.

Caution

4.13

1 Masters of deep-draught vessels planning a transit of Port Phillip Heads during conditions of high, long period swells from the S, should be aware that this may considerably reduce under-keel clearance when passing over Rip and Nepean Banks. Under such conditions a delayed transit of the Heads may be necessary.

Do not attempt to enter the Heads at night without a pilot or against the outgoing stream which sets across the entrance and attains a rate of 7 or 8 kn at springs, causing a high short confused sea. In S or W gales the sea breaks right across the entrance between the Heads.

2 Outward bound deep-draught vessels are recommended, when a rough sea is running, to leave only on the last quarter of the in-going stream or at the following slack water.

Vessels awaiting the turn of the tidal stream outside the Heads are advised to keep towards the Point Lonsdale shore; here the streams run fairer and in bad weather a vessel is in smoother water and in less danger from the tide-rips. Never heave to near the Heads while waiting for daylight.

Tides and tidal streams

4.14

1 Owing to the narrow entrance and the large area of Port Phillip the range of tides within the Heads is small in comparison with that at the entrance. Water level within Port Phillip is consequently much affected by winds blowing for a long period in one direction, and may remain above mean level continuously for some time after S gales, or below mean level continuously for some time after N gales.

2 The tidal streams in the entrance depend on the relative water levels inside and outside Port Phillip. The greatest difference in levels occurs at about the time of HW and LW in the entrance, and the tidal stream therefore runs at its strongest, 5 to 8 kn, at these times. Slack water occurs at about 3 hours before and after HW in the entrance when there is no difference in the levels, and the tidal stream runs in from about 3 hours before until 3 hours after HW, and out at other times. As the levels depend partly on wind, the times of slack water and the rate of the tidal stream are also affected by the wind. On an average it is HW at the Heads about 3¼hours before that at Williamstown (37°52′S, 144°54′E), but owing to weather conditions this interval may vary from 3 to 4 hours. It will therefore be approximately slack water following the in-going stream at the Heads when it is HW at Williamstown.

3 The in-going stream from S and E increases in strength as it nears the Heads; it sets right into the entrance, across and through the reefs, with great force and spreads towards Shortland Bluff and Point King (38°19′·5S, 144°44′·4E).

The out-going stream sets towards the bight between Point Lonsdale and Shortland Bluff, and thence out through the entrance at a great rate; the body of this stream sets athwart the entrance towards Point Nepean and away SE along the land and into the shore between Point Nepean and Cape Schanck (38°30′S, 144°53′E).

4 In South Channel, the in-going stream sets through at a rate of from 1 to 1¼kn, and strongly over Great Sand and Middle Sand. The out-going stream sets through at a rate of from ¾ to 2 kn, and strongly over the S banks. In the dredged cut at the E end of South Channel the tidal streams follow the direction of the channel, but immediately outside its ends they set obliquely to the direction of the channel.

Availability of tidal information

4.15

1 Tidal information for Port Phillip Heads, as well as for Queenscliff, West Channel Pile (West Channel) and Hovell Pile (South Channel) is available on request from Point Lonsdale Signal Station.

For details see *Admiralty List of Radio Signals Volume 6 (4)* and *Admiralty Tide Tables*.

Tidal stream signals

4.16

1 Tidal stream signals (Diagram 4.15) at Point Lonsdale (38°18′S, 144°37′E), are displayed by night from Point Lonsdale Lighthouse.

Night Signal	*Meaning*
●	In-going stream from end of slack water to high water.
● ●	In-going stream continuing after HW to beginning of slack water (1st quarter).
●	Out-going stream from end of HW slack to LW.
● ●	Out-going stream continuing after LW to beginning of LW slack (3rd quarter).

Tidal Stream Signals (4.16)

For 1st and 3rd quarter signals see 1.58

ENTRANCE CHANNELS

General information

Charts Aus 144, Aus 143, Aus 158

Routes

4.17

1 The main route into Port Phillip leads NE through the channels in the Heads and thence ESE along South Channel (4.34) to the S corner of the bay.

Five channels lead through the Heads from SW; a sixth leads from SE. These channels are as follows:

Great Ship Channel (4.27), with a declared depth of 14 m, lies midway between Point Lonsdale and Point Nepean and is about 245 m wide. It is referred to in directions as the main channel for entering Port Phillip. See 4.12 for maximum allowable draught for vessels navigating this channel.

2 Western Ship Channel (4.29), leading on the W side of Great Ship Channel, with a declared depth of 11·4 m.

Outer Western Channel (4.30), leading on the W side of Western Ship Channel, has a declared depth of 10·3 m.

Eastern Ship Channel (4.31), which leads along the E side of Great Ship Channel, has a declared depth of 11·9 m and a width of about 1 cable.

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Port Phillip Heads from ESE (4.17)
(Original dated 1998)

Outer Eastern Channel (4.32), leading on the E side of Eastern Ship Channel, has a declared depth of 10·0 m.

3 Clarkes Channel (4.33) leads from SE to the Heads passing close SW of a shoal area with depths of less than 10 m over it.

There are also secondary channels, the most important being West Channel (4.37), which leads from inside the Heads through the banks lying on the SW side of Port Phillip.

Topography

4.18

1 **West.** The W side of the entrance to Port Phillip is formed by Point Lonsdale (38°18′S, 144°37′E) (4.24) and inside by Lonsdale Bay which indents the coastline between Point Lonsdale and Shortland Bluff, 2½miles NE. A yellow limestone bluff, 18 m high, forms the shore for 7½cables NNE of Lonsdale Point, thence a sandy beach backed by a wall extends to Shortland Bluff.

2 Shortland Bluff, behind which stands the town of Queenscliff (38°16′S, 144°39′E), is 18 m high and formed of yellow sandstone and is prominent. It forms the SW end of a peninsula which extends 1¾ miles NE to the S entrance point of Swan Bay, fronted by Swan Island.

From Shortland Bluff the shore, for 8 cables NE, is low and fronted by a wall. Swan Island, 1½ miles NE of Shortland Bluff, is low and marshy in its central part with well-timbered ridges, about 12 m high, E and W.

3 **East.** The E side of the entrance is formed by Point Nepean (38°18′S, 144°39′E) (4.24) which is the NW extremity of a peninsula. The peninsula extends WNW for 16 miles, from Dromana (38°20′S, 144°58′E) on the N side and Cape Schanck (38°30′S, 144°53′E) on the S side. Sand dunes, about 60 m high and, covered with scrub, stand behind the towns of Rye, Sorrento and Portsea on the N coast of the peninsula. From Dromana to Rye, 7 miles WSW, the shore is low and fronted by trees, and then from Rye to Point Nepean the shore gradually rises into a series of bluffs, with those to the W being higher, with undulating timbered ground behind.

The Rip

4.19

1 Rip Bank, a rocky flat with depths of 8·3 to 18·5 m over it, extends across the entrance close outside the Heads. Along the inner side of Rip Bank lies Entrance Deep, with depths of 45 to 76 m over it, which curves around a 12·3 m patch lying on the leading line for Ship Channel.

This sharp contrast in depth combined with tidal streams running at rates between 5 and 8 kn at times cause The Rip, a race which breaks so heavily during or immediately after SW gales as to endanger small vessels.

Prohibited anchorage

4.20

1 Anchoring is prohibited within an area covering the entrance to Port Phillip, West Channel and South Channel, except as described at (4.52). The limits are shown on the chart.

Restricted area

4.21

1 Swan Island (38°15′S, 144°40′E) and an area to the N and NE of the island lies within naval waters. The limits are shown on the chart.

For information on regulations applying to naval waters see Appendix I.

Marine Protected Areas

4.22

1 Marine protected areas exist as shown on the chart.

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Port Phillip Heads from SW (4.25)
(Original dated 1998)

Caution

4.23

1 Between September and April, yellow or orange yachting buoys of varying shapes and topmarks, are deployed up to 3 miles offshore.

Care should be taken to avoid confusing these with normal navigational marks.

Landmarks

4.24

1 Point Lonsdale (38°18′S, 144°37′E), a dark rocky point 12 m high. Point Lonsdale Light (white concrete tower, 21 m in height) is displayed from the point.

Point Nepean (38°18′S, 144°39′E), lying 2 miles ESE of Point Lonsdale, is 31 m high. There are some buildings on it and Rock beacon, stands on a drying rock ledge which extends 2 cables W.

2 Station Peak (37°57′S, 144°25′E), known locally as Flinders Peak, standing 22 miles NNW of Point Lonsdale, is a cone-shaped granite mountain and the highest of four peaks of The You Yangs which overlook the port of Geelong. An aero light is displayed from the summit of Station Peak.

Arthur's Seat (38°21′S, 144°57′E) a conspicuous mountain standing 15 miles ESE of Point Nepean. Two towers stand on the summit and Flinders Monument stands on its W fall. This mountain is the highest land on the S shore of Port Phillip and shows well offshore from the Heads.

Outer approaches

Chart Aus 350

From the south-west

4.25

1 Landfall is made off the high and bold land of Cape Otway (38°51′S, 143°31′E) (3.48), which is easily identified by its lighthouse, keeping at least 3 miles off. Thence steer for Port Phillip Heads passing about 3½miles outside Henty Reef (38°47′S, 143°42′E) (3.77); a berth of 3 miles off the coast will clear all other dangers. Detailed directions for the coastal route from Cape Otway to Port Phillip Heads are given at 3.77.

2 After passing Split Point (38°28′S, 144°06′E) (3.91), Arthur's Seat (38°21′S, 144°57′E) (4.24) may be seen rising inland before lower and nearer land in that direction is sighted. This mountain and Station Peak (37°57′S, 144°25′E) (4.24) help to identify the entrance to Port Phillip.

On nearing Port Phillip entrance Barwon Head (38°18′S, 144°30′E) (3.92) will open out NW and forms a good mark in making the port, but in poor visibility care should be taken not to mistake it for the Heads (4.2) whereby vessels have gone ashore.

3 When the lighthouses on Shortland Bluff (38°16′·5S, 144°39′·5E) are sighted, if in a deep-draught vessel, steer for the entrance to Great Ship Channel (4.27).

At night, do not lose sight of the white sector of Split Point Light until the white sector of Point Lonsdale Light (38°18′S, 144°37′E) (4.24) has been seen; in clear weather the latter should be picked up at 16 miles.

Soon after entering the white sector (325°–069°) of Point Lonsdale Light, Queenscliff High Light and the white sector (032°–046°) of Queenscliff Low Light should be seen; keep in the white sector of the latter light to enter Great Ship Channel.

(Directions continue at 4.27)

From south or east

4.26

1 It is prudent, particularly in strong S winds, to make landfall off Cape Schanck (38°30′S, 144°53′E) (5.9) which, being bold and with a lighthouse on its summit, cannot be mistaken.

Having passed Cape Schanck, keep a good offing in approaching the Heads (4.2) until Queenscliff Lighthouses open out. The land near Point Nepean (38°18′S, 144°39′E) obscures the high lighthouse until it bears 014° and the low lighthouse until it bears 011°.

2 **At night**, having passed from 3 to 4 miles off Cape Schanck, steer to make the white sector (325°–069°) of Point Lonsdale Light and keep within it until Queenscliff High Light and Queenscliff Low Light are sighted. Thence steer for the entrance to Great Ship Channel (4.27).

Directions for the coastal route between Cape Schanck and Port Phillip Heads are given, in reverse order, at 5.11.

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Directions for entering Port Phillip

(continued from 3.92 and also from 4.25 or 4.26)

Chart Aus 144

Main entrance channel (Great Ship Channel)

4.27

1 **Leading lights:**

Queenscliff Low Light (white stone tower, red stripe with green top) (38°16′·5S, 144°39′·5E) standing on Lighthouse Point at the S end of Shortland Bluff.

Queenscliff High Light (stone tower with green top, 25 m in height) (2 cables NE of front light).

From a position 3½miles SSW of Point Lonsdale (38°18′S, 144°37′E) (4.24) the alignment (042½) of these lights leads NE, close E of the centreline of the channel, passing (with positions from Point Lonsdale):

2 NW of an isolated shoal (1¼miles SE), with a depth of 9·1 m over it, thence:

SE of Lonsdale Rock (6 cables SE); kelp growing on the rock gives the water over it an oily appearance by which it can be identified. Mushroom Rock and Yellowtail Rock lie at the extremity of Point Lonsdale Reef, an area of drying rocks which extends 3½ cables SE of Point Lonsdale. Thence:

3 NW of Corsair Rock (1½ miles ESE), which lies on the outer end of a spit with depths of less than 5·0 m over it, extending 5 cables WNW from Point Nepean (4.24). Corsair Rock is marked by an eddy on the flood stream and on the ebb by a short breaking sea from where a tide spume extends about 1 mile SE. Thence:

4 SE of Merlan Reef (4 cables NE), with a least depth of 0·1 m over it, lies at the SW side of Lonsdale Bay (6 cables NE). The vicinity of the bay should be avoided as there are other dangers in it. Fronting the bay, about 1 mile ENE of Point Lonsdale, is an area of kelp, which surfaces at slack water, causing a tide spume extending about 7½cables SSW on the ebb. Thence:

To a position about 1 mile E of Point Lonsdale.

Caution: A shoal with a least depth of 13·7 m over it, has been reported (2004) in position 38°17′·2S, 144°38′·0E.

Useful marks

4.28

1 The intersection of the following transits mark Corsair Rock: Rock Beacon (38°18′·1S, 144°38′·9E) with Point Nepean Beacon (2 cables ESE of Rock Beacon) (4.24), in line bearing 100°, and Queenscliff Low Light (38°16′·5S, 144°39′·5E) with Fort Flagstaff (¾ cable NE of light) (4.29), in line bearing 028°.

Marcus Hill Beacon (38°14′·6S, 144°36′·5E) (4.33) (chart Aus 158).

2 Radio mast (38°16′·5S, 144°37′·2E) and water tower, 2 cables WSW of Clarkes Beacon.

Clarkes Beacon (38°16′·5S, 144°37′·4E) (4.33).

Fort West Light (beacon) (38°16′·5S, 144°39′·5E).

Radar tower (38°18′·5S, 144°39′·6E), standing 5¼cables SE of Point Nepean.

Tower on Mount Levy (38°20′·1S, 144°42′·4E).

(Directions for South Channel continue at 4.34 and for West Channel at 4.37)

Alternative entrance channels

Western Ship Channel

4.29

1 This channel leads through the Heads close W of Great Ship Channel (4.17). The E limit of the channel is delineated by the following marks in line bearing 044°:

Fort Flagstaff (16 m in height) (38°16′·5S, 144°39′·5E).

Queenscliff High Light (1 cable NE of Fort Flagstaff) (4.27).

At night this E limit is marked approximately by the line of bearing 044° of Queenscliff High Light showing just less than halfway between Queenscliff Low Light and Hume Tower Light.

Outer Western Channel

4.30

1 The W limit of the channel is marked by the following lights in line bearing 046°:

Hume Tower Light (white rectangle on metal framework tower, 24 m in height) (38°16′·5S, 144°39′·5E).

Queenscliff High Light (2 cables NE of Hume Tower Light) (4.27).

Eastern Ship Channel

4.31

1 This channel leads through the Heads along the E side of Great Ship Channel (4.17). Its E limit is delineated by the following marks in line bearing 039½:

Murray Tower Light (metal framework tower) (38°16′·5S, 144°39′·5E).

Queenscliff High Light (2 cables NE) (4.27).

Outer Eastern Channel

4.32

1 This channel leads through the Heads along the E side of Eastern Ship Channel. Its E limit is marked by the following lights in line bearing 034¾:

Murray Tower Light.

Queenscliff Lookout House (wooden tower), close NW of Queenscliff High Light; the roof and the top 5 m is visible over roofs of buildings S of it.

2 The alignment (034¾) of these marks leads close E of a 10·4 m patch, 5 cables WSW of Corsair Rock (38°18′·1S, 144°38′·4E) (4.27), and then 2 cables SW of Corsair Rock.

Caution. A shoal, with a depth of 8·3 m over it, lies on Nepean Bank, 2 cables NNW of Corsair Rock.

Clarkes Channel

4.33

1 **Leading marks:**

Clarkes Beacon (black and white, elevation of 33 m) (38°16′·5S, 144°37′·4E).

Marcus Hill Beacon (white column, black diamond topmark, 14 m in height) (38°14′·6S, 144°36′·5E) (chart Aus 158).

From a position about 1¾ miles S of Point Nepean (38°18′S, 144°39′E) (4.24) the alignment (339½) of these marks leads NNW, passing (with positions from Point Nepean):

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2 Close WSW of a small bank (8 cables SSW), with a depth of 9·1 m over it. The sea breaks heavily over the bank. Thence:

WSW of Petriana Reef (4 cables SSE) close to the shore, which dries, thence:

ENE of an isolated shoal (9 cables WSW), with a depth of 9·1 m over it, thence:

3 Close WSW of Corsair Rock (5 cables WNW) (4.27), to join the main channel leading through the Heads.

Caution. Clarkes Channel may only be used when the fairway between the Heads is clear of traffic. If entering on the flood stream take account of the onshore set. Deep-draught vessels should not leave by this channel but by Great Ship Channel (4.27).

Directions for South Channel

(continued from 4.28)

The Heads to Popes Eye

4.34

1 **Caution.** There are *Harbour Master's Directions* applying to navigation within South Channel; see Appendix II.

From a position about 1 mile E of Point Lonsdale (38°18′S, 144°37′E) (4.24) the track leads E for about 2½miles, keeping within the white sector (266°–272°), astern, of Point Lonsdale Light, and passing (with positions from Point Lonsdale):

N of Point Nepean (2 miles ESE) (4.24), thence:

2 N of Nepean Bay (2½ miles ESE), with depths of less than 5·0 m and several below-water rocks within it, thence:

N of Observatory Point (3¼ miles ESE) which is low and scrub covered. A ruined jetty projects from the point. Thence:

To a position about 2 cables S of Popes Eye Light-beacon (S cardinal) (3½ miles E).

Chart Aus 158, Aus 144

Popes Eye to Hovell Pile

4.35

1 From the position S of Popes Eye Light-beacon the track then leads ESE, for about 8½ miles, through a channel marked by numbered light-beacons (lateral), passing (with positions from Popes Eye Light-beacon (38°17′·4S, 144°41′·2E)):

NNE of Nicholson Knoll (8 cables SE), with a least depth of 6·1 m over it, thence:

SSW of Caisson M (derelict concrete structure with a wooden hut on top) (1¾ miles E), known locally as Magic Eye. A tide gauge stands close SE of Caisson M. Thence:

2 SSW of Great Sand (4 miles ENE) an extensive bank. Mud Islands, a group of three low islands, lies near its central part. The middle island is a nature sanctuary where the breeding place of the Stormy Petrel is preserved. Mud Islands lie within a Marine Protected Area see 4.7. Thence:

NNE of South Sand (5 miles SE), an extensive bank with a least depth of 0·3 m over it. The sea breaks heavily on its N side, 7½ cables E of its W end. And:

3 SSW of Middle Ground (6 miles ESE) which forms the E part of Great Sand, E of Pinnace Channel. South Channel Fort, which is 7 m high above its retaining wall, and from where a light is displayed, stands near the W end of Middle Ground. Thence:

Through a narrow cut lying between No 12 Light-beacon (38°19′·4S, 144°50′·1E) and No 13 Light-beacon (38°20′·0S, 144°51′·5E).

4 The track then leads E passing, at a distance of not less than 2 cables, S of No 20 Light-beacon (port hand) (38°19′·9S, 144°53′·9E). Thence the track leads N into Port Phillip, to a position E of Hovell Pile Light (1¾cables N of No 20 Light-beacon), marking the E extremity of Middle Ground.

Useful marks

4.36

1 Monash Light (38°19′·0S, 144°40′·7E) (4.39).
Quarantine Station (38°18′·8S, 144°41′·6E) (4.44).
Water tower (38°19′·5S, 144°42′·2E).
Point Franklin (38°19′S, 144°43′E) (4.44).
Eastern Lighthouse (disused) (white metal tower) (38°21′S, 144°56′E).

(Directions continue for Geelong at 4.73 and for Melbourne at 4.113)

Directions for secondary channels

West Channel

(continued from 4.28)

4.37

1 **Cautions.** West channel is closed to shipping with the exception of exempted vessels.

In West Channel there is a declared depth of 4·0 m sand and shells, in the channel, but the banks and shoals in West Channel are subject to frequent changes so that the charts are an insufficient guide. The latest information and the Harbour Masters Directions which apply to navigation within West Channel, (see Appendix II); should be obtained from the appropriate authority (4.3) before proceeding through this channel.

The tidal streams do not set fairly through the channel particularly in the vicinity of No 2 Light-beacon (38°15′·7S, 144°42′·3E).

4.38

1 **Inward bound.** From a position about 1 mile E of Point Lonsdale the track leads ENE, passing (with positions from No 1 Light-beacon (38°16′·7S, 144°41′·8E)):

SSE of Lighthouse Point Beacon (red concrete structure, 1·8 m in height) (1¾ miles W), marking a drying reef which extends 1 cable SE from Lighthouse Point, the S extremity of Shortland Bluff, thence:

2 SSE of Drapers Reef (1½ miles WNW), covered in kelp with a least depth of 0·7 m over it, extending 4 cables NE from Lighthouse Point; a light-beacon (port hand) marks the S side of the reef. Thence:

NNW of No 1 Light-beacon (starboard hand), which stands close N of The Annulus, a semi-circular wall at the SW end of Popes Eye Bank, and:

3 SSE of Queenscliff NE Approach Light-beacon (port hand) (9 cables NNW), thence:

Between Royal George Shoal (5 cables N), with a least depth of 5·9 m over it, and Popes Eye Bank, marked on its SW side by Wedge Light-beacon (white beacon, 5 m in height) (2 cables ENE). Vessels may pass either side of Royal George Shoal but the deeper water lies to the S.

4.39

1 **Leading lights and mark:**

Wedge Light-beacon (38°16′·6S, 144°42′·1E) (4.38).
Beacon (orange) standing 6 cables NNE of Monash Light.

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Monash Light (red and black masonry tower, orange rectangular topmark, 4 m in height) standing on the peninsula 2¾ miles SSW of Wedge Light-beacon. The light is obscured to seaward.

2 From a position about 5 cables NE of No 1 Light-beacon the alignment (204½°), astern, of these three marks leads through that part of the channel known as The Narrows, marked by light-beacons (lateral), to the vicinity of No 5 Light-beacon, passing (with positions from No 1 Light-beacon):

Close ESE of a shoal (1¼ miles NNE), with a depth of 4·1 m over it. Thence:

ESE of a shoal (1¾ miles NNE), with a depth of 4·9 m over it, thence:

3 Between William Sand (2¾ miles NNE), an extensive bank about 4 miles long, with a least depth of 0·3 m over it close to a stranded wreck, and the S end of West Sand (3 miles NNE), which dries in places, to the vicinity of No 9 Light-beacon (starboard hand) (4 miles NNE).

Caution. A shoal area is reported (3 miles NNE) lying on the alignment of the leading lights above.

4.40

1 **Leading lights:**

No 8 Light-beacon (port hand) (38°13′·2S, 144°43′·9E).

Coles Light-beacon (white hut on black piles, 5 m in height) (38°14′·4S, 144°42′·2E).

Queenscliff High Light (2¾miles SW of Coles Light-beacon) (4.27).

From the vicinity of No 9 Light-beacon the alignment (226°), astern, of these lights leads NE passing through the N part of West Channel to a position E of West Channel Pile Light (white round hut on piles) (38°11′·7S, 144°45′·3E).

4.41

1 **Outward bound.** From a position 2 cables E of West Channel Pile Light (4.40) the track leads SW parallel to, and a little NW of the Coles Channel Light-beacon/Queenscliff High Light leading line (4.40), but keeping No 10 Light-beacon (port hand) on the starboard bow.

2 Thence, when approaching No 9 Light-beacon (38°13′·2S, 144°44′·3E) course should be altered gradually S on to the alignment (204½°) of the Wedge Light-beacon/Monash Light leading line (4.39); this alignment leads through the channel passing 2 cables W of No 9 Light-beacon. Thence follow the inward directions in reverse order.

3 These directions apply particularly to an outward bound vessel passing an inward bound vessel to ensure the latter ample room to clear William Sand near No 9 Light-beacon.

(Directions for Melbourne continue at 4.114)

(Directions for Geelong are given at 4.73)

Coles Channel

4.42

1 **Caution.** Local knowledge is required.

Coles Channel leads between West Sand (38°13′S, 144°43′E) and the mainland to the W. The channel has a least depth of 3·6 m close WNW of the leading line and may be used by small vessels.

From a position close E of West Channel No 2 Light-beacon (red rectangle on red round hut, concrete base) (38°15′·7S, 144°42′·3E) the track leads N, passing (with positions from No 2 Light-beacon):

2 E of Swan Spit Light-beacon (port hand) (3 cables NW) which marks the S end of Swan Spit. Swan Spit, with depths of less than 2 m over it, extends 7½cables S from Swan Point and a bank, known locally as Swan Bank, extends 2½ cables E from the spit; the edge of the bank is subject to frequent change. Thence:

W of No 4 Light-beacon (port hand) (1 mile NNE), and:

3 E of Swan Point (1 mile NNW). Beacons (starboard hand), on the N side of the point, mark a channel leading to Swan Island Docks (4.60). The wreck of a submarine lies on the point and a beacon (isolated danger) marks a patch of foul ground 6 cables SW of the point.

The track then leads NNW passing ENE of Coles Light-beacon (38°14′·4S, 144°42′·2E) to a position on the following leading line:

Coles Light-beacon (4.40).

Monash Light (38°19′·1S, 144°40′·6E) (4.39).

4 The alignment (195°), astern, of these lights leads NNE, passing (with positions from Coles Light-beacon):

WNW of Nos 1, 3 and 5 Beacons (starboard hand) (6 cables, 1½miles and 2½miles NNE, respectively). Between these beacons the leading line leads very close WNW of the S part of West Sand (4.39). Thence:

ESE of South Red Bluff (3¼ miles N) which is 12 m high and of reddish colour. A beacon (white) stands on the bluff. And:

5 WNW of No 7 Beacon (starboard hand) (3¼miles NNE).

Thence the track leads NE, passing SE of Saint Leonards Jetty (4 miles NNE) (4.74) into the open waters of Port Phillip.

Useful mark:

West Channel Pile Light (38°11′·7S, 144°45′·3E) (4.40).

(Directions for Melbourne are given at 4.114 and for Geelong at 4.73)

Inshore channel

Charts Aus 144, Aus 158, Aus 143 plan of Sorrento

Local knowledge

4.43

1 Local knowledge is necessary for navigating this inshore channel.

Observatory Point to Sorrento

4.44

1 This inshore channel, of which Sorrento Channel forms the middle part, runs close along the S shore of Port Phillip from Observatory Point (38°18′·4S, 144°40′·7E) to Dromana, 14 miles ESE. It has a least depth of 2·8 m in the NNW approach to Sorrento Pier (38°20′·2S, 144°44′·6E) (4.62).

From a position about 4 cables NNE of Observatory Point (4.34) the track leads ESE, passing (with positions from Observatory Point):

SSW of Nicholson Knoll (1 mile ENE) (4.35), and:

2 NNE of Quarantine Station (8 cables ESE). A light (white mast, 4 m in height) is displayed from the station. A chimney (red brick, 24 m in height) and a flagstaff stand close by. Observatory Point and a flag staff on Police Point mark the boundaries of the station. Thence:

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NNE of Police Point (1¼miles ESE), a yellow limestone bluff, 18 m high, fronted by a sandy beach. A cutting through the timbered slope to Monash Light, (1¼miles W of Police Point) (4.39), is prominent. Thence:

3 NNE of Portsea Pier (1¾miles ESE) (4.61) and Point Franklin (2 miles ESE). A flagstaff stands on the point and a group of green-roofed buildings lie 1 cable SW. Thence:

NNE of Collins Bay (2½miles ESE), which is backed by bluffs up which zig-zag paths lead from the shore, thence:

4 NNE of Point Macarthur (2¾ miles ESE), 24 m high and sheer, thence:

To a position about 2½ cables NNE of Point King (3 miles ESE) and on to Sorrento Channel leading line. Point King, 7 m high, is fringed with rocks. A beacon (white, 5 m in height) stands on the point.

4.45

1 **Sorrento Leading Lights:**

Front light (column with an elevation of 7·0 m) (38°20′·1S, 144°44′·7E).

Rear light (column with an elevation of 7·0 m)

The alignment (169¾°) of these lights leads towards Sorrento Pier (4.62), passing (with positions from front light):

2 Between No 1 Light-beacon (starboard hand) (7 cables NNW) and No 2 Light-beacon (port hand), thence:

WSW of the historical wreck (5 cables N) of the *Wauchope* marked by a beacon (isolated danger).

Useful marks:

Monash Light (38°19′·1S, 144°40′·6E) (4.39).

Water tower (38°19′·5S, 144°42′·1E).

Sorrento to Dromana

4.46

1 From a position about 3 cables NNW of Sorrento Pier (38°20′·2S, 144°44′·6E) the track continues SE, passing (with positions from Sorrento Pier):

Between Sorrento Pier and No 4 Beacon (port hand) (2 cables NNE), thence:

SW of No 6 (2½ cables E) and No 8 Beacons (port hand) (4 cables ESE), thence:

2 NE of No 3 Buoy (starboard hand) (1 mile SE) marking the edge of the bank fronting The Sisters. The Sisters are a prominent double point of limestone formation, about 18 m high. A light is displayed from the end of a jetty 2 cables W of The Sisters. Thence:

NE of Camerons Bight (1½miles SE). A marina with a L-shaped head lies on the SE side of this bight.

The track then leads E into Capel Sound, passing:

S of No 10 Beacon (port hand) (2¼ miles SE) and No 12 Beacon (port hand) (3 miles ESE) marking the S side of South Sand, thence:

3 N of White Cliffs (3½miles SE), a limestone formation, 24 m high, on which a beacon (white) stands. It is the most remarkable feature on this coast. Thence:

N of Rye Jetty (4 miles SE) (4.63).

From N of Rye Jetty (38°22′S, 144°49′E) the track then leads ENE through Capel Sound, passing (with positions from Rye Jetty):

SSE of an historic wreck (2¾ miles NE), thence:

NNW of Rosebud Jetty (4 miles ESE) (4.64), thence:

4 SSE of No 19 Light-beacon (starboard hand) (4½miles ENE), marking the E end of South Channel (4.34), thence:

To a position about 1 mile E of Dromana Jetty (7 miles ENE) (4.65) allowing access to the open waters in the S part of Port Phillip.

Useful marks:

A series of beacons (white) standing between 1 and 3 cables off the shore from Camerons Bight (38°21′S, 144°46′E) to Dromana 9 miles ENE.

Eastern Lighthouse (38°21′S, 144°56′E) (4.36).

Hovell Pile Light (38°19′·7S, 144°53′·8E) (4.35).

Minor channels

Chart Aus 144

Point Lonsdale Reef

4.47

1 **Small craft channels.** A channel with a least depth of 1·8 m leads through Point Lonsdale Reef (4.27), extending SE from Point Lonsdale (38°18′S, 144°37′E) (4.24), about 1 cable from the point. Also, small vessels drawing less than 4·3 m may pass between Point Lonsdale Reef and Lonsdale Rock, 4 cables SE.

Local knowledge is required.

Chart Aus 158

Loelia Channel

4.48

1 Loelia Channel (38°14′S, 144°44′E) leads between William Sand and West Middle Sand, a bank with a least depth of 0·6 m over it; a 2·7 m bar extends across its S end, 5 cables ESE of No 5 Light-beacon (38°14′·9S, 144°43′·1E). This channel is unmarked.

Local knowledge is required.

Symonds Channel

4.49

1 Symonds Channel leads between Popes Eye Bank (38°17′S, 144°42′E) and West Middle Sand on its W side and Great Sand on its E side.

It is entered at its S end between Popes Eye Light-beacon (38°17′·4S, 144°41′·2E) (4.34) and Caisson M, (1¾ miles E) (4.35). Its N entrance is S of Symonds Light-beacon (port hand) (38°13′·7S, 144°48′·4E).

2 A shoal, with a least depth of 4·6 m over it, lies in the middle of the fairway about 1 mile W of the N entrance. In the S entrance to the channel there is a spoil ground, the limits of which are shown on the chart.

Local knowledge is required.

Pinnace Channel

4.50

1 Pinnace Channel (38°17′S, 144°48′E) separates Great Sand from Middle Ground and is unmarked. A shoal, with a depth of 1·2 m over it, lies near its S end.

Local knowledge is required.

Rye Channel

4.51

1 Rye Channel (38°20′S, 144°48′E) leads SSE from the middle of South Channel (4.34) to Capel Sound giving an alternative approach to the jetties at Rye (4.63) and Rosebud (4.64). It has a least charted depth of 4·8 m at its N entrance.

A light-beacon (pile) marks the S side of the bank, with a least depth of 1·8 m over it, which borders the E side of Rye Channel.

Local knowledge is required.

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Anchorages

Chart Aus 144

Queenscliff

4.52

1 Anchorage may be obtained, as shown on the chart, in a depth of 11 m, 6 cables E of Queenscliff Low Light (38°16′·5S, 144°39′·5E) (4.27).

Quarantine Station

4.53

1 If it is necessary to anchor off the Quarantine Station (38°18′·8S, 144°41′·6E) (4.44) a vessel should anchor, as shown on the chart, 5¾cables N of Quarantine Light (38°18′·7S, 144°41′·7E), in a depth of 15 m.

Symonds Channel

4.54

1 Anchorage may be obtained in a depth of about 7 m, as shown on the chart, 1¾miles E of The Annulus (38°16′·6S, 144°41′·9E) (4.38).

Queenscliff

Charts Aus 144, Aus 143 plan of Queenscliff.

General information

4.55

1 Queenscliff (38°16′S, 144°40′E) situated on a narrow spit of land behind Shortland Bluff has a jetty, a pier and a boat harbour.

A vehicular ferry runs between Queenscliff and Sorrento (38°20′·2S, 144°44′·6E) (4.62).

2 **Local knowledge** is required.

Caution. Depths are subject to unpredictable and rapid changes although regular dredging takes place to maintain a depth of 3·0 m in the vicinity of the leading line.

Directions for entering Queenscliff Boat Harbour

4.56

1 From a position about 1 mile E of Queenscliff High Light (38°16′·4S, 144°39′·6E) (4.27), the alignment (307½) of the following lights leads to the harbour entrance passing close NE of a light-beacon (port hand) standing 2½cables SE of the harbour entrance:

Front light (mast, 4 m in height) (38°15′·9S, 144°40′·3E).

Rear light (492 m from front light).

Berths

4.57

1 **Pilot Jetty.** This jetty, which extends from the N end of Shortland Bluff, is maintained solely for the use of pilots.

Queenscliff Pier. The pier extends 1 cable SE from a position 2½cables NE of the pilot jetty. A light is displayed from the head of the pier.

2 **Queenscliff Boat Harbour.** This harbour, lying between South Wall and North Wall, has berths for small craft and a ferry terminal. A light (mast, 4 m in height) is displayed from the E end of the South Wall which also marks the ferry terminal breakwater.

Supplies

4.58

1 Fresh water available from Queenscliff Pier.

Minor berths

Chart Aus 158

Swan Bay Jetty

4.59

1 Swan Bay Jetty (38°13′·8S, 144°39′·2E) lies on the W side of Swan Bay, which is shallow and mainly filled with mud flats. A light is displayed from the head of the jetty.

Swan Bay is approached from the S end of Coles Channel (4.42) and entered between Edwards Point (38°13′S, 144°42′E) and Black Billy on the N side and Duck Island (wooded) on the S side, 5 cables SW.

A channel with a least depth of 0·9 m, marked by light-beacons and beacons (lateral), leads to the jetty.

Local knowledge is required.

Swan Island Docks

4.60

1 Swan Island Docks (38°14′·6S, 144°41′·6E), situated 3½cables WNW of Swan Point, lies within naval waters (4.21). The docks consist of two L-shaped jetties.

A channel with a least depth of 2·4 m, marked by beacons (starboard hand), leads from E of Swan Point to the docks.

Local knowledge is required.

Chart Aus 144

Portsea

4.61

1 Portsea Pier (38°19′S, 144°43′E) lies at the head of Weeroona Bay which indents the coast between Police Point and Point Franklin. The bay is backed by a continuation of a yellow bluff upon which the town of Portsea stands.

The pier has an L-shaped head with a depth of 3 m close NNE. There is a boat landing on the E side of the pier which is illuminated at night; a light (metal column, 5 m in height) is displayed from the pierhead.

Sorrento

4.62

1 Sorrento (38°20′·2S, 144°44′·6E), a town about midway between Point King and The Sisters, is joined W to Portsea. It serves as the terminal for the vehicular ferry connecting Sorrento with Queenscliff (4.55).

It has a T-shaped jetty with a depth of 3·2 m alongside. A boat landing place lies on the W side of the jetty.

2 A set of leading lights is displayed from the head of the jetty. A description of these lights, and the approach to the jetty, is given in the directions for the inshore channel at 4.44.

A small craft anchorage, with depths of 1·8 m to 3·7 m, lies close SE of Sorrento Pier.

Chart Aus 158

Rye

4.63

1 Rye (38°22′S, 144°49′E), a town lying 3 cables ESE of White Cliffs (4.46), has a jetty with a depth of 4·3 m

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alongside the outer end of its L-shaped head. A light (column, 4 m in height) is displayed from the head of the jetty.

A boat ramp is situated close W of the jetty being approached through a channel marked by beacons (starboard hand).

Rosebud

4.64

1 Rosebud (38°22′S, 144°54′E), a small town lying on the coast about 1 mile E of Tootgaroot Creek, has a jetty for the use of boats.

An anchorage and approach to this jetty has been dredged to a depth of 1·5 m; boats moor here, being sheltered by the banks to the N. A light (column, 5 m in height) is displayed from the head of the jetty.

Dromana

4.65

1 Dromana (38°20′S, 144°58′E), a small town, lies about 2½miles NE of Rosebud.

A pier fronts the town, and a light (column, 5 m in height) is displayed from the head of the pier.

PORT PHILLIP — WESTERN PART

GENERAL INFORMATION

Charts Aus 143, Aus 157

Area covered

4.66

1 This section covers the W part of Port Phillip which is entered between Point George (38°08′S, 144°42′E) and the mouth of Werribee River, 9 miles N. This area, known as Western Arm, extends 16 miles WSW to its head and includes the port and city of Geelong.

It also includes directions for the approach to Western Arm from the E end of South Channel and is arranged as follows:

Approaches to Geelong (4.69).
Port of Geelong (4.77).

Water levels

4.67

1 See 4.14.

Marine farms

4.68

1 Marine farms are found in the vicinity of the approaches to Geelong in the following positions:

Five cables N of Grassy Point (38°07′·3S, 144°41′·3E).
Five cables S of Bates Point (38°05′·1S, 144°27′·3E).
In position 38°03′S, 144°38′E, 3 miles N of Point Richards. On the N side of this marine farm lies Portarlington Artificial Reef, marked by a buoy (special).

2 Off Bellarine Bank, 1½ miles N of Clifton Springs (38°09′·5S, 144°34′·0E).

The farms are generally marked by beacons and buoys, which may be lit, and contain numerous submerged obstructions and rafts and therefore should be given a wide berth. Their charted positions are approximate.

APPROACHES TO GEELONG

General information

Charts Aus 143, Aus 157

Route

4.69

1 From a position E of Hovell Pile Light (38°19′·7S, 144°53′·8E) the route leads NW for 16½ miles to the vicinity of Prince George Light-beacon (38°06′·5S, 144°44′·1E), and then WNW for a further 3½ miles to a position close by Point Richards Entrance Channel Light-beacon, 1¾ miles N of Harding Reach (38°07′S, 144°40′E).

Topography

4.70

1 From Saint Leonards (38°10′S, 144°43′E) to Indented Head, 1½ miles N, the shoreline is backed by low bluffs, the most notable of which are: a bold red bluff, 15 m high, close N of Saint Leonards Jetty; and North Red Bluff, 9 m high, standing about 1 mile N of the bold red bluff. The shore between is low and fronts a salt lake but changes at the bluff from a sandy beach to ironstone pebbles.

2 Between Indented Head and Point George, 1¼miles NNW, the shore is low and wooded with the roofs of houses showing above it. From Point George to Harding Reach, a point 2 miles WNW, the shore remains low, but then to Portarlington, 6 cables farther W, it is formed by yellow bluffs, 18 m high.

3 On the NW side of the entrance to Western Arm, between the entrance to Little River (38°00′S, 144°35′E) and the entrance to Werribee River, 5 miles ENE, the coast is low, flat and dominated by Station Peak (37°57′S, 144°25′E) (4.24). The shore is bordered by plantations of cypress trees and a grassy hummock, 12 m high, stands 5 cables W of the entrance to Werribee River.

Principal marks

4.71

1 **Landmarks:**

Arthur's Seat (38°21′S, 144°57′E) (4.24).
Tower (elevation 176 m) (38°11′S, 144°36′E).
Water tower (elevation 81 m) (38°07′·6S, 144°38′·5E), green in colour.
Station Peak (37°57′S, 144°25′E) (4.24).

Major light:

Fawkner Light-beacon (37°57′S, 144°56′E) (4.111).

Other aid to navigation

4.72

1 **Racons:**

Prince George Light-beacon (38°06′·5S, 144°44′·1E).
Fawkner Light-beacon (37°57′S, 144°56′E).

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

Directions

(continued from 4.36)

4.73

1 From a position close E of Hovell Pile Light (38°19′·7S, 144°53′·8E) (4.35) the track leads NNW, passing (with positions from Hovell Pile Light):

ENE of the N entrance to Pinnace Channel (5 miles NW) (4.50), thence:
ENE of a light-buoy (E cardinal) (6¼miles NNW) close NE of a marine farm (4.108).

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2 The track then continues NW, passing:

NE of Symonds Light-beacon (7½miles NW), marking the N side of the N entrance to Symonds Channel (4.49), thence:

NE of West Channel Pile Light (10½ miles NW) (4.40), marking the N side of the N entrance to West Channel (4.37), thence:

3 NE of No 2 Light-beacon (port hand) (13¼miles NW), which marks the SE edge of Prince George Bank and which stands 1 mile E of Indented Head, a wooded point 3 m high on which stands a beacon (white, 1·5 m in height). Prince George Bank, with depths of less than 1·5 m over it in places, fronts the shore from Saint Leonards (38°10′S, 144°43′E) to Grassy Point, 3½miles NNW. Several reefs and patches, including those of Governor and Inner Governor Reefs, SE of Indented Head, lie on the bank and are marked by beacons. Thence:

4 NE of No 4 Light-beacon (port hand) (14¼miles NW) which stands 1½ miles E of Point George, low and grass covered which may be recognized by a lone building and a beacon (white) standing on the point. White Woman Rock, a basalt boulder, 1·2 m high, lies close off the point. Thence:

To a position about 5 cables NNE of Prince George Light-beacon (pile, port hand) (38°06′·5S, 144°44′·1E), which marks the NE extremity of Prince George Bank.

5 **At night** to clear Prince George Bank keep within the white sector (174°–278°), astern, of West Channel Pile Light (38°12′S, 144°45′E). The red sector (042°–174°) of this light covers the bank.

The track then leads WNW, passing (with positions from Prince George Light-beacon):

NNE of Prince George Bank (close SW). Dangerous patches on the N side of the bank are marked by piles. Thence:

NNE of Grassy Point (2¼ miles WSW), on which stands a beacon (white, 5 m in height), thence:

6 To a position about 1¾ miles N of Harding Reach (3¼miles W), close by Point Richards Channel Entrance Light-beacon (N cardinal). A beacon (white, 5 m in height) stands on Harding Reach. *(Directions for Geelong continue at 4.93)*

Minor berths

Saint Leonards

4.74

1 Saint Leonards (38°10′S, 144°43′E) has a jetty 119 m long with a depth of 3 m at the outer end on the N side. A curved breakwater extending S from the jetty head affords shelter for small craft.

A light (wooden post) is displayed from the end of the breakwater. The approach to the jetty is marked by a pile (port hand), situated 2 cables ESE of the end of the breakwater.

Hood Bight and Half Moon Bay

4.75

1 **Description.** Hood Bight (38°08′·6S, 144°43′·0E) and Half Moon Bay, separated by a low rocky point, lie close NW of Indented Head (4.73). A monument on the S side of Indented Head, where there is a boat landing, marks the point where Matthew Flinders landed in 1802.

Berths. There is a private jetty in Half Moon Bay close N of Hood Bight. A beacon (N cardinal) stands in the entrance to the bay.

2 On the S side of Hood Bight a jetty, with a depth at its outer end of 2·7 m, extends out from the shore close N of Indented Head.

Caution. The S side of the jetty, in Hood Bight, lies close to a reef, marked by a pile (port hand), extending ENE from Indented Head.

Portarlington

4.76

1 Portarlington (38°07′S, 144°39′E), a small town, has a jetty with two breakwaters extending from its E side. A light is displayed from the head of the N breakwater.

On the W side of the jetty there is berthing accommodation of 76 m from its head with depths of 3·4 to 4·0 m alongside. On the E side there is a depth of 2·7 m alongside the inner side of the N breakwater and a depth of 1·2 m alongside the inner side of the S breakwater; they afford shelter for small craft.

PORT OF GEELONG

General information

Chart Aus 157

Position

4.77

1 The port of Geelong (38°07′S, 144°23′E) lies in Corio Bay at the head of the W arm of Port Phillip.

The city of Geelong (38°09′S, 144°22′E), lies in the SW corner of Corio Bay.

Function

4.78

1 Geelong is Australia's principal port for the export of grain. Other exports include petroleum products, meat, livestock, explosives and general cargo. Imports include crude oil, petroleum products, chemicals, phosphate rock, sulphur, steel, alumina and general cargo. Most cargoes are handled in bulk form.

City of Geelong has an estimated population in 2004 of 159 900.

Topography

4.79

1 **Western Arm southern shore.** From Portarlington (38°07′S, 144°39′E) (4.76) to Point Richards, 1 mile W, and for a further 1½ miles SW of the point, the shore is low and bare. Thence it is formed of bold yellow bluffs, about 27 m high, which extend SW for 6 miles and upon which stand numerous buildings.

Between Point Henry (38°08′S, 144°25′E) and Limeburners Point, 2 miles SW, the shore of Stingaree Bay, which is shallow, is low and backed by salt flats but there are low cliffs near Limeburners Point.

2 **Western Arm northern shore.** The N shore is low with the most significant feature being The Sand Hummocks, extending from 1 to 2½miles SW of Kirk Point (38°02′S, 144°33′E). These consist of two narrow sandy promontories fronting a mangrove-fringed lagoon which lies at the head of a shallow bight forming the shore between Kirk Point and Point Wilson, 4 miles SSW. A drying sand bank closes the entrance to the lagoon between the heads of the promontories.

3 Between Point Wilson, which is fringed with mangroves, and Point Lillias, 3 miles W, the coast is flat and bare of

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timber. Snake Island (38°05′S, 144°28′E), connected to the mainland by salt flats, lies midway between the points. The island separates two shallow bays, and a grass hummock, 18 m high, locally known as Snipe Hill, stands about 2½cables inland.

From Point Lillias, a grassy point 6 m high, fringed with rocks, to Point Abeona, 2 miles WNW, the coast is backed by commercial salt beds.

Depths

4.80

1 Between Point Richards (38°07′S, 144°38′E) and Point Henry, 10 miles WSW, the shore is fronted by a bank with depths of less than 5 m over it extending about 5 cables offshore. The NE part of this bank for about 1½miles SW of Point Richards is known as Point Richards Bank, thence for about 3 miles farther SW as Bellarine Bank and thence to Point Henry as Curlewis Bank.

A bar, through which Hopetoun Channel (4.90) passes, fronts Corio Bay between the entrance points of Point Henry (38°08′S, 144°25′E) and Point Lillias, to the N. The bar has depths of less than 5 m over it and dries in places.

2 On the N side of Western Arm between Little River (38°00′S, 144°36′E), in the entrance of which lies a bar with a depth of 0·6 m over it, and Point Wilson, 6½miles SW, the shore is fronted by a bank, with depths of less than 5·0 m over it, which at Long Reef, Arthur the Great Spit, Point Wilson Bank and Wilson Spit extends between 1 and 2 miles offshore. At the outer end of Arthur the Great Spit lies an isolated shoal marked by Arthur the Great Buoy (starboard hand).

Traffic

4.81

1 In 2003 the port was used by 479 vessels having a total of 20 008 404 dwt.

Port Authority

4.82

1 TOLL Geelong Port, 65 Brougham Street, (PO Box 344), Geelong, Victoria 3220. The port authority is responsible for the port land and berths.

Website: www.tollports.com.au

The commercial navigation channels leading to the berths within the port are the responsibility of the Victorian Channels Authority; see 4.3.

Limiting conditions

4.83

1 **Controlling depths.** The main channels to the principal wharves in Corio Bay have a maintained depth of 12·3 m.

Point Richards Passing Channel has depths of 7·5 m to 10.0 m, as shown on the chart.

Wilson Spit Passing Channel has a maintained depth of 7·0 m

2 **Tidal levels.** See information in *Admiralty Tide Tables*. Mean maximum range about 0·9 m; meam minimum range about 0·2 m.

Maximum size of vessel handled. Largest vessel: LOA 265·2 m, beam 45·7 m, 72 100 grt.

Point Henry Pier. Maximum size of vessel handled: length 209 m, draught 11·4 m.

Arrival information

Vessel Traffic Service

4.84

1 Geelong Port Marine Control co-ordinates the movement of shipping within the Port of Geelong.

Inward-bound vessels should establish contact with Point Lonsdale Signal Station (4.10) and on clearing the South or West Channels make contact with Geelong Port Marine Control.

2 Outward-bound vessels should maintain contact with Geelong Port Marine Control until communication is established with Point Lonsdale Signal Station, or if proceeding to Melbourne with Melbourne Harbour Control Centre (4.133).

For details see *Admiralty List of Radio Signals Volume 6 (4)*.

Anchorages

4.85

1 **Corio Bay.** There are three anchorage areas, with limited space, within the bay, designated as Western, Eastern and Southern; the limits are shown on the chart. The bottom is soft mud and holding is bad; depths vary from 7·4 to 9·1 m.

All vessels within the port must anchor as directed by the Harbour Master and main engines may not be immobilized without permission.

2 **Outer anchorage.** Vessels unable to anchor in Corio Bay due to draught restrictions may anchor to the S and E of Point Richards Channel Entrance Light-beacon (38°05′·1S, 144°39′·9E), in depths of 12·5 to 15·0 m.

Explosives. An explosives anchorage, with a depth of about 6 m, lies 7 cables NNE of the head of Point Wilson Pier (38°06′S, 144°32′E); the limits are shown on the chart. Vessels carrying explosives, when required to anchor, must do so within this area. The use of the anchorage is limited to vessels carrying less than 300 tonnes of explosives.

Pilotage and tugs

4.86

1 **Pilotage**, which is provided by Port Phillip Sea Pilot Service, is compulsory for merchant vessels; see 4.4.

Tugs are available.

Traffic regulation

4.87

1 In Hopetoun channel speed is restricted to 7 kn

Regulations concerning entry

4.88

1 The following information is an extract of the *Harbour Master's Directions* from the *Port Waters of Geelong and Melbourne Operating Handbook,* the latest edition of which should be obtained on arrival:

3.6.1 Traffic control.

(1) The Master of a vessel shall not enter Point Richards Channel inwards, or depart from a berth or anchorage in Corio Bay, without prior permission of Geelong Port Marine Control (4.84).

2 (2) The Master of an outward-bound vessel proceeding to Melbourne shall, on passing Point Richards Entrance Beacon, advise Geelong Port Marine Control of ETA at Fawkner Beacon.

(3) The Geelong main shipping channels are used for one-way traffic only; however two-way traffic may be permitted using Passing Channels (subject to certain conditions).

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Bay City Marina *Cunningham Pier*

South part of Geelong Harbour from NNE (4.90)
(Original dated 1998)

(4) The movement of bunker barges within Geelong port waters shall be at the direction of Geelong Port Marine Control.

3 **3.6.3 Maximum allowable draught.**

(1) The Master of a vessel shall observe the following requirements with respect to maximum allowable draught:

a) For all channels, except the Point Henry Channel, 11·6 m with tide, 10·8 m without tide.

b) For the Point Henry Channel, 11·3 m with tide, 10·5 m without tide.

4 (2) The Master of a vessel with a draught exceeding 9·5 m shall insure that the speed of the vessel does not exceed 8 kn in order to keep the effect of squat at 0·6 m or less. A further reduction in speed may be required when transiting sections of the channel where the channel profile, due to "blockage", is likely to increase the effect of squat. This applies in particular to vessels with a beam greater than 35 m.

5 (3) An under-keel clearance of at least 0·6 m is required, at all times, when manoeuvring within Corio Quay, swinging basins, and alongside berths.

(4) The Master of a vessel shall ensure that the vessel remains afloat whilst alongside a berth.

Navigation at night. The following vessels are restricted to daylight navigation, daylight being defined as 30 minutes before sunrise to 30 minutes after sunset:

6 **3.6.2 Restricted night navigation.**

(1) The Master of a woodchip carrier, unless authorised otherwise by the Harbour Master, shall navigate Geelong port waters in daylight hours only.

Quarantine

4.89

1 Geelong is a first port of entry. The quarantine line referred to in the *Quarantine Act* (1.47) is a line drawn between Limeburners Point (38°09′S, 144°23′E) to the mouth of Limeburners Bay, 4 miles N. Vessels in quarantine must anchor as directed by the Harbour Master.

Harbour

General layout

4.90

1 The principal berths for the port of Geelong are situated on the W and NW side of Corio Bay. Corio Bay is entered between Point Henry (38°08′S, 144°25′E), on the S side, and Point Lillias 2¼ miles NNE, on the N side of Western Arm. Access is through Point Richards Channel, Wilson Spit Channel and Hopetoun Channel.

2 There is also a berth at Point Henry, on the SW side of the Outer Harbour, for the discharge of alumina, and another at Point Wilson (38°06′S, 144°30′E), on the NE side of the Outer Harbour.

Tidal streams

4.91

1 The tidal streams in Western Arm are always feeble and irregular, except when between Nos 5 and 6 Light-beacons in Hopetoun Channel, where the stream crosses the bar between Point Henry and Point Lillias. The out-going stream here has a rate of 1 kn during its second quarter. At the E end of Wilson Spit a slight cross set of the tidal stream is perceptible.

For information on water levels within Port Phillip see 4.14.

Landmarks

4.92

1 Water tower (38°07′·6S, 144°38′·5E) (4.71).
Tower (38°11′S, 144°36′E) (4.71).
Tower (conspicuous) (38°08′S, 144°25′E) at the Alcoa Alumina works on Point Henry.

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Tower (elevation 64 m) (38°09′·2S, 144°23′·3E).
Silos (38°06′·8S, 144°21′·7E) behind the Bulk Grain Piers.

2 Chimney (conspicuous) (38°05′·8S, 144°22′·7E) at the phosphate works behind Lascelles Wharf.
Chimney (orange and white bands, elevation 150 m) (38°04′·7S, 144°23′·0E) among refinery towers.
Geelong Grammar School Clock Tower (38°04′·3S, 144°23′·9E).
Avalon Air Control Tower (38°02′·5S, 144°28′·5E) together with hangers and other buildings.

Directions for entering harbour

(continued from 4.73)

4.93

1 **Route.** The route passes through Point Richards Channel, Wilson Spit Channel, Hopetoun Channel and Corio Channel to the berths on the W and NW sides of Corio Bay. The sides of the channels are marked by pile light-beacons (lateral and cardinal), except for a buoy (N cardinal) marking the elbow (38°08′S, 144°32′E) of the junction between Point Richards Channel and Wilson Spit Channel.

2 **Caution.** Careful steering is necessary in these channels, especially between Hopetoun Channel No 5 and No 6 Light-beacons where tidal influence is felt, and at the E approach to Wilson Spit Channel. For further detail on tidal streams see 4.91.

3 **Directions.** From a position about 1¾miles N of Harding Reach (38°07′S, 144°40′E) the track passes close N of Point Richards Channel Entrance Light-beacon (N cardinal). It then leads WSW and SW in mid-channel for a total distance of about 7 miles to the vicinity of the light-buoy (N cardinal) marking the junction with Wilson Spit Channel; an underwater rock, with a depth of 8·8 m over it, lies close S of the channel, about 3½cables W of this light-buoy.

Point Richards Passing Channel (4.88), 200 m in width, lies immediately S of Point Richards Channel, as shown on the chart.

4 The track through Wilson Spit Channel leads WNW in mid-channel for about 4 miles to the vicinity of No 16 Light-beacon (38°07′·2S, 144°27′·4E), off the entrance to Point Henry Pier Channel (4.97).

Wilson Spit Passing Channel (4.88), 200 m in width, lies immediately S of Wilson Spit Channel between No 6 Light-beacon (38°07′·7S, 144°30′·0E) and No 16 Light-beacon (38°07′·2S, 144°27′·4E), as shown on the chart.

5 Thence Hopetoun Channel leads W in mid-channel for 3½miles into Corio Bay.

On passing No 16 Light-beacon, near the W end of Hopetoun Channel, vessels drawing less than 8·4 m should proceed direct to anchorage or berth. Vessels drawing from 8·4 to 10·5 m continue in the dredged channel as far as No 15 and No 18 Light-beacons and proceed thence by City Channel (4.99), or N and NNE through Corio Channel, marked by light-beacons (lateral), passing E of the Bulk Grain Piers.

6 Thence the alignment (315°) of the following set of leading lights are occasionally displayed for the approach to Refinery Pier No 1 Berth:
Front light (38°05′·3S, 144°23′·2E) close off the centre of the pier.
Rear light (585 m from front light) at the root of the pier.

4.94

1 **Useful marks on south shore:**
Beacon (white) (38°07′·1S, 144°36′·8E), near the SW end of a salt lake. No 1 Beacon stands 7 cables NW of this beacon marking the edge of the bank to the W of Point Richards.
Spray Farm Beacon (white, 5 m in height) (38°07′·8S, 144°35′·7E).
Star Beacon (white, 5 m in height) (38°08′·6S, 144°34′·5E).
Bellarine Beacon (white, 5 m in height) (38°09′·8S, 144°29′·8E).

2 Dolphin with a S cardinal topmark (38°08′·6S, 144°29′·7E).
Beacon (black, 5 m in height) (38°07′·7S, 144°25′·5E) standing close within Point Henry with the conspicuous tower (4.92) of Alcoa Alumina works 3½cables SSW of it and the Point Henry Operations Control Centre about midway between.
Salt works building (red) (38°09′·6S, 144°23′·6E).
Beacon (white), standing close S of Limeburners Point (38°08′·8S, 144°23′·0E).

4.95

1 **Useful marks on north shore:**
Little River Beacon (white, 4 m in height) (38°00′·4S, 144°35′·6E).
Long Reef Beacon (S cardinal) (38°01′·9S, 144°35′·6E), marking a dangerous rock. A rock awash lies 2¾ cables WNW of the beacon.
Kirk Point Beacon (38°02′·3S, 144°35′·4E); the ruins of a jetty lie 2 cables W of the beacon.
Steamboat Beacon (pile, green, triangular topmark) (38°06′·8S, 144°30′·9E) marking the seaward end of Point Wilson Bank.

2 Point Wilson Beacon (white) (38°05′·6S, 144°30′·4E) with a tank about 3 cables NNW of it. There is also another beacon (S cardinal) standing 5¼cables SW of the point.
Beacon (S cardinal) (38°05′·5S, 144°28′·4E) marking a wreck, awash at HW, which lies near the outer end of a rocky spit extending 4 cables S of Snake Island.
Beacon (white) (38°05′·5S, 144°26′·4E) standing 1¾cables NW of Point Lillias.

Chart Aus 157 plan Point Wilson Pier

Directions for Point Wilson Pier

4.96

1 **Leading lights:**
Front light (triangular beacon, point up) (38°05′·9S, 144°32′·2E).
Rear light (triangular beacon, point down) (212 m W from front light).

From a position 4½ cables SW of No 8 Light-beacon (38°05′·8S, 144°36′·1E), in Point Richards Channel, the alignment (273½) of these leading lights leads to the pier passing S of the inner and outer light-beacons (starboard hand), 4 and 7 cables E of the pierhead.

2 In February 2000 a survey of the approaches to the pier detected a least depth of 9 m but was unable to locate an 8·3 m patch, reported (December 1999) to lie in line with the leading lights.

Caution. A rocky patch, with a depth of 8·4 m over it, marked by a buoy (starboard hand), lies 1¼cables NNE of the pierhead.

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Point Wilson Pier from E (4.96)
(Original dated 1998)

Chart Aus 157 plan Point Henry Pier

Directions for Point Henry Pier

4.97

1 **Leading lights:**

Front light (neon rectangle) (38°07′·8S, 144°26′·2E) displayed 250 m WSW from the pierhead.

Rear light (similar structure) (6¾ cables SW of front light) displayed from the shore.

From a position about 2 cables W of No 16 Light-beacon (38°07′·2S, 144°27′·4E), at the W end of Wilson Spit Channel, the alignment (233¾°) of these lights leads through a narrow channel, with a maintained depth of 12 m, marked by light-beacons (port hand) and a light-buoy (starboard hand), to the berth.



Point Henry Pier from NE (4.97)
(Original dated 1998)

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2 A light is displayed from a dolphin close to the pierhead and a swinging area,with a maintained depth of 8·2 m, lies E of the pierhead.

A pair of light-beacons (red and white bands) in line bearing 233¾ and a pair of beacons (green and white bands, front topmark triangular point up, rear topmark triangular point down) in line bearing 246¼, mark the NW edges of the dredged channel and berth area respectively.

Side channels

Chart Aus 157

North Channel

4.98

1 **Description.** North Channel provides an alternative entrance to Corio Bay, but, with a least depth of 3·1 m (1986) and a least width of ¼ cable, it is only suitable for recreational craft with a draught of 2·7 m or less.

Local knowledge is required.

Directions. From a position 2 cables ENE of No 2 Light-beacon (38°07′·2S, 144°26′·7E), at the E end of Hopetoun Channel, the track leads towards Bird Rock Beacon (S cardinal) which stands on a rock, 3 cables SW of Lillias Point (38°06′S, 144°27′E) (4.79).

2 Thence, when a position is reached about 9 cables from Bird Rock Beacon, the track leads NW through the channel, marked by beacons (lateral), which curves to the W into Corio Bay.

Useful marks:

Beacon (pile, starboard hand) (38°06′·3S, 144°27′·2E) marking the seaward end of the reef extending SSE from Point Lillias.

Beacon (W cardinal) (38°06′·2S, 144°24′·8E) marking the W side of the bar fronting Corio Bay.

City Channel

4.99

1 City Channel, with a charted depth of 8·5 m, leads towards Cunningham Pier (38°08′·5S, 144°21′·7E) and the small craft berths situated along the waterfront of the City of Geelong.

The channel is entered close W of No 18 Light-beacon (38°07′·7S, 144°22′·2E), at the W end of Hopetoun Channel, and leads S between two light-beacons (lateral) towards the berths.

Berths

Geelong approaches and Outer Harbour

4.100

1 **Point Wilson Pier** (38°06′S, 144°32′E) extends 1¾miles ESE from a position 1½cables N of Point Wilson. A berth, 168 m long, with a maximum permitted draught of 8·5 m alongside, lies on each side of the pierhead; a dolphin lies close off the pierhead.

2 In bad weather these exposed berths may be untenable.

Small craft may not approach within 200 m of any part of the pier.

The pier is the property of the Australian Government. Port of Geelong Authority jurisdiction extends to vessels alongside the jetty, unless inconsistent with Commonwealth Regulations, when the latter is paramount.

3 **Point Henry Pier** (38°08′S, 144°26′E) extends 1200 m ENE from the E side of Point Henry. No 1 berth on the N side is 152 m long, with a depth alongside of 12 m, and is used for unloading alumina.

Corio Bay (Inner Harbour)

4.101

1 **Cunningham Pier** (38°08′·5S, 144°21′·7E): berth 215 m long on the E side of the pier and another, 200 m long, on the W side. Maximum draught 7·9 m; maximum length 186 m. The pier is used by cruise and naval vessels.

Bulk Grain Piers (38°06′·9S, 144°21′·8E).

South Pier: No 1 Berth; length 201 m, depth alongside 10·5 m. No 2 Berth; length 201 m, depth alongside 12·3 m.

2 North Pier: No 3 Berth; length 168 m, maximum length of vessel 225 m, depth alongside 12·3 m.

The normal maximum length of vessel allowed at Berth Nos 1 and 2 is 210 m and 192 m, respectively, but vessels up to 225 m in length have been accommodated.

Corio Quay (38°06′·4S, 144°21′·8E) contains four berths, the numbers of which are shown on the chart.

3 Longest and deepest berths: North No 1 and 2, both with a length of 183 m and a depth alongside of 11·0 m. Maximum length of vessel allowed at these berths is 192 m.

South No 1 has a Ro-Ro ramp, with a width of 8·2 m, at its W end. Maximum length of vessel allowed is 180 m.

4 **Lascelles Wharf** (38°05′·8S, 144°22′·9E): length 621 m, depth alongside 12·3 m; used for bulk handling.

Refinery Pier (38°05′·4S, 144°23′·3E) containing four berths with a depth alongside of 12·3 m:

Berths Nos 1 and 2; both 213 m long; can accommodate tankers up to 30 000 tonnes and 185 m LOA.

5 Berths Nos 3 and 4; both 275 m long; can accommodate tankers up to 30 000 tonnes and 230 m and 265 m LOA respectively.

Caution. The available depths at these berths may change. For the latest details the port authority should be consulted.

Port services

4.102

1 **Repairs.** Large repairs can be carried out. There is a patent slip, with a capacity of 1000 tonnes, situated on the N side of Rippleside Pier (38°07′·7S, 144°21′·6E).

Other facilities. Deratting and deratting exemption certificates issued; floating crane with a capacity of 35 tonnes; reception facilities for oily waste; garbage disposal; hospitals.

Supplies. Fuel oil; fresh water; provisions.

Communications. There is an international airport for Melbourne situated at Tullamarine, 80 km distance. A heliport stands on the water front of the city of Geelong.

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North part of Geelong Harbour – Refinery Pier (4.101)
(Original dated 1997)
(Photograph – Port of Geelong Authority Pty Ltd)

PORT PHILLIP — NORTH AND EASTERN PART

GENERAL INFORMATION

Charts Aus 143, Aus 158

Area covered

4.103

1 This section covers the N and E part of Port Phillip from the E end of South Channel to River Yarra and includes a description of the port of Melbourne. It is arranged as follows:

Approaches to Melbourne (4.105).
Port of Melbourne (4.124).

Water levels

4.104

1 See 4.14.

APPROACHES TO MELBOURNE

General information

Charts Aus 143, Aus 158, Aus 155

Routes

4.105

1 The main approach (4.113) to Melbourne is made from the S having passed through the Heads and South Channel into Port Phillip. Thence from a position close E of Hovell Pile Light (38°19′·7S, 144°53′·8E), at the E end of South Channel, the route leads N across Port Phillip, for a distance of about 23½ miles, to a position in the vicinity of Fawkner Light-beacon (37°57′S, 144°56′E), at the entrance to Port Melbourne Channel.

2 For vessels using West Channel a similar approach (4.114) may be made, which leads NNE across Port Phillip for a distance of about 17 miles, from a position close E of West Channel Pile Light (38°11′·7S, 144°45′·3E), to Fawkner Light-beacon.

Also described in this sub-section is a route (4.115) linking Geelong with Melbourne which passes along the NW shore of Port Phillip.

Topography

4.106

1 **North-west shore.** From Campbells Cove (37°57′S, 144°44′E) to Point Cook, 2¼ miles ENE the coast is low, rocky and backed by salt lagoons. From Point Cook to Laverton Creek, which enters the sea 1¾ miles N, the bay is backed by low, swampy ground fronting lagoons.

From close E of Laverton Creek to the entrance to Kororoit Creek, 1½ miles WNW of Point Gellibrand (37°52′S, 144°54′E), the shore is backed by the houses of the suburb of Altona.

Between Kororoit Creek and Point Gellibrand the shore is backed by parkland; foul ground, with depths of less than 5 m, extends up to 3 cables off this shore.

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2 **East shore.** From Dromana Bay (38°19′S, 144°59′E) to Schnapper Point, 6 miles NNE, the shore is backed by hills. North of Frankston (38°09′S, 145°07′E) to Mordialloc, 8 miles N, the shore is low, wooded and well built over.

From Mordialloc, NNW towards Melbourne, the coast becomes higher with 12 m high yellow cliffs at Table Rock Point (38°00′S, 145°02′E). Between a position 2½cables NE of Picnic Point (37°57′S, 145°00′E) and Green Point, 1¼miles NW, the shore is rocky and formed by yellow bluffs from 12 to 15 m high.

Gas pipeline

4.107

1 There is a gas pipeline laid across the approach to Port Melbourne Channel. It leads NW from Mordialloc (38°01′S, 145°05′E) (4.119), on the E shore of Port Phillip, to a refinery at the head of Altona Bay (37°53′S, 144°50′E) (4.123) on the N shore, passing close SW of Fawkner Light-beacon. In the vicinity of Altona Bay the pipeline is marked by a light-beacon (special) and a light-buoy (special), as shown on the chart.

Mariners are cautioned not to anchor within 300 m of the pipeline. See 1.33 for further information on pipelines.

Marine farms and artificial reefs

4.108

1 **Marine farms** are found on the E side of Port Phillip in the following positions:

In Dromana Bay, 7 cables SW of Martha Point (38°18′S, 144°59′E).

In Balcombe Bay, 8 cables SW of Fisherman Point (38°14′S, 145°01′E).

In Beaumaris Bay (38°00′S, 145°03′E).

Lying off Mud Islands (4.35), two marine farms centered on (38°17′S, 144°51′E) and (38°15′S, 144°50′E).

The farms may contain submerged obstructions and rafts and therefore should be given a wide berth.

2 **Artificial reefs** are situated as follows:

Chelsea Artificial Reef lying 1½miles W of Chelsea (38°03′S, 145°07′E), a suburb of Melbourne. It has a depth of 8 m over it and is constructed of concrete pipes; a buoy (special) marks the reef.

Carrum Artificial Reef, lying 4 miles WSW of Chelsea, has a depth of 11·6 m over it. A dangerous wreck forms part of the reef.

Marine reserve

4.109

1 A marine reserve has been established in the vicinity of Point Cook (37°56′S, 144°48′E). Three pile beacons (special), marking the reserve, stand about 200 m offshore, 1½cables NE, 4 cables SSW and 7 cables SW respectively, of Point Cook.

Measured distance

4.110

1 Between Rickett's Point (38°00′S, 145°02′E) and Quiet Corner, 1 mile NW, there is a measured distance marked by similar pairs of beacons.

Front beacons (frame, white triangle topmark, point up).

2 Rear beacons (dark wood frame tower, triangle topmark, point down).

Distance 1853 m (6080 ft).

Running track 146½–326½.

Principal marks

4.111

1 **Landmarks:**

Arthur's Seat (38°21′S, 144°57′E) (4.24).

Red Bluff (elevation 34 m) (37°58′S, 145°00′E) the only bare cliff in the vicinity, reddish-coloured.

2 Concrete building (elevation 108 m) standing 1¼miles ENE of Red Bluff.

Building at Saint Kilda (37°52′S, 144°58′E).

Two buildings (37°50′S, 144°57′E), standing 3 cables apart, in South Melbourne.

Chimney (red obstruction light, elevation 183 m) (37°50′·6S, 144°53′·7E).

Building (37°52′·1S, 144°54′·2E) in Williamstown.

3 Refinery Tower (red obstruction light) (37°51′S, 144°51′E), standing about 3 miles WNW of Point Gellibrand.

Pine trees WSW of Point Cook (37°56′S, 144°48′E).

Water tower (elevation 37 m) (37°58′·5S, 144°41′·4E) at Werribee River.

Station Peak (37°57′S, 144°25′E) (4.24).

4 **Major lights:**

Fawkner Light-beacon (white round tower, red bands, on pile structure) (37°57′S, 144°56′E).

Port Melbourne Channel Direction Lights (white concrete tower, 26 m in height) (37°50′·3S, 144°55′·7E).

Other aids to navigation

4.112

1 **Racons:**

Prince George Light-beacon (38°06′·5S, 144°44′·1E).

Fawkner Light-beacon (37°57′S, 144°56′E).

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

Directions

(continued from 4.36)

Main approach

4.113

1 From a position close E of Hovell Pile Light (38°19′·7S, 144°53′·8E) the track leads N, passing (with positions from Hovell Pile Light):

W of Dromana Bay (3 miles ENE), fronted by Safety Beach, thence:

W of Martha Point (4½miles ENE) behind which lies Mount Martha, the summit of a well-timbered ridge which extends 3 miles E from the point. Thence:

2 W of Martha Cliff (5¾ miles NE). R1 Light-buoy (special) is moored 1¼ miles W of Martha Cliff. Balcombe Bay lies between Martha Cliff and Fisherman Point 3 miles NE. The bay is fronted by rocks and backed by a red granite rocky coast. Shag Rock, which is prominent, lies close offshore at the head of the bay. Thence:

3 W of Schnapper Point (9¼ miles NE), a narrow projection, 15 high, fronted by red granite boulders. A light (metal framework tower) is displayed from the head of the jetty on the NE side of the point.

Thence the track continues N across Port Phillip, clear of any dangers except that of a spoil ground (38°00′S, 144°53′E) (4.114), passing (with positions from Fawkner Light-beacon (37°57′S, 144°56′E)):

E of a light-buoy (special) (8 miles SSW), thence:

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4 W of Rickett's Point (5½ miles SE), which is flat with a height of 9 m. The outer edge of a reef, fronting the point, is marked by a light-beacon (starboard hand), a pile and a beacon (S cardinal). Thence:

W of Quiet Corner (4¾ miles SE), a cliffy point 15 m high. Black Rock, detached and awash, lies 2 cables off the point. Thence:

W of the S point of Half Moon Bay (4 miles ESE) (4.120). Thence:

5 W of Anonyma Shoal (3 miles ESE), marked by two light-beacons (E and W cardinal), and Yorkies Rock 4 cables NE of this shoal. Behind Anonyma Shoal and Yorkies Rock, foul ground, with depths of less than 5 m over it, extends up to 5 cables offshore, between Red Bluff and Picnic Point. Thence:

6 To the vicinity of Fawkner Light-beacon (4.111) which stands 3¼ miles W of Picnic Point. Picnic Point is well-defined, grassy and fringed with rocks. A green-roofed building, with a beacon (white triangular topmark, point up) close S, stands on the point.

Useful mark:

Green Point (37°55′·6S, 144°59′·1E) on which stands a war memorial (15 m in height).

(Directions continue for Melbourne at 4.144)

Charts Aus 143, Aus 157, Aus 155

West Channel to Fawkner Light-beacon

(continued from 4.41)

4.114

1 **Caution.** This route leads near a spoil ground in which there may be less water than charted; see also information on water levels at 4.14.

From a position close E of West Channel Pile Light (38°11′·7S, 144°45′·3E) (4.40) the track leads NNE, passing (with positions from West Channel Pile Light):

ESE of Prince George Bank (4 miles NNW) (4.73) marked by light-beacons, thence:

ESE of an historic wreck (7½ miles NNE), thence:

2 Clear of a light-buoy (special) (9 miles NE), thence:

ESE of the SE corner of a spoil ground (13 miles NNE), the limits of which are shown on the chart. The NW limit of the spoil ground is marked by a light-buoy (special). The least charted depth of 10·6 m lies in the NE corner.

The track then leads N to the vicinity of Fawkner Light-beacon (17 miles NNE) (4.111).

(Directions continue for Melbourne at 4.144)

Geelong to Melbourne

4.115

1 From a position in the vicinity of Point Richards Channel Entrance Light-beacon (38°05′·1S, 144°39′·9E), at the entrance to the Geelong harbour channels, the track leads NE, passing (with positions from Point Richards Channel Light-beacon):

SE of Portarlington Artificial Reef (2¼ miles NNW) (4.68) and the marine farm close SE, thence:

SE of a beacon (S cardinal) (3 miles NNW), known locally as Half-way Beacon, thence:

NW of Prince George Bank Light-beacon (3½ miles ESE) (4.73), and:

2 SE of Wedge Spit (4 miles N) which, with depths of less than 1·0 m over it, extends 1 mile S from Wedge Point. Wedge Point, with a beacon standing close offshore 3 cables ENE, is low, rounded and fronts a lagoon. Thence:

SE of a group of isolated shoals (2¾ miles NE), depending on draught, with depths of 10 m or less over them, thence:

SE of Werribee River entrance (6½ miles N) (4.121), thence:

3 SE of Campbells Cove (8½ miles NNE) (4.122), thence:

SE of Point Cook (11¼ miles NE) on which stands a beacon (white, triangle topmark, 5 m in height). A rocky spit, with a least depth of 0·9 m, extends 1 mile ESE of the point and is marked at its outer end by a light-beacon (E cardinal). Thence:

Between the light-beacon (special) (12 miles NE) marking the Outer Anchorage and the light-buoy (special) (12 miles ENE) marking the NW edge of a spoil ground, thence:

4 To the vicinity of Fawkner Light-beacon (14¾ miles NE) (4.111).

Caution. Target buoys are moored within a circular area centred 1½ miles SW of Point Cook. Vessels should give this area a wide berth, especially at night.

Useful mark:

Radio mast (red lights) (37°56′S, 144°45′E) at Point Cook airfield.

(Directions continue for Melbourne at 4.144)

Anchorages

4.116

1 Anchorage, over a bottom of mud and shells, may be obtained anywhere along the routes leading to the port of Melbourne from the N or E ends of the entrance channels, or from Geelong, except in the vicinity of the submarine pipeline (4.107) laid across the N part of Port Phillip and the spoil ground in position 38°12′S, 144°46′E.

However there is a designated Outer Anchorage (37°57′S, 144°52′E), marked by a light-beacon (special), 3 miles SE of Point Cook (4.115). There are depths of 10 to 16 m in this anchorage.

Minor berths

Charts Aus 158, Aus 143 plan of Mornington.

Mornington

4.117

1 **Description.** Mornington (38°13′S, 145°02′E), situated on the SE side of Port Phillip, stands in parkland behind Fisherman Bay and Schnapper Point. There are facilities for small craft on the S side of Fisherman Bay and on the E side of Schnapper Point.

2 Fisherman Bay, is entered between Fisherman Point (38°14′S, 145°02′E) and Schnapper Point 8 cables NNE. Fisherman Reef extends 3 cables N from Fisherman Point; an above-water rock, marked by a beacon (isolated danger), lies close within the outer end of the reef. Two further beacons (lateral) mark a passage through the reef between the above-water rock and the point. There is a boat ramp on the NE side of Fisherman Point.

3 **Berths.** A jetty, from the head of which a light (4.113) is displayed, extends 198 m NE from Schnapper Point. Depths alongside vary from 9·4 m at the head to 5·0 m half way along.

A wharf 61 m long lies on the SE side of the jetty; with a depth of 3·3 about 8 m off the wharf.

Three boat ramps and a slipway lie to the S of the wharf.

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Chart Aus 143

Frankston

4.118

1 **Description.** Frankston (38°09′S, 145°07′E) is a SE suburb of Melbourne. There is a large public hospital and several private ones in the suburb.

Berths. For small craft there is a T-shaped jetty with a light (post) displayed from the head of the jetty. There are also private jetties close E of Davey Point, 1½miles SW of Frankston Jetty.

2 **Caution.** Between Davey Point and Frankston, foul ground extends about 3 cables offshore with Wooley Reef, lying at the end of a spit of sand and rock extending 6 cables N of Davey Point. Wooley Reef is marked by a beacon (isolated danger). There is also a dangerous wreck 1 mile WNW of Wooley Reef.

3 **Useful marks:**

Beacon (N cardinal) off Davey Point (38°10′S, 145°05′E).

Beacon (W cardinal) standing 1 mile SW of Davey Point near Canadian Bay.

Chart Aus 155

Mordialloc

4.119

1 **Description.** Mordialloc (38°01′S, 145°05′E), a suburb of Melbourne, lies mainly on the N side of Mordialloc Creek which is used by fishing boats and recreational craft. The entrance to the creek is periodically dredged.

A jetty, with a depth of 2·7 m at its head, extends SW from the N entrance point of the creek. A light (post) is displayed from the head of the jetty and another light is displayed from the S side of the entrance to the creek.

Caution. A ledge of rocks, through which a gas pipeline is laid, extends 1 cable offshore N of Mordialloc Creek. For further information on the pipeline see 4.107.

Half Moon Bay

4.120

1 Half Moon Bay (37°58′S, 145°01′E), which contains a jetty and boat ramps, is entered 1 mile NNW of Quiet Corner (4.113).

A reef, with a depth of 1·5 m over its outer end, extends 4 cables NW from the S point. The entrance to the bay is fronted by the historic wreck *Cerberus,* from where Half Moon Bay Light (column, 4 m in height) is displayed. Close N of the jetty the shore is marked by beacons (special).

The jetty extends 110 m from the shore close E of the S entrance point.

Werribee River

4.121

1 **Description.** Werribee River (37°58′·5S, 144°41′·1E) lies on the NW side of Port Phillip halfway between Geelong and Melbourne. The entrance to the river may be recognised by a prominent water tower (4.111) standing on the N side of the river mouth.

2 **Directions.** The river is entered on the alignment (309½) of a set of leading lights (white triangles on posts) displayed from close within the entrance. This alignment leads across the bar towards a light-beacon (special), with a tide gauge, positioned 3½ cables SE of the river entrance. Pass close SW of the light-beacon and enter the river.

Caution. Depths of less than 1 m may be found on the leading line.

Berth. A small jetty lies 2 cables within the river entrance.

Campbells Cove

4.122

1 **Description.** Campbells Cove (37°57′S, 144°44′E) is a slight indentation in the NW coast of Port Phillip between a low point 2½miles NE of Werribee River entrance and a similar point 1½ miles farther ENE. Many fishing boats lie in this bay in fine weather, being hauled up skidways to their sheds when an onshore storm threatens.

2 **Berth.** A seaplane jetty is situated on the NE side of Campbells Cove. The jetty extends 1¾cables S.

Caution. There is a firing practice area, the limits of which are shown on the chart, to the SW of the seaplane jetty.

Useful marks:

Prominent chimney 4 cables W of root of jetty.

Radio mast (37°56′S, 144°45′E) (4.115).

Altona Bay

4.123

1 **Description.** Altona Bay (37°53′S, 144°50′E) lies between Point Cook and Point Gellibrand, 6 miles NE, and has facilities for small craft at Laverton Jetty and at the Altona Boat Ramp.

Laverton Jetty (37°52′·5S, 144°49′·8E), from where a light (column, 4 m in height) is displayed, has a depth of 1·2 m alongside.

Cautions. Submerged piles extend ¾ cable S from the head of Laverton Jetty and a gas pipeline passes through the NE side of Altona Bay; for further information about the pipeline see 4.107.

PORT OF MELBOURNE

General information

Charts Aus 155, Aus 154

Position

4.124

1 The port of Melbourne (37°50′S, 144°54′E) is situated within the entrance to River Yarra and on the N side of Hobson's Bay, at the N end of Port Phillip.

The city of Melbourne, standing on each side of River Yarra, is surrounded by numerous suburbs, the city rises gradually from the river but nowhere exceeds an elevation of 91 m.

Function

4.125

1 The port serves the city of Melbourne, which with its central position along with a network of railways and roads connecting it with a large part of Australia, assures for it a large export and import trade; it handles over 20% of the cargo passing through all Australian ports. Nearly 70% of the cargo handled is in containers making Melbourne one of the world's major container ports.

2 Principal imports are crude oil, vehicles, car parts, chemicals, fertilizers, timber and general cargo. Principal exports are wool, meat, hides and skins, fruit, petroleum products, dairy produce and general cargo.

The city of Melbourne, with a population estimated at 3 659 700 in 2004, is the capital of the State of Victoria and second city in Australia.

Traffic

4.126

1 In 2003 the port was used by 3172 vessels with a total of 62 477 438 dwt.

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Port Authority

4.127

1 Melbourne Port Corporation, Building A, World Trade Centre, Corner of Spencer and Flinders Streets, Melbourne, Victoria 3005. Melbourne Port Corporation is responsible for the port land and berths.

Website: www.portofmelbourne.com.au

Email: information@portofmelbourne.com.au

The commercial navigation channels leading to the berths within the port are the responsibility of the Victorian Channels Authority; see 4.3.

Limiting conditions

Controlling depth

4.128

1 Maximum draught of vessels using the port is controlled by the maximum permissible draught limits (4.12) at Port Phillip entrance and in South Channel, and by the depth alongside the berths. Vessels drawing 12·1 m may navigate these waters when the tidal rise is sufficient to provide the necessary under-keel clearance and when the weather conditions permit.

The following information is an extract of the *Harbour Master's Directions* from the *Port Waters of Geelong and Melbourne Operating Handbook*, the latest edition of which should be obtained on arrival:

3.7.5 Maximum allowable draught.

2 (1) The Master of a vessel shall observe the following requirements with respect to maximum allowable draught:

a) When navigating in the Port Melbourne Channel S of the junction of the Williamstown Channel, 12·1 m with tide, 11·6 m without tide. An under-keel clearance of at least 1·5 m is required.

3 b) When navigating in the Precautionary Area (4.139) to enter or exit the Williamstown Channel, 8·5 m with tide, 7·8 m without tide. An under-keel clearance of at least 1·2 m is required.

c) When navigating in the Port of Melbourne Channel N of its junction with the Williamstown Channel, 10·2 m with tide, 9·7 m without tide. An under-keel clearance of at least 1·2 m is required.

4 d) When navigating in the Williamstown Channel and River Yarra to Beacon No 52, 12·1 m with tide, 11·6 m without tide. An under-keel clearance of at least 1·2 m is required.

e) An under-keel clearance of at least 0·6 m is required when manoeuvring within docks, swinging basins and alongside berths.

(2) Masters must ensure that their vessel remains afloat whilst alongside a berth.

Vertical clearances

4.129

1 **West Gate Bridge** (37°49′·8S, 144°53′·9E), with a vertical clearance of 50·5 m and marked by lights, crosses River Yarra downstream of the main inner docks.

Bolte Bridge, with a vertical clearance of 25 m, and marked by lights, crosses River Yarra between the E end of No 22 Victoria Dock and No 21 South Wharf with a central pier positioned at 37°49′·2S, 144°55′·9E.

2 **Overhead power cables** span River Yarra in two places; 3½cables S of West Gate Bridge, with a safe overhead clearance of 59 m, and at the entrance to Victoria Dock, with a safe overhead clearance of 56 m, on the W side of Bolte Bridge.

Deepest and longest berth

4.130

1 Deepest berth: Swanson Dock (4.155).

Longest berth: Webb Dock No 4/5 (4.151).

Tidal levels

4.131

1 See information in *Admiralty Tide Tables*. Mean maximum range about 0·8 m; mean minimum range about 0·1 m.

Maximum size of vessel handled

4.132

1 **Mobil Flinders:** LOA 290 m, breadth 48 m, 149 235 dwt.

Arrival information

Vessel Traffic Service

4.133

1 Melbourne Harbour Control Centre co-ordinates the movement of shipping within the port. No vessel, except for small craft under 25 m in length not engaged in towing or licensed to carry passengers, should enter the port or proceed from her berth or anchorage without permission from Melbourne Harbour Control.

For details see *Admiralty List of Radio Signals Volume 6 (4)*. Positions of reporting points are shown on the chart.

Notice of ETA

4.134

1 The arrival information that is required to be sent is the same as for Port Phillip; see 4.4.

Anchorages

4.135

1 **Port Melbourne anchorage.** See also 4.116. Vessels awaiting a berth may anchor, according to draught, to the S of Point Gellibrand (37°52′S, 144°54′E) and to the W of longitude 144°55′·1E, keeping well clear of Port Melbourne Channel and the gas pipeline, as shown on the chart. For further information on the pipeline see 4.107.

Hobsons Bay anchorage. Shallow draught vessels may anchor in the fork between Williamstown and Port Melbourne Channels, in depths of 6·5 to 7·5 m.

Prohibited anchorages

4.136

Vessels should not anchor in any fairway, channel or river. A prohibited anchorage area extends across the pipeline area described in 4.137, as shown on the chart.

Anchorage is prohibited within the Precautionary area (4.139), E of Point Gellibrand.

Pipelines

4.137

1 An area in which several submarine pipelines and a sewer cross River Yarra, lies 2½ cables S of West Gate Bridge (37°49′·8S, 144°53′·9E), close to the Korevaar, Shell and BP bunker jetties.

See 1.33 for further information on pipelines.

Pilotage and tugs

4.138

1 **Pilotage**, which is provided by Port Phillip Sea Pilots, is compulsory for merchant vessels; see 4.4.

Tugs are available.

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Traffic regulations

4.139

1 **Precautionary area and speed limitations in port waters.** A precautionary area exists between Breakwater Pier (37°52′S, 144°55′E), Gellibrand Shoal Light-beacon, 7 cables S, and Port Melbourne Channel. The following information is an extract of the *Harbour Master's Directions* from the *Port Waters of Geelong and Melbourne Operating Handbook*:

2 **3.7.4 Precautionary area.**

(1) The precautionary area means the area off Point Gellibrand as delineated on Charts Aus 154 and Aus 155.

(2) Masters of vessels shall comply with the following when navigating the precautionary area:

3 a) When entering, transiting and leaving the precautionary area, vessels shall keep to the E when inward-bound and to the W when outward-bound, and;

b) any inward bound vessel using the precautionary area shall not hinder another vessel using the Port Melbourne or Williamstown Channels, or any vessel which is outward-bound, within, or which is about to enter the precautionary area.

4 **3.7.7 Speed of vessels in port waters.**

(1) The Master of a vessel, unless due to exceptional circumstances, shall not cause or permit the vessel to be navigated at a speed greater than specified as follows:

a) upstream from the entrance to Appleton Dock — 4 kn;

b) between Appleton Dock Entrance and West Gate Bridge — 6 kn;

c) between West Gate Bridge and within port waters north of Port Melbourne Channel Beacon 9 — 8 kn;

5 d) within port waters and south of Port Melbourne Channel Beacon No 9 and 2 nautical miles south of Fawkner Beacon – 18 kn. Notwithstanding this speed limit the master shall make an assessment and adjust the vessels speed to ensure that the waves generated by the vessel will not unduly interfere with the safe operation of small craft including recreational boats, work boats and barges or the safety of the general public.

e) when passing works in progress on banks of a river, a berth or dredging operations, a speed consistent with the safe navigation of the vessel.

6 **Restricted area.** The area W of Williamstown Channel between Gellibrand Pier (37°51′·8S, 144°54′·9E) (4.150) and the NW face of Nelson Pier lies within naval waters. The limits are shown on the chart.

For information on regulations applying to naval waters see Appendix I.

Regulations concerning entry

4.140

1 The following information is an extract of the *Harbour Master's Directions* from the *Port Waters of Geelong and Melbourne Operating Handbook*:

3.7.1 Movements.

(1) The Master of an inward-bound vessel shall not cause or permit the vessel to pass Fawkner Beacon, or depart an anchorage, until permission has been received from Harbour Control Centre.

2 (2) The Master of an outward-bound vessel shall:

(a) not cause or permit the vessel to depart a berth or anchorage until permission has been received from Harbour Control Centre.

(b) advise all shipping when the vessel departs from the berth.

3 (3) The Master of a vessel seeking permission to proceed in accordance with (1) and (2) above, shall advise Harbour Control Centre of the vessel's maximum draught and, if the vessel intends to navigate within the Port Melbourne Channel. Harbour Control Centre shall provide advice to the Master of the movements of other relevant vessels. In addition, the Masters of inward and outward vessels must communicate with each other to confirm their agreed sequence and route when rounding Breakwater Pier.

4 (4) The Master of an inward or outward-bound vessel shall report to Harbour Control Centre when passing Fawkner Beacon, Breakwater Pier, and West Gate Bridge.

(5) a) Vessels navigating within the marked channels of the port of Melbourne may pass each other, provided there is a prior agreement between the Masters and Harbour Control Centre.

b) Sub-paragraph (5) a) does not apply to the following:

5 (i)a vessel navigating in the Port Melbourne Channel.

(ii)a non-gas free tanker in the marked channels of the Port of Melbourne.

(6) The Master of an outward-bound vessel shall, when passing Fawkner Beacon, if on passage to Geelong, advise Harbour Control Centre of the ETA at Point Richards Channel Entrance Beacon.

(7) The movement of bunker barges within port waters is not permitted, except at the direction of Harbour Control Centre.

4.141

1 **3.7.2 Vessels to sound signals.**

The Master of a vessel departing Swanson Dock or Maribyrnong River shall, if appropriate for the purpose of warning another vessel, comply with Rule 34, Manoeuvring and Warning Signals, of *The International Regulations for Preventing Collisions at Sea (1972).*

4.142

1 **3.7.3 Navigating in the vicinity of Webb Dock.**

(1) The Master of an inward-bound vessel intending to enter River Yarra that has not reached No 10 Beacon by the time a vessel is ready to depart from Webb Dock must not proceed until the departing vessel has cleared Webb Dock and crossed to the correct side of the channel.

2 (2) The Master of a vessel shall not permit the vessel to depart from Webb Dock unless there is sufficient time for the vessel to cross to the correct side of the channel without hindering another vessel which may be navigating between the Williamstown Breakwater and the River Yarra entrance.

Harbour

General layout

4.143

1 The port consists of several separate berthing areas, situated on the shores of Hobson's Bay and on the banks of River Yarra, which specialise in particular types of trade.

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Melbourne from SSE (4.143)
(Original dated 1998)

There is also a naval dockyard at Williamstown on the W side of Hobson's Bay and on the N side a passenger terminal for Tasmania ferries and overseas cruise ships.

2 **Tidal streams** in Hobson's Bay are weak and the flow is, for the most part, governed by the prevailing wind.

In River Yarra the waters run outward almost continually. Even during the in-going tidal stream the water, from the surface to a depth of nearly 4 m, runs out. But strong S to W winds do cause an upstream current. Outflow is from ¼ to ½ kn but attains a rate of 4 kn in heavy rains. The river has overflowed its banks, causing damage to property, during severe floods.

Climatic table. See 1.133 and 1.137.

Directions for entering harbour

(continued from 4.113, 4.114 and 4.115)

Port Melbourne Channel

4.144

1 Port Melbourne Channel leads to the entrance to Williamstown Channel and to the piers at Port Melbourne (37°50′·6S, 144°55′·5E) (4.149). The sides of the channel are marked by numbered light-beacons (lateral) standing 15 m outside of the dredged area. The centreline of the channel is marked by a direction light (37°50′·3S, 144°55′·7E) (4.111), with a line of bearing 001½, standing 2¾cables NNW of the root of Station Pier. The light is visible by day and night over a very narrow tri-coloured sector (001·1°–001·9°). When within this sector the vessel is in the channel and its position in relation to the line of bearing is indicated as follows.

2 Red: W of line.
White: on line.
Green: E of line.

From the vicinity of Fawkner Light-beacon (37°57′S, 144°56′E) (4.111) Port Melbourne Channel leads N for 5½miles, along the line of bearing of the direction light, passing (with positions from Gellibrand Shoal Light-beacon (37°52′·7S, 144°54′·8E)):

3 W of R2 Light-buoy (special) (2¼ miles SSE, thence:
E of Gellibrand Shoal Light-beacon (port hand). It marks the remains of a demolished light-tower with a depth of 2·3 m over it. An abandoned submarine cable leads N from this obstruction. Thence:

4 E of Point Gellibrand (5½cables NW), the W entrance point of Hobson's Bay. The point is bordered by rocks and foul ground extending 1½cables S and 4 cables E. Between Point Gellibrand and Breakwater Pier, 7 cables NE, a drying reef fronts the shore. Thence:

5 E of the entrance to Williamstown Channel (7 cables ENE) (4.145) to the swinging area off Station Pier and Princes Pier.

Useful mark:

Timeball Tower (stone and brick, 10 m in height, disused) (37°52′·0S, 144°54′·8E).

Chart Aus 154

Williamstown Channel

4.145

1 From a position 7 cables ENE of Gellibrand Shoal Light-beacon (37°52′·7S, 144°54′·8E) Williamstown Channel, the sides of which are marked by numbered light-beacons (lateral), leads NW, off Port Melbourne Channel, passing close NE of the berths at Williamstown (4.150) and through Gellibrand Swinging Basin, to a position NE of No 22 Light-beacon (37°51′·3S, 144°54′·6E), at the entrance to River Yarra and the Webb Dock approach (4.146).

2 **At night** the middle of the channel is marked by the narrow white sector (323½–325½) of a direction light (38°50′·8S, 144°54′·3E), displayed from the site of a former day mark, on the W side of the entrance to Webb Dock.

(Directions for River Yarra continue at 4.147)

Webb Dock

4.146

1 From a position close SW of No 21 Light-beacon (37°51′·2S, 144°54′·8E), at the NW end of Williamstown Channel, the alignment (334¾) of the following lights leads to the head of the dock.

Webb Dock Leading Lights:

Front lights (orange triangle on post, 10 m in height) (37°50′·3S, 144°54′·2E).

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2 Rear lights (orange triangle on post, 8 m in height) (2½cables NW of front light).

Within the dock the W limit of the dredged area is marked by lights in line (red triangles on beacons) (37°50′·4S, 144°54′·2E) bearing 335°.

River Yarra

(continued from 4.145)

4.147

1 From a position NE of No 22 Light-beacon (37°51′·3S, 144°54′·6E) the dredged channel, which is marked by light-beacons (lateral), leads NNW and then curves N and NE under West Gate Bridge to the inner berths.

There are no specific directions for navigating the river although the following leading lights are of use in berthing.

2 **Holden Swinging Basin Leading Lights:**

No 45 Light-beacon (starboard hand) (37°49′·4S, 144°54′·5E).

Rear light (½ cable SE of front light-beacon).

The alignment (146½) of these lights is for the use of vessels turning in Holden Swinging Basin.

3 **Swanson Dock Approach Leading Lights:**

Front light (white post on gable of shed, neon rectangle) (37°49′·1S, 144°55′·0E).

Rear light (similar structure) (168 m from front).

The alignment (064½) of these lights leads NE in River Yarra to Swanson Dock entrance.

4 **Swanson Dock Leading Lights:**

Front lights (column, green triangle point up, neon triangle point up) (37°48′·6S, 144°54′·8E).

Rear lights (column, green triangle point down, neon triangle point down) (161 m from front).

Front light (37°49′·3S, 144°54′·8E).

Rear light (70 m from front).

The alignment of these lights leads along the centre of Swanson Dock.

Berths

Depths

4.148

1 Depths in the approach channels, basins and alongside piers and wharves are maintained by dredging. These dredged depths are shown on the chart but for the latest information the Victorian Channels Authority (4.3) should be contacted.

Port Melbourne

4.149

1 There are two piers at Port Melbourne (37°50′·6S, 144°55′·7E):

Station Pier serves as the Tasmanian and overseas passenger terminal having four berths with the outer W berth being the largest; length 305 m, depth alongside 10·9 m. There is a Ro-Ro ramp at the N end of the inner E berth. At the root of Station Pier, on the W side, is a basin dredged to 3·2 m with an approach channel dredged to 3·5 m. The approach channel is marked by a beacon (starboard hand).

Princes Pier is no longer used commercially.

Williamstown

4.150

1 Williamstown (37°52′S, 144°55′E) is the site of a naval dockyard which contains the following commercial berths on its SE side:

Breakwater Pier; length 215 m, depth alongside 9·0 m. For the use of gas tankers.

Gellibrand Pier; length 290 m, depth alongside 12·1 m. Used for the handling of crude oil. Vessels over 250 m in length berth in daylight only but may sail at night subject to the weather.

2 There are also several naval piers, the largest being Nelson Pier West with a length of 188 m and a depth alongside of 8·8 m, along with a graving dock (4.159).

Caution. Ships passing through Williamstown Channel can cause vessels to move off the berths; mooring lines must be carefully tended.

Webb Dock

4.151

1 Webb Dock (37°50′·7S, 144°54′·5E), with a dredged depth varying from 7·0 to 12·5 m, contains six berths. Five of the berths are on the E side, the sixth being No 2 Webb Dock West, a dedicated car terminal, on the W side. There are Ro-Ro ramps at the N end of Berth No 1 and at the NW ends of Berths No's 2, 3 and 4.

Largest berth No 4/5; length 530 m, depth alongside 12·5 m.

Holden Oil Dock

4.152

1 Holden Oil Dock (37°49′·5S, 144°54′·0E), with two berths and an alongside depth of 13·1 m, handles coastal and overseas tankers.

Maximum size of vessel berthed; length 185 m, draught 12·1 m.

Yarraville Wharves

4.153

1 Yarraville Wharves (37°49′·2S, 144°54′·3E), situated on the W side of the entrance to Maribyrnong River, consists of the following berths numbered from the N:

No 1 Berth; out of commission.

No 5 Berth; length 178 m, depth alongside 9·4 m; for the discharge of bulk sugar.

No 6 Berth; length 190 m, depth alongside 10·2 m.

Maribyrnong Berth

4.154

1 Maribyrnong Berth (37°49′·1S, 144°54′·4E), situated on the E side of the entrance to Maribyrnong River, can accommodate vessels of 180 m in length and has a depth alongside of 10·0 m. Used for the handling of bulk petroleum chemicals, lubricating oils, molasses and tallow.

Swanson Dock

4.155

1 Swanson Dock (37°48′·9S, 144°54′·8E), with eight berths and a maintained depth of 13·1 m, serves a container complex of four terminals.

Maximum size of vessel berthed; length 290 m, draught 12·1 m.

Appleton Dock

4.156

1 Appleton Dock (37°49′·0S, 144°55′·4E), with a maintained depth of 10·7 m alongside (11·4 m at Berth F) and a total length of 980 m, has five berths marked B to F for the use of general and bulk cargoes.

Maximum size of vessel berthed: Berths B to E; length 250 m, draught 10·1 m. Berth F; length 225 m, draught 10·8 m.

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Victoria Dock

4.157

1 Victoria Dock (37°49′·1S, 144°56′·1E) consists of three river berths and an enclosed dock containing 16 berths.

The enclosed dock has depths from 8·5 to 11·0 m alongside. It is no longer used commercially. The Victoria Dock River Berths, numbered 22 to 24, have a length of 261 m and a depth alongside of 9·4 m. They are used for the handling of general cargo and cars.

River Yarra South Wharf

4.158

1 River Yarra South Wharf (37°49′·2S, 144°55′·5E), W of Bolte Bridge, contains berths numbered 26 to 33, as shown on the chart. Berth 26 is the largest, with a length of 266 m and a depth alongside of 11·0 m. Berth 33, although shorter, has a depth alongside of 11·6 m. These berths are used for the handling of bulk cement, general cargo and layup, the berths upstream of Bolte Bridge (4.129) are no longer available commercially.

Port services

4.159

1 **Repairs.** Marine repairs of all kinds can be carried out. Alfred Graving Dock at Williamstown Naval Dockyard (37°52′S, 144°55′E) is available for dry docking vessels and there are several slipways.

Alfred Graving Dock:

Length	*Breadth*	*Depth on sill*
146·2 m (top)	29·6 m (top)	7·26 m at LW
139·9 m (floor)	19·0 m (keel blocks), 24·4 m (caisson)	7·92 m at HW

2 **Other facilities.** Deratting and deratting exemption certificates issued; reception facilities for oily waste; garbage disposal; fire and rescue launch; emergency diving tender; several hospitals.

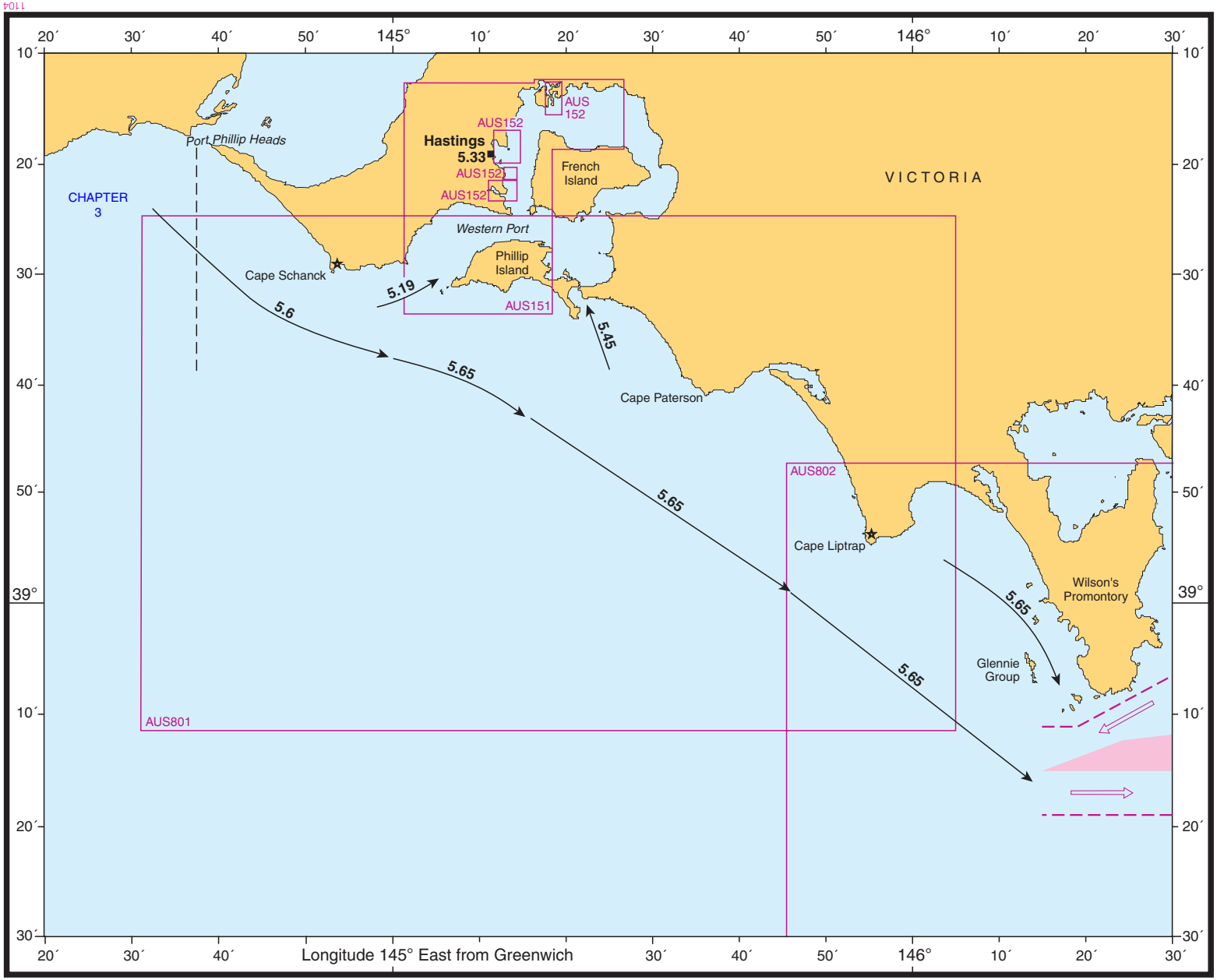
Supplies. Fuel oil by barge; fresh water; provisions.

Communications. There is an international airport at Tullamarine, 15 km NNW of the port.

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Chapter 5 - Port Phillip Heads to Wilson's Promontory



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CHAPTER 5

VICTORIA — PORT PHILLIP HEADS TO WILSON'S PROMONTORY

GENERAL INFORMATION

Chart Aus 350

Scope of the chapter

5.1

1 The area covered by this chapter comprises the coastline between Port Phillip Heads (38°18′S, 144°38′E) and Wilson's Promontory (39°00′S, 146°25′E).

The only harbour, the port of Hastings, and deep-water anchorage on this coast lies within Western Port (38°21′S, 145°20′E); elsewhere anchorages are of a temporary kind.

The chapter is divided into the following sections:

Port Phillip Heads to Cape Woolamai (5.6).
Western Port (5.14).
Cape Woolamai to Wilson's Promontory (5.65).

Topography

5.2

1 Between Port Phillip Heads and Cape Liptrap, 72 miles SE, the coast forming the NE shore of Bass Strait is lower than that forming the NW shore of the strait, but it attains a height of over 750 m at Wilson's Promontory (39°00′S, 146°25′E).

Historic wrecks

5.3

1 Along the coastline described in this chapter there are numerous historic wrecks. For further details see 1.52.

Rescue

5.4

1 See 1.66 and *Admiralty List of Radio Signals Volume 5*.

Tidal streams

5.5

1 Tidal streams generally change regularly at or about HW and LW, but the direction of the streams is much influenced by the winds, except inshore.

PORT PHILLIP HEADS TO CAPE WOOLAMAI

General information

Chart Aus 788, Aus 801, Aus 150 (see 1.12)

Route

5.6

1 From the vicinity of Port Phillip Heads (38°18′S, 144°38′E) the route leads initially SE for 17 miles to the vicinity of Cape Schanck then, passing the main entrance to Western Port, ESE for a further 22 miles to the vicinity of Cape Woolamai (38°34′S, 145°22′E).

Topography

5.7

1 The coast between Point Nepean (38°18′S, 144°39′E) and Cape Schanck, 16 miles SE, forms the SW side of a peninsula which separates Port Phillip from Western Port. From Point Nepean to The Divide (38°24′S, 144°47′E), a deep cleft, the coast is made up of rocky escarpments, which is broken by The Amphitheatre (38°21′S, 144°44′E), the local name for a remarkable cleft in the coastline.

2 From The Divide the coast changes to sand dunes covered with marram grass extending to within 2 miles of Cape Schanck; thence to the cape the coast is steep and rock-fringed. The land rises to 160 m 3 miles NNE of Cape Schanck making it the highest part along this stretch of the coast.

Thence the coastline is formed by Phillip Island (38°29′S, 145°15′E) which fronts Western Port. The S coast of this island from Point Grant (38°31′S, 145°07′E) to Pyramid Rock, 5 miles ESE, is craggy, indented with small coves and backed by cliffs, 30 m high in places.

3 Between Pyramid Rock and Cape Woolamai, about 7 miles ESE, lies a bay fringed with reefs and backed by cliffs to about 3 miles from the cape; the shore along this stretch is formed of scrub-covered sand dunes. McGregor Hill, 49 m high, stands 1¼ miles N of Pyramid Rock; the ground slopes gradually up to the hill. Smith Point, 63 m high, stands within the coast, 2¼ miles NNE of Pyramid Rock and a prominent conical sandhill, stands 1½miles NNW of Cape Woolamai.

For further information on the topography of Phillip Island see 5.20 and 5.46.

Exercise area

5.8

1 Gunnery exercises are conducted to the S of Cape Schanck. For area limits and details see *Annual Australian Notice to Mariners No 9*. Mariners should keep a listening watch on VHF Channel 16.

Principal marks

5.9

1 **Landmarks:**

Arthur's Seat (38°21′S, 144°57′E) (chart Aus 143) (4.24).

Cape Schanck (38°30′S, 144°53′E), a cliffy headland 84 m in height. Cape Schanck Light (white stone tower and lantern, red cupola; 21 m in height) is displayed from the summit of Cape Schanck about 5 cables NW of the headland. The smoke from summer bush fires sometimes gives the light a reddish appearance.

2 **Major light:**

Cape Schanck Light — as above.

Other aid to navigation

5.10

1 **Racon:**

Western Port Fairway Light-buoy (38°30′·2S, 145°05′·4E).

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

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Directions

(continued from 3.92)

Port Phillip Heads to Western Port main entrance

5.11

1 From a position about 3½ miles SSW of Point Lonsdale (38°18′S, 144°37′E) (4.24) the track leads SE, passing (with positions from Point Lonsdale):

SW of London Bridge (4½ miles ESE), a rocky islet with several others nearby, thence:

SW of Cape Schanck (38°30′S, 144°53′E) (5.9), from where a light is displayed. Pulpit Rock, a remarkable rock, 12 m high, stands close S of the cape with Schanck Rock, 1·2 m in height, 2½ cables S of it.

2 The track then leads ESE, passing (with positions from Cape Schanck):

SSW of Picnic Point (1½ miles E), a bold sheer bluff 75 m in height. Between Cape Schanck and Picnic Point the coast is formed by a rocky bight. From Picnic Point to West Head, 5½ miles E, the coast is closely bordered by rocks. Thence:

SSW of Bismark Reef (6 miles E), a large area of foul ground close W of West Head, thence:

3 To a position off the main entrance to Western Port, S of West Head (6¾ miles E). West Head, a cliffy point 34 m high, is fringed by reefs and below-water rocks. Flinders Rock, with a depth of 2·9 m over it, lies 5½ cables SSE of West Head. The red sector (320°–343°) of Flinders Light (5.44) covers the rock.

4 **Clearing line.** The 84 m high summit of Cape Schanck (38°30′S, 144°53′E) open S of Picnic Point clears Flinders Rock and Bismark Reef.

Useful marks:

Tower (60 m elevation) on Mount Levy (38°20′·1S, 144°42′·4E) (4.28).

Beacon (white) (38°21′·4S, 144°44′·6E) standing on Saint Paul's Hill, which is 55 m high and scrub covered.

5 Two radio masts (38°28′S, 144°55′E), NNE of Cape Schanck.

Beacon (38°28′S, 144°59′E), 2½ miles WNW of West Head.

(Directions for the main entrance to Western Port continue at 5.25)

Western Port main entrance to Cape Woolamai

5.12

1 From a position off the main entrance to Western Port, S of West Head (38°29′S, 145°02′E), the track continues ESE, passing (with positions from Point Grant (38°31′S, 145°07′E) (5.26)):

2 SSW of Seal Rocks (1 mile SW) and Point Grant (5.26), the W extremity of Phillip Island. A light is displayed from Round Island, close WSW of Point Grant; a red sector (033°–066°) of the light on Round Island covers Seal Rocks. Black Rock, 10 m high with a seal rookery on it, lies close S of Seal Rocks. A reef, over which the sea breaks heavily during SW gales, extends 3½ cables SW of Black Rock. Attention is drawn to Flinders Bank, with a least depth of 21·5 m over it, which lies 2 miles SSW of Seal Rocks. Thence:

3 SSW of Phelan Bluff (1½ miles E) and Kitty Miller Bay (2½ miles E). Kitty Miller Bay lies between Kennon Head, a cliffy point fringed by rocks, and Watt Point. Thence:

SSW of Helena Head (3¼ miles E), faced with cliffs 30 m high, thence:

SSW of Red Bluff (4¼ miles E), on the NW side of which lies Redcliff Head, thence:

SSW of Pyramid Rock (5 miles ESE), high and needle-shaped, which is steep-to seaward, thence:

4 To a position SSW of Cape Woolamai (11½ miles ESE), which is a remarkable helmet-shaped granite headland rising abruptly from the sea. The cape is fringed with rocks, some drying and others below water, which extend more than 2½ cables offshore. In a short, bumpy sea the sea breaks over a rocky area, with a least depth of 20·3 m over it, which lies about 1 mile WSW of Cape Woolamai. Cape Woolamai Light (metal column, 3 m in height) is displayed from the summit of the cape.

5 **Useful marks:**

Framework observation tower (38°32′S, 145°06′E) on the summit of the largest of Seal Rocks; not to be confused with Round Island Light.

Beacon (5.26) standing on Grant Hill (38°31′S, 145°08′E).

(Directions continue for the coastal route at 5.71 and for Eastern Entrance to Western Port at 5.52)

Anchorage

General information

5.13

1 Anchorage may be obtained 1 mile NE of Pyramid Rock (38°32′S, 145°13′E) (5.12), on the S coast of Phillip Island, in depths of about 10 m.

Caution. A wreck with a depth of 4·3 m over it lies 1¼ miles NE of the rock. The wreck forms an artificial fishing reef.

WESTERN PORT

GENERAL INFORMATION

Charts Aus 151, Aus 150 (see 1.12)

Description

5.14

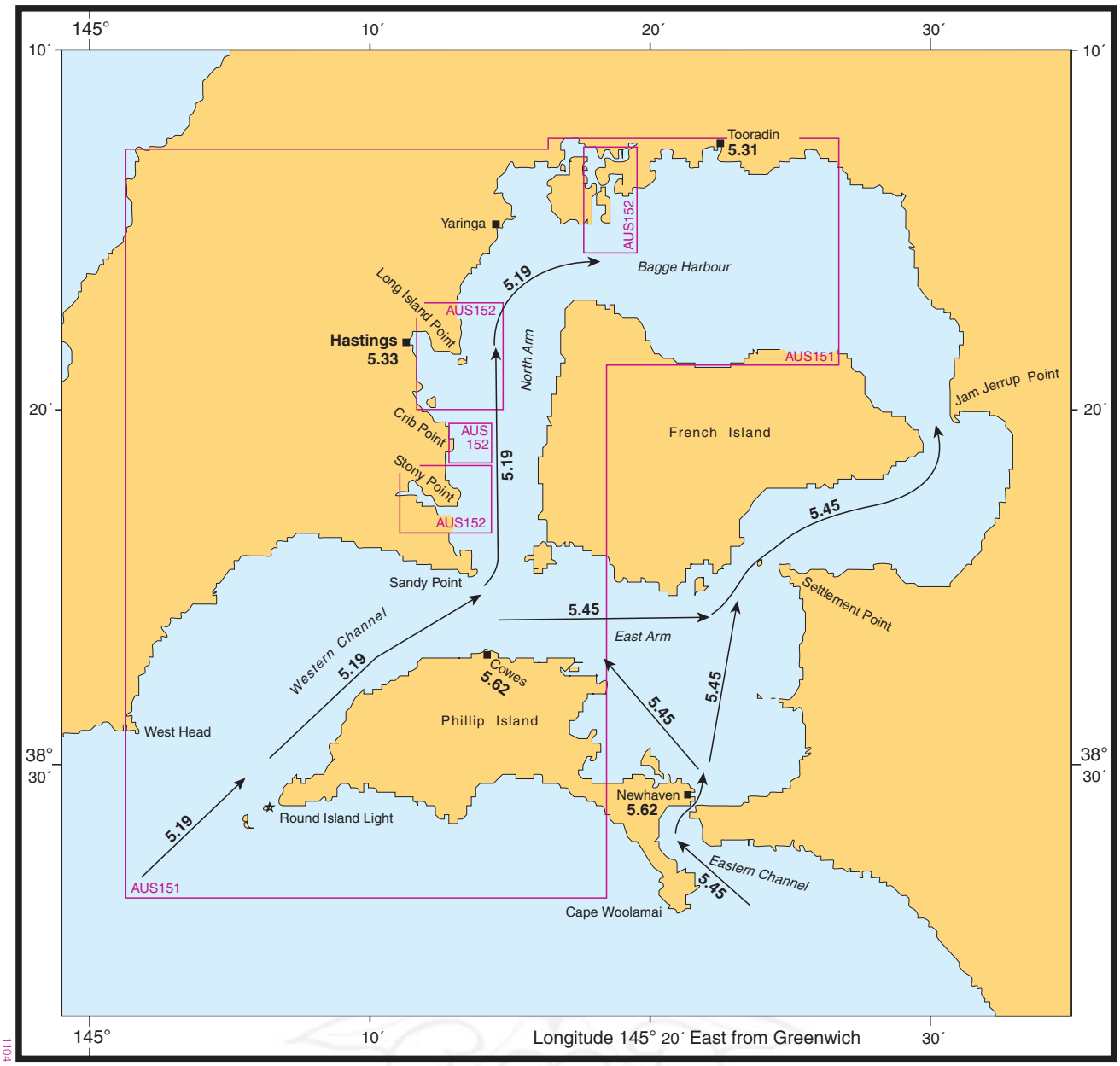
1 Western Port is an extensive bay fronted seaward by Phillip Island (38°29′S, 145°15′E). The bay is entered E and W of Phillip Island. Western Entrance lies between West Head (38°29′S, 145°02′E) and Point Grant, the W end of Phillip Island, 4½ miles ESE. This is the main entrance, giving easy access to Western Channel, which leads to the port of Hastings, and a naval base, HMAS *Cerberus*, in Hanns Inlet. Eastern Entrance is suitable only for small vessels.

2 French Island (38°21′S, 145°22′E) lies in the middle of the bay, N of Phillip Island, dividing Western Port into two arms; North Arm to the W and East Arm to the S and E. East Arm has a large area of deep water available for anchorage.

Settlement Point (38°25′S, 145°25′E) (5.55) on the E shore was the site of the first settlement in Victoria.

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Western Port



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The section is arranged as follows:
Western Entrance and North Arm (5.19).
Eastern Entrance and East Arm (5.45).

Port limits

5.15

1 The port of Western Port, the limits of which are shown on the chart, includes:

a) All waters of Western Port Bay and adjacent Bass Strait lying N of a line joining West Head (38°29′S, 145°02′E) and Point Grant, 4½miles ESE, thence along the HW mark of the N shore of Phillip Island to Cape Woolamai (38°34′S, 145°22′E), thence 045° to the opposite shore; except those waters declared to be part of the associated port of Hastings, and;

b) The navigable rivers and creeks flowing into the waters described in paragraph a).

Vessel Traffic Service

5.16

1 A reporting system is maintained for the control of shipping in Western Port. For details and reporting requirements see *Admiralty List of Radio Signals Volume 6 (4).*

Pilotage

5.17

1 Pilotage, which is compulsory except for vessels specially exempted, is provided by Port Phillip Sea Pilots; there is a 24 hour service. Pilots board from a launch:

By day; 3½miles S of West Head (38°29′S, 145°02′E), as shown on the chart.

2 By night; in the white sector (053°–061°) of McHaffies Point Light (38°28′S, 145°10′E) (5.23) with Cape Schanck Light bearing 295°.

In bad weather; for vessels up to 9·75 m draught, 2 miles E of Flinders Breakwater Head Light (38°29′S, 145°02′E) close to a light-buoy (special), as shown on the chart.

3 Vessels requiring a pilot should signal their ETA at Western Port to Port Phillip Sea Pilots, through the coast radio station of Melbourne, 24 hours in advance, stating draught, destination and pratique requirements. Changes in ETA of more than 1 hour should be notified immediately and the time should be confirmed 4 hours before arrival or, if the vessel is delayed, 4 hours before the original ETA.

4 The pilot launch is painted orange and shows the prescribed signals; communication may be made by VHF radio on approach to the pilot boarding ground. Pilots require assurance that the main engines have been tested astern immediately before arrival.

For further detail see *Admiralty List of Radio Signals Volume 6 (4).*

Quarantine

5.18

1 Vessels subject to quarantine must not proceed N of a line joining Sandy Point (38°25′S, 145°14′E) to Tortoise Head, 1¾miles E, thence to Cobb Bluff (38°27′S, 145°26′E). There is a good anchorage (5.59) off Cowes, for vessels awaiting pratique, 1½ miles SSE of Sandy Point.

For further information on quarantine see 1.47.

WESTERN ENTRANCE AND NORTH ARM

General information

Charts Aus 151, Aus 150 (see 1.12)

Route

5.19

1 Western Port is entered between West Head (38°29′S, 145°02′E) and Point Grant, 4 miles SE. The route then leads through Western Channel which passes between Middle Bank, on its NW side, and the NW coast of Phillip Island on its SE side. The channel is dredged to a depth of 14·9 m to a position 1½ miles SSW of Sandy Point.

2 Thence the route, with a reduced dredged depth of 14·3 m to Long Island Point (38°18′·5S, 145°13′·3E), leads NNE and then N, passing close E of the naval base and principal commercial berths at Hastings (5.33), into Bagge Harbour (5.31). The fairway leads between mud flats fronting the W shore and drying mud banks off the W side of French Island.

Topography

5.20

1 **West shore.** The mainland at Western Entrance to Western Port is fairly steep. From West Head (38°29′S, 145°02′E) to Palmer Bluff, 6 miles NE, the W shore is fringed with rocks and backed by cliffs. Thence to Sandy Point (38°25′S, 145°14′E), 5¾ miles farther E, a sandy beach fronts the coast.

From the direction of the fairway Mount Wellington (38°20′S, 145°22′E) on French Island is visible over low trees on Sandy Point. Between Sandy Point and Watson Inlet, 9 miles NNE the coast is low, marshy and fronted by mud banks.

2 **Phillip Island** (38°29′S, 145°15′E). The island is hilly, with Cape Woolamai, 108 m high, at its SE extremity, being its highest point. The NE part of the island is moderately wooded, with scrub in places. A peninsula, forming the SE part of the island and connected to it by a narrow isthmus, is mostly scrub-covered in its NE part.

The W side of Phillip Island is also fairly steep and rocky between Seal Rocks (38°32′S, 145°06′E) and McHaffies Point, 4 miles NE; The Nobbies and Point Grant, along this stretch of coast, are prominent.

3 **French Island** (38°21′S, 145°22′E). This island is for the most part hilly and wooded except in the NW part where, between Scrub Point (38°17′S, 145°17′E) and Palmer Point, 7½miles ESE, it is low and marshy and fronted by drying mud flats extending 2 miles offshore.

Mount Wellington stands 6 miles NE of Tortoise Head (38°25′S, 145°16′E), the SW point of the island, with The Pinnacles, a prominent three-peaked hill of which the summit is 66 m high, 3 miles SW. Harrop Hill, 72 m high, stands 3½ miles ENE of Tortoise Head.

There is a large colony of koala bears in these hills and, in the NW part of the island, waterfowl abound.

Restricted area

5.21

1 Hanns Inlet (38°23′S, 145°13′E) (5.43) and an area to the E of its entrance lies within naval waters. The limits are shown on the chart.

For information on regulations applying to naval waters see Appendix I.

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Tidal streams

5.22

1 Tidal streams attain a rate of nearly 4 kn between Middle Bank and McHaffies Point, where there is a tide-rip.

Principal marks

5.23

1 **Landmark:**

Water tower (65 m in height) (38°23′S, 145°11′E) standing on the E side of Western Hill, about 3 miles WNW of Sandy Point. The land between the hill and the point is low and marshy.

Major light:

McHaffies Point Light (12 m in height) (38°28′S, 145°10′E).

Other aid to navigation

5.24

1 **Racon:**

Western Port Fairway Light-buoy (38°30′·2S, 145°05′·4E).

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

Directions

(continued from 5.11)

Approaches

5.25

1 **Main approach.** From a position about 3½ miles S of West Head (38°29′S, 145°02′E) (5.11), the track leads NE, passing (with positions from Point Grant (38°31′S, 145°07′E) (5.26)):

Between Flinders Rock (4 miles WNW) (5.11) and Seal Rocks (1 mile SW) (5.12). The red sector (320°–343°) of Flinders Light (5.44) covers Flinders Rock. Vessels should pass about 1¼ miles off Seal Rocks by keeping McHaffies Point Light (5.23) ahead bearing 057°. Thence:

2 NW of an isolated shoal (7 cables W), with a depth over it of 9·0 m, thence:

NW of The Nobbies (4 cables WSW). The Nobbies consist of Round Island, 42 m high and sheer on all sides, and another rocky islet 6 m high. A light is displayed from Round Island, a red sector (033°–066°) of which covers Seal Rocks. Thence:

3 To a position close SE of Fairway Light-buoy (safe water) (1½ miles NW).

From west by night. Having rounded Cape Schanck keep Round Island Light bearing less than 090° until on the line of bearing 057° of McHaffies Point Light, in the white sector (053°–061°) of that light, which leads to a position close SE of Fairway Light-buoy.

4 **From east by day.** Pass 3½ miles SW of Point Grant steering NW then, with Seal Rocks in line with Point Grant bearing 059°, alter course to the N. When McHaffies Point Light bears 057° alter course NE and steer for the light on that bearing to a position close SE of Fairway Light-buoy.

From east by night. Follow the directions given for entry by day. The alteration to the N is marked by the change in the sectors of McHaffies Point Light from red to green.

Western Channel

5.26

1 From a position close SE of the Fairway Light-buoy, the track continues NE, for a distance of about 7½ miles, through a dredged channel marked by light-buoys (lateral and cardinal) at regular intervals, passing (with positions from Point Grant (38°31′S, 145°07′E)):

NW of Point Grant, a craggy headland 33 m high, thence:

2 NW of Point Sambell (9 cables NE) which forms the SW entrance point to Cat Bay. Reefs extending up to 1 mile offshore from the S side of the bay break in a SW swell. Thence:

SE of Horseshoe Bank (2½ miles N), as the outer part of Middle Bank is known. There is a least depth of 2·8 m over it on its SE side and the sea breaks over it with a heavy swell. And:

3 NW of Flynn Reef (2 miles NE) and Tyro Reef, 7½ cables farther NE, which fringe the W coast of Phillip Island NE of Cat Bay, thence:

NW of McHaffie Reef (4 miles NE) which extends 3½ cables NW from McHaffies Point. Hen and Chickens Reef, which dries, lies 2½ cables W of McHaffies Point. A light (5.23) is displayed from the point and close SW of the point lies a red-coloured, razor-backed ridge, 9 to 12 m high. Thence:

4 SE of Middle Bank (6 miles NNE), with depths of less than 1 m over it and which dries in places, extending 7 miles SW from the coast W of Sandy Point, and:

NW of Red Rocks Point (5½ miles NE) with Penguin Rock close SW of it. Thence:

To a position 1¾ miles SSW of Sandy Point (38°25′S, 145°14′E), close to No 13 Light-buoy (N cardinal).

5 **Useful marks:**

Beacon standing on Grant Hill (38°31′S, 145°08′E).

Beacon, standing on Tortoise Head (38°25′S, 145°16′E) (5.27), makes a good leading mark for Western Entrance to Western Port.

(Directions for East Arm continue at 5.56)

North Arm — Sandy Point to Long Island Point

5.27

1 **14·3 m Channel.** From the position 1¾ miles SSW of Sandy Point (38°25′S, 145°14′E) the track leads initially NNE for 2 miles then N for a further 6 miles, through a dredged channel marked by light-buoys (lateral and cardinal), passing (with positions from Sandy Point):

E of Sandy Point, on which a beacon (white) stands, and:

2 W of Tortoise Head (1¾ miles E), a flat-topped point, on which there is a beacon (5.26), thence:

E of the entrance (1¼ miles N) to Hanns Inlet (5.43). The E edge of the drying bank, extending across Hanns Inlet, is marked by a beacon (port hand), S of the entrance, and by a light-beacon (port hand), N of the entrance. Thence:

3 E of Stony Point (2 miles N) on which stands a beacon. There is a railway terminus and a jetty (5.40) on the point from where a ferry service operates to Cowes Jetty (5.62), 4½ miles S. Thence:

E of Crib Point (3½ miles N) a headland at which Crib Point Oil Terminal (5.40) is located, thence:

E of the entrance to Hastings Channel (5 miles N) (5.42), thence:

4 To a position about 5 cables E of Long Island Point (6 miles N) which is low and mangrove-fringed with a beacon standing on it. Long Island Liquids

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Pier (5.40) is situated on the E side of the point. There is a 9·8 m patch 6 cables E of the point.

5.28

1 **Alternative channel.** Close E of the 14·3 m dredged channel, between Crib Point and Long Island Point, there is an alternative channel having a least depth of 10·0 m. The E side of this channel is marked by (with positions from Crib Point (38°21′S, 145°13′E)):

MS 1 Light-beacon (special) (1¼ miles SE).
MS 2 Light-beacon (special) (1½ miles NE).
MS 3 Light-beacon (special) (2¾ miles NNE).

2 These light-beacons stand on the W edge of an elongated shoal, the N part of which dries, W of Middle Spit. The shoal itself is marked by beacons (starboard hand).

North Arm — Long Island Point to Bagge Harbour

5.29

1 From a position about 5 cables E of Long Island Point (38°18′·5S, 145°13′·3E) the track leads NNE and then NE, for a total distance of 4 miles, into Bagge Harbour (5.31), through a fairway with a least depth of 10·6 m, passing (with positions from Long Island Point):

ESE of No 31 Light-buoy (starboard hand) (6 cables ENE) and NW of MS 3 Light-buoy (special) (1 mile ENE), thence:

2 SE of the light-buoys (starboard hand and special) marking the swinging area off Steel Industry Wharf (1 mile NNE) (5.40), and:

NW of two isolated shoals (1½ miles NE), with depths of 4·5 and 2·2 m over them respectively, thence:

3 NW of the NW end of Middle Spit (2¾ miles NE). The N end of the spit is marked by a beacon (N cardinal). Thence:

SE of the entrance (3¼ miles NNE) to Watson Inlet (5.20), thence:

SE of Eagle Rock (3¾ miles NE), a rock awash on which stands a light-beacon (isolated danger), thence:

4 To a position close N of Crawfish Rock (38°16′S, 145°18′E) on the S side of Bagge Harbour. Crawfish Rock, drying 3·0 m, is marked by a light-beacon (concrete pile). The mud bank, extending 4½cables WSW from the rock, is marked at its W end by a beacon (starboard hand).

(Directions continue at 5.31)

North Arm — Middle Spit Channel

5.30

1 Middle Spit Channel, with a least depth of 6 m although obstructed by shallow patches, leads between the drying mud banks extending up to about 1½ miles from the W coast of French Island, between Tea Tree Point (38°23′S, 145°16′E) and Scrub Point, 6 miles N, into Bagge Harbour (5.31).

2 From a position about 6 cables SW of Tea Tree Point the track leads N, passing (with positions from Tea Tree Point):

W of Tea Tree Point a beacon stands on a small hill, 1½ cables ENE of the point. Thence:

E of a shoal (8 cables NW), with a least depth of 2·3 m over it. Shoal water extending S from the drying mud flat in the channel entrance is marked by a light-beacon (S cardinal) (9 cables NW). Thence:

3 Between the mud flat (1½ miles NNW) to the S of Middle Spit and Chilcott Rocks (1½miles N). The mud flat is marked on its E side by two beacons (port hand); another beacon (starboard hand), 3 cables NW of Chilcott Rocks, marks the E side of the channel. Thence:

Between Middle Spit (4½miles NNW), a drying mud bank, and the entrance to Redbill Creek (4½miles N), fringed with mangroves. The E side of Middle Spit is marked by beacons (port hand). Thence:

4 W of Scrub Point (6 miles N). This NW point of French Island, with a beacon standing on it, is wooded and 6 m high. A mud bank, with several patches of rock on it, extends 5 cables N and 1 mile ENE of the point to Barrallier Islet at the entrance to Chicory Lane Channel. Thence:

W of a dangerous rock (6¼ miles N).

The track then leads through a gap, marked by beacons (N cardinal and starboard hand), between the N end of Middle Spit and the W end of the mud bank extending WSW of Crawfish Rock (38°16′S, 145°18′E) (5.29) to enter the W side of Bagge Harbour.

5 Alternatively Bagge Harbour may be entered on its SE side by following a track ENE, passing close NW of a beacon (starboard hand), marking the mud bank extending out from Scrub Point, and then close SSE of Crawfish Rock.

Head of the bay

(continued from 5.29 and 5.30)

5.31

1 Bagge Harbour lies between mud flats fronting Scrub Point (38°17′S, 145°17′E) (5.30) and Quail Island, 2 miles N; there is a least depth of 10·4 m in the fairway.

To the E of Bagge Harbour, North Arm branches into narrow channels intersecting mud flats. The most important of these channels are Rutherford Inlet leading to Warneet, Gentle Annie Channel leading to Blind Bight and Tooradin Channel leading to Tooradin. Farther E, to the E of Joe's Island (38°16′·6S, 145°21′·0E), Bouchier Channel (38°16′S, 145°24′E) and Boulton Channel, S of it, are the largest of several blind channels leading into the extensive mud flats which fill the NE part of Western Port.

Side channel

5.32

1 At the W end of Phillip Island there is a passage which leads between Seal Rocks (38°32′S, 145°06′E) (5.12) and The Nobbies (5.25). The passage has depths of 5·0 to 8·1 m. It may be used by small craft in an emergency but a depth of 4·2 m lies at the SW end of foul ground extending 2 cables SW from Round Islet.

Hastings

Charts Aus 151, Aus 152

General information

5.33

1 **Position.** The port of Hastings (38°20′S, 145°13′E) is situated on the W shore of North Arm.

Function. Developed to serve the oil industry and a large steel mill. Petroleum and steel products are imported. Crude oil, refined petroleum products and gas are exported.

The port includes a naval base and naval waters subject to control regulations; see also 5.21.

Port limits. The port of Hastings, the limits of which are shown on the chart, includes:

2 a) All the waters of Western Port Bay and adjacent Bass Strait lying N of a line commencing at the

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most S point of West Head (38°29′S, 145°02′E); thence 030° for 2600 m, 090° for 4 miles, 055° to the beacon at Sandy Point (38°25′S, 145°14′E); thence in a N direction to Stony Point, Crib Point and Long Island Point, and along the HW mark to 38°15′S; thence 090° for 400 m, 180° to 38°25′·6S, 090° for 1½ miles, 180° for 1500 m, 270° for 3½ miles, 235° for 7¼ miles to Point Grant; thence 295° to point of commencement, and

3 b) the navigable rivers and creeks flowing into the waters described in paragraph a).

Approach and entry. The port is approached via Western Channel which leads from Western Entrance along the NW side of Phillip Island to Sandy Point at the entrance to North Arm, directions for which are given at 5.25.

Traffic. In 2003 the port was used by 202 vessels having a total of 6 624 077 dwt.

4 **Port Authorities:**

Principal; Port of Melbourne Authority, Stony Point Road, Crib Point, Victoria 3919.

Local; Port of Hastings Authority, TOLL Western Port, PO Box 102, Hastings 3915, Victoria.

Website: www.tollports.com.au

Email: tollwesternport@bigpond.com

Limiting conditions

5.34

1 **Controlling depths:** The approach channel to the berths at Crib Point and Long Island Liquids Pier has a maintained dredged depth of 14·3 m. For Steel Industry Wharves at the N end of Long Island the dredged depth in the channel is reduced to 9·1 m.

Deepest and longest berth. Long Island Liquids Pier (5.40).

2 **Tidal levels.** See information in *Admiralty Tide Tables* under Stony Point. Mean maximum range about 2·2 m; Mean minimum range about 1·3 m.

Maximum size of vessel handled: LOA 300 m; maximum draught 15·5 m, depending on the tide; 165 000 dwt.

Arrival information

5.35

1 **Port radio.** A port radio station transmits from Stony Point (38°22′·4S, 145°13′·3E). For details see *Admiralty List of Radio Signals Volume 6 (4)*.

Anchorages. There is an anchorage 5 cables NE of Long Island Liquids Pier (38°18′·4S, 145°13′·7E), the limits of which are shown on the chart, with a least depth of 8·5 m.

There is also an anchorage for general use in East Arm; see 5.59.

2 **Pilotage** is compulsory and is available 24 hours; for pilot boarding positions see 5.17.

Tugs. Two tugs are berthed at Stony Point but a third tug, on 24 hours notice from Melbourne, is required for vessels with a draught of 12·5 m or more, on arrival and departure on the out-going tide, by day or night, and on departure on the in-going tide, if requiring to be turned. An efficient bow thrust propeller is considered equivalent to one tug.

Traffic regulations. Crib Point jetty (5.40) is a restricted area and small craft should not approach it within 200 m.

Harbour.

5.36

1 **General layout.** The port of Hastings is spread out for 5½miles along the W shore of North Arm. It consists of several separate berthing areas. At Stony Point (38°22′·4S, 145°13′·3E), the S end of the port, there are facilities for fishing vessels; at Crib Point, 1½ miles N, an oil terminal; and at Long Island Point, a further 2½ miles N, another oil terminal along with berths serving a steel works. For small craft there is a marina (5.42), which fronts the town of Hastings, at the head of Hastings Bight.

Chart Aus 152 plan of Hanns Inlet

Directions for approaching Stony Point

5.37

1 From a position about 8 cables ESE of Stony Point, in the 14·3 m dredged fairway, the alignment (288°) of the following leading lights leads WNW through a channel to the jetty:

Front light (post) (38°22′·3S, 145°13′·5E) displayed from the middle of the jetty head.

Rear light (post) (5 cables from front light).

2 The S side of the approach to the jetty is marked by a light-beacon and a beacon (both port hand) standing 2¾ and 1½ cables SE of the front leading light, respectively. From the jetty the channel, marked by numbered beacons (lateral), continues N passing between the drying mud flat and an area of shoal water NE of the jetty.

Chart Aus 152 plan of Crib Point

Directions for approaching Crib Point

5.38

1 From a position about 8 cables SE of No 1 Berth at Crib Point, in the 14·3 m dredged fairway, the alignment (320¾) of the following leading lights leads NW to the berths passing close NE of the 12·8 m dredged area SE of No 2 Berth:

Front light (38°20′·9S, 145°13′·5E) displayed from a dolphin close N of No 1 berth.

Rear light (100 m from front light) displayed from a catwalk.

Chart Aus 152 plan of Hastings Bight

Directions for approaching Long Island Point

5.39

1 **Long Islands Liquids Pier** is approached via the 14·3 m dredged channel which leads N from Sandy Point (38°25′S, 145°14′E) to a swinging basin off the berth. To aid berthing the limits of the swinging area are marked by light-buoys and lights.

The SW limit is marked by the following lights in line, bearing 319°:

2 Front light (38°18′·5S, 145°13′·7E) on S dolphin.

Common rear light (580 m from front light) near root of jetty.

The N limit is marked by the following lights in line, bearing 275½:

Front light (38°18′·3S, 145°13′·7E) on N dolphin.

Common rear light (380 m from front light), which is also the SW limit rear light.

3 **Steel Industry Wharf** is approached via a channel, dredged to a depth of 9·1 m, which leads NNW from the swinging area off Long Island Liquids Pier, to a similar swinging area, dredged to a depth of 9·1 m, off the wharf. The centre of the swinging area off Steel Industry Wharf is marked by the following lights in line, bearing 287°:

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Hastings *Crib Point Oil Terminal*



Stony Point

Western Port – North Arm from SSE (5.37)

(Original dated 1998)

Front light (green neon triangle, point up) (38°17′·5S, 145°13′·7E) on jetty.

Rear light (green neon triangle, point down) (83 m from front light) on shore.

Chart Aus 152 plans of Hanns Inlet, Crib Point and Hastings Bight

Berths

5.40

1 **Stony Point** (38°22′·4S, 145°13′·3E). A pier 1150 m long, extends NE from Stony Point, at its head the jetty lies to the NNE and SSE, with a length of 190 m. There are depths of 6·0 m alongside at its N end, and of 2·5 m at its S end.

A large fishing fleet operates from the jetty.

Crib Point jetty (38°21′·0S, 145°13′·5E). A concrete L-shaped jetty, with two berths from where lights are displayed, owned by the Australian Government.

2 No 1 Crib Point; length with dolphins 366 m, depth alongside 15·8 m. For vessels up to 80 000 dwt.

No 2 Crib Point; length with dolphins 274 m, depth alongside 12·8 m.

No 2 berth is decommissioned and is used as a repair berth.

3 **Long Island Liquids Pier** (38°18′·4S, 145°13′·7E). Consists of a single berth, aligned N and S, alongside a concrete pierhead 105 m long. Six mooring dolphins, aligned N and S, stand 64 m inshore of the pierhead which is connected by a catwalk to a jetty extending 180 m from the shore. Lights are displayed from both ends of the berth.

The berth has a dredged depth of 15·8 m alongside and is capable of taking tankers up to 165 000 dwt and of maximum length 300 m.

4 **Steel Industry Wharf** (38°17′·6S, 145°13′·5E), 1 mile N of Long Island Point, has two berths with a dredged depth alongside of 12·1 m.

No 1 Berth. A Ro-Ro berth with a curved ramp 28 m long and width 8·5 m. Suitable for vessels, with a stern door, up to 10 000 tons.

5 No 2 Berth. A conventional cargo wharf, 152 m long with a mooring dolphin off the head, extending from N of No 1 Berth 270 m NE. Maximum size of vessel berthed; length 200 m, beam 28 m, 45 000 dwt.

Port services

5.41

1 **Repairs:** medium repairs can be effected.

Other facilities: Deratting and deratting exemption certificates issued; reception facilities for oily waste; garbage disposal; hospital.

Supplies: bunkers in small quantities; fresh water.

Communications: nearest airport Melbourne International, 80 km.

Minor harbours

Chart Aus 152 plan of Hastings Bight

Hastings Bight

5.42

1 Fronting the town of Hastings (38°19′S, 145°11′E), which stands close within the NW shore of Hastings Bight, is a jetty, boat ramps and a marina for recreational craft. Hastings Jetty has a T-shaped head, length 46 m, with a depth of 1·8 m alongside its outer face.

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Hastings



Sandstone Island *Long Island Point*

Hastings Bight from E (5.42

(Original dated 1998)

These facilities are approached via Hastings Channel, leading through Hastings Bight, which lies between Crib Point (38°21′·0S, 145°13′·5E) and Long Island Point, 2 miles N. The bight is mainly filled with a mud flat along with Sandstone Island in its S part.

2 Hastings Channel, with a least depth of 1·8 m, is entered 1½ miles N of Crib Point and leads NW through a winding channel marked by beacons (lateral and cardinal) and light-beacons (lateral and cardinal). A light (mast, 4 m in height), is displayed from the S part of Hastings Jetty head.

Chart Aus 152 plan of Hanns Inlet

Hanns Inlet

5.43

1 **Description.** Hanns Inlet, entered between Sandy Point (38°25′S, 145°14′E) and Stony Point, 2½ miles N, forms the W part of the naval port of HMAS *Cerberus*, in the S part of North Arm.

Hanns Inlet extends 2 miles WNW from North Arm and is filled by a drying flat through which winds a tortuous channel with a least width of 52 m. The channel is reported (1989) to have been dredged to 3·3 m. Light-beacons (port and starboard hand) stand on each side of the entrance, thence the channel is marked throughout its length by beacons (lateral). The mud banks each side of the channel are steep-to.

2 **Directions.** Navigation of Hanns Inlet should only be attempted within 1 hour of HW, when the tidal streams, which attain a considerable rate, no longer set across the channel over the mud banks. A set across the entrance must be guarded against.

Although the channel is well marked, favourable weather and good visibility is essential when using the channel. A tug is also essential for single screw vessels in making the turn required by the right-angled bend in the channel 6 cables within the entrance.

3 **Berth.** At head of the inlet there is a concrete wharf, length 241 m with a reported depth alongside of 3 m, and a small boat marina.

Anchorage and minor berth

Chart Aus 151

Flinders

5.44

1 Flinders (38°28′S, 145°01′E) is a small town situated 8 cables NW of West Head (5.11).

A breakwater fronts the town; Flinders Light (column, 5 m in height) is displayed from the head of the breakwater.

Good anchorage for small vessels may be obtained in depths of about 5 m off the head of Flinders breakwater.

EASTERN ENTRANCE AND EAST ARM

General information

Chart Aus 150, Aus 151 (see 1.12)

Routes

5.45

1 **Eastern Entrance**, in its outer part, leads between Red Point (38°33′S, 145°22′E) and Woody Point, 2 miles N, on the W side, and Griffith Point (38°32′S, 145°22′E) and Davis Point, 1 mile NNW, on the E side.

The Narrows (38°31′S, 145°22′E), as the inner passage of Eastern Entrance passing between Woody Point and Davis Point is called, extends 1½ miles NNE between partly drying shoal banks to East Arm.

2 For depth and draught restrictions see 5.48.

East Arm lies between Phillip Island (38°29′S, 145°15′E), French Island (38°21′S, 145°22′E) and the mainland E. To the N of Phillip Island the arm has a width of about 1 mile with regular depths of about 13 m, but E of Phillip Island it is filled by Eastern Flat.

3 The main channel of East Arm, with a least depth of 6 m between the banks, leads from Western Channel (5.26) E and NE between Eastern Flat (5.46) and the S and SE sides of French Island to Stockyard Point (38°24′S, 145°23′E). From Stockyard Point the main channel continues 6½ miles ENE to Spit Point (38°21′S, 145°30′E) with gradually decreasing depths being much obstructed by shoals between the mud flats fronting both coasts.

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Eastern Entrance from NE (5.45)
(Original dated 1998)

Above Spit Point the channel branches into several narrow, shallow arms ending in drying banks about 3 miles N.

Topography

5.46

1 **Phillip Island.** On the E side of Phillip Island between Red Point (38°33′S, 145°22′E) and Woody Point, 2 miles N, within Eastern Entrance, the coast forms a bight with rocky points and sandy beaches bordered by a bank, with depths of less than 5 m, extending up to 5 cables offshore. The shore along the N half of the bight is backed by grassy slopes about 18 m high.

2 Between Woody Point (38°31′S, 145°22′E) and Fisherman Point, 3¾ miles NW, close to the town of Rhyll, the E side of Phillip Island is indented by a bight filled by a mud flat most of which dries. Between Rhyll and Observation Point, 1 mile NW, lies a salt marsh.

On the N side of Phillip Island between Observation Point (38°27′S, 145°18′E) and Cowes, 2¾ miles W, the coast is formed by a steep sandy beach backed by tall dense trees.

3 **French Island** (38°21′S, 145°22′E). On the S side of the island between Tortoise Head and Long Point, 4 miles ESE, the coast is fringed with boulders and fronted by a drying bank divided by channels. On the SE side of the island between Stockyard Point (38°24′S, 145°23′E) and Freeman Point, 3¾ miles NE, lies a shallow bight fringed with mangroves on its SW side and with boulders W of Freeman Point.

4 **East shore.** The mainland around the E end of Western Port is fairly high and sparsely wooded with stunted trees, the shore being covered with stunted grass to the water's edge. From the hilly promontory forming the E side of Eastern Entrance a range of sparsely wooded hills extends E and NE; prominent plantations around homesteads stand on the slopes. Bass Hill, 284 m high, stands 10 miles ENE of Cape Woolamai (38°34′S, 145°22′E).

5 Eastern Flat is the local name for the extensive flat, with depths of less than 5 m, which fronts the coast between San Remo (38°31′·3S, 145°22′·0E) and Settlement Point, 7 miles NNE. The flat, narrowing NW, terminates in a narrow spit 1 mile N of Observation Point, the NE point of Phillip Island. Between Settlement Point and Jam Jerrup Point, a further 6 miles NE, the coast is indented by a bight most of which is filled by a mud flat.

Local knowledge

5.47

1 Local knowledge is necessary for navigating Eastern Entrance and East Arm.

Draught restrictions

5.48

1 Eastern Entrance has a least depth of 0·6 m in its inner passage. Vessels drawing up to 3·7 m can reach San Remo through Eastern Entrance on the top of HW with an ordinary rise of tide and, if drawing 3·0 m or less, can reach Western Port through the inner passage; on a good spring tide it may also be possible for vessels drawing up to 3·7 m to enter Western Port.

As the tidal streams in The Narrows (5.45) are very strong, vessels drawing nearly 3·7 m must wait at the inner anchorage (5.58), SE of Manuka Point (38°31′·7S, 145°20′·6E), until nearly HW slack.

Submarine cable

5.49

1 A submarine cable, now disused, is laid across The Narrows close SW of Eastern Entrance Bridge. For further information on submarine cables see 1.33.

Vertical clearances

5.50

1 **Eastern Entrance Bridge** spans The Narrows (5.45) between Woody Point (38°31′S, 145°22′E) and San Remo. The central span, marked by lights, is 61 m wide and has a vertical clearance of 12 m. The pylons of this span are floodlit.

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Red Point

Eastern Entrance from Seaward (5.52)

(Original dated 1998)

Overhead power cables, with a vertical clearance of 18 m, span The Narrows close SW of the bridge.

Tidal streams

5.51

1 In The Narrows (38°31′S, 145°22′E) (5.45) the tidal stream attains a rate of 5 to 6 kn and it also sets strongly along the N shore of Phillip Island.

Directions for Eastern Entrance

(continued from 5.12)

Chart Aus 150 plans of Eastern Entrance to Western Port and of The Narrows (see 1.12)

Seaward to The Narrows

5.52

1 **Eastern Entrance Leading Lights:**

Front light (white triangle, point up, 5 m in height) (38°32′·1S, 145°20′·4E).

Rear light (white square, 6 m in height) (455 m from front light).

2 From a position about 2½ miles ESE of Cape Woolamai (38°34′S, 145°22′E) (5.12) the track leads NW, for a distance of 3½ miles, on the alignment (306½) of these lights, passing (with positions from Red Point (38°33′S, 145°22′E)):

NE of Red Point, formed of red granite boulders, 15 high, and:

3 SW of Griffith Point (1 mile NE), a bold sandstone bluff 21 m high and bare of trees for some distance inland. The point is fringed by a reef. Thence:

Close NE of Black Reef (7 cables NW), marked by No 2 Light-beacon (port hand), where the channel is only 50 m wide.

The track then leads N and NE, for a total distance of 1½miles, passing:

4 W of Middle Sand (1 mile NNW), keeping about ½cable from No 1 and No 3 Light-beacons (starboard hand) marking its W side. Middle Sand, with drying patches of sand and rock, extends about 1 mile offshore between Griffith Point (1 mile NE) and Davis Point (2 miles N), almost completely obstructing Eastern Entrance. In bad weather and especially on the out-going stream the sea breaks on the edge of Middle Sand. And:

5 E of Manuka Point (1¾miles NW), a rocky promontory, thence:

Between a beacon (port hand) (2 miles N) and Davis Point, which is low and sandy with a pier (5.60) on its N side. A light (mast, 4 m in height) is displayed from the head of the pier. Thence:

To a position close S of East Entrance Bridge (5.50) spanning The Narrows (5.45).

The Narrows to Maggie Shoal

5.53

1 From the position close S of East Entrance Bridge the track continues NE through The Narrows (5.45) and an inner passage, for a further distance of 1½miles, passing (with positions from Woody Point (38°31′S, 145°22′E)):

Under East Entrance Bridge (1½ cables S), thence:

SE of a beacon (port hand) (1 cable ESE) marking the outer rock off Woody Point. A rock close NW of the outer rock is also marked by a beacon (N cardinal). Woody Point is low, scrub-covered, fringed with reefs, with a pier extending from its E extremity. Thence:

2 SE of an isolated shoal (2 cables ENE), with a depth of 0·9 m over it, thence:

SE of No 8 and No 10 Beacons (port hand) (3 cables NE), and:

NW of No 7 Beacon (4 cables E), marking the NW side of a mud flat, with drying rocky patches, which lies E of Davis Point (5.52) and extends about 3 cables offshore.

3 The track then leads N and NW to pass W of Inner Passage Outer Light-beacon (starboard hand) (4 cables NE) (charted as No 9 Light-beacon). The track then returns NE, passing:

SE of Nos 12 and 14 Beacons (port hand) (5 and 8 cables NE, respectively) marking the SE edge of the drying flat (5.46) extending NW from Woody Point, thence:

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4 SE and E of Inner Passage Inner Light-beacon (port hand) (1¼ miles NE), (charted as No 16 Light-beacon), thence:

To a position W of Maggie Shoal (1¾ miles NE) which is marked by a beacon (W cardinal). The shoal lies at the NW end of a spit 2 miles NE of San Remo (5.60).

(Directions to the NE part of East Arm continue at 5.55)

Chart Aus 150 (see 1.12)

Maggie Shoal to Observation Point

5.54

1 From the position W of Maggie Shoal a track, for small craft, leads NW for 5 miles, passing (with positions from Inner Passage Inner Light-beacon (38°30′S, 145°23′E)):

NE of Churchill Island (2 miles W). No 1 buoy (special) is moored 7 cables NE of the N point of Churchill Island, on the NE side of mudflats surrounding the island. Thence:

2 SW of Loelia Shoal (1¾ miles N) (5.55), thence:

NE of a beacon (port hand) (3½ miles WNW) in the approaches to Rhyll. Three small channels are entered N of the beacon; the W channel leads to Rhyll Jetty (5.63); the E channel leads S to Swan Bay at the head of the extensive mud flat (5.46). Thence:

3 NE of Rhyll (4 miles NW). Flagstaff Hill, 21 m high, stands on the N side of Rhyll. There is a beacon on the NW side of Rhyll. Thence:

To a position N of Observation Point (4¾ miles NW), a low, narrow sandspit, wooded at its inner end. A drying sandspit extends 2 cables E of the point. From this position access to North Arm may be made; see directions, in reverse, at 5.56.

Maggie Shoal to Stockyard Point

(continued from 5.53)

5.55

1 From the position W of Maggie Shoal a track, for small craft, leads N for 5 miles, passing (with positions from Inner Passage Inner Light-beacon (38°30′S, 145°23′E)):

E of Loelia Shoal (1¾ miles N), two stony patches marked on the E and W sides by beacons (cardinal), and:

W of a beacon (W cardinal) (2 miles NNE) marking the W side of Reef Island. The island lies at the outer end of a rocky spit. Thence:

W of Cobb Bluff (4 miles NNE), thence:

2 W of shoal water (4¾ miles NNE), with a least depth of 1·2 m over it, extending 1½ miles SW from Settlement Point. The land near Settlement Point appears from the S as reddish cliffs about 15 m high with a rocky foreshore extending 1 cable SW and rocks and foul ground extending 2½ cables NW of the point. Thence:

To a position about 5 cables S of Stockyard Point (5½ miles N), joining the track (5.57) leading into the NE part of East Arm.

Directions for East Arm

(continued from 5.26)

Cowes to Long Point

5.56

1 From the vicinity of No 13 Light-buoy (N cardinal) the track leads E for 6½ miles, passing (with positions from Cowes Jetty Light (38°27′S, 145°14′E)):

N of Cowes Jetty (5.62). A light (column, 4 m in height) is displayed from the head of the jetty. Thence:

2 N of Mussel Rock (2 cables E), a dangerous rock. A beacon (white, orange globe topmark) stands on the shore close S of the rock. Thence:

S of a light-buoy (W cardinal) (1¼ miles NNE) which marks the W end of a shoal bank, parts of which dry, extending SSW from Tortoise Head (5.27), thence:

3 Through the anchorage (5.59) and N of Observation Point (5.54) (2¾ miles E), thence:

Between the drying mud bank (3 miles NE), fronting the bay which lies between Tortoise Head and Peck Point, 10 m high, and the W end of Eastern Flat (5.46), a narrow spit with depths of 3·0 to 3·9 m over it. Thence:

4 S of Bird Rock (4½ miles ENE), lying on the edge of a mud bank, thence:

To a position S of Long Point (5½ miles ENE), the S point of French Island; Ram Island lies close SW of the point.

Long Point to Jam Jerrup Point

5.57

1 From the position S of Long Point (38°25′S, 145°21′E) the track leads NE for 7½ miles, passing (with positions from Long Point):

SE of Elizabeth Island (8 cables E), a round, grass-covered island 18 m high, lying on the edge of a mud bank midway between Long Point and Red Bluff; a beacon (special) stands close to the 5 m depth contour on the N side of the fairway between Elizabeth Island and Red Bluff. A jetty, marked by a light, lies on the SE side of the island. Thence:

SE of Stockyard Point (1¾ miles ENE), known locally as Finger Point, thence:

2 Through a narrow channel, with a least depth of 4·3 m, which leads between Pelican Island (2½ miles NE) and Schnapper Rock, 4 cables NW. Pelican Island is low with a few bushes on it. A reef ½ cable wide surrounds the islet and between it and Settlement Point (5.55) to the E there are several above and below-water rocks. The NW side of the islet is marked by a light-beacon (starboard hand). Schnapper Rock, dries 1·5 m and is marked by a beacon (S cardinal). Foul ground surrounds the rock from where spits, with depths of less than 5 m, extend 3 cables N and 5 cables NE. Thence:

3 SE of a mud bank (3¾ miles NE) marked by several beacons (port hand), thence:

SE of Freeman Point (5½ miles NE) (5.46), thence:

SE of Blue Gum Point (6½ miles NE).

The channel, with ever decreasing depths, then leads N for a further distance of 1½ miles, passing close E of Spit Point (8 miles NE), on which stands a beacon, to a position WSW of Jam Jerrup Point (38°20′S, 145°31′E), close E of a beacon (special). The channel then splits into several narrow, shallow arms, the E one of which leads to Lang Lang Jetty.

4 **Caution.** Although the channel between Pelican Island and Schnapper Rock has a least depth of 4·3 m there are shoals extending into the channel from the island with depths of between 3·3 and 3·8 m.

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Anchorages

Eastern Entrance

5.58

1 A small vessel, with a draught of 4·6 m, can obtain anchorage, sheltered except from SE gales, 2½cables NNW of Red Point (38°33′S, 145°22′E). For vessels with draughts up to 3·7 m there is an anchorage 3 cables SE of Manuka Point, which lies 1¾ miles NW of Red Point.

Tidal streams at these anchorages usually have a rate of 2 to 3 kn.

Charts Aus 151, Aus 150 (see 1.12)

East Arm

5.59

1 Anchorage may be obtained in East Arm, in depths of about 15 m, NE of Cowes Jetty (38°27′S, 145°14′E), as shown on the chart. There is also good anchorage in depths of 15 m, sand and shells, 5 cables off Observation Point (38°27′S, 145°18′E).

Minor berths

Chart Aus 150 plans of Eastern Entrance to Western Port and The Narrows (see 1.12)

San Remo

5.60

1 **General information.** San Remo (38°31′·3S, 145°22′·0E), E of Davis Point (5.52), is a resort noted for its freedom from hot winds and a summer climate with day temperatures about 4°C below those of Melbourne. A large crayfish and shark fishing fleet operates from San Remo.

Berths. A jetty, which projects NW from Davis Point, has an L-shaped head. Inside the head is a cross jetty.

Facilities. A resident officer can arrange for slipping small craft at Newhaven (5.61) and can provide information about the E part of Western Port.

Supplies: fuel; provisions.

Newhaven

5.61

1 **General information.** Newhaven (38°30′·9S, 145°21′·7E), a small town on the E side of Phillip Island, is connected by Eastern Entrance Bridge to the town of San Remo (5.60) on the mainland. A fishing fleet operates from Newhaven.

Berths. Newhaven Jetty, off Woody Point (5.53), has a T-shaped head 68 m long; there is a small slipway close SW of the jetty and another jetty 1 cable N.

Chart Aus 151

Cowes

5.62

1 **General information.** Cowes (38°27′S, 145°14′E), with a population of about 1500, is the administrative centre of the shire of Phillip Island. There are forest reserves of kola bear and native game near the town.

Berth. An L-shaped jetty, 105 m long with a depth of 6·4 m alongside its outer face, fronts the town. A car ferry plies between Cowes Jetty and Stony Point Jetty (5.27). When the weather is rough the ferry berths at Rhyll (5.63).

Facilities: hospital; boat ramps to the W of the jetty.

Supplies: fresh water.

Chart Aus 150 plan of Rhyll (see 1.12)

Rhyll Jetty

5.63

1 Rhyll Jetty (38°28′·0S, 145°18′·5E), lies off the small town of Rhyll which stands N of Fisherman Point. It is approached through a channel, with a least depth of 2·5 m, marked by beacons (lateral). A light (column, 4 m in height), is displayed from the head of the jetty and from No 2 Light-beacon (porthand), the outer-most beacon on the E side of the entrance.

The jetty is L-shaped with a depth of 5·0 m close to its head. A monument stands near the root of the jetty. There is a slipway and a boat ramp close E of the jetty.

Chart Aus 150 (see 1.12)

Corinella Jetty

5.64

1 Corinella Jetty (38°24′·4S, 145°25′·3E) is situated on the NE side of Settlement Point (5.55), NW of the small town of Corinella. This town was the site of the earliest European settlement in Victoria.

The jetty is approached through Corinella Channel which is entered NE of Pelican Island (5.57). A bar, with a depth of 1·1 m over it, obstructs the entrance to the channel 3 cables NW of Settlement Point; inside the bar there is a least depth of 2·8 m to the jetty. A light-beacon (port hand) is displayed from the N side of the channel abreast the bar.

2 The jetty has a T-shaped head from where a light (wooden mast, 3 m in height) is displayed. There is a boat ramp and a small jetty close E of Corinella Jetty.

CAPE WOOLAMAI TO WILSON'S PROMONTORY

General information

Chart Aus 350, Aus 801, Aus 802

Routes

5.65

1 From the vicinity of Cape Woolamai (38°34′S, 145°22′E), the route leads SE for 59 miles to a position about 10 miles S of Citadel Island (39°07′S, 146°14′E), at the entrance to the E-bound lane of the TSS off Wilson's Promontory.

Also described is an inshore route from Waratah Bay (38°52′S, 146°05′E), SSE to the inshore traffic zone off Wilson's Promontory.

Topography

5.66

1 **Cape Woolamai to Wilson's Promontory.** Between Griffith Point (38°32′S, 145°22′E) (5.52) and Black Head, 4½miles ESE, the coast is fronted by cliffs. Anderson Hill, grassy-topped, stands 1½ miles NNW of Black Head, with the town of Anderson on its W fall. Kilcunda, a small town, stands 5 cables E of Black Head.

2 Between Black Head and Coal Point, 7½ miles SE, sandy hillocks, 30 m to over 40 m high and mostly covered with scrub, back the shore. This part of the coastline is broken by the mouth of Powlett River, which lies 3 miles SE of Black Head; a prominent railway viaduct spans the river 1 mile inland.

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3 From Point Smythe (38°39′S, 145°44′E), for 13 miles SE, the coast is formed by bare sandhills 30 m high. Table Hill 154 m (500 ft) high, as shown on chart Aus 445B, stands 8 miles E of Point Smythe and is the most prominent mark along this stretch of the coast; a slightly lower summit stands 1 mile ESE of the hill.

4 From Waratah (38°52′S, 146°00′E), 4½ miles NE of Cape Liptrap, the coast on the W side of Waratah Bay, for a distance of 3 miles NNE, is cliffy and fringed with rocks. Thence the land decreases in elevation to about 30 m with sandhills, most of them bush covered, and continues thus until Seven House Hill, 29 m high, 2 miles NW of the NW entrance point of Shallow Inlet (38°51′S, 146°10′E) (5.82). The land then decreases in height to just above HW level at the inlet.

5 From Shallow Inlet to Black Rock, 6½ miles SSE, the coast is formed of sand dunes. Thence the coastline to Oberon Point (39°05′S, 146°19′E) is formed by several prominent points and small bays. From Oberon Point to South West Point, 3 miles SSE, the coast is steep-to, bold and fronted by cliffs several hundred feet high in places and backed by the higher land of Wilson's Promontory. The islands of Glennie Group (39°05′S, 146°14′E) (5.74) on the SW side of Wilson's Promontory are prominent.

6 **Wilson's Promontory**. This is a lofty peninsula lying with South Point (39°08′S, 146°22′E), its S extremity, about 25 miles SE of Cape Liptrap (5.70). It is connected with the mainland NNW by a low sandy neck, which separates Waratah Bay from Corner Inlet, NE. South Point is the S extremity of the continent of Australia.

The promontory rises to rugged mountain ranges, some over 600 m high and wooded on their upper and least exposed parts but, towards the sides of the promontory, nearly bare of vegetation, descending abruptly to the sea.

7 The principal mountains are:

Mount Vereker (38°58′S, 146°22′E), the NW mountain of the promontory;

Mount La Trobe (39°00′S, 146°23′E), the highest peak on the promontory;

Mount Ramsay, flat-topped (39°01′S, 146°23′E);

Mount Wilson (39°03′S, 146°24′E); these last three mountains stand in the central part of the promontory.

8 All the mountain ranges on the promontory are granite, with immense boulders, most noticeable in Boulder Range at the SE end of the promontory, and separated from Wilson Range by a low valley lying E and W across the promontory.

Prohibited anchorage

5.67

1 Anchoring is prohibited within 1 mile either side of the submarine cable, laid from Waratah Bay, S to Jacob's Boat Harbour, Tasmania, as shown on the chart.

Submarine cables and pipeline

5.68

1 A submarine gas pipeline is laid S from a position 6 miles E of Cape Woolamai (38°34′S, 145°22′E) (5.12). For further information on submarine pipelines, see 1.33.

At the head of Venus Bay (5.80) there is a landing site for a submarine cable laid across Bass Strait to a position 1 mile SSW of Highfield Point (40°44′S, 145°18′E) (7.14), Tasmania.

At the head of Waratah Bay (5.77) there is a landing site for a submarine cable laid across Bass Strait to Jacob's Boat Harbour (40°56′S, 145°37′E) (7.45), Tasmania. For further information on submarine cables see 1.33.

Climatic table

5.69

1 See climatic table for Wilson's Promontory at 1.133 and 1.138.

Principal marks

5.70

1 **Landmarks:**

Tower (38°40′S, 145°37′E), 9 cables NNE of Cape Paterson (5.71).

Cape Liptrap (38°55′S, 145°55′E), 91 m high and nearly vertical. It forms the SW end of a heath-covered table-topped promontory which rises to Mount Liptrap, 4 miles NNE. A light (white concrete tower, 10 m in height) is displayed from the cape.

Wilson's Promontory (39°00′S, 146°20′E) (5.66).

2 **Major lights:**

Cape Liptrap Light — as above.

Citadel Island Light (white GRP hut, 4 m in height) (39°07′S, 146°14′E).

Directions for coastal route

(continued from 5.12)

Chart Aus 801

Cape Woolamai to Cape Liptrap

5.71

1 From a position SSW of Cape Woolamai (38°34′S, 145°22′E) the track leads SE, passing (with positions from Cape Paterson (38°41′S, 145°36′E)):

SW of Black Head (10 miles NW). Kilcunda Reef lies 5 cables ESE of the head and, with depths of less than 1·8 m over it, extends 3 cables offshore, fronting the small town of Kilcunda. Thence:

2 SW of Coal Point (2¾ miles NW), which has many below-water rocks extending 1 mile S from it with one rock which dries; the sea breaks heavily on these rocks. Thence:

SW of Cape Paterson, which is low and ill-defined. A reef, steep-to seaward, extends 3 cables SW from the cape. Honeysuckle Hill, 43 m in height, stands 2 miles E of the cape and is the highest land near the cape. And:

3 Clear of, depending on draught, Cody Bank (8 miles SSW), thence:

SW of Venus Bay (5 miles E) (5.80).

The track continues SE, passing (with positions from Cape Liptrap (38°55′S, 145°55′E) (5.70)):

SW of a small sandstone rock (6 miles NNW), 4 m in height, which lies close offshore. Rocks below water extend 4 cables seaward of the sandstone rock. Thence:

4 SW of Arch Rock (4¼ miles NNW) with a natural arch on its E side and a drying rock ½ cable SSW of it. The coast for about 1 mile each side of Arch Rock consists of overhanging sandstone cliffs. Thence:

SW of Morgan Beach (2½ miles N). A remarkable islet, 19 m high, lies close offshore at the S end of the beach. Thence:

5 To a position SW of Cape Liptrap. From Morgan Beach to the cape the tableland gradually approaches the coast. This part of the coast is renowned for the very large crayfish which abound here.

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Chart Aus 802

Cape Liptrap to Wilson's Promontory

5.72

1 **Caution.** Vessels should keep at least 1 mile offshore between Cape Liptrap (38°55′S, 145°55′E) and Bell Point, 4 miles ENE, as shoal water is reported to exist.

From the position SW of Cape Liptrap the track continues SE, passing (with positions from Cape Liptrap):

SW of Grinder Point (2 miles ENE), thence:

2 SW of Bell Point (4 miles ENE) (5.77). Between Grinder Point and Bell Point the land is low and the coast, known as Maitland Beach, is fronted by rocks, up to 9 m high, within 2½ cables of the shore. The sea breaks heavily along the whole coast between Cape Liptrap and Bell Point. Thence:

3 SW of Glennie Group (39°05′S, 146°14′E) (5.74), thence:

SW of Cleft Islet (39°10′S, 146°18′E) (6.15), thence:

To a position about 7 miles SW of Rodondo Island (39°14′S, 146°23′E) (6.12), off the entrance to the E bound lane of the TSS (6.6), S of Wilson's Promontory.

4 **Useful marks:**

Pithead structures standing at Wonthaggi (38°36′S, 145°35′E), a coal-mining town 4 miles N of Cape Paterson. At night the loom of the town lights, which lie below the level of the coastal sand dunes, is visible from seaward.

Wilson's Promontory Light (39°08′S, 146°25′E) (6.10).

(Directions for the coastal route continue at 6.12)

Directions for inshore route

Waratah Bay to Southwest Point

5.73

1 This inshore route may be of use to small vessels, coming from the NW, wishing to use the Inshore Traffic Zone off Wilson's Promontory, during N gales.

From a position about 5 miles NW of Shellback Island (38°58′S, 146°13′E), on the SE side of Waratah Bay, the track leads SSE for 15 miles, passing (with positions from Citadel Island Light (39°07′S, 146°14′E)):

2 WSW of Shellback Island (9 miles N) which is steep-to. There are large numbers of geese on the island and good crayfish grounds near it. Black Rock stands close off the coast, 1¼ miles NE of the island. Thence:

3 WSW of Tongue Point (7¼ miles N). The point, forming the N side of Whisky Bay, has a remarkable white conical rock close W of it. From the base of the point the land is high, rising SE towards La Trobe Range. Thence:

ENE of Norman Island (5½ miles N); for information on anchoring see 5.78. Thence:

4 WSW of Leonard Point (6 miles NNE) and Pillar Point (5½ miles NNE). Leonard Bay lies between the points. Thence:

WSW of Norman Bay (6 miles NE). The bay has a sandy beach and at its N end some huts, a store and a post office at a river entrance. Thence:

5 WSW of Norman Point (5½ miles NE) which forms the S side of Norman Bay. There is a dangerous rock close W of the point. Mount Oberon stands 1¼mile ENE of the base of the point. Thence:

6 Between the islands of Glennie Group (1½miles N) (5.74) and Oberon Point (4½ miles ENE), standing on the S side of Oberon Bay. For information on anchoring see 5.79. Thence:

To a position about 1 mile NW of South West Point (5 miles E).

7 **Caution.** Although the water is deep between Glennie Group (39°05′S, 146°14′E) and Anser Group, 3½miles SE, the passage between Citadel Island and Cleft Island should not be used.

(Directions for the inshore route continue at 6.25)

Glennie Group

Description

5.74

1 Glennie Group (39°05′S, 146°14′E), 4 miles W of Oberon Point on the SW side of Wilson's Promontory, is comprised of the following islands and rocks:

Great Glennie Island, also known as Big Glennie Island, the N and largest of the group, is saddle-shaped and composed of granite, large blocks of which are strewn over it giving a castellated appearance. The island rises to a height of 138 m near its S end. Its N part is covered with tussocky grass and abounds in mutton birds and Cape Barren geese.

2 Ramsbotham Rocks, 1 m high and over which the sea generally breaks, lie 2 cables N of the N point of Great Glennie Island; another large rock, 5 m high, lies 1 cable E of the same point.

Dannevig Island lies S of Glennie Island with a narrow channel between.

Citadel Island (39°07′S, 146°14′E) close S of Dannevig Island, resembles an ancient fortress. A monolith stands near its NE point and a light (5.70), with a tank close N of it, is displayed from the island.

McHugh Island lies close SE of Citadel Island.

Tidal levels

5.75

1 See information in *Admiralty Tide Tables*. At Great Glennie Island mean maximum range about 2·0 m, mean minimum range about 1·6 m.

Anchorage and landing

5.76

1 Bolger Anchorage, on the E side of Citadel Island (39°07′S, 146°14′E), affords anchorage in a depth of 18 m about 2 cables E of the monolith.

Good landing may be made 7 cables SSE of the N end of Great Glennie Island, near the saddle on the E side, where there are mooring chains.

Anchorages

Waratah Bay

5.77

1 **Description.** Waratah Bay, entered between Bell Point (38°53′S, 146°00′E) and Shallow Inlet, 8 miles E (5.82), affords good anchorage except during S and SE gales.

The main dangers in the bay are the rocks around Bell Point, an islet 18 m high, 3 cables N of the point and close offshore, and Bird Rock, 12 m high, the largest of a group of rocks 1 mile N of Bell Point.

Bell Point, fringed with rocks above and below water, may be identified by a large broad topped rock, about 12 m high, 1 cable E of it.

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2 Waratah Bay Light (metal column, 5 m in height) (38°52′S, 146°00′E) is displayed 1 cable W of Bird Rock.

Submarine cable. See 5.68.

Anchorage. Vessels may anchor within the white sector (259°–328°) or the green sector (194°–259°) of Waratah Bay Light with good shelter from SW gales, but a good lookout must be kept for a sudden windshift to E. A good berth is 7½ cables NE of the light in a depth of 11 m, sand, or 1 mile off the head of the bay in a depth of about 14 m.

Norman Island

5.78

1 Norman Island (39°01′S, 146°14′E), situated N of the Glennie Group (5.74), has two peaks; the N and higher point being 96 m high. The W side of the island is steep-to but landing may be effected at its SE end.

Anchorage may be obtained during SW winds, in depths of about 18 m, from 1 to 2 cables off the E side of Norman Island. In a SW gale low-powered vessels bound W might do better to anchor here rather than to run back to Waterloo Bay (39°05′S, 146°27′E) (6.26) on the E side of Wilson's Promontory.

Oberon Bay

5.79

1 Oberon Bay (39°04′S, 146°20′E), entered N of Oberon Point, has a broad sandy beach upon which the sea breaks heavily, though landing can usually be made in the SE corner.

The bays on the W side of Wilson's Promontory are not normally recommended for anchoring in as SW gales spring up suddenly, leaving vessels on a lee shore with a heavy swell setting on to it. However, Oberon Bay is the least dangerous and during SE gales good shelter has been found 7½ cables NNE of Oberon Point, as shown on the chart.

2 In 1986 MV *Cape Otway*, 31 600 tons with draught of 10·5 m, anchored 8 cables NW of Oberon Point using seven shackles of cable in a depth of 27 m. An E gale was blowing with the wind funnelling between Mount Wilson (39°03′S, 146°24′E) and Mount Boulder, 2 miles S, but the vessel lay comfortably at anchor.

Inlets

Chart Aus 801

Anderson Inlet

5.80

1 **Description.** Anderson Inlet (38°39′S, 145°47′E) lies at the head of Venus Bay, a bay which does not afford good anchorage. The inlet is entered between Point Smythe (38°39′S, 145°44′E) and Point Norman, 8 cables W. It is a shallow inlet which extends from its entrance E and SE about 7 miles to Tarwin River at its head. It is almost filled with mud flats, drying 0·1 m, and intersected by shallow channels.

2 The main danger in the approach to the inlet is Petril Rock, lying 2 miles SW of Point Smythe. It is 0·6 m high and lies on a bank with depths of less than 10 m, extending 1 mile offshore on the NW side of Venus Bay.

The small town of Inverloch stands on the NW side of the inlet, about 8 cables ENE of Point Norman (38°39′S, 145°44′E). It lies within a rich pastoral and agricultural district.

3 **Port limits.** The port of Anderson Inlet is bounded on the S by the parallel of latitude of Petril Rock (38°39′·5S, 145°41′·6E) and, within the entrance, by the rivers and creeks flowing into it.

Limiting conditions. The inlet can only be used by vessels with a draught of 1·5 to 1·8 m according to the condition of the bar and the state of tide.

Submarine cable. See 5.68.

4 **Local knowledge** is required.

Landmark:

Eagles' Nest (38°40′S, 145°40′E), a remarkable rock, 18 m high, standing on the W side of Venus Bay, close offshore.

5.81

1 **Directions.** The entrance to Anderson Inlet can be identified by the houses on higher ground, in Inverloch, near Point Hughes (38°38′·3S, 145°43′·5E), 8 cables NE of Point Norman, and by coastal sand hummocks SE of Point Smythe.

An extensive drying sandbank almost fills the entrance leaving only a narrow channel between it and some rocky ground, with depths of less than 1·8 m over it, extending ¾cable from a drying sandstone reef which lies 1 cable off Point Norman.

2 The entrance channel, 5 cables seaward of Point Norman, is fronted by a sand bar, the depths over which vary from 0·9 to 2·1 m. Inside this bar the channel, with a width of about 120 m, leads N between the outer edges of reefs projecting from the NW shore and the large sand bank E, and then NE as far as Point Hughes and thence to the jetty at Inverloch.

For a vessel inward bound, the best time to cross the bar is on a rising tide from half tide to HW; outward bound, about HW.

3 Abreast Point Hughes the channel contracts to a width of about 90 m, and then leads SE, with a width of about 60 to 90 m and a depth of 1·2 m, to pass close off the S shore. It then becomes a winding channel, marked by buoys leading SE for 5½ miles to the entrance to Tarwin River.

Berths. At Inverloch there is a T-shaped jetty, the depth alongside which is subject to change.

Chart Aus 802

Shallow Inlet

5.82

1 Shallow Inlet (38°51′S, 146°10′E) on the E side of Waratah Bay (5.77) is entered between a low point on the NW side and a point, 5 cables SE, formed of drifting sand dunes up to 12 m high. A prominent sandhill, 53 m high, stands 2½ miles ESE of the entrance.

The depth in the entrance varies under the influence of freshets and the wind prevailing; it is occasionally dry at LW but at other times there is enough water for fishing vessels.

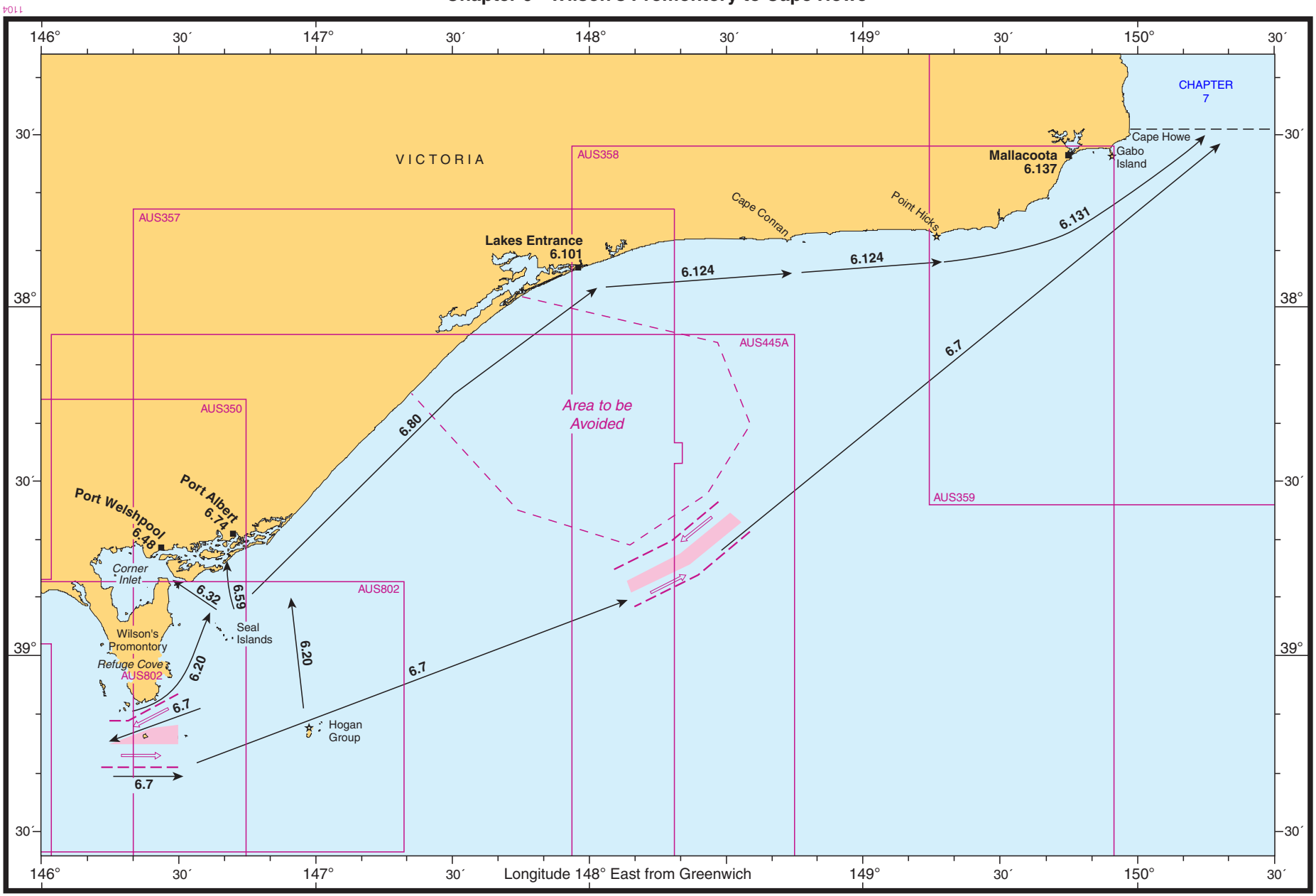
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Chapter 6 - Wilson's Promontory to Cape Howe



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CHAPTER 6

VICTORIA — WILSON'S PROMONTORY TO CAPE HOWE

GENERAL INFORMATION

Chart Aus 422

Scope of the chapter

6.1

1 The area covered by this chapter comprises the coastline between Wilson's Promontory (39°00′S, 146°20′E) and Cape Howe (37°30′S, 149°59′E). The coast is generally indented, with large areas of relatively sheltered water in Corner Inlet (38°49′S, 146°32′E) and Gippsland Lakes (38°00′S, 147°30′E), but there are few anchorages for deep-draught vessels; of these the principal ones are Waterloo Bay (6.26) and Refuge Cove (6.27), both on the E side of Wilson's Promontory.

2 The harbours on this coast, all of a small size, are those of Port Welshpool (6.48), Barry Beach (6.54), Port Franklin (6.55), Port Albert (6.74) and Lakes Entrance (6.101).

The chapter is divided into the following sections:

Offshore route — Wilson's Promontory to Cape Howe (6.7).
Wilson's Promontory to Shoal Inlet Entrance (6.19).
Shoal Inlet Entrance to Lakes Entrance (6.79).
Lakes Entrance to Cape Howe (6.123).

Topography

6.2

1 Apart from the high land of Wilson's Promontory (5.66) the coast between South East Point (39°08′S, 146°25′E) and Lakes Entrance (37°53′S, 147°58′E), the entrance to Gippsland Lakes, about 105 miles NE, is low and consists mainly of hummocks less than 30 m high. Thence to Cape Howe (37°30′S, 149°59′E), 100 miles farther ENE, the coast is higher, rising to about 90 m in places.

Numerous mountains and hills lie inland and many of those standing near the E part of the coast form good landmarks.

Historic wrecks

6.3

1 Along the coastline described in this chapter there are several historic wrecks. For further details see 1.52.

Rescue

6.4

1 See 1.66 and *Admiralty List of Radio Signals Volume 5*.

Tidal streams

6.5

1 The tidal streams are generally regular, changing at or about HW and LW, but the direction of the streams is much influenced by the winds, except inshore.

Traffic Separation Schemes

6.6

1 Within the area covered by this chapter TSS have been established as follows:

South of Wilson's Promontory (39°00′S, 146°20′E). An Inshore Traffic Zone is situated between the traffic lane for W-bound traffic and Wilson's Promontory.

South-east of Kingfish B Platform (38°36′S, 148°11′E) and an Area to be Avoided (6.8) containing an oil and gas field.

These TSS are IMO adopted and Rule 10 of *International Regulations for Preventing Collisions at Sea (1972)* applies.

OFFSHORE ROUTE — WILSON'S PROMONTORY TO CAPE HOWE

General information

Charts Aus 802, Aus 357, Aus 358, Aus 359

Route

6.7

1 From a position about 10 miles S of Citadel Island (39°07′S, 146°14′E) the offshore route leads E, for a distance of 16 miles, then ENE for a distance of 9 miles, through the TSS off Wilson's Promontory, continuing ENE, for a distance of 76 miles, to a TSS, centred in position 38°45′S, 148°15′E, off the SE side of an Area to be Avoided (6.8). The route then leads NE, for a further distance of about 112 miles, passing SE of New Zealand Star Bank (37°47′S, 149°44′E), to a position SE of Cape Howe (37°30′S, 149°59′E).

Area to be Avoided

6.8

1 An Area to be Avoided by unauthorized vessels of more than 200 grt, and within which lies a large oil and gas producing field, between 27 miles SE and 40 miles S of Lakes Entrance (37°53′S, 147°58′E). This field contains oil wells and oil and gas production platforms most of which are marked by lights, light-buoys and buoys, and some with racons. The limits of the Area to be Avoided, the positions of these structures and the submarine pipelines linking them to each other, or to the shore, are shown on the chart.

2 In accordance with *The International Convention for the Safety of Life at Sea (SOLAS), 1974*, vessels should maintain a listening watch on VHF channel 16 whilst in the vicinity of the Area to be Avoided. Surveillance operations are carried out within a radius of 40 miles of position 38°20′S, 148°00′E by military vessels and aircraft, which

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may use illuminants and approach close to vessels to establish identification.

Exploration rigs may be encountered outside the Area to be Avoided and should not be approached within 2½miles. For remarks on safety zones and submarine pipelines see 1.10.

Tidal streams south of Wilson's Promontory

6.9

1 Off the S side of the promontory the normal direction of the streams is W and E but their direction is much influenced by the wind. Normally the streams turn at about HW or LW.

Strong E gales cause a W-going current and strong W gales an E-going current, which persist for a while after the gales cease. Near the promontory, after an E gale the strong E-going tidal stream, which has been checked during this gale, sets E for some time after the W-going tidal stream should have begun. When the W-going tidal stream is running strongly the resultant set is to the N. A SW gale has the opposite effect.

2 The streams inshore are little influenced by the wind. Off the S side of the promontory, where the streams are strongest, the rates do not exceed 2½kn. However around Rodondo Island (39°14′S, 146°23′E) rates of 4 to 5 kn are attained and the area should be avoided.

3 Off Cape Wellington (39°04′S, 146°29′E) the tidal streams appear to meet and set in opposite directions; the stream from NE turning and setting N along the shore, the outer part of the same stream setting around the cape S and W. The stream from the SW sets in an opposite manner. The conditions cause a strong tidal rip and race off Cape Wellington.

Principal marks

6.10

1 **Landmarks:**

Wilson's Promontory (39°00′S, 146°20′E) (5.66).

Everard Hill (37°43′S, 149°17′E), wooded and conspicuous. Mount Kay (37°24′S, 149°16′E), 1001 m high, flat-topped and wooded, with a sharp fall W, stands 20 miles farther N.

2 Genoa Peak (37°32′S, 149°38′E), the summit of a wooded range extending NE and N from an elevation of about 290 m, to which the land rises gradually.

Howe Hill (37°31′S, 149°53′E), a prominent feature which arises abruptly from low level land extending about 4 miles W from Cape Howe (6.16); the summit is shaped like a haystack and the hill shows a steep fall S.

3 **Major lights:**

Citadel Island Light (39°07′S, 146°14′E) (5.70). From the SE the light is partially obscured by Anser Group.

Wilson's Promontory Light (grey round stone tower, white lantern and dwellings, 19 m in height) (39°08′S, 146°25′E), displayed from South East Point. This light may be obscured by off-lying islands.

4 Cliffy Island Light (grey granite tower, white lantern, 12 m in height) (38°57′S, 146°42′E).

Little Rame Head Light (white GRP hut, 2 m in height) (37°41′S, 149°40′E).

Gabo Island Light (red granite tower, white lantern, 47 m in height) (37°34′S, 149°55′E), displayed from the SE end of the island.

Other aids to navigation

6.11

1 **Racons:**

Kingfish B Platform (38°36′S, 148°11′E).
Flounder A Platform (38°19′S, 148°26′E).
Gabo Island (37°34′S, 149°55′E).

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

Directions

(continued from 5.72)

Citadel Island to Hogan Group — TSS east-bound

6.12

1 **Caution.** Soundings off the S side of Wilson's Promontory afford no guide as there is deep water close to the coast, between it and the off-lying islands, and between the groups of islands.

From a position about 7 miles SW of Rodondo Island (39°14′S, 146°23′E) the track leads E, passing (with positions from East Moncoeur Island (39°14′S, 146°32′E)):

S of Rodondo Island (7 miles W), a remarkable conical mass of granite rising to a distinct peak. The island is steep-to on all sides and has high cliffs covered with scrub. Landing is possible on a ledge on the E side of the island. Thence:

2 N of Crocodile Rock (8 miles SSW), a large smooth granite boulder. The sea sweeps over it almost continuously so the rock is seldom visible, though usually well marked by breakers. Thence:

S of West Moncoeur Island (1½miles W), an almost bare, steep-to island with small islets on its N and S sides, thence:

N of Cutter Rock (7 miles S) which is steep-to. The sea seldom breaks over this rock but in rough weather there is a lumpy sea in its vicinity. Thence:

3 S of East Moncoeur Island, an almost bare, steep-to island. A light (white GRP hut, 2 m in height) is displayed from its SW point.

The track then leads ENE, passing:

NNW of Devil's Tower (13 miles SE), a rugged islet. A few detached rocks lie close off its SW side but it is otherwise steep-to. From NW or SE, Devil's Tower appears as a double summit, the NE being the higher. Thence:

4 To a position NNW of Twin Islets (20½miles E) lying on the N side of Hogan Group (6.17). A light (white GRP hut, 4 m in height) is displayed from Hogan Island, the main island of the group; the hut is conspicuous.

(Directions for the offshore route continue at 6.16 and for a coastal route at 6.24)

Hogan Group to Citadel Island — TSS west-bound

6.13

1 From a position NNW of Twin Islets (39°12′S, 146°59′E), on the N side of Hogan Group (6.17), the track leads WSW, passing (with positions from East Moncoeur Island (39°14′S, 146°32′E)):

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SSE of Cliffy Island (18½ miles NNE) (6.31) from where a light (6.10) is displayed. It is the E-most island of Seal Islands (6.31). Thence:

2 SSE of Cape Wellington (10 miles N), a hilly headland 78 m high at its SE point, rising to 135 m high about 5 cables inland and then to Kersop Peak, its highest part, 1 mile inland. Thence:

NNW of East Moncoeur Island (6.12), thence:

SSE of Waterloo Point (9½miles NNW), from where a light (6.15) is displayed, thence:

3 NNW of West Moncoeur Island (1½miles W) (6.12), thence:

SSE of South East Point (8 miles NW), from where Wilson's Promontory Light (6.10) is displayed. Landing places, each with a hand crane, are situated 2½ cables N on the W side of the point and 5 cables N on the E side; they are used according to the direction of the wind except when fresh from the S.

6.14

1 Thence the track continues WSW, passing:

NNW of Forty Foot Rocks (5¾ miles WNW). These rocks comprise three distinct granite islets; the W and largest is 6 m high with a granite boulder, 6 m in height, on its S end, making this rock 12 m high overall. When the sea breaks over these rocks the boulder is probably the only part of them visible. The rocks are steep-to all round. Thence:

2 SSE of South Point (9½ miles NW), which is low and stony with a rock about 4 m high, 1 cable WSW, and a rock awash 1 cable ENE, thence:

SSE of Wattle Island (10 miles NW), which is covered with green vegetation and from the S appears to be connected to the promontory. Geese are always found here. Thence:

NNW of Rodondo Island (7 miles W) (6.12), thence:

3 SSE of Anser Island (11 miles NW) which is the largest and the NE-most island of Anser Group. The group takes its name from the geese frequenting it; many seals breed here. Anser Island rises to a nipple-pointed summit; it is cliffy all round but least so on its N side where landing may often be made. Thence:

SSE of Kanowna Island (11½ miles WNW).

6.15

1 The track then leads W, passing:

S of Cleft Island (12 miles WNW), also known as Skull Rock, the SW and most remarkable of Anser Group. The island is sheer and white all round; a large slice out of its NW side gives it a cavern-like appearance. Between Cleft Island and Kanowna Island lie Anderson Islets, a group of three rock islets; the two S islets are between about 12 and 15 m high with the N islet slightly lower. Carpentaria Rock, with a depth of 1·8 m over it (charted as a dangerous rock), lies 7½cables N of Cleft Island. Thence:

2 To a position about 5½ miles S of Citadel Island (39°07′S, 146°14′E) (5.74), from where a light (5.70) is displayed.

Useful marks:

Waterloo Point Light (white post, 2 m in height) (39°05′·4S, 146°26′·4E).

Refuge Cove Light (metal post, 2 m in height) (39°02′·5S, 146°28′·0E).

3 Sealers' Cove Light (metal column, 2 m in height) (39°01′·3S, 146°27′·6E).

These lights serve primarily to identify the position of the E coast of Wilson's Promontory which is difficult to pick up W on a dark night.

(Directions to Western Port and Port Phillip Heads are given in reverse at 5.72)

Hogan Group to Cape Howe

(continued from 6.12)

6.16

1 From a position NNW of Twin Islets (39°12′S, 146°59′E), on the N side of Hogan Group (6.17), the offshore route leads ENE, passing through the TSS, SE of Kingfish B Platform (38°36′S, 148°11′E), from where a light is displayed and which lies within an Area to be Avoided (6.8). The track then leads NE, passing (with positions from Gabo Island Light (37°34′S, 149°55′E)):

2 SE of New Zealand Star Bank (15½ miles SSW), a group of shoals with a least reported depth of 15 m (51 ft) over them. The sea breaks over the bank in heavy weather and a confused sea forms nearby; at such times the area should be avoided. A bank with a depth of 20 m (11 fm) over it lies 2 miles NNW and another with a depth of 26 m (14 fm) over it lies 1¼ miles W of New Zealand Star Bank. Thence:

SE of Little Rame Head (13½ miles SW) (6.136) from where a light (6.10) is displayed, thence:

3 SE of Gabo Island, from where a light (6.10) is displayed. The island lies close off Telegraph Point (6.136) with a narrow shallow channel between; the channel is unsafe with any swell. A monument stands near the centre of the island. The bare sides of some sandhills face SE and show from that direction only; the highest is 52 m (171 ft) high. The N end of the island tapers to a low point composed of granite boulders. Thence:

4 To a position SE of Cape Howe (5 miles NE). Cape Howe is a low point, formed of stones and sand, within which are tree-covered hummocks; the point rises to a height of 45 m about 1 cable inland. Below-water rocks extend 3 cables E from the cape.

For detailed directions along the coast between Point Hicks (37°48′S, 149°16′E) and Cape Howe (37°30′S, 149°59′E) see 6.135.

(Directions continue at 11.13)

Hogan Group

Chart Aus 148 (see 1.12)

Description

6.17

1 Hogan Group (39°14′S, 146°59′E), 27 miles ESE of South East Point on the S side of Wilson's Promontory, is comprised of the following islands and rocks:

Hogan Island, from where a light is displayed (6.12), is the largest of the group. The island affords grazing for cattle which are landed at the two anchorages (6.18).

2 Twin Islets; the higher islet lies 3 cables N of the N end of Hogan Island with the other 1 cable farther N.

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Long Islet, sheer-faced, lying close NE of Hogan Island.

Boundary Island (charted as North East Islet on chart *Aus 802*), lying 1 mile ENE of Long Island with Seal Rock, 7½ cables farther ENE.

East Islet lying 1½ miles E of Hogan Island.

3 Round Islet lying close off the SE side of Hogan Island. A rock with a depth of 10·2 m over it, which breaks occasionally, lies 7½ cables E, and a detached shoal with a depth of 6·1 m over it, lies 2 miles S of Round Island.

Caution. A submarine gas pipeline passes 4 miles E of Hogan Group, and a submarine power cable passes 3 miles W of the Group, as shown on chart *Aus 802.*

For further information on pipelines see 1.33.

Anchorages

6.18

1 Sheltered anchorage in strong S winds may be obtained, in depths of 18 to 37 m with good holding, on the NE side of Hogan Island between Twin Islets and Long Island.

Better anchorage during W gales may be obtained in depths of 11 to 27 m, sand, stones and rock, in a bay on the E side of Hogan Island, S of Long Island.

WILSON'S PROMONTORY TO SHOAL INLET ENTRANCE

GENERAL INFORMATION

Charts Aus 802, Aus 357

Area covered

6.19

1 The area covered by this section comprises:

Coastal and inshore routes (6.20).

Corner Inlet and Corner Basin (6.32).

Port Albert and approaches (6.59).

COASTAL AND INSHORE ROUTES

General information

Charts Aus 802, Aus 357

Routes

6.20

1 From a position NNW of Twin Islets (39°12′S, 146°59′E), on the N side of Hogan Group (6.17), the coastal route leads N for about 22 miles, passing the entrances to Corner Inlet and Port Albert, to a position SE of Shoal Inlet Entrance (38°41′S, 146°50′E).

Also described is the continuation of the inshore route from Waratah Bay (38°52′S, 146°05′E), through the inshore traffic zone off Wilson's Promontory, to the entrance to Corner Inlet.

Topography

6.21

1 The S and E coast of Wilson's Promontory between South West Point (39°08′S, 146°21′E) and the N entrance point of Sealers' Cove (39°01′S, 146°27′E), formed by a high, bold bluff at the E end of La Trobe Range, is for the most part, high, bold and much indented.

South Peak stands 8 cables NW of South East Point (39°08′S, 146°25′E) and Mount Boulder stands 2 miles farther NNW. The principal mountains of Wilson's Promontory, which may afford useful landmarks offshore, are described at 5.66.

2 From Sealers' Cove to Monkey Point, 6 miles NNE, the coastline is fronted by Five Mile Beach, consisting of reddish-coloured sand backed by swampy ground extending 2 miles W to high ground. A prominent mound, 15 m high, stands 1½ miles SW of the N end of Five Mile Beach, and Monkey Point is bold.

From Monkey Point (38°55′S, 146°29′E) to Shoal Inlet Entrance (38°41′S, 146°50′E), 21 miles NE, the coast is fronted by low-lying islands between which channels pass, leading to Corner Inlet, Port Albert and Shoal Inlet.

Tidal streams

6.22

1 See 6.9.

Principal marks

6.23

1 **Landmark:**

Wilson's Promontory (39°00′S, 146°20′E) (5.66).

Major lights:

Citadel Island Light (39°07′S, 146°14′E) (5.70). From the SE the light is partially obscured by Anser Group.

Wilson's Promontory Light (39°08′S, 146°25′E) (6.10).

Cliffy Island Light (38°57′S, 146°42′E) (6.10).

Lighthouse Point Light (38°51′S, 146°28′E) (6.39).

Directions

(continued from 6.12)

Coastal route

6.24

1 From a position NNW of Twin Islets (39°12′S, 146°59′E), on the N side of Hogan Group (6.17) the track leads N, passing:

E of Cliffy Island (38°57′S, 146°42′E) from where a light (6.10) is displayed. This is the E-most island of Seal Islands (6.31). Thence:

E of the entrance to Corner Inlet (38°51′S, 146°35′E), thence:

2 E of the entrance to Port Albert (38°45′S, 146°41′E), thence:

To a position SE of Shoal Inlet Entrance (38°41′S, 146°50′E).

Useful mark:

Shoal Inlet Entrance Light (metal tower, 3 m in height) (38°40′·6S, 146°50′·0E).

(Directions for the coastal route continue at 6.85)

(Directions for Corner Inlet are given at 6.40 and for Port Albert at 6.66)

Chart Aus 802

Inshore route

(continued from 5.73)

6.25

1 From a position about 1 mile NW of South West Point (39°08′S, 146°21′E) the track leads SSE for 2½miles, passing (with positions from South West Point):

Between South West Point and Anser Island (1¼miles SW) (6.14), thence:

WSW of Wattle Island (1 mile SSE) (6.14). There is a passage, 2 cables wide, between Wattle Island

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and the rock, 4 m high, WSW of South Point, but the currents in it are strong.

The track then leads ENE for 4 miles, within the inshore traffic zone, passing:

2 SSE of Wattle Island, South Point (1½ miles SE), Fenwick Bight (2 miles ESE) and South East Point (3½miles ESE), all of which are described in the directions (6.13) for the W-bound lane of the TSS off Wilson's Promontory.

Thence the track leads NE, for 6 miles, passing (with positions from Cape Wellington (39°04′S, 146°29′E):

SE of Waterloo Point (2¼ miles SW) from where a light (6.15) is displayed, thence:

SE of Cape Wellington (6.13).

3 The track then leads NNE, for a further 13 miles, passing:

ESE of Brown Head (1 mile NNW). Bareback Cove lies between Brown Head and Cape Wellington. Thence:

ESE of Horn Point (2 miles NNW), thence:

ESE of Five Mile Beach (6 miles NNW) (6.21). The beach may be approached to within 8 cables in depths of about 10 m. Thence:

4 ESE of Rabbit Island (9 miles N). The island is bare of trees but covered with high grass. It provides an excellent mark for vessels proceeding NNE to Corner Inlet (6.32). On the W side a remarkable patch of sand rises from a small sandy beach to a saddle at the head of an indentation in the S side of the island, giving it a notched appearance near its S end. A beacon (white) stands on the SE side of the island. Mutton birds, penguins and rabbits abound on the island. And:

5 WNW of White Rock (12¼ miles NE), the NW-most danger of Seal Islands (6.31). Thence:

To a position off the entrance (14 miles NNE) to Corner Inlet.

Clearing lines:

The alignment (215°) of Cape Wellington (39°04′S, 146°29′E) with South East Point, 4½ miles SSW, clears 8 cables NW of White Rock (38°55′S, 146°39′E).

6 The line of bearing, 231°, of Mount La Trobe (39°00′S, 146°23′E) open SE of Rabbit Island (38°55′S, 146°31′E), leads SE of the sandbanks in the entrance to Corner Inlet.

Useful marks:

See 6.15.

(Directions for Corner Inlet continue at 6.40)

Bays, anchorages and islands

Waterloo Bay

6.26

1 **Description.** Waterloo Bay (39°05′S, 146°27′E), is entered between Waterloo Point, from where a light (6.15) is displayed, and Cape Wellington (6.13), 2¼ miles NE. The bay has a depth of 26 m at its centre decreasing to 10 m about 2 cables from the head but deeper towards its outer points. The SW shore of the bay forms the E end of a valley extending W across the promontory to Oberon Bay (39°04′S, 146°20′E) (5.73). The valley makes a remarkable break between the mountain ranges N and S of it.

2 **Anchorage.** The best anchorage is 4 cables from the SW shore in depths of 22 m. Small vessels bound W may anchor with shelter from SW gales close inshore in a small cove under Waterloo Point, as shown on the chart. Although the holding is good this anchorage is not recommended for it lies immediately under high land SW and is exposed to the swell from both sides of Bass Strait.

Caution. The bay, from 5 cables N of Waterloo Point, is open to severe W winds sweeping through the valley between the mountain ranges.

Chart Aus 802 plan of Refuge Cove

Refuge Cove

6.27

1 Refuge Cove (39°02′S, 146°28′E), the central of three coves between Brown Head (6.25) and Horn Point (6.25), 1 mile N, is the only anchorage on the E side of Wilson's Promontory affording any shelter from E. It may easily be identified as lying midway between Kersop Peak (6.13) and Horn Point and it has the first sandy beach opening N of Cape Wellington.

2 The entrance to the cove, S of Hobb's Head, on which there is a round-topped hill, is about 1½ cables in width with depths of 11 m in it. Depths within the entrance shoal gradually to about 5 m close inshore. A light (6.15) is displayed from the S entrance point. The anchorage is in the S part of the cove.

Chart Aus 802

Sealers' Cove

6.28

1 Sealers' Cove (39°01′S, 146°27′E) is entered 1½miles WNW of Horn Point (6.25). There are depths of 8·2 m in the entrance, which is about 6 cables wide, decreasing to less than 5·0 m inside. A light (6.15) is displayed from the shore, on the S side, 6 cables E of the entrance. A heavy swell is often felt in the cove, which has a ruined jetty at its S end.

Caution. The N side of the bay is fringed with rocks.

Chart Aus 181 (1.12)

Miranda Bay

6.29

1 Miranda Bay (38°55′S, 146°29′E), a small cove, lies between a bold granite point, close NE of the N end of Five Mile Beach (6.21), and Monkey Point (6.21) 5 cables NE. It is fronted by Rabbit Rock, with a detached rock close W, and backed by wooded slopes.

Landing can be made at the head of the bay.

Rabbit Island

6.30

1 Good anchorage may be obtained, except in E or SE gales, in depths of about 8·5 m, 1 mile NE of Rabbit Island (38°55′S, 146°31′E); coasters bound W may find this a convenient anchorage during SW gales.

Landing can be made in a small sandy cove on the W side of Rabbit Island (6.25).

Seal Islands

6.31

1 Seal Islands (38°56′S, 146°40′E), 11 miles ENE of Wilson's Promontory, comprise a group of islands, islets and rocks lying between 7 and 9 miles offshore, as follows:

Cliffy Island, the SE-most island. A light (6.10) is displayed from the E side of the island. Landing may be made, in calm weather, on the SE side of the island adjacent to a set of piles.

Rag Island lies about 1 mile WSW of Cliffy Island with two prominent rocks 1½ cables E.

Notch Island, steep-to, lies 7 cables N of Rag Island. A valley between two hills gives the island a notched appearance.

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2 Seal Island, covered with tufts of coarse grass, lies 1 mile NW of Notch Island and is the largest island of the group. A rock 2 m high lies near the outer end of rocks awash and below water which extend 6 cables NW from the island. Mutton birds, penguins and wild goats abound on Seal Island.

White Rock (38°55′S, 146°39′E) lies 1¼ miles NW of Seal Island. A rock with a depth of 5·5 m over it lies close S and a rock with a depth of 5·8 m (charted as sounding of doubtful depth) lies 2 cables NW.

CORNER INLET AND CORNER BASIN

General information

Charts Aus 350, Aus 181 (see 1.12)

Description

6.32

1 Corner Inlet (38°49′S, 146°32′E) is the name generally given to the funnel shaped bight between the NE shore of Wilson's Promontory, N of Rabbit Island (38°55′S, 146°31′E), and the S shore of Snake Island (38°46′S, 146°32′E).

Corner Inlet leads into Corner Basin which lies between the NW side of the peninsular forming the NE side of Wilson's Promontory and the land N of it. The basin is sometimes also known as Corner Inlet. Within Corner Basin lie the small harbours of Port Welshpool (6.48), Barry Beach (6.54) and Port Franklin (6.55).

Route

6.33

1 From a position about 2¾ miles N of White Rock (38°55′S, 146°39′E) the route into Corner Inlet leads WNW for 4 miles, passing between two sandbanks about 4 miles NE of Rabbit Island (38°55′S, 146°31′E). The channel then leads NW for a further 8 miles, passing between Snake Island (38°46′S, 146°32′E) and Entrance Point, the NE point of Wilson's Promontory, to a position about 2½ miles WNW of Bentley Point Light (38°46′·5S, 146°29′·6E). From this position the channels leading to Port Welshpool, Toora, Barry Beach, Port Franklin, Foster and Yanakie can be easily accessed.

Topography

6.34

1 **West side of the entrance to Corner Inlet.** Between Monkey Point (38°55′S, 146°29′E) and Hunter Point, 5½ miles N, the coast is backed by high land rising to 350 m in places. Between Hunter Point and Entrance Point, 2¼ miles farther N, the coast is low and sandy.

The large wedge-tailed eagle is found in the forests of Mount Roundback and Mount Hunter, and in the plain behind the coast between Hunter Point and Entrance Point there are red deer, kangaroo and emu.

2 **South shore.** This part of Corner Basin is formed by the N side of Wilson's Promontory with its many prominent mountains. The only features on this side of Corner Basin are the following islands:

Granite Island (38°49′S, 146°23′E) covered with coarse grass. There is a mutton bird rookery on the island.

3 Bennison Island (38°51′S, 146°22′E) standing on a drying sand bank, has a well-known mutton bird rookery on it. Two mangrove islets lie close to the coast, 1¼ miles ESE of the island, and another two mangrove islands lie 3½ miles SW and W.

Doughboy Island (38°46′S, 146°17′E), a white-faced granite island covered with scrub, lies on the edge of a drying sand bank 2 miles N of Duck Point. There is also a mutton bird rookery on this island.

4 **West Shore.** Between Duck Point (38°48′S, 146°16′E) and the entrance to Golden Creek (38°45′S, 146°11′E), about 5 miles NW, and thence to the entrance to Stockyard Creek, about 3 miles father NE, the coast is formed by a bight, at the head of which is a low swampy island. From Stockyard Creek to the entrance to Franklin River, 2½ miles E, the coast is marshy and off its E part fronted by a low marshy island.

5 **North shore.** The shore on this side of Corner Basin is low, fringed with mangroves and fronted by large drying sand banks through which narrow channels lead to Port Welshpool, Barry Beach, Toora, Port Franklin and Foster.

Barry Point (38°43′S, 146°23′E), 27 m high, is prominent and timbered. Swampy ground backs the coast to the E of the point. Between Barry Point and the entrance to Agnes River, 1¾ miles N, the coast is fronted by a sandy beach broken only by the wharf at Barry Beach (6.54).

6 **East side of Corner Basin.** Snake Island (38°46′S, 146°32′E) and Little Snake Island (38°43′S, 146°28′E) form the E side of the basin and separate Corner Inlet from Port Albert to the NE.

Snake Island is low with a prominent red bluff, 12 m high, on its NW side. The island is timbered giving it an apparent elevation of about 15 m. The N coast of the island is indented and, for the most part, fringed with mangroves.

Little Snake Island, close off the NW end of Snake Island, is low, grassy and fringed with mangroves in places.

Port limits

6.35

1 The port of Corner Inlet include all the waters contained generally W of a line as follows:

Drawn 050°01′ from the summit of Mount La Trobe (39°00′S, 146°23′E) through the beacon on Rabbit Island to 38°40′·6S, 146°52′·2E;

Thence 360° to 38°39′·0S, 146°52′·2E;

The port also includes the navigable sections of creeks and rivers entering these waters.

Depths

6.36

1 In the outer entrance channel leading to Corner Inlet there is a least depth of 6·3 m within the white sector (276°–278°) of Lighthouse Point Light (38°51′S, 146°28′E), about 2½ cables SW of No 3 Light-buoy. In 1995 a depth of 5 m existed 50 m N of the N edge of the white sector of Lighthouse Point Light, midway between No 1 Light-buoy (38°51′S, 146°36′E) and No 3 Light-buoy.

2 Between No 3 Light-buoy and No 5 Light-buoy there exists a dynamic sandwave field; in May 1995 it had a least depth of 5·5 m over it, about 3¼ cables W of No 5 Light-buoy. Although the channel tends to deepen past No 5 Light-buoy, an additional sand ridge exists about

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Corner Inlet Entrance from SSE (6.40)
(Original dated 1998)

7¾cables NW of No 5 Light-buoy. In May 1995 this ridge had a least depth of 5·8 m over it, 2¼ cables SW of the alignment of No 5 Light-buoy with No 2 Light-buoy.

Local magnetic anomaly

6.37

1 It is believed that the NW part of Corner Inlet, in the vicinity of Port Welshpool (38°42′S, 146°27′E), is magnetically anomalous.

Tidal streams

6.38

1 Tidal streams vary considerably throughout the area. On the NE side of Corner Inlet, along the S side of Snake Island and through Bentley Harbour (38°47′·7S, 146°33′·0E) the tidal streams attain a considerable rate because of the confined area; sometimes of over 2 kn. In 1986, HMAS *Wyalla* experienced rates between 2 and 3 kn on both the in-going and out-going tides. However rates of up to 5 kn have been reported on a out-going tide in the vicinity of Entrance Point (38°47′S, 146°28′E), probably as a result of prolonged rainfall and W weather.

Principal marks

6.39

1 **Landmarks:**

Mount Roundback (38°53′S, 146°27′E) a timbered summit standing at the NW end of a range. The range rises about 1 mile W of Monkey Point to a flat-topped timbered ridge, about 230 m high, and thence to the summit of Mount Roundback.

Mount Margaret (38°51′S, 146°27′E); a prominent boulder, covered with grass and heath, stands 5 cables S of the summit.

2 Lighthouse Point (38°51′S, 146°28′E), 11 m high, is a heath-covered point with a prominent bare granite face from where a light (framework tower with red slats, 24 m in height) is displayed. The point stands at the N end of Three Mile Beach, 4½miles N of Monkey Point.

Mount Hunter (38°49′S, 146°27′E), doubled-peaked and wooded, standing 1 mile W of Hunter Point. There is a remarkable stone on its S slope and a prominent peak, 237 m high, stands on the E spur.

3 Mount Singapore (38°47′S, 146°27′E), which stands 1 mile W of Entrance Point, the NE point of Wilson's Promontory.

Major lights:

Cliffy Island Light (38°57′S, 146°42′E) (6.10).

Lighthouse Point Light — as above.

Directions

(continued from 6.25)

Chart Aus 181 (see 1.12)

Seaward to Singapore Deep

6.40

1 On the approach to the entrance channel, the sea breaks at times on the banks but rarely in the approach itself which, in heavy weather, can be seen between the breakers on either side. On the NE bank the sea breaks heavily between the channel and Bentley Harbour (38°47′·7S, 146°33′·0E). The SW bank dries in places.

2 **Caution.** The entrance to Corner Inlet should not be attempted without local knowledge. If local knowledge is unavailable vessels are recommended to wait until daylight, anchoring within the white sector of Lighthouse Point Light (38°51′S, 146°28′E) (6.39) in depths of about 20 m. The light-structure of Lighthouse Point Light is extremely difficult to distinguish in hazy weather or in the afternoon sun.

3 From a position about 2¾ miles N of White Rock (38°55′S, 146°39′E) the track leads W along the line of bearing, 277°, in the white sector (276°–278°) of the direction light displayed from Lighthouse Point, passing (with positions from Lighthouse Point):

S of No 1 Light-buoy (S cardinal) (5¾ miles E) marking the SE side of a sandbank, thence:

S of No 3 Light-buoy (starboard hand) (4½miles E), marking the S side of the same bank.

4 The track then leads NW, passing:

SW of No 5 Light-buoy (starboard hand) (4 miles E), thence:

NE of No 2 Light-buoy (port hand) (2¾ miles NE) and No 4 Light-buoy (port hand) (2¾miles NNE), and:

SW of the large sandbank (4 miles NE), which dries in places, fronting Bentley Harbour (6.44) and Townsend Point, the S point of Snake Island, thence:

5 SW of Bentley Point (4¼ miles N), from where a light is displayed, and:

NE of No 6 Light-buoy (port hand) (3½ miles N), thence:

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NE of Entrance Point (3¾ miles N) which is tree covered, thence:

Through Singapore Deep and NE of Bennison Spit (5 miles NNW), the E end of which is marked by a light-buoy (E cardinal), thence:

To a position about 2½ miles WNW of Bentley Point Light (38°46′·5S, 146°29′·6E).

Useful marks

6.41

1 Rabbit Island (38°55′S, 146°31′E) (6.25).

Hunter Point (38°49′S, 146°28′E), on which stands a beacon, lies 1¼ miles N of Lighthouse Point with a sandy beach between, is 19 m high and covered with scrub; massive boulders front its N side.

Beacon (white, 3 m in height) standing on the W side of Townsend Point (38°48′S, 146°33′E).

Shellback Island (38°58′S, 146°13′E) (5.73), on the W side of Wilson's Promontory, is prominent over the land from the vicinity of Corner Inlet.

Two radio masts (38°43′S, 146°23′E) at Barry Beach.

Side channels

Bennison Channel

6.42

1 Bennison Channel, which is blind, leads SW from off the NE point of Wilson's Promontory between Granite Island (38°49′S, 146°23′E) (6.34) and Bennison Island (38°51′S, 146°22′E) (6.34) to within 1½ miles of the S head of Corner Basin.

Middle Channel

6.43

1 Middle Channel leads from a common entrance with Bennison Channel SW for 8 miles to the landing place (38°51′S, 146°16′E) of Yanakie Cattle Station, where there is a depth of 2·7 m. The channel is marked by light-buoys (lateral).

(Directions for Port Welshpool continue at 6.51, for Barry Beach at 6.54 and for Port Franklin at 6.55)

Anchorages

Bentley Harbour

6.44

1 **Description.** Bentley Harbour (38°47′·7S, 146°33′·0E), an open anchorage, lies off the S coast of Snake Island and extends about 2½ miles WNW to 1½ miles E of Townsend Point. The width of the anchorage decreases from 1 mile, E of Townsend Point, to 1 cable in the WNW part.

Depths vary from 8 m at the entrance through 16·5 m to 3 m at the narrowest parts in which good anchorage may be obtained with shelter from all winds.

Leading line. The line of bearing, 278°, of Mount Singapore (38°47′S, 146°27′E) open S of Townsend Point leads towards Bentley Harbour. When abreast the point keep along the shore and anchor as convenient.

Freshwater Cove

6.45

1 Anchorage may be obtained, in a depth of 15 m, in Freshwater Cove (38°47′S, 146°26′E), which lies on the E side of the entrance to Bennison Channel (6.42). The anchorage, with good holding ground, is well sheltered from all winds except those from between SW and N.

Explosives anchorage

6.46

1 For vessels carrying explosives there is a designated anchorage within a circle, radius 500 m, centred 310°, distance 1300 m, from the triangulation station on Mount Singapore (38°47′S, 146°27′E).

Franklin Channel

6.47

1 Anchorage may be obtained in Franklin Channel in depths of 10 to 20 m S of Franklin Bank, on the N side of the channel, at the E end of which stands Franklin Spit Light-beacon (E cardinal) (38°45′·4S, 146°25′·1E). When approaching the anchorage keep a sharp lookout for the ripple off the banks. It is safer to proceed to this anchorage at LW when the banks are visible.

Port Welshpool

Chart Aus 182 plans of Lewis Channel and Port Welshpool (see 1.12)

General information

6.48

1 **Position and function.** Port Welshpool (38°42′S, 146°27′E) lies on the mainland N of Little Snake Island. The port forms a base for craft engaged in the coastal trade and fishing industries of Bass Strait and the islands.

Approach and entry. The port is approached by passing through Corner Inlet from seaward and entered via Lewis Channel.

Port Authority:

Principal; Gippsland Ports, PO Box 388, Bairnsdale, Victoria 3875.

Local; Port Welshpool, 27 Lewis Street, Port Welshpool 3965.

Limiting conditions

6.49

1 **Depths.** The following information comes from a survey carried out in 1991. The entrance to Lewis Channel is subject to depth variations due to sand movement, with the deepest water being found by passing No 1 and No 2 Light-beacons in mid-channel; at this point depths vary from 4·5 to 5·5 m.

The channel then deepens with the deepest water being found to the W side, within a channel width of approximately 150 m.

2 **Caution.** All of the beacons marking the channel stand on the banks in shallow water, therefore care should be taken, at all times, to avoid getting too close to them.

Tidal levels. See information in *Admiralty Tide Tables*. Mean maximum range about 2·4 m; mean minimum range about 1·1 m.

Arrival information

6.50

1 **Port radio.** There is a port radio station at Port Welshpool; for details see *Admiralty List of Radio Signals Volume 6(4)*.

Anchorage. Small vessels may anchor, in a depth of about 2 m, in the mooring zone 1½ cables E of the Port Welshpool Fishermens Jetty Light (38°42′·2S, 146°28′·0E).

Tidal streams. The tide sets fair through Lewis Channel, which leads to the harbour, and off Port Welshpool Shipping Pier (6.52) it sets directly along the berth at a rate of nearly 2 kn.

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Boat Harbour



Port Welshpool Shipping Pier

Port Welshpool from SW (6.48)
(Original dated 1998)



Port Welshpool Boat Harbour and Fishermans Jetty from S (6.52)
(Original dated 1998)

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Directions for entering harbour

(continued from 6.41)

6.51

1 From a position in Singapore Deep, about 2½miles WNW of Bentley Point Light (38°46′·5S, 146°29′·6E), the track curves 4 miles N and E through Lewis Channel, which passes between Possum Islands (38°43′S, 146°25′E) and the W shore of Little Snake Island (38°43′S, 146°28′E) (6.34). The sides of the channel are marked by numbered beacons (lateral) and light-beacons (lateral and cardinal).

Between Port Welshpool Shipping Pier (38°42′·4S, 146°26′·9E) and Port Welshpool Fishermens Jetty, 9 cables ENE, the channel is marked by light-buoys (lateral).

Berths

6.52

1 **Port Welshpool Shipping Pier** (38°42′·4S, 146°26′·9E) has a berth 150 m long on the outer part of its S side, with charted depths of about 6 m alongside. On its N side there is a berth 110 m long with depths of 4·6 to 6·6 m alongside. A light is displayed from the head of the pier.

2 **Boat Harbour** (8 cables ENE of Port Welshpool Shipping Pier). This basin is bounded on its W side by Port Welshpool Breakwater extending S from the shore, from the head of which a light is displayed; the E side is bounded by Port Welshpool Fishermens Jetty. A jetty, known as the Ferry Jetty, from the head of which a light (dolphin) is displayed, projects S into the middle of the basin.

3 **Port Welshpool Fishermens Jetty** has a T-shaped head with a 150 m long berth on its outer face. There are depths of 3 to 6 m alongside. A light (post) is displayed from its W head.

Port services

6.53

1 **Repairs:** minor repairs carried out; there is a slipway for vessels up to 24 m in length.

Facilities: hospital at Toora, 11 km WNW; compass adjustment beacon (special) standing 1 cable E of Port Welshpool Fishermens Jetty.

Supplies: fuel oil; water; provisions.

Minor harbours

Chart Aus 182 plan of Approaches to Barry Beach (see 1.12)

Barry Beach

6.54

1 **Description.** Barry Beach (38°43′S, 146°23′E), situated 6 cables N of Barry Point (6.34), contains a marine terminal used for servicing offshore supply boats. It is approached through Corner Inlet and entered via Toora Channel and Barry Beach Channel.

Depths. Toora Channel, has charted depths of 10·7 to 25·1 m in its outer 3¾ miles to the entrance to Barry Beach Channel. There is a least charted depth of 5·9 m in Barry Beach Channel.

2 **Port radio.** There is a port radio station at Barry Beach Marine Terminal; for details see *Admiralty List of Radio Signals Volume 6 (4)*.

Directions *(continued from 6.41)*. From a position in Singapore Deep, about 2½ miles WNW of Bentley Point Light (38°46′·5S, 146°29′·6E), the track leads 3¾miles NW through Toora Channel, marked by numbered beacons (lateral) and light-beacons (lateral), passing NE of Franklin Bank, a drying bank, the E extremity of which is marked by Franklin Spit Light-beacon (E cardinal) (38°45′·4S, 146°25′·2E).

3 Thence the track leads for a further 8 cables to the marine terminal, through Barry Beach Channel, which branches NNE off Toora Channel. The sides of this channel are marked by light-buoys (lateral and cardinal) and by a direction light (38°42′·5S, 146°23′·0E), the white sector (022·1°–023·1°) of which is aligned with the centreline (022½) of Barry Beach Channel.

Berth: wharf 430 m long; depths alongside from 6·1 to 6·8 m; privately owned by Esso Australia Ltd.

Chart Aus 181 (see 1.12)

Port Franklin

6.55

1 **Description.** Port Franklin (38°41′S, 146°17′E) is situated in the NW part of Corner Basin. The town of Port Franklin lies on the W side of Franklin River, 5 cables within the entrance. The harbour is approached through Franklin Channel and entered via Franklin River Channel.



Barry Beach from W (6.54)

(Original dated 1998)

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Port Authority:

Principal; Gippsland Ports, PO Box 388, Bairnsdale, Victoria 3875.

Local; Port Welshpool, 27 Lewis Street, Port Welshpool 3965.

2 **Depths.** The fairway through Franklin River Channel has a least depth of about 2·0 m to No 10 Light-beacon (38°42′·8S, 146°18′·5E) and thence to the river mouth and the wharf there is a narrow, dredged cut with depths of 0·9 to 1·5 m.

Directions *(continued from 6.41).* From a position in Singapore Deep, about 2½ miles WNW of Bentley Point Light (38°46′·5S, 146°29′·6E), the track leads W through Franklin Channel for about 5 miles, passing (with positions from Franklin Spit Light-beacon (38°45′·4S, 146°25′·2E)):

3 N of Bennison Spit (7 cables SE) (6.40), thence:
S of Franklin Spit Light-beacon (E cardinal), thence:
S of Franklin Bank (6 cables W) (6.54), thence:
N of Halfway Shoal (2 miles WSW), thence:
S of No 1 Light-beacon (starboard hand) (3 miles W).

4 The track then leads NW into Franklin River Channel, passing NE of the entrances to Doughboy Channel (5 miles W), which extends SW and W to Golden Creek (6.34), and Stockyard Channel (5¼ miles W), which extends NW to the entrance to Stockyard Creek (6.34). Franklin River Channel, marked by light-beacons (lateral) and beacons (lateral), leads N and then NW for about 5 miles to Port Franklin, passing SW of Mangrove Island (38°43′S, 146°20′E).

5 **Berths.** Port Franklin Wharf lies off the N bank of Franklin River about 1 mile within the entrance. The wharf, with a length of 50 m, has a depth of 2·4 m alongside.

Repairs: small slipway about 2½ cables above Port Franklin Wharf.

Supplies: fresh water.

Snake Island

6.56

1 On the NW side of Snake Island there is a jetty; length 51 m. A light (38°43′·4S, 146°30′·1E) is displayed from the head of the jetty. It is accessed from a narrow channel, which leads from a position about 1¾miles NW of Bentley Point Light (38°46′·5S, 146°29′·6E), on the N side of Singapore Deep, N and then E, passing between Snake Island and Little Snake Island to the jetty. The access channel to the jetty is poorly defined and dries.

Toora

6.57

1 Toora (38°40′S, 146°20′E), a small town in which there is a factory and a retirement hospital, lies in the centre of a rich agricultural area.

From the entrance to Barry Beach Channel (38°43′S, 146°22′E), the upper part of Toora Channel, which is marked by beacons (lateral), leads about 3 miles NW to Toora Jetty and thence to a boat ramp and another jetty; depths decrease rapidly towards the head of the inlet. The Toora Jetty, which is in ruins, has a depth of 1·8 m alongside.

Foster

6.58

1 Foster (38°43′S, 146°12′E) (position approximate) is situated on the W shore of Corner Basin. It is accessed through Stockyard Channel.

PORT ALBERT AND APPROACHES

General information

Chart Aus 357, Aus 181, Aus 182 plan of approaches to Port Albert (see 1.12)

Description

6.59

1 Port Albert and its approaches encompasses the area between Port Welshpool (38°42′S, 146°27′E) and Snake Island, 5 miles SSE, and Shoal Inlet Entrance (38°41′S, 146°50′E) 18 miles ENE.

Route

6.60

1 The main approach to Port Albert is made from seaward by passing through Port Albert Entrance, a narrow channel (38°44′·6S, 146°40′·0E) lying between the E end of Snake Island and the SW end of Clonmel Island. The harbour is then entered via Port Albert Channel.

Topography

6.61

1 **South-east shore.** Port Albert is fronted on its SE side by Clonmel Island, Sunday Island and Drum Island. Clonmel Island (38°43′S, 146°42′E) is narrow, sandy and covered with vegetation. A low, sandy island, similar to Clonmel Island, lies NE of Clonmel Island.

Sunday Island lies 1½ miles NW of the SW point of Clonmel Island, with Drum Island, close S of it. Both islands are timbered giving them an apparent height of about 12 m.

2 **South-west shore.** The SW shore of Port Albert is formed by the N shore of Snake Island (38°46′S, 146°32′E) (6.34) and of Little Snake Island (38°43′S, 146°28′E) (6.34).

North shore. The N shore between Port Welshpool (38°42′S, 146°28′E) and the entrance to Albert River, 9 miles ENE, is indented and fronted by several low islands and in places by mangroves, and backed by wooded, grassy land. The coast between the entrance to Albert River and Port Albert, 2 miles E, is low and scrub-covered.

Controlling depths

6.62

1 A bar, with a least charted depth of 0·3 m over it, extends across Port Albert Entrance (38°45′S, 146°41′E) along with Bar Bank, which dries, extending 1½miles SSE from the NE end of Snake Island; the sea breaks over Bar Bank.

Port Albert Channel, which leads 4 miles NNE to Port Albert from the inner end of Port Albert Entrance, has a least charted depth of 1·4 m.

Local knowledge

6.63

1 An attempt to cross the entrance bar should not be made without local knowledge and those with local knowledge should exercise the greatest care, for the entrance channel and bar are liable to changes in position and depth and the buoys marking the entrance are liable to be washed away. Positions and characteristics of navigational marks, lights and buoys should be regarded as temporary as they are liable to be changed due to variations in the shoaling pattern.

2 It is also recommended that without local knowledge no attempt should be made to enter at night but instead remain offshore until daylight keeping a close watch on soundings.

Local knowledge is necessary when using the anchorage (6.73).

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Tidal streams

6.64

1 Strong W to SW winds cause the in-going stream to run from 1 to 1½ hours after, and E winds cause it to cease running 40 minutes before, the predicted time of HW. No reliance can be placed on calculated times of HW during unsettled weather.

Principal marks

6.65

1 **Landmark:**

Water tower (38°40′·4S, 146°41′·6E) in the town of Port Albert.

Major light:

Lighthouse Point Light (38°51′S, 146°28′E) (6.39).

Directions

Approach

6.66

1 The coast N of the alignment (276°) of Townsend Point (38°48′S, 146°33′E) with Mount Singapore (38°47′S, 146°27′E) should not be approached until the fairway light-buoy has been identified.

Caution. As the bar is liable to changes in position and depth the leading line should not be relied upon.

Entry

6.67

1 From a position in the vicinity of the Fairway Light-buoy (safe water) (38°45′·2S, 146°42′·6E) the track leads W across the bar. The inner section of the bar is marked by light-buoys (port and starboard hand) and an historic wreck (38°44′·7S, 146°40′·6E) (see 1.52) on the NE side of the fairway, part of which is visible, is marked by a buoy (isolated danger).

2 The latter part of this track is marked by the following leading line.

Leading lights:

Front light (red slats on a two pile structure, 6 m in height) (38°44′·1S, 146°39′·6E).

Rear light (white framework tower, 9 m in height) (7 cables from front light).

The alignment (318°) of these lights only indicates the best line through Port Albert Entrance at its inner end.

3 Thence, from a position 3 cables SE of the front light, the track leads NNE through Port Albert Channel, marked by light-beacons, light-buoys, beacons and buoys, passing (with positions from Port Albert Entrance Front Leading Light):

ESE of Drum Island (7 cables N) (6.61), and WNW of Clonmel Island (1½ miles NE) (6.61), thence:

ESE of Sunday Island (1½ miles N) (6.61), thence:

4 ESE of the E end (2¼ miles NNE) of Midge Channel (6.71) and WNW of Horn Island (2½ miles NNE) on the W side of Shoal Inlet, thence:

Between Scrubby Island (3 miles N) and Dog Island (3½ miles NNE), thence:

To the berths at Port Albert.

Useful mark:

Clonmel Beacon (white, 6 m in height) (38°43′·4S, 146°41′·4E) standing on the SW end of Clonmel Island.

Side channels

Kate Kearney Entrance

6.68

1 Kate Kearney Entrance (38°42′S, 146°45′E) leads from seaward to the middle of Shoal Inlet, a shallow inlet mainly covered with drying flats lying SE of Port Albert. The entrance is fronted by breakers off its SW side which extend about 7½ cables offshore. Drying banks extend across the entrance.

Shoal Inlet Entrance

6.69

1 Shoal Inlet Entrance (38°41′S, 146°50′E), 4 miles NE of Kate Kearney Entrance, with a sand spit extending 4 cables seaward from its SW entrance point, has a depth of 0·9 m. It is passable for most of the year by small vessels.

Useful mark:

Shoal Inlet Entrance Light (38°40′·6S, 146°50′·0E) (6.24).

South or Snake Channel

6.70

1 South Channel leads 4 miles WNW from the inner end of Port Albert Entrance Channel (38°45′S, 146°41′E), passing S of Drum Island and Sunday Island to a junction with the E end of Middle Ground Channel and the S end of Midge Channel. Except for No 16 Light-beacon (S cardinal) (38°43′·6S, 146°34′·5E), sometimes known as One Tree Spit Pile, marking the SE extremity of the drying bank at the junction of Middle Ground Channel and Midge Channel, the channel is unmarked; it has a least charted depth of 5·5 m at its W end.

Middle Ground Channel

6.71

1 Middle Ground Channel (38°43′S, 146°32′E), marked by numbered beacons (lateral), leads 5 miles ESE from Port Welshpool (38°42′S, 146°27′E) (6.48) to the junction with South Channel and Midge Channel. It connects Corner Basin (6.32) with Port Albert (6.74) but is only suitable for small boats as it dries in places.

Midge Channel and the entrance to Albert River

6.72

1 Midge Channel leads from the junction with Middle Ground Channel and South Channel around the W and N sides of Sunday Island (38°43′S, 146°38′E), passing between Pelican Island (38°42′S, 146°38′E) and Sheep Island, 1 mile NE, to join Port Albert Channel at a position 4 cables W of Horn Island (38°42′S, 146°41′E). The channel has a least charted depth of 1·4 m and is marked by beacons (lateral) and by Pelican Point Light-beacon (N cardinal) (38°41′·2S, 146°37′·8E).

2 There is a jetty on the NE side of Sunday Island at the E end of Midge Channel. It extends 450 m N from the shore and a light (occasional) is displayed from its head.

3 From a position close N of Pelican Point Light-beacon a channel leads 1½ miles NE to the entrance of Albert River

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Port Albert Entrance from SE (6.74)
(Original dated 1998)

(38°40′S, 146°39′E) and thence to the old port settlement, the original port of Port Albert, about 1 mile N on the N side of the river. There is a least depth of 1·8 m in this channel.

Local knowledge is required.

Anchorage

6.73

1 Anchorage, with good shelter, may be obtained in depths of 6 m, for vessels with draughts up to 3 m, NW of the inner end of Port Albert Entrance Channel (38°45′S, 146°41′E).

Vessels carrying explosives should anchor in the explosives anchorage (6.46) established in Corner Inlet.

Port Albert

Chart Aus 182 plans of approaches to Port Albert and of Port Albert (see 1.12)

General information

6.74

1 **Position and function.** Port Albert (38°40′S, 146°42′E) is one of the oldest ports in Victoria and is used as a fishing port for Bass Strait.

Port Authority:

Principal; Gippsland Ports, PO Box 388, Bairnsdale, Victoria 3875.

Local; Port Welshpool, 27 Lewis Street, Port Welshpool 3965.

Limiting conditions

6.75

1 For controlling depths see 6.62.

Harbour

6.76

1 The harbour consists of a main wharf and four small jetties arranged along the N and W bank of the channel fronting the town of Port Albert.

Berths

6.77

1 **Port Albert Wharf** (38°40′·5S, 146°41′·9E): length 120 m long on its outer face, with a depth of 2 m alongside; on the inner side of the head is a berth 59 m long.

Hotel Jetty: length 90 m, depths of 1 to 4 m alongside; lies ½ cable NW of Port Albert Wharf, with a partially drying boat harbour inside the breakwater.

2 **Boat Harbour Jetty:** a T-shaped jetty with a 25 m long outer berthing face, and pen moorings in its approach; depth alongside approximately 3 m; lies 1 cable NW of Hotel Jetty.

Slipway Jetty: an L-shaped jetty with pen moorings; length 45 m; depth alongside 2 to 4 m; lies 2 cables NNW of Port Albert Wharf.

Rutters Jetty: a T-shaped jetty for temporary access only; length 25 m; depth alongside 1 to 2 m; lies 3 cables N of Slipway Jetty.

Port services

6.78

1 **Facilities:** small hospital at Yarram, 6 km N; compass adjustment beacon (special) stands ½ cable NE of Port Albert Wharf.

Supplies: fuel.

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Port Albert from SE (6.76)
(Original dated 1998)

SHOAL INLET ENTRANCE TO LAKES ENTRANCE

GENERAL INFORMATION

Charts Aus 357, Aus 422

Area covered

6.79

1 The area covered by this section comprises:
Ninety Mile Beach (6.80).
Port of Gippsland Lakes (6.88).

NINETY MILE BEACH

General information

Charts Aus 357, Aus 422

Route

6.80

1 From a position SE of Shoal Inlet Entrance (38°41′S, 146°50′E) the coastal route leads NE, for a distance of 72 miles, to a position SE of Lakes Entrance (37°53′S, 147°58′E).

Caution. This route leads through an Area to be Avoided and should not be entered by unauthorised ships over 200 grt. For further information see 6.8.

Topography

6.81

1 **General description.** Ninety Mile Beach is the name by which the coast between Shoal Inlet (38°41′S, 146°50′E) and Red Bluff, about 75 miles NE, is generally known. As far as Lakes Entrance (37°53′S, 147°58′E) the coast consists of a continuous steep-to sandy beach backed by lakes and by low wooded ground, much intersected by inlets, and small streams which break through the narrow strip of sand after a heavy rainfall.

2 **Aspect.** The coast is low and off the middle part of Ninety Mile Beach will not be visible from 10 miles offshore. From off the SW part of the beach nothing can be seen but the mountains of the S spur of Great Dividing Range (1.81) and Fainting Range, which lie some distance behind the coast; these include:
Panorama Hill (38°27′S, 146°40′E).
Tom's Cap (38°20′S, 146°48′E).

3 **Shoal Inlet Entrance to Seaspray.** Between Shoal Inlet Entrance (38°41′S, 146°50′E) and the town of Seaspray, 25 miles NE, the coast is nearly separated from higher, wooded land behind it, by fresh and salt water lagoons or ti-tree swamps. Along much of this coast there are no openings through which even small boats may enter.

4 A prominent hummock, 12 m (39 ft) high, stands 8 miles NE of Shoal Inlet Entrance and 9 miles farther NE a hill, 27 m (88 ft) high, stands close to the shore. Jack Smith Lake lies 2 miles SW, and Lake Denison 3 miles NE, of the 27 m (88 ft) high hill. In places between the hummocks the coast is scarcely above HW level and, during floods, Lake Denison breaks through the coast.

5 **Seaspray to Lakes Entrance.** Between Seaspray (38°23′S, 147°11′E) and Lakes Entrance, 47½ miles NE, the coast, uniform and monotonous in appearance, continues low with a height of about 12 to 26 m. It is covered with ti-trees in places.

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6 Lake Reeve and Bunga Arm lie immediately behind the coast, and behind them lie Lake Wellington (6.122), Lake Victoria (6.118) and Lake King (6.108), separated from each other and surrounded by low thickly timbered country, much of it subject to flooding.

From Metung Hill, 75 m (246 ft) high, which stands about 8 miles ENE of Sperm Whale Head (37°58′S, 147°43′E), to Mount Barkly at Lakes Entrance (37°53′S, 147°58′E) the land is fairly high and timbered.

Submarine cable

6.82

1 A submarine power cable is laid generally in a SSW direction, from position 38°27′·3S, 147°05′·6E to a position 3 miles W of Twin Islet (6.17), then S to position (39°18′·7S, 146°54′·4E).

Natural conditions

6.83

1 **Tidal streams** are experienced off the SW part of Ninety Mile Beach but they decrease in strength farther NE until, near Lakes Entrance (37°53′S, 147°58′E), they are imperceptible. They set SW and NE, with both streams attaining a rate of 1 kn about 20 miles NE of Shoal Inlet Entrance (38°41′S, 146°50′E).

2 **Weather.** Off the SW part of Ninety Mile Beach, E gales are not felt so generally as off Lakes Entrance for Wilson's Promontory appears to act as a dividing barrier.

In W gales the waters off Lakes Entrance are fairly calm. East gales are preceded by warning signs when an offing should be made immediately.

Principal marks

6.84

1 **Landmarks:**

Radio mast (elevation 458 m (1502 ft)) (38°29′S, 146°56′E) marked by red obstruction lights.

Flare towers (38°13′S, 147°10′E), visible from a good distance at night.

Mount Lookout (elevation 326 m (1070 ft)) (37°45′S, 147°33′E).

2 Mount Taylor (elevation 476 m (1560 ft)) (37°42′S, 147°33′E).

Mount Little Dick (elevation 319 m (1046 ft)) (37°39′S, 147°50′E).

Major Light:

Mount Barkly Light (metal framework tower, 9 m in height) (37°52′·9S, 147°57′·8E).

Directions

(continued from 6.24)

6.85

1 From a position SE of Shoal Inlet Entrance (38°41′S, 146°50′E) the track leads NE, keeping about 5 miles offshore, passing:

NW of Perch Platform (38°34′S, 147°20′E), thence:

SE of Seaspray (38°23′S, 147°11′E), a small town standing at the mouth of Merriman Creek. The surrounding countryside is low, the land W of it having an elevation of 15 m and that E of it about 8 m. And:

2 NW of Dolphin Platform, lying 11 miles SE of Seaspray, thence:

NW of several charted production wells and Barracouta A Platform (38°18′S, 147°41′E). A light is displayed from the platform. For further information see 6.8. And:

SE of Golden Beach (38°13′S, 147°24′E), a small village, 15 miles NE of Seaspray. A hummock, 19 m (63 ft) high, stands 2½ miles NE of Golden Beach with another hummock covered with ti-trees 6 miles farther NE. Thence:

3 SE of Stockyard Hill (38°03′S, 147°36′E), a hummock, thence:

SE of Sperm Whale Head (37°58′S, 147°43′E); this is the NE end of a peninsula which separates the NE part of Lake Reeve from Lake Victoria (6.118). Thence:

To a position SE of Lakes Entrance (37°53′S, 147°58′E).

Useful marks

6.86

1 Buildings of Seaspray (38°23′S, 147°11′E) and the houses of Buckley's Station, close N.

Deadman Hill (38°11′S, 147°11′E), standing 11 miles W of Golden Beach.

Group of houses, visible from seaward, standing on the coast 2½miles E of Sperm Whale Head (37°58′S, 147°43′E).

2 Mount Barkly (37°52′·9S, 147°57′·8E), with an apparent elevation of 74 m to the tops of the trees, is the most prominent object along this coast.

Entrance Light (metal column on wooden framework tower, 5 m in height) (37°53′·3S, 147°58′·4E).

(Directions continue for the coastal route at 6.127 and for Lakes Entrance at 6.100)

Landing

6.87

1 **Caution.** Landing on Ninety Mile Beach (6.81), though possible, is very dangerous.

PORT OF GIPPSLAND LAKES

General information

Charts Aus 357, Aus 358, Aus 182 (see 1.12)

Description

6.88

1 **Area covered.** Port of Gippsland Lakes includes Lake Wellington (38°06′S, 147°20′E) (6.122), Lake Victoria (38°00′S, 147°38′E) (6.118), Lake King (37°54′S, 147°48′E) (6.108), Lake Reeve (38°07′S, 147°30′E), Bunga Arm (37°56′S, 147°51′E) and all inlets, rivers, bays, harbours and navigable waters flowing into them up to defined geographical boundaries. It also includes the waters outside the entrance within the circumference of a circle, radius 3 miles, centred on Entrance Light (37°53′·3S, 147°58′·4E).

2 Bairnsdale (6.116), 27 km WNW of Lakes Entrance, and Sale (6.85), about 48 km farther WSW, are the principal towns of the district.

Entrance. Lakes Entrance (37°53′S, 147°58′E) is of artificial construction. The entrance leads between rock piers, 445 m in length. There is a width of 82 m between the pierheads, widening to 120 m ½cable inshore from the seaward end. The piers are dark in colour making them fairly easy to identify from seaward.

Route

6.89

1 From a position SE of the entrance (37°53′·4S, 147°58′·4E) the route leads NW through the piers to a position in Reeve Channel, S of Bullock Island (37°53′·1S,

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147°58′·2E), from where the berths of Lakes Entrance (6.101), in Cunninghame Arm, can be accessed.

Depths

6.90

1 **The Bar.** A horseshoe-shaped sandbar extends across the entrance to Gippsland Lakes. The depths, location and alignment of the channel across The Bar are constantly changing. A sidecaster dredge undertakes periodic dredging (6.96), which occasionally causes drying sandbanks to form in areas adjacent to the alignment of the channel. Under normal conditions The Bar is 3 cables across on the line of the fairway with its inner edge 1 cable from the heads of the piers.

The sea almost always breaks over the shallow ridge of The Bar E of the fairway. The swell usually rolls in across the fairway without breaking but in heavy weather The Bar becomes dangerous and unfit for navigation.

2 **Fairway.** The fairway over The Bar varies considerably in location and alignment in response to the prevailing weather. The seaward end of the fairway, which is 60 to 80 m wide, can move over 1½cables in response to seasonal weather variations. Depths within the fairway over The Bar and close to the alignment are generally around 3 m and increase gradually to about 8 m between the pier heads, but then decrease again rapidly.

3 The foregoing description can only be regarded as generally correct, for the position and depth on The Bar vary rapidly according to the weather prevailing. During a prevalence of SW and W weather The Bar extends farther seaward and E of its usual position, especially if the lakes are in flood. But with a long spell of E weather The Bar approaches closer to the entrance with a general decrease in depth. During S and SW gales depths on The Bar may be considerably reduced.

4 **Depths in the entrance.** Within the entrance, inside the piers, depths decrease for about 3 cables, forming an inner bar off the entrance to Cunninghame Arm (37°53′S, 147°59′E). The greatest depths are on the E, or Bullock Island side, about midway between the entrance and Jemmy's Point (37°53′S, 147°58′E) where a channel, about ½cable wide, usually leads. But in dry seasons, with little water coming down from the lakes, the W bank of the channel may extend E reducing the depth and the width to about 60 m. In such conditions the S end of the bank, usually about ½ cable W of the entrance to Cunninghame Arm, may project as a spit, with depths of less than 2 m over it, across the channel into the arm.

Hazard

6.91

1 During a prevalence of E winds, especially on the in-going or W-going tidal streams, there is a strong W set across the entrance to Gippsland Lakes. Owing to shoaling on The Bar, vessels are faced with considerable risk, even with a moderate sea and favourable tidal conditions, when crossing it. April and June are the most difficult months in which to navigate Lakes Entrance.

On average there are three life threatening incidents on The Bar each year.

Pilotage

6.92

1 Pilotage assistance to cross The Bar can be arranged via contact with the local Port Authority.

Local knowledge

6.93

1 It is of local expert opinion that local knowledge is required for crossing The Bar. Local knowledge is also of benefit in using the inland waters of Gippsland Lakes. Details of the lakes and connecting channels is given in *General Notice to Mariners respecting Navigation in Victorian Waters*, published by the Victorian Channels Authority. A Boating Guide showing all navigation marks within the Gippsland Lakes is available from the local Port Authority.

Traffic regulations

6.94

1 a) The master of a vessel departing Cunninghame Arm shall keep out of the way of a vessel navigating Reeve Channel.

b) Where two vessels in Reeve Channel, at its junction with Cunninghame Arm, are approaching each other on reciprocal or near reciprocal courses, the master of the vessel stemming the tide shall keep out of the way of the vessel proceeding with the tide.

c) The master of a vessel which is proceeding to sea and navigating the waters of the port between the seaward end of the entrance piers and the offshore bar shall keep out of the way of a vessel inward bound.

Movement reporting

6.95

1 All vessels entering or leaving the port are required to advise as follows:

On departure; prior to leaving Cunninghame Arm to announce their intended passage through the channel on radio.

On arrival; at least 1 mile to seaward of the outer edge of The Bar to announce their intended passage through the entrance on radio.

For details of radio frequencies see *Admiralty List of Radio Signals Volume 6 (4)*.

Dredging

6.96

1 Periodic maintenance dredging takes place on The Bar at Lakes Entrance. Vessels should not enter the area between the entrance and the outer edge of The Bar whilst the dredger is operating; contact with the dredger can be made on radio. Mariners should contact Gippsland Ports at Lakes Entrance on radio for the latest information on The Bar.

For details of radio frequencies see *Admiralty List of Radio Signals Volume 6 (4)*.

Port Authority

6.97

1 Principal: Gippsland Ports, PO Box 388, Bairnsdale, Victoria 3875.

Local: Lakes Entrance Depot, Bullock Island, Lakes Entrance.

Natural conditions

6.98

1 **Local magnetic anomaly.** There are indications of magnetic anomaly in the vicinity of Lakes Entrance.

Tidal streams off the entrance to Gippsland Lakes set W and E but between 1 and 2 miles offshore they are scarcely perceptible.

2 Within Lakes Entrance the tidal streams are irregular because of its narrowness and of constant variations in the amount of water in the lakes. Between the piers the streams do not depend upon nor coincide with the times of HW

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and LW but are influenced by the state of the weather and amount of water in the lakes. The rate of the in-going and out-going streams averages 2½ to 3 kn in ordinary circumstance but may attain 7 kn under exceptional circumstances as in times of floods.

Major light

6.99

1 Mount Barkly Light (37°52′·9S, 147°57′·8E) (6.84).

Directions

(continued from 6.86)

6.100

1 **Caution.** The location of the channel varies greatly and local knowledge (6.93) should always be sought prior to attempting a crossing of The Bar.

From a position SE of the entrance and having identified Mount Barkly (37°52′·9S, 147°57′·8E) (6.86) and Entrance Light (37°53′·3S, 147°58′·4E) (6.86), stand in until the navigable condition of The Bar and channel has been ascertained. Thence cross The Bar on the recommended alignment.

2 The track then leads NW, passing midway between the piers, along Reeve Channel to a position ½cable S of the SW corner of Bullock Island, from where a light (37°53′·2S, 147°58′·2E) is displayed.

It is especially recommended to adhere to the foregoing directions in order to avoid the broken water on The Bar. The safest time to cross The Bar is at slack water or when the rate of the tidal stream at the entrance does not exceed 1 kn. At night, in fine, clear weather and with a smooth bar, entry is possible but is attended by considerable risk and is not recommended.

3 **Useful marks:**

Western Pierhead Light (metal framework tower) (37°53′·4S, 147°58′·4E).

Beacons (37°53′·4S, 147°58′·1E) on Boole Poole Peninsula.

Beacons close N of E pier (37°53′·4S, 147°58′·4E).

Inner Pierhead Light (metal framework tower) (37°53′·2S, 147°58′·2E).

4 Light (37°53′·0S, 147°58′·0E) marking the NW corner of Bullock Island.

Radio mast (37°52′·7S, 147°57′·8E), on the N side of Mount Barkly.

(Directions continue for Lakes Entrance at 6.105 and for Lake King at 6.112)

Lakes Entrance

Chart Aus 182 plan of Lakes Entrance (see 1.12)

General information

6.101

1 **Position.** The harbour of Lakes Entrance (37°53′S, 147°58′E) encompasses Cunninghame Arm (37°53′S, 147°59′E), which is bounded on the S side by Long Island and on the N side by Bullock Island and the town of Lakes Entrance, and North Arm on the N side of the town of Lakes Entrance.

2 **Function.** A large fleet of fishing vessels operates from Lakes Entrance.

Port Authority:

Principal; Gippsland Ports, PO Box 388, Bairnsdale, Victoria 3875.

Local; Lakes Entrance Depot, Bullock Island, Lakes Entrance.



Lakes Entrance from SE (6.101)

(Original dated 1998)

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Limiting conditions

6.102

1 **Controlling depth.** The draught of a vessel is limited by the depths within Cunninghame Arm, which range from 2·0 to 3·6 m, and by the depth of water over The Bar and in the entrance to Gippsland Lakes. For further information see 6.90 & 6.96.

Tidal levels. See information in *Admiralty Tide Tables*. Mean maximum range about 0·6 m.

Arrival information

6.103

1 **Port radio.** For details of freqencies see *Admiralty List of Radio Signals Volume 6 (4)*.

Submarine cables. Two power cables are laid between Bullock Island and Long Island about 1 cable E of the harbour entrance and there is a cable area, as shown on the chart, lying between the Boat harbour (37°52′·9S, 147°58′·8E) and Post Office Jetty on the N side of Cunninghame Arm, and Long Island to the SW. Another power cable is laid between the N side of the town of Lakes Entrance and the mainland, across the E end of North Arm (37°52′·8S, 147°58′·5E).

2 **Prohibited anchorage.** Anchoring is prohibited within the cable area and in the vicinity of the submarine power cables. See 1.33 for further information on cables.

Pilotage. See 6.92.

Harbour

6.104

1 **General arrangement.** The harbour is divided into two main berthing areas, Bullock Island (37°53′·1S, 147°58′·2E) and Cunninghame Arm (37°53′·0S, 147°59′·0E). On the E side of Bullock Island there are facilities for unloading fishing vessels and a jetty for the Ports and Harbours Depot.

2 Cunninghame Arm, which extends about 2 miles ENE from the inner end of the E entrance pier contains, on its N side, several jetties and, fronting the town of Lakes Entrance, a large boat harbour for recreational craft. There are also some small jetties on the S side of the arm projecting from the N shore of Long Island. The channel in Cunninghame Arm has a least width of about 1 cable at its innermost jetty.

North Arm, which fronts the N side of the town of Lakes Entrance, also contains some small jetties.

Directions

(continued from 6.100)

6.105

1 **Cunninghame Arm.** There are no specific directions but where the harbour channel changes direction from having led along the N shore of Long Island, from the entrance, to cross over to the shore fronting the town of Lakes Entrance, the alignment (214°), astern, of a set of leading light-beacons (37°53′·2S, 147°58′·7E) on Long Island, marks the fairway. The 2 m depth contour, S of the harbour, in the inner part of Cunninghame Arm, is marked by buoys.

2 **North Arm.** A small craft channel leads ENE, off the entrance channel to Gippsland Lakes, passing between Jemmy's Point (37°53′S, 147°58′E) and the N side of Bullock Island and then under a bridge, with a vertical clearance of 4·8 m, into North Arm. There are overhead cables spanning the North Arm, as marked on the chart. The channel is marked by numbered beacons (lateral).

Berths

6.106

1 **Bullock Island** (37°53′·1S, 147°58′·2E). On the E side of the island are situated three jetties at the S end serving the Fish Co-op, Charter Jetty, a ¼ cable N of the fish jetties, and Port Authority Depot Jetty, a further ¼cable N. There is a depth of 3·3 to 3·7 m off the jetties.

2 **Cunninghame Arm** (with positions from Boat Harbour (37°52′·9S, 147°58′·8E)):

Boat Harbour, consisting of two basins protected by breakwaters. Lights are displayed from the sides of the entrances to the basins. Charted depths within the basins range from 2·0 to 2·7 m.

3 Post Office Jetty (1 cable E), L-shaped with a depth of 2·4 m off its S side.

Scallop Jetty (6 cables ENE) with a depth of 2·4 m off its S side.

There are several jetties on the N shore of Long Island, the largest of which is Flagstaff Jetty (for public use) (4 cables SW).

Port services

6.107

1 **Repairs.** Two concrete slipways close W of Scallop Jetty (37°52′·8S, 147°59′·5E), handling vessels up to 22 m in length.

Other facilities: a pile for compass adjusting is situated ½cable SE of Scallop Jetty; fixed facility for the reception of oily bilge water only.

Lake King

Chart Aus 357, Aus 182 plan of Lakes Entrance

Description

6.108

1 Lake King (37°54′S, 147°48′E) is perhaps the most important, though not the largest, of Gippsland Lakes. It receives the waters of Tambo River, Mitchell River and Nicholson River and is connected to Lake Victoria (6.118) by McMillan Strait (6.117), passing NW of Raymond Island (37°55′S, 147°45′E), and by Campbell Channel entered S of Point Scott, the SE end of Raymond Island. There is a uniform depth of about 6·4 m (21 ft) in the central part of Lake King.

2 The lake, which is approached from seaward via Lakes Entrance and Reeve Channel, can be used by vessels with a draught of up to 3·0 m (9½ft).

Local knowledge

6.109

1 See 6.93.

Tidal streams

6.110

1 Tidal streams off Shaving Point (37°54′·0S, 147°51′·5E), where the channel is only 1½ cables wide, normally attain a rate of 1½to 2 kn, but the out-going stream attains a rate of 4 kn when the rivers flowing into the lakes are in flood.

Compass adjusting

6.111

1 There is a compass adjusting station situated in Lake King. It consists of a central beacon at which vessels may swing with four pile beacons N, E, S and W of it, the

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exact bearings of which are available from the local Port Authority.

Directions

(continued from 6.100)

6.112

1 From a position ½cable S of the SW corner of Bullock Island (37°53′·2S, 147°58′·2E) the track leads NW for 5 cables through a part of Reeve Channel known as The Narrows, between Jemmy's Point (37°53′S, 147°58′E) and Rigby Island.

Thence the track leads 5 miles farther W, passing between the high ground of the mainland and the low lying islands S, to enter the E side of Lake King off Shaving Point (37°54′·0S, 147°51′·5E). The channel is marked by numbered light-beacons (lateral) and leading beacons.

Reeve Channel and Bancroft Bay

6.113

1 Two jetties, each with a depth of 2·5 m alongside, project from the N shore of Reeve Channel between Jemmy's Point (37°53′·0S, 147°58′·0E) and Bell Point, 4 miles W.

Bancroft Bay, between Shaving Point (37°54′·0S, 147°51′·5E) (6.112) and Bell Point, has depths of 4·6 to 7·0 m (15 to 23 ft) about 1 cable off its shores. Metung on the SW side of Bancroft Bay is a popular centre for yachtsman and holiday makers. A jetty, with a depth of 2·7 m alongside, lies near the village of Metung and there is a marina at the Metung Yacht Club.

Chart Aus 357

Tambo River

6.114

1 **Description.** Tambo River (37°52′S, 147°48′E) is entered, about midway along the N shore of Lake King, through a narrow dredged channel with a depth of about 1·8 m (6 ft) but subject to frequent change. It is navigable by craft for about 8 miles.

Vertical clearance. At Swan Reach (37°50′S, 147°51′E) a bridge with a minimum vertical clearance of 7·0 m spans the river.

Berths. The river contains the following wharves (positioned by their distance from the mouth of the river):

Johnsonville (2½ miles); depth alongside 2·4 m.
Swan Reach (6 miles); depth alongside 2·1 m.

Nicholson River

6.115

1 **Description.** Nicholson River, entered through a narrow channel on the N side of Jones Bay (37°51′S, 147°44′E), is navigable for about 7 miles by craft with a draught of up to 1·8 m (6 ft). A road bridge and a rail bridge cross the river 2 miles above its entrance and another road bridge crosses it 5½ miles higher up where the river is only about 18 m wide.

Berth. A public jetty, with a depth of 2 m alongside, is situated just downstream of the road bridge next to the rail bridge.

Mitchell River

6.116

1 **Description.** Mitchell River, on the W side of Lake King, enters the lake through a low delta which, projecting ENE and E to within 5 cables of the N shore of the lake, forms the S side of Jones Bay. From Point Dawson (37°52′S, 147°45′E), the S entrance point of the river, there is a narrow dredged entrance channel with a depth of about 2·7 m (9 ft) and a navigable channel which extends WSW and NNW for about 9 miles to Bairnsdale.

Bairnsdale used to be the main port for the area when cargo and passenger steamers were operating on Gippsland Lakes.

2 **Vertical clearance.** Overhead power cables with a minimum vertical clearance of 10·7 m at the summer level of the river, span the river below the wharf at Bairnsdale.

Berths. The river contains the following wharves (positioned by their distance from the river mouth):

At the entrance (close within); depth alongside 4·3 m.
Eagle Point (4 miles); depth alongside 3·7 m.
Bairnsdale (9 miles); depth alongside 2·4 to 2·8 m.

McMillan Strait

6.117

1 **Description.** McMillan Strait (37°55′S, 147°44′E), lying between the NW side of Raymond Island and the mainland, has a channel 3·7 m (12 ft) deep and about ½cable wide. The town of Paynesville (37°55′S, 147°43′E) lies on the W side of the strait and is a popular boating and holiday centre.

2 **Ferry.** A vehicular ferry operates on underwater cables across the S end of the strait. Vessels should keep a good lookout for it and wait until the ferry docks as there is only 1·3 m over the cables when it is operating.

Speed. A speed limit of 5 kn is in force for McMillan Strait.

3 **Berths.** At Paynesville there is a wharf with a depth of 2·7 m alongside, small boat harbours, jetties and Slip Bight Marina.

Repairs: patent slip for vessels up to 120 tons; straddle lift for vessels up to 40 tons.

Lake Victoria

Description

6.118

1 Lake Victoria (38°00′S, 147°38′E) extends 17 miles SW from the SE end of Raymond Island (37°55′S, 147°45′E) to the entrance of McLennan Strait (6.121) which leads into Lake Wellington (6.122). The lake has a general depth of 7·0 m (23 ft), over a width of about 5 cables, for about 10 miles to Waddy Point, thence to Storm Point, about 3 miles farther SW, depths decrease to 5·2 m (17 ft). From Storm Point to the entrance to McLennan Strait (38°05′S, 147°27′E) depths decrease gradually to 2·1 m (7 ft).

Local knowledge

6.119

1 See 6.93.

Loch Sport

6.120

1 Loch Sport (38°03′S, 147°34′E) is a small town standing near the W boundary of the Lakes National Park on the S side of Lake Victoria. There is a jetty at the town along with Loch Sport Marina which lies about 1 mile NE of the jetty.

McLennan Strait

6.121

1 **Description.** McLennan Strait (38°05′S, 147°27′E) is 5 miles long with a width of about ½ cable and a least depth of 4·3 m (14 ft). Both its entrances are approached through narrow dredged channels; the E channel is 5 cables long with a depth of 1·8 m (6 ft); the W channel is 1 mile long with a depth of 3·0 m (10 ft).

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Berths. There is a public wharf at Holland's Landing, 5 cables from the E end of the strait. The wharf has a depth of 3·7 m alongside.

Facilities. Boat ramp at Seacombe Landing, about 4 miles from the E entrance to the strait.

Lake Wellington

Description

6.122

1 Lake Wellington (38°06′S, 147°20′E) is the largest but shallowest of the Gippsland Lakes. Depths in the channel through it range from 3·0 m (10 ft) at its E end to about 1·8 m (6 ft) 7½ cables from its W end.

2 La Trobe River enters the W end of Lake Wellington from the W; its entrance is approached by a narrow dredged channel with a depth of 1·5 m (5 ft). Small craft can navigate the narrow channel through the river for about 9 miles to its junction with Thomson River and thence along Sale Canal to Sale, 10 miles above the entrance to La Trobe River. Sale has a swinging basin with depths of 2·4 to 3·7 m in it and a boat landing with a depth of 2·1 m alongside.

3 **Vertical clearance.** A road bridge, with a vertical clearance of 3·8 m, spans the river close below the junction of Thomson River with Sale Canal; the bridge is actually a swing bridge but now fixed in position. Overhead cables, with vertical clearances of 12·5 and 16·0 m, span La Trobe River E of the road bridge.

Local knowledge. See 6.93.

LAKES ENTRANCE TO CAPE HOWE

GENERAL INFORMATION

Chart Aus 422

Area covered

6.123

1 The area covered by this section comprises:

Lakes Entrance to Point Hicks (6.124).

Point Hicks to Cape Howe (6.131).

LAKES ENTRANCE TO POINT HICKS

General information

Chart Aus 358

Route

6.124

1 From a position SE of Lakes Entrance (37°53′S, 147°58′E) the coastal route leads E for about 60 miles to a position S of Point Hicks (37°48′S, 149°16′E).

Topography

6.125

1 **General description.** From Mount Barkly, at Lakes Entrance (37°53′S, 147°58′E), to Red Bluff, 4½miles E the land is fairly high and timbered. It then remains so skirting the arms and streams of Lake Tyers (37°52′S, 148°05′E), 1½miles E of Red Bluff, and follows the coastline 2 miles inland giving the coast E of Lakes Entrance a higher appearance than that W of it.

2 Between the entrance to Lake Tyers and that of Snowy River (37°48′S, 148°35′E), 23 miles E, the coast is formed of sand hummocks, faced with sand cliffs or patches, which increase in elevation towards Snowy River, reaching a height of about 50 m near the river. Ewing Marsh backs the whole length of coast just described and, for the most part, the country about 5 cables inland from its margin is wooded and about 75 m high.

3 Behind a low sandy coast, which extends from the entrance to Snowy River as far as Point Ricardo, 2½miles E, there is a backwater marking the old course of Snowy River, the entrance to which was, many years ago, close W of Point Ricardo. Between Point Ricardo and Cape Conran, 5 miles farther E, lies a sandy bight. A prominent sand hummock, 50 m high and covered with ti-trees, stands in the centre of the shore of the bight.

4 From Cape Conran (37°49′S, 148°44′E) to Pearl Point, 7½miles E, the coast is formed by a sandy bight and thence to Point Hicks, 18½ miles farther E, the coast remains low with grass hummocks about 30 m in height in places, broken only by the entrances to Sydenham Inlet and Tamboon Inlet.

5 **Aspect.** From about 5 miles behind the coast the land rises in elevation to the summits of several mountains; the most notable of which are as follows:

Mount Nowa Nowa (37°42′S, 148°05′E), high and flat-topped with a tower standing on it.

6 Mount Tara (37°35′S, 148°12′E) consisting of two prominent peaks with others less notable. Its main summit is flat-topped with a large gap in it. A tower stands on Tara Tower, a slightly lower peak about 1 mile SW.

Mount Raymond (37°43′S, 148°36′E) with a tower standing on it.

7 Mount Kuark (37°33′S, 148°45′E), 970 m (3183 ft) high, standing 16 miles N of Cape Conran at the NE end of Diana Range. Mount Ellery, a double-peaked summit 1311 m (4301 ft) high, stands 9 miles farther NNE.

Mount Cann (37°39′S, 148°59′E), a peaked hill with a tower standing on it.

Principal marks

6.126

1 **Landmark:**

Everard Hill (37°43′S, 149°17′E) (6.10).

Major light:

Mount Barkly Light (37°52′·9S, 147°57′·8E) (6.84).

Directions

(continued from 6.86)

Lakes Entrance to Cape Conran

6.127

1 From a position SE of Lakes Entrance the track leads E, passing:

S of Red Bluff (37°52′S, 148°04′E) which is remarkable for its reddish colour. A dangerous rock lies close off the bluff. Thence:

S of the E part of Ninety Mile Beach (37°49′S, 148°17′E) (6.81).

2 The track then continues E, passing (with positions from Cape Conran (37°49′S, 148°44′E)):

Clear of a 15·5 m (51 ft) steep-to rocky patch (11½miles WSW), thence:

S of the entrance to Snowy River (7 miles W) (6.130). Snowy River Light (metal framework tower) is displayed from Marlo, about 2 miles W of the river entrance. Thence:

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S of Point Ricardo (5 miles W), which is rocky with rocks below water extending about 2½cables from it. Hummocks about 30 m high stand on the point. Thence:

3 To a position S of Cape Conran. The cape is not easily identified; the land about it is flat and covered with scrub. A light (metal tower, 5 m in height) is displayed from the S point of Cape Conran. Numerous rocks below water, on which the sea breaks heavily at times, extend 5 cables from the E side of the cape. Landing can be effected, in fine weather, W of Cape Conran; it is also possible, though not good, E of the cape.

4 **Useful mark:**

Snowy River Beacon (5 m in height) standing on a sand hummock 1¼ miles WSW of Snowy River Light (37°48′S, 148°32′E) (6.127).

Cape Conran to Point Hicks

6.128

1 From the position S of Cape Conran (37°49′S, 148°44′E) the track continues E, passing (with positions from Cape Conran):

S of Beware Reef (3 miles ESE) with rocks below water lying about 2½ cables SE and E from it. Yeerung River enters the sea 1¾ miles N of the reef; two patches of dangerous rocks below water lie about 2½cables off the entrance to the river. Thence:

S of Dock Inlet (5½ miles ENE), the entrance to which is prominent, thence:

2 S of Pearl Point (7 miles E), which with two remarkable conical sand cliffs W of it, is easy to identify. Scattered rocks extend 2½ cables S from the point, and about 1 mile E below-water rocks extend about the same distance offshore. Thence:

S of Sydenham Inlet (14 miles E), which is a shallow lake when it is landlocked, into which the Bemm River flows. Thence:

Clear of a 5·5 m (18 ft) patch (20 miles E), reported in 1970, and:

3 S of Tamboon Inlet (20 miles E), which is the outlet for Tamboon Lake and of Lake Furnell, N of it. The entrance is barred for most of the year but the waters break through after freshets. Tamboon Hill stands about 2 miles NE of the inlet. Thence:

S of Clinton Rocks and Cloke Rock (22 miles E). Cloke Rock is the highest of these above and below-water rocks. Thence:

4 To a position S of Point Hicks (37°48′S, 149°16′E), which consists of granite overlain by boulders, with four points extending seaward. Point Hicks Light (white round tower, 22 m in height) is displayed from the S-most point. Several dangers lie within about 1 mile SE and E of Point Hicks, which should be given a wide berth. Sandy Peak stands 1 mile N of Point Hicks; seen from the W this peak shows a gradual slope of bare sand which is remarkable and helps to identify the point. Landing can be made, in fine weather, in a bight W of Point Hicks where there is a sandy beach. An obelisk standing on Point Hicks commemorates the first sighting of the Australian coast by Captain Cook HMS *Endeavour*, in 1770.

(Directions continue at 6.135)

Coastal Inlets

Lake Tyers

6.129

1 **Description.** Lake Tyers (37°51′S, 148°05′E) is entered 1½miles E of Red Bluff (6.127). A sand bar usually bars its entrance during the dry season, but after heavy rains the lake breaks through the bank and forms one or two channels, but the entrance is unfit for navigation. A large part of the lake is formed by Toorloo Arm, which enters from NW, and Nowa Nowa Arm, which enters it from NE. A group of houses stand on a bare promontory between the arms.

2 **Depths.** The depth of water in the lake depends on the state of the creeks flowing into it and whether the entrance to the sea is open, in which case the height of water becomes subject to tidal rise and fall. The times at which the entrance is open to the sea is unpredictable but is approximately every 18 months, depending on the rainfall and the weather pattern in Bass Strait. There is generally a depth of 2 m in the lake decreasing to less than 1 m in parts.

3 **Vertical clearance.** Overhead cables span the entrance to Toorloo Arm, with a vertical clearance of 17 m, and also across the entrance to Nowa Nowa Arm, with a vertical clearance of 15 m.

Facilities. There are several boat ramps along the shores of the lake and there is a jetty at the head of Fishermans Landing Arm, SW of the entrance to Toorloo Arm.

Snowy River

6.130

1 **Description.** Snowy River leads 2 miles W from its entrance, with a least depth of 1·8 m (6 ft), to the town of Marlo (37°48′S, 148°32′E) and then connects with Lake Corringle, 1¼ miles NW of Marlo. Lake Corringle has a depth of 0·5 m over most of its area making it only suitable for dinghies and duck punts.

From the entrance to Lake Corringle, Snowy River is navigable for a further 2½ miles N to just above Lochend where a water pipe spans the river. There is a boat ramp on the W bank just above the water pipe.

2 Brodribb River, which enters Snowy River 1½miles NW of Marlo, leads E and then N for about 4 miles into Lake Curlip. There is a depth of about 2 m in the river to Lake Curlip; the lake has a depth of approximately 1 m over it.

Caution. Snowy River is obstructed at its entrance by a sand bar over which depths vary; at times the entrance may be closed. Owing to its shifting nature attempts to cross this bar should not be made without local knowledge.

POINT HICKS TO CAPE HOWE

General information

Chart Aus 359, Aus 806 (see 1.12)

Route

6.131

1 From a position S of Point Hicks (37°48′S, 149°16′E) the route continues, initially E for 10 miles to the vicinity of Rame Head, then NE for a further 30 miles to the vicinity of Cape Howe (37°30′S, 149°59′E).

Topography

6.132

1 Between Point Hicks (37°48′S, 149°16′E) and Rame Head, 10 miles E, the coast fronts wooded, undulating country higher than that to the W, which rises gradually

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inland to a height of over 180 m about 2½ miles from the coast.

From Rame Head (37°47′S, 149°29′E) to Telegraph Point, 24 miles NE, behind Gabo Island (37°34′S, 149°55′E), the coastline is rugged with a shallow bight lying between Little Rame Head and Gabo Island. The head of the bight is indented by Mallacoota Inlet.

2 Between Mallacoota Inlet and Telegraph Point the coast is sandy and thence to Cape Howe, 4 miles farther NE, the coast is backed by white, bare sand hummocks, between 18 to 30 m (60 to 100 ft) high, behind which lies Wau Wauka Lake and Freshwater Lake. Mount Carlyle stands 5 miles NNW of Telegraph Point.

Principal marks

6.133

1 **Landmarks:**

Everard Hill (37°43′S, 149°17′E) (6.10).

Genoa Peak (37°32′S, 149°38′E) (6.10).

Conspicuous sand patch (37°35′S, 149°45′E), lying 5 cables NE of the entrance to Betka River (6.136).

Howe Hill (37°31′S, 149°53′E) (6.10).

Major lights:

Little Rame Head Light (37°41′S, 149°40′E) (6.10).

Gabo Island Light (37°34′S, 149°55′E) (6.10).

Other aid to navigation

6.134

1 **Racon:**

Gabo Island (37°34′S, 149°55′E).

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

Directions

(continued from 6.128)

Point Hicks to Cape Howe

6.135

1 From a position S of Point Hicks (37°48′S, 149°16′E) the track leads E, passing (with positions from Little Rame Head (37°41′S, 149°40′E)):

S of Island Point (Petrel Point) (12½ miles SW), which is 71 m (233 ft) high. A 9 m (30 ft) high rock stands close S of the point and a small rock 0·3 m (1 ft) high lies 2 cables S of the point. Between Point Hicks and Island Point the coast is formed by sandy beaches, with reefs extending about 2½ cables from rocky points. A group of conspicuous sand hummocks stand about midway between the points. Thence:

2 S of Rame Head (10¼ miles SW), a granite formation. It is 112 m high on its E side with a summit of the same elevation close SW. A sand cliff, 62 m high, stands 1½ miles N of Rame Head at the SW end of a sandy beach which extends 1 mile NE to Wingan Inlet.

3 The track then leads NE, passing:

SE of Wingan Point (8 miles SW), the E entrance point to Wingan Inlet. A light (pole, 5 m in height) is displayed from the point. The Skerries, three rocks of which the central and highest is 13 m (42 ft) high, lie close off the point. Thence:

4 SE of Sand Patch Point (4¼ miles SW), which is easy to identify by a large mass of drift sand extending along each side of it. A hill 108 m (354 ft) high stands 7½ cables NW of the point. The only part of this coast at all resembling Sand Patch Point is Point Hicks, where the sand drift is higher, but not so prominent from E. Long Reef, a pinnacle rock, with a depth of 2·1 m (7 ft) over it and on which the sea sometimes breaks, lies 5 cables S of Sand Patch Point.

6.136

1 Thence the track continues NE, passing:

NW of New Zealand Star Bank (6 miles SSE) (6.16), thence:

SE of Little Rame Head, 59 m high, from where a light (6.10) is displayed. The coast between Sand Patch Point and Little Rame Head is about 90 m (300 ft) high and forms a rocky bight with sandy beaches. Thence:

2 SE of the entrance to Betka River (7 miles NNE). An airfield lies on the S side of the river entrance and a conspicuous sand patch lies 5 cables NE of the entrance. This part of the coast is subject to a continuous swell and should not be approached within 1 mile. Thence:

3 SE of the entrance to Mallacoota Inlet (8½ miles NNE) (6.137), thence:

SE of Tullaburnga Island (11¼ miles NE), a rocky islet 8·5 m (28 ft) high with a few bushes on its NE point. The historic wreck of the vessel *Monumental City* lies on the SE side of the island; see 1.52. Thence:

4 SE of Gabo Island (13½ miles NE) (6.16), from where a light (6.10) is displayed. On the mainland close N of Gabo Island lies Telegraph Point, a low sandy extension of the sandhills to the N of it, which is subject to flooding with offshore winds. Thence:

5 SE of a sandy point (17 miles NE). A rocky ledge, the inner end of which is 2·4 m (8 ft) high with the remainder sunken, and on which the sea nearly always breaks, extends about 5 cables S. This point may be mistaken for Cape Howe, about 1 mile farther NE, as its bare sandhills make it more prominent than the cape. A rocky shoal, with a depth of 5·8 m (19 ft) over it, lies 1 mile SSW of the sandy point; the sea breaks over this shoal in heavy weather. Thence:

6 To a position SE of Cape Howe (37°30′S, 149°59′E) (6.16).

(Directions continue at 11.13)

Minor harbour and anchorage

Mallacoota

6.137

1 **Description.** Mallacoota (37°34′S, 149°46′E) is a small town, with a landing place, situated on the SW side of Mallacoota Lake about 1 mile N of Bastion Point. Mallacoota Inlet forms the entrance to Mallacoota Lake and Top Lake which are connected by a narrow channel. A fishing fleet operates from Mallacoota.

Caution. The channel leading into the inlet changes in position and depth and its navigation is dangerous without local knowledge.

2 **Directions.** Mallacoota Inlet is approached from the SE and entered, passing:

Close NE of Bastion Point, which is 24 m high with wooded land rising to about 90 m behind it. A rock, 0·9 m (3 ft) high, stands 3 cables SW of the point, among other rocks, and the sea breaks heavily on a rock, with a depth of 2·7 m (9 ft) over it, about 2½ cables SE of the point. Landing

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may be made, in fine weather, on the N side of Bastion Point. Thence:

3 Through a channel which leads through the sandy beach fronting the inlet. During heavy floods the waters usually break through the sandy beach close to the rocky shore inside Bastion Point. This channel, with a depth of about 2·4 m (8 ft), may be maintained by recurrent freshets for several months but when these cease the channel gradually works E and its depth decreases to 1·2 m (4 ft). During long spells of dry weather the channel usually reaches its E limit, about 3 cables along the beach, and its depth may decrease to about 0·6 m (2 ft). Thence:

4 Through a narrow channel, with a least depth of 0·9 m (3 ft), which leads to Mallacoota. Within the entrance there are numerous islets and rocks above water. The channel connecting Mallacoota Lake to Top Lake is marked by lights displayed from each side of its entrance.

Useful marks:

Mallacoota Inlet Light (fluorescent triangle, point up, on steel tower, with triangular daymark) (37°33′·7S, 149°45′·7E) on the W side of the entrance to Mallacoota Inlet.

5 Mallacoota Lake Light (metal framework tower) (37°32′·8S, 149°46′·2E) in the S part of the lake.

Beacon (spar) standing at an elevation of 22 m on the E entrance point to Mallacoota Inlet.

Berths. The landing place at Mallacoota, where there is a boat ramp and town jetty, has depths of about 1 m alongside. There are also several small jetties in Mallacoota Lake and Top Lake for the use of recreational craft.

Gabo Island

6.138

1 **Anchorage.** One vessel may obtain anchorage in all but heavy SW gales in a small sandy bay, with a depth of 9·1 m (30 ft) at its centre, on the NW side of Gabo Island (37°34′S, 149°55′E) (6.16). A vessel has ridden out several moderate SW gales in this bay and it is probable that a gale would have to continue to blow directly into the bay for some time before the swell would make this anchorage unsafe.

2 In 1930 HMAS *Anzac* rode out a SW gale off the W side of Gabo Island in a depth of 27 m (15 fm) about 1¼miles NW of Gabo Island Light (6.10); the holding ground, in fine sand, appeared to be good. Ships boats could use the jetty in the bay despite a heavy sea at the anchorage.

3 **Landing.** In the SW corner of the bay, on the NW side of Gabo Island, there is a small L-shaped jetty used for the servicing of the lighthouse. There is a depth of 2·4 m alongside.

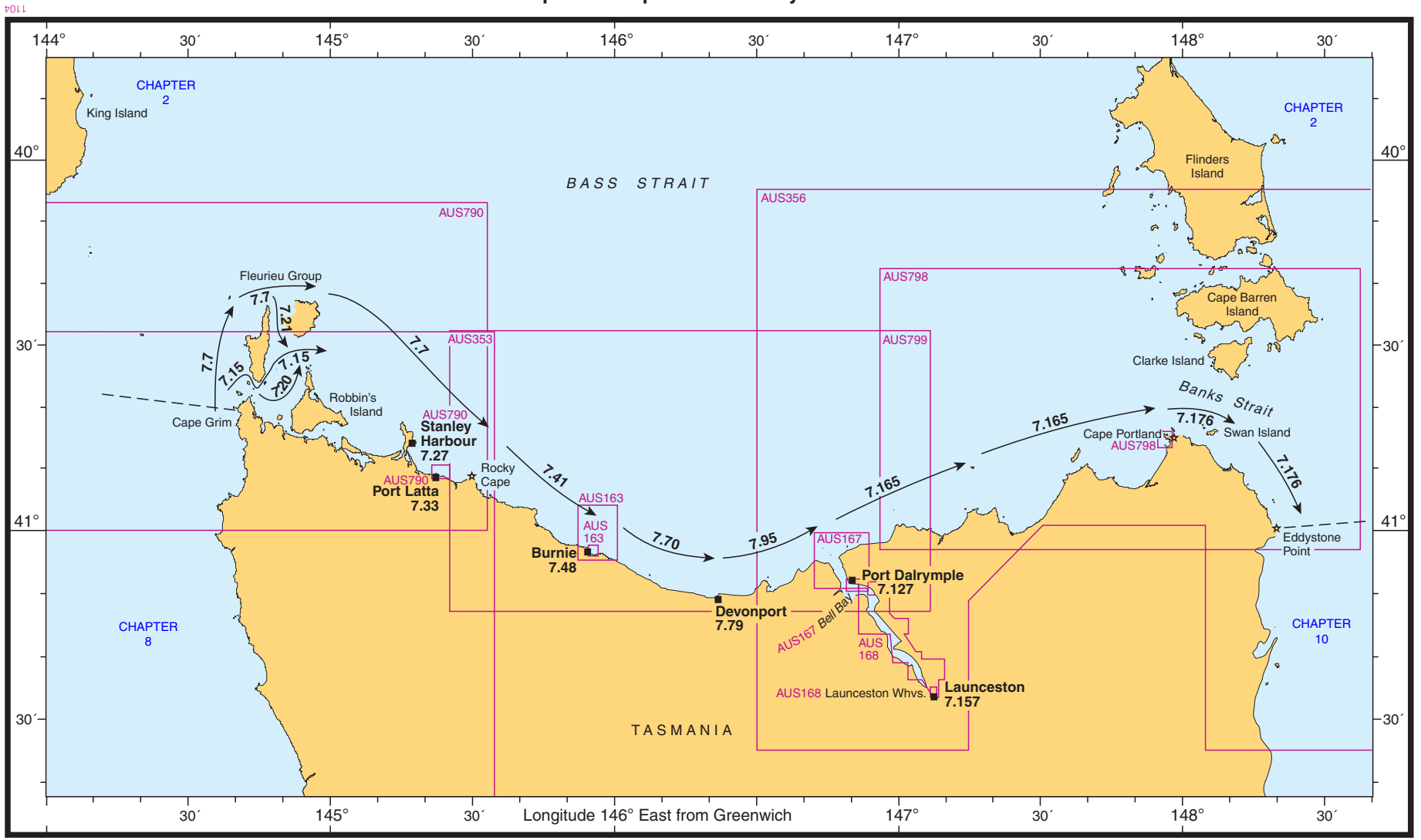
Caution. There is a below-water rocky ledge on the E shore of the bay.

Climatic table. See 1.133 and 1.139.

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Chapter 7 - Cape Grim to Eddystone Point



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CHAPTER 7

NORTH COAST OF TASMANIA — CAPE GRIM TO EDDYSTONE POINT

GENERAL INFORMATION

Charts Aus 422, Aus 790, Aus 799, Aus 798

Scope of the chapter

7.1

1 The area covered by this chapter comprises the N coast of Tasmania, forming the S shore of Bass Strait, from Cape Grim (40°41′S, 144°41′E) to Eddystone Point (41°00′S, 148°21′E), about 165 miles E. This coast is the most densely populated part of Tasmania. The description includes the principal industrial and commercial ports of Burnie (7.48), Devonport (7.79) and Port Dalrymple (7.127).

2 The chapter is divided into the following sections:
Cape Grim to Burnie (7.6).
Burnie to Port Dalrymple (7.68).
Port Dalrymple and Launceston (7.100).
Port Dalrymple to Eddystone Point (7.162).

Topography

7.2

1 The N coast of Tasmania, in contrast with its other coasts, slopes gently from Great Western Tiers Range, backing the central part, and from Stack's Bluff (41°38′S, 147°41′E) (10.45), about 50 miles SW of Eddystone Point.

Rescue

7.3

1 See 1.66 and *Admiralty List of Radio Signals Volume 5*.

Natural conditions

7.4

1 The whole of this coast lies generally in smooth water, as the prevailing winds blow from offshore, and the long SW swell of the Southern Ocean is interrupted by the islands at the W entrance to Bass Strait.

Caution

7.5

1 Parts of the coast NW of Cape Grim (40°41′S, 144°41′E), in the vicinity of Fleurieu Group, are unsurveyed and along the N coast of Tasmania there are areas, as shown on the charts, which are inadequately surveyed. Accordingly mariners should proceed with extreme caution in these areas as unidentified shoals, reefs and other navigational hazards may exist.

CAPE GRIM TO BURNIE

GENERAL INFORMATION

Charts Aus 790, Aus 799

Area covered

7.6

1 The area covered by this section comprises:
Cape Grim to Rocky Cape (7.7).
Rocky Cape to Burnie (7.41).
Port of Burnie (7.48).

CAPE GRIM TO ROCKY CAPE

General information

Chart Aus 790

Routes

7.7

1 From a position to the W of Cape Grim (40°41′S, 144°41′E) the coastal route leads NNE, NE and then E, around Fleurieu Group, for a total distance of 38 miles to the vicinity of Cape Rochon, the NE point of Three Hummock Island (40°26′S, 144°54′E). The route then leads SE for a further 38 miles to a position NE of Rocky Cape (40°51′S, 145°30′E).

There are also inshore routes for small vessels which lead through Hunter Passage, between Hunter Island (40°30′S, 144°45′E) and the NW coast of Tasmania, and through Hope Channel, between Three Hummock Island and Hunter Island.

Topography

7.8

1 Between Cape Grim (40°41′S, 144°41′E) and Woolnorth Point, the NW point of Tasmania, 3 miles NE, the coast consists of rocky points fronted by rocks, above and below water, and by a sandy beach. Woolnorth Point (40°39′S, 144°43′E) is low, rocky and surmounted by low sandhills covered with coarse grass and scrub.

2 Between Woolnorth Point and the entrance to Welcome River, 4 miles SE, the coast is low and wooded with Murkay Islets, Shell Islet and Clump Islet lying off it on the shoal bank which obstructs the W entrance to Robbin's Passage. Thence to the E entrance of Robbin's Passage, S of Cape Elie (40°43′S, 145°04′E) at the E end of Robbin's Island, the coast consists of islets and points intersected by Harcus River, 8½ miles SE of Woolnorth Point, and by Montagu River, 4 miles farther E.

3 Between Robbin's Island and Rocky Cape, 23 miles ESE, the coast is indented by Perkin's Bay and Sawyer Bay. The bays are separated by a narrow peninsula, extending N for 5½miles; Stanley Harbour (40°46′S, 145°18′E) is situated on the E side of the peninsula. West Inlet lies W and East Inlet E of a low isthmus which forms the base of the peninsula. From Port Latta (40°51′S, 145°23′E), on the E side of Sawyer Bay, to Rocky Cape, a low, heavily timbered ridge backs this stretch of the coast; another ridge lies 3½ miles farther S of which the summit, Crag Peak stands 8 miles S of Rocky Cape.

For a description of the topography of Fleurieu Group see 7.22.

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Local magnetic anomaly

7.9

1 Local magnetic survey results indicate that there is likely to be a significant magnetic anomaly in the vicinity of Perkin's Bay (40°47′S, 145°10′E) (7.39).

Tidal streams

7.10

1 **South-west entrance to Bass Strait.** Near Cape Grim (40°41′S, 144°41′E) the SW-going stream attains a rate of 5 kn at springs and 3 kn at neaps. For general information on the tidal streams and currents within the SW entrance to Bass Strait see 2.17.

In the vicinity of Hunter Island (40°30′S, 144°45′E). At or near springs the E-going stream runs from ½ to 1 hour longer than the W-going stream. At neaps the E-going and W-going streams are of equal duration.

2 **West of Hunter Island.** On this side of the island the W-going stream is met by the N-going stream along the W coast of Tasmania. In general, within a few miles W of Hunter Island, the tidal streams run SW and NE in accordance with those on its E side, turning about the same time. These tidal streams are however complicated by those on the W coast of Tasmania which often results in a NE set prevailing. In winter W and SW gales also greatly affect the streams W of Hunter Island.

3 **Hunter Passage.** Tidal streams set strongly through this passage and the chain of islets and rocks between Woolnorth Point (40°39′S, 144°43′E) and Hunter Island. The streams attain a rate of 5 kn in places at springs and form heavy races off the points of the islets along with many swirls and eddies in the passage.

East of Hunter Island. The W-going stream begins from 4½ to 3½ hours before HW. It sets W, at a rate of 1 to 2 kn, between Petrel Islets (40°34′S, 144°56′E) and Three Hummock Island where it divides.

4 One part sets SW, at a rate of 2 to 3 kn, through the channels between Walker Island (40°36′S, 144°56′E) and Hunter Island, thence W between the islets S of Hunter Island. The other part sets N, at a rate of 1 to 2 kn, through Hope Channel, then bends sharply W and SW, at a rate of 3 to 4 kn, round Cape Keraudren (40°24′S, 144°47′E) and races strongly over Dangerous Bank.

The E-going stream begins from 3 to 3½ hours after HW and sets in the opposite direction at the same rates.

Principal marks

7.11

1 **Landmarks:**

Cape Grim (40°41′S, 144°41′E), a bold, grass-topped headland of dark rock almost sheer to seaward. A radio tower (approximately 90 m in height), reported conspicuous in 1985, stands on the headland. Steeple Rock, close S of Cape Grim, is a fallen fragment of the cliffs above.

Black Pyramid (40°29′S, 144°20′E) (2.18).

2 Tower standing on the S slope of South Hummock (40°28′S, 144°54′E), a conical hill at the S end of Three Hummock Island.

Circular Head (40°46′S, 145°18′E), locally known as The Nut, the E extremity of a peninsula extending N from the E side of Perkin's Bay. The Nut is formed of trappean rocks which rise abruptly from the sea. The headland is conspicuous and appears from E as a small flat-topped island.

3 Building (40°51′S, 145°23′E), elevation 39 m, which is part of the iron ore pellet plant at Port Latta (7.33). There are also some conspicuous quarries S of Cowrie Point and 5 cables W of the iron ore pellet plant.

4 **Major light:**

Rocky Cape Light (white concrete tower and lantern, 9 m in height) (40°51′S, 145°30′E).

Directions

Cape Grim to North Black Rock

7.12

1 From a position W of Cape Grim (40°41′S, 144°41′E) (7.11) the track leads NNE for 15 miles, passing (with positions from Cape Grim):

WNW of The Doughboys (8 to 10 cables NNW), two remarkable islets with almost vertical sides and steep-to seaward. Their summits are covered with coarse grass. Thence:

2 WNW of Trefoil Islet (3 miles N) which is covered with grass. Its summit stands over its S point and its S and W sides are formed by steep cliffs. A rock, 17 m high, lies close off the NW end of the island and reefs extend a short way from all sides of the island, but a landing may be made on a shingle beach on its E side. A sandbank, with depths of less than 5 m over it, connects Trefoil Islet to the mainland SE at Woolnorth Point (7.8); the sea breaks heavily on the bank with W winds. Little Trefoil, a rock, stands on the S side of the sandbank. Thence:

3 WNW of Roller Shoal (6 miles NNW) (7.18) lying on the N side of the entrance to Hunter Passage (7.15), thence:

WNW of South Black Rock (8½ miles NW), a round rock, steep-to except for a rock with a drying height of 2·1 m, 5 cables SW. South Black Rock stands 4 miles W of Steep Islet, which is grass-covered with its sides mostly consisting of steep cliffs. Thence:

ESE of Black Pyramid (20 miles NW) (2.18), thence:

4 WNW of Walaby Point (10½ miles N) on the W coast of Hunter Island. For 4 miles S of Walaby Point to Perigo Point the coast is steep and fringed by rocks. Thence:

To a position about 5 miles WNW of North Black Rock (12¼ miles N) which stands 2¼ miles W of Cutter Rock. This latter rock lies on the edge of an area of foul ground fringing the W point of Hunter Island. The sea breaks over the rock in heavy weather.

5 **Caution.** The W coast of Hunter Island (40°30′S, 144°45′E) is rocky and should be avoided because of dangerous rocks and breakers which extend some distance seaward from its W extremity. See also 7.5.

(Directions for Hunter Passage are given at 7.18)

North Black Rock to Cape Rochon

7.13

1 From the position about 5 miles WNW of North Black Rock (40°29′S, 144°39′E) the track leads NE, passing (with positions from Cape Keraudren (40°24′S, 144°47′E)):

Either side of Albatross Islet (6 miles WNW), the NW-most islet of Fleurieu Group, and the site of an albatross colony. The E side of the islet is almost vertical. Both sides are steep-to but a dangerous rock lies 2 cables W of its S point; a rocky patch, with a depth of 4·1 m over it, lies 2 cables SSE of the same point. When viewed

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from NE or SW a deep notch appears to divide the islet. During the maximum flow of the tidal streams strong tide rips occur off both ends of the islet. And:

2 NW of Cuvier Bay (4 miles SSW). This bay, in which there is a temporary anchorage (7.23), is entered between the W point of Hunter Island and Cape Keraudren, 6 miles NNE. Its shores are steep, except near its N part, and rocks extend 5 cables NNE from the W entrance points which should be given a berth of at least 1 mile. Hunter Island Light (white GRP hut, 4 m in height) is displayed from the W side of Cuvier Bay. Thence:

3 NW of Dangerous Bank (2 miles WSW) over which the sea breaks with a moderate swell. A deep channel leads between Dangerous Bank and Cape Keraudren but it is not recommended. Tidal streams set strongly over the bank and around the cape. Thence:

To a position about 4 miles N of Cape Keraudren, which is low, sloping and steep-to.

4 The track then leads E, passing:

N of the N entrance to Hope Channel (7.21), thence:

Clear of, depending on draught, an isolated shoal (5 miles NE), with a depth of 12·3 m over it reported in 1966, thence:

5 N of North West Cape (4¾ miles E). Boulders, of which the largest is nearly 8 m high, lie off the point, which may be rounded at a distance of 5 cables in a depth of 13 m; a rock with a drying height of 0·9 m lies close SW. There are strong tide-rips off this point. Thence:

6 N of Mermaid Rock (7¾ miles ENE), thence:

To a position N of Cape Rochon (7¾ miles E), the NE point of Three Hummock Island (7.24); the coast around the cape is fringed with dangerous rocks. A light (white GRP hut, 4 m in height) is displayed from a position 3 cables S of the cape.

(Directions for Hope Channel are given at 7.21)

Cape Rochon to Rocky Cape

7.14

1 From a position N of Cape Rochon (40°24′S, 144°57′E) the track leads SE, passing (with positions from Cape Rochon):

NE of Taniwha Rock (2 miles SSE), a dangerous rock. It is steep-to but several rocks, above and below water, lie between it and the coast. A rock, with a depth of 2·7 m over it, was reported in 1951 to lie about 5 cables E of Taniwha Rock. Thence:

2 NE of an isolated shoal (4¼ miles SE), with a depth of 10 m over it, lying on the E side of a bank which extends 3 miles E from Cape Adamson (4 miles S). Thence:

NE of the E entrance (7 miles SSE) to Hope Channel (7.21), Hunter Passage (7.15) and Walker Channel (7.20), thence:

NE of the bight lying between Big Stony (10 miles S) (7.19) and North Point, 17 miles SE, containing Ransonnet Bay (7.25), on the E side of Robbin's Island, and Perkin's Bay (7.39).

3 The track then continues SE, passing (with positions from North Point (40°43′S, 145°16′E)):

NE of North Point, which is low, shingly and forms the N end of a peninsula extending 4½miles from the coast. A rocky ledge, which dries, extends 6 cables E from the point. The outer end of the ledge is marked by a beacon (ball topmark) and is covered by the red sector (133°–173°) of Highfield Point Light. Tidal streams, both NW-going and SE-going, set over the reef E of North Point at a rate of 2 to 3 kn. There are heavy tide rips off this reef with E winds. Thence:

4 NE of Highfield Point (2¼miles SE), forming the SE side of Halfmoon Bay. The point is a rocky projection, 41 m high, from where rocks, 10 m high, extend 2 cables N and rocks, 1 m high, extend the same distance from its E side. A light (white GRP tower, 6 m in height) is displayed from the summit of the point. Thence:

5 NE of Circular Head (3¾miles SSE) (7.11) on the S side of which lies Stanley Harbour (7.27). Between Highfield Point and Circular Head lies a small sandy bight with depths of 3·6 to 9·1 m in it. The bight is the landing site for a submarine cable laid across Bass Strait to Venus Bay (38°39′S, 145°42′E) (5.80). This part of the peninsula is covered with grassland and rises to 82 m about 1 mile SW of Highfield Point. Thence:

6 NE of Sawyer Bay (6 miles SSE), on the E side of which lies Port Latta (7.33). This bay has a low sandy shore with Black River flowing into its head. East Inlet extends 2 miles SSE from the W part of Sawyer Bay. Thence:

7 To a position NE of a rock, with a drying height of 1·1 m, lying 1¼ miles off Rocky Cape (14 miles SE). The rock lies on a small bank, with a least depth of 3·2 m over it, which is steep-to on its outer sides; it is covered by the red sector (shore–138°) of Table Cape Light (7.44). Rocky Cape Light (7.11) is displayed from the E side of the cape. Rocky Cape has a pointed summit 128 m high with other peaks behind it.

8 **Clearing marks:**

The alignment (165°) of Highfield Point (40°44′S, 145°18′E) with the E side of Circular Head, 1½miles SSE, clears E of the rocky ledge off North Point.

(Directions continue at 7.45)

Hunter Passage

General information

7.15

1 Hunter Passage, with a least depth of 6·8 m, is entered from the W between Roller Shoal (40°35′S, 144°39′E) and Nare's Rock to the N, and Brown Rocks to the S. It then leads S of Delius Islet, between the S end of Hunter Island (40°30′S, 144°45′E) and Bird Island, and W of Stack Islet and Holbrow Bank. This passage is tortuous and the tidal streams (7.10) in it are strong. In particular that part of the passage S of Hunter Island, between Weber Point (40°36′S, 144°45′E) and Stack Islet, SE, should be used with great caution as it is narrow with foul ground and dangerous rocks on both sides.

Tidal levels

7.16

1 See information in *Admiralty Tide Tables.* In the vicinity of Stack Islet (40°36′·3S, 144°46′·6E), within Hunter Passage, mean maximum range about 1·9 m, mean minimum range about 1·5 m.

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Local Knowledge

7.17

1 Local knowledge is recommended.

Directions

7.18

1 **Trefoil Islet to Weber Point.** From a position about 2 miles NW of Trefoil Islet (40°38′S, 144°41′E) the track leads NE, passing (with positions from Trefoil Islet):

NW of Trefoil Islet (7.12) and SE of Roller Shoal (2½miles NNW). The shoal consists of sand, rock, and gravel, over which the sea generally breaks. Thence:

2 NW of Brown Rocks (1¼ miles N), a chain of bare rocks, thence:

SE of Nare's Rocks (2¾ miles N) which consists of four rocky islets, the largest and N-most being 9 m high, thence:

Between Delius Islet (3 miles NNE), the largest of a group of small rocks lying on a reef 8 cables SW of Perigo Point, and the N end of Bird Island (2 miles NE).

The track then leads SE, passing:

3 Between Bird Island and the SW coast (3 miles NE) of Hunter Island. This part of the coastline between Weber Point (40°36′S, 144°45′E) and Perigo Point 2½ miles NW, between which lie Keafer Point and Logan Point, is foul in places up to 2 cables offshore. Bob Rock stands on a small above-water reef with a rock awash close SW of it, 1¼miles NW of Weber Point and 1 cable offshore. Thence:

4 NE of Henderson Islets (2¼ miles ENE), a group of rocks and islets lying on the foul ground which extends N and NNW from Harbour Islets, 5 cables NE of Woolnorth Point (7.8), to Bird Island. Harbour Islets consists of two islets of which the SW is 6 m high. Thence:

To a position close S of Weber Point (3¾miles ENE).

5 **Leading lines:**

The line of bearing, 288°, of South Black Rock (40°34′S, 144°36′E), seen midway between the two highest Nare's Rocks, leads between Delius Islet and Bird Islet.

The line of bearing, 316°, of the NE point of Steep Islet (40°34′S, 144°41′E), open twice the breadth of Delius Islet SW of it, leads in mid-channel between the SW coast of Hunter Island and Bird Island and Henderson Islets.

7.19

1 **Weber Point to Petrel Bank.** The track then rounds Weber Point at a distance of not less than 3 cables and leads NNE, passing:

Between Weber Point and Stack Islet (4¼miles ENE), which is rocky. Dugay, 7 m high, and Edwards, 5 m high, close N, are two islets which lie on Eagle Shoal extending 8 cables N from the N end of Stack Islet; they are nearly joined to Stack Islet at LW. Thence:

ESE of Renard Point (5 miles NE), close N of which lies a conspicuous granite cliff, thence:

2 WSW of Holbrow Bank and Penguin Islet (6½miles NE). Holbrow Bank consists of two parallel shoals separated by a narrow channel. Penguin Islet is rocky and stands on the W shoal, which has depths of 1·4 m over it in places S of the islet; House Rocks, some awash or drying, lie from 2 to 3 cables W of Penguin Islet.

When a position is reached about 3 miles NNE of Penguin Islet, with the summit of Petrel Islet (40°34′S, 144°56′E) bearing 120°, alter towards the E. The track then leads E, passing (with positions from Petrel Islet):

3 N of the NE end of Holbrow Bank (4 miles WNW) and S of the S point (5¼ miles NNW) of Three Hummock Islet, known locally as Hummocky Head, thence:

N of Middle Bank (1¾ miles E), which dries in its S part, thence:

N of Big Stony (8 cables NNE), a reddish-coloured rock; there are also above-water rocks close N of Big Stony. And:

4 S of Cape Adamson (6½miles N) (7.14). The coastline between Cape Adamson and Hummocky Head is fringed with dangerous rocks. Thence:

N of Petrel Bank (1½ miles NE) into open water. Petrel Bank, mud and sand, has depths of less than 5 m over it. This bank is dangerous as no clearing marks can be given for it and the tidal streams in the vicinity are strong.

5 **Leading marks:**

The alignment (223°), astern, of the W end of the E islet of The Doughboys (40°40′S, 144°41′E), with Weber Point, leads through the fairway WNW of Penguin Islet and Holbrow Bank.

Useful marks:

Cairn standing on the N point of Bird Island (40°36′S, 144°43′E).

Secondary channels

Walker Channel

7.20

1 **General information.** Walker Channel leads between Walker Island (40°36′S, 144°56′E) and Middle Bank, to the W, connecting with Hunter Passage (7.15) N of Crescent Bank. The channel has a least width of about 2 cables abreast the S end of Middle Bank, and a least depth of 11·0 m in the fairway WSW of Cape Buache.

Local knowledge is necessary when using Walker Channel.

2 **Directions.** Having passed through the W part of Hunter Passage the track leads ESE, passing (with positions from Stack Islet (40°36′·3S, 144°46′·6E)):

SSW of Weber Point (7 cables W), thence:

SSW of Stack Islet, to reach a position about 1 mile SSE of the islet, in Boullanger Bay.

3 The track, on the line of bearing, 260° astern, of Trefoil Islet (4¼miles WSW), then leads over the NE extremity of Crescent Bank (2½ miles SE), in depths of about 7·6 m. Thence, when the S-most Petrel Islet (40°34′·4S, 144°55′·3E) bears 043°, the track leads NE on that line of bearing, passing (with positions from Big Stony (40°33′·6S, 144°56′·4E)):

4 NW of Walker Island (2¼miles S) and SE of Middle Bank (3 miles SW) (7.19). Low hills border the E and W coasts of Walker Island. Thence:

To a position 7 cables from the S-most Petrel Islet, close by a rock (1¾miles SSW), 4·6 m high, lying off the NW end of Walker Island.

The track then leads generally N, passing:

W of Cape Buache (1 mile SSW), the N point of Walker Island. A chain of islets and rocks, the highest 18 m high, extends 2½ cables E from the cape. Thence:

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5 W of Petrel Islets (7 cables SW), keeping about 2 cables off. The group, separated from the N end of Walker Island by a channel used only by small local craft, consists of four islets and a few rocks lying at the W end of Petrel Bank. The largest islet rises to a sandhill, 22 m high, the top of which is covered with scrub. Thence:

W of Big Stony (7.19) to join the track leading E from Hunter Passage at a position at least 8 cables N of the islet.

Hope Channel

7.21

1 **General information.** Hope Channel, leading between Hunter Island and Three Hummock Island, is 2 miles wide with a least depth of 12·9 m. There are no known dangers in this channel except for the rocks close to the W point of Three Hummock Island.

Directions. From a position 2 miles NE of Cape Keraudren (40°24′S, 144°47′E) the track leads S, passing (with positions from Cape Keraudren):

W of North West Cape (4¾ miles E) (7.13), thence:

E of Cape Keraudren (7.13), thence:

2 W of Coulomb Bay (3½ miles ESE) in which there is an anchorage (7.24), thence:

Between the N part of Hunter Island and the W point of Three Hummock Island (3½ miles SE) (7.24).

The track then leads SE, passing NE of Shepherd's Bay (4¼miles S), in which there is an anchorage for small vessels (7.23), and the SW coast of Three Hummock Island, to a position S of Hummocky Head (40°29′S, 144°54′E) where it joins the track from Hunter Passage (7.15).

Fleurieu Group

General information

7.22

1 Fleurieu Group is comprised of three large islands, Hunter Island (40°30′S, 144°45′E), Three Hummock Island (40°26′S, 144°54′E) and Robbin's Island (40°41′S, 144°57′E), together with a number of small islands, islets and rocks lying off the NW end of Tasmania between Cape Grim and the W end of Perkin's Bay, about 18 miles E. Mutton birds, in the autumn, and crayfish are plentiful on and around these islands.

Hunter Island

7.23

1 **Description.** Hunter Island (40°30′S, 144°45′E) is mostly of a barren appearance but its S coasts are backed by wooded hills. Its highest part is Chase Hill, standing 3½miles S of Cape Keraudren (40°24′S, 144°47′E), which is the summit of a ridge rising steeply behind the coast. Between Cape Keraudren and Renard Point, 11 miles S, the E coast of Hunter Island consists of small sandy bays separated by slightly projecting points.

2 **Anchorages:**

Cuvier Bay (40°29′S, 144°45′E) (7.13). Although this bay is entirely exposed W, temporary anchorage, during S and E winds, can be obtained in its S part in depths of 16 m, mud, 7½ cables offshore.

East side of Hunter Island. There is good anchorage with shelter, except from the N and E, off the E coast of Hunter Island, in depths of about 16 m, 2¼miles SSE of Chase Hill.

3 Shepherd's Bay (40°28′·4S, 144°47′·4E). Small vessels may anchor, in a depth of about 11 m and 2½cables offshore, in the entrance to Shepherd's Bay, about 1 mile S of Chase Hill, as shown on the chart.

Three Hummock Island.

7.24

1 **Description.** The coasts of Three Hummock Island consist mainly of rocky points with off-lying boulders between which lie sandy bays. The interior of the island consists of low sandhills with a coastal ridge of partly bare and fairly high land extending from its S point to its NE point. Three hills, South Hummock (7.11), Middle Hummock and North Hummock, from which the island derives its name, rise from the ridge. Horizontal scrub, as it is locally known, covers most of the island with an impenetrable growth.

2 **Anchorages.** Coulomb Bay (40°25′S, 144°52′E) provides good anchorage off its sandy beaches and good anchorage may also be obtained in offshore winds in a large bay entered between Cape Adamson (40°28′S, 144°57′E) and the E point of Three Hummock Island.

Berth. A jetty, with a few buildings nearby, lies 4 cables SE of the W point (40°27′S, 144°50′E) of Three Hummock Island.

Robbin's Island

7.25

1 Robbin's Island (40°41′S, 144°57′E) lies between the mainland to the S, separated by Robbin's Passage, and Walker Island (7.20) to the N. Robbin's Island is separated from the S end of Walker Island by a narrow channel, drying in places, and by Mosquito Inlet, which also dries.

The island is sandy and most of it is flat and swampy although White Rock Ridge, hilly and with bare summits from about 50 to 69 m high, extends 4¼ miles N from Kate's Point (40°44′S, 144°54′E) (7.26). There is also a ridge of timbered hills near Guyton Point (40°41′S, 145°03′E) on the E coast.

2 Guyton Point divides the E coast into two sandy beaches. The N beach forms the shore of Ransonnet Bay in which there are depths of more than 5 m about 5 cables offshore.

Between Buckby Point, 1½ miles ENE of Kate's Point, and Cape Elie (7.26), the SE point of the island about 6 miles farther ENE, a thickly wooded belt extends 7½cables inland.

Robbin's Passage

7.26

1 **General information.** Robbin's Passage lies between Robbin's Island (40°41′S, 144°57′E) (7.25), to the N, and the mainland between Woolnorth Point (40°39′S, 144°43′E) and the W end of Perkin's Island, 16 miles ESE, to the S. Both entrances to this passage and the passage itself are filled for the most part with shallow banks of sand or mud, much of which dries and through which lead constantly shifting channels used only by small local craft.

2 **Directions.** The passage is entered, on the NW side, from the SW end of Walker Channel (7.20) and leads initially S, passing (with positions from Kangaroo Islet (40°42′S, 144°50′E)):

E of Kangaroo Islet, thence:

E of Short Islet (1 mile S).

The track then leads SE and E passing:

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SW of Wallaby Islets (2¼ miles SE), of which there are four, thence:

3 Between Kate's Point (4 miles SE), the S end of Robbin's Island, and Montagu Island (4¾ miles SE), thence:

Between Howie Islet (7 miles ESE) and Stony Point, close S, from where a rocky spit projects, thence:

Between Cape Elie (10½ miles E), which is low and sandy, and a small reef 8 cables S of the cape, with a drying height of 0·9 m, and into Perkin's Bay (7.39).

4 **Landings.** On the mainland, a jetty, with a depth of 1·2 m alongside, extends from Stony Point (40°45′S, 144°59′E).

On Robbin's Island there is a jetty close W of Cape Elie (40°43′S, 145°04′E).

Shellfish beds, marked by buoys or beacons, exist in Robbin's Passage.

Stanley Harbour

Charts Aus 790, Aus 178 plan of Stanley Harbour (see 1.12)

General information

7.27

1 **Position and function.** Stanley Harbour (40°46′S, 145°18′E), situated on the S side of Circular Head (7.11), is a small commercial harbour and ferry terminal. The town of Stanley stands on a narrow neck of lower land joining Circular Head to the peninsula.

Timber and agricultural products are exported and wheat, bentonite and ammonium nitrate are imported.

Port limits. Stanley port limits extend seawards to a radius of 2½ miles from position 40°45′·9S, 145°18′·1E.

Port Authority. Hobarts Ports Corporation, GPO Box 202, Hobart, Tasmania 7001.

Limiting conditions

7.28

1 **Tidal levels.** See information in *Admiralty Tide Tables;* mean maximum range about 2·6 m, mean minimum range about 2·0 m.

Arrival information

7.29

1 **Port radio.** There is a port radio station at Stanley Harbour; for details see *Admiralty List of Radio Signals Volume 6 (4)*.

Anchorage. Vessels may anchor in the roads in a depth of 11 m, sand and clay. Strong E winds cause a heavy sea to set into the roadstead when shelter should be taken in the lee of Breakwater Pier, in a depth of about 6 m, about 1 cable WSW of this pier.

2 **Pilotage** is compulsory for merchant vessels over 35 m LOA unless exempted. The pilot boards 1 mile SE of Breakwater Pier. Early notice of ETA should be given to avoid delay. For further details see *Admiralty List of Radio Signals Volume 6 (4)*.

Tugs are available.

Tidal streams. In Sawyer Bay the NW-going tidal stream begins 2 hours before HW.

Directions for entering harbour

7.30

1 Stanley Harbour is approached and entered from the W side of Sawyer Bay (7.14), which is itself entered between Circular Head (40°46′S, 145°18′E) (7.11) and a point 6 miles SE.

Caution. Allowance must be made for a current which sets E round the head of Breakwater Pier in all weathers.

Useful mark:

Tank (elevation 70 m) (40°47′S, 145°16′E) standing 1½ miles SW of Circular Head.

Berths

7.31

1 (Positioned from the head of Breakwater Pier (40°46′·2S, 145°18′·2E)):

Breakwater Pier, which extends 1 cable S from the shore, has on its W side a berth 161 m long with a depth of 8 m alongside.

Ferry terminal (½ cable WNW), 100 m long, extends from the E side of Foreshore Wharf, with depths alongside of 8·8 to 5·8 m at the inner end. At the inner end is a Ro-Ro ramp; width 6·4 m.



Stanley Harbour from SE (7.27)

(Original dated 1998)

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2 Foreshore Wharf (1 cable WNW), 60 m long with a depth of 4·9 m alongside (1975).

Fishermans' Dock (1½ cables WNW), formed by two breakwaters, contains several finger piers on its S side, with a quay on the N side for mooring and unloading fish.

An area, 1 cable W of Fishermans' Dock is being reclaimed (2002).

Port services

7.32

1 **Minor repairs** can be carried out.

Other facilities: deratting and deratting exemption certificates issued; garbage disposal; there are no facilities for the reception of oily waste.

Supplies: fresh water; provisions; fuel oil and diesel from road tanker.

Communications. There is an airfield at Mella 22 km WSW.

Port Latta

Charts Aus 790, Aus 178 plan of Port Latta (see 1.12)

General information

7.33

1 **Position and function.** Port Latta (40°51′S, 145°23′E) stands on the E side of the entrance point of Sawyer Bay. Iron ore pellets are exported..

Port limits extend seawards to a radius of 3 miles from position 40°50′·3S, 145°23′·1E.

Traffic. In 2003 the port was used by 43 vessels totalling 2 263 983 dwt.

Port Authority. The loading facility is owned by the Savage River Mining Company.

Email: danbar@southcom.com.au

Limiting conditions

7.34

1 **Maximum size of vessel handled:** length 245 m; beam 38·5 m, draught 15·25 m plus tide; 2 m under-keel clearance required at all times.

Arrival information

7.35

1 **Port radio.** There is a port radio station at Stanley Harbour; for details see *Admiralty List of Radio Signals Volume 6 (4)*.

Anchorage. Vessels may anchor in the vicinity of the pilot boarding area, within a circle, radius 1 mile, centred 310°, distance 5 miles, from Rocky Cape Light (40°51′S, 145°30′E). The limits are shown on the chart.

2 **Pilotage** is compulsory for vessels over 35 m LOA unless exempted. The pilot boards 2 miles NE of the jetty head, as shown on the chart, and remains on board throughout the stay of the vessel. Vessels should send an ETA 10 days, 48 and 24 hours in advance. A radio listening watch is kept during normal working hours and when a vessel is expected.

For further details see *Admiralty List of Radio Signals Volume 6(4)*.

3 **Tugs** are available.

Regulations. Ore carriers of more than 100 000 dwt and tankers are berthed only in daylight. Due to the exposed position of the jetty, vessels are frequently required to put to sea before the completion of loading; vessel's main engines must be standing by on 30 minutes notice.

Quarantine. Port Latta is a first port of entry. The quarantine area lies SW of a line 137° from Highfield Point (40°44′S, 145°18′E) to the coast E of the port.

For further information on quarantine see 1.47.

Harbour

7.36

1 **General layout.** The port consists of a conveyor jetty extending 1800 m from the shore and an L-shaped



Port Latta from NNE (7.33)

(Original dated 1998)

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breakwater with a wharf, 4 cables E of the root of the conveyor jetty.

Landmarks:

Circular Head (40°46′S, 145°18′E) (7.11).

Building (40°51′S, 145°23′E) (7.11).

Berths

7.37

1 **Main berth.** There is a minimum depth of 15·25 m, for vessels up to 245 m in length, alongside the head of the conveyor jetty; two slewing bridges for the loading of iron ore pellets, 85 m apart and each protected by a dolphin, lie close off the jetty head. There is an oil discharge pipeline on the jetty. During loading, the berth operates 24 hours a day, 7 days a week, weather permitting; loading rate 3000 tonnes per hour although the nominal rate is 2250 tonnes per hour.

2 A light is displayed from each of the slewing bridges and eight red lights mark the approach arm. This berth is exposed to all winds and to swells from the N quadrant. Vessels berth port side to, using the starboard anchor, and secure to six mooring buoys with fore and aft springs to dolphins. The mooring buoys lie on a radius of about 1 cable from the jetty head.

Minor berth. There is a small wharf on the S side of the L-shaped breakwater at the root of the conveyor jetty. Depths of less than 5 m extend 2½ cables from the N side of the breakwater.

Port services

7.38

1 **Minor repairs** only can be carried out at Stanley Harbour (7.27).

Other facilities: deratting and deratting exemption certificates issued; there are no facilities for the disposal of oily waste or garbage; hospital at Smithton, 30 km W.

Supplies: fresh water from tug; provisions. Fuel oil not available.

Communications: airfield at Wynyard 40 km SE.

Minor bays

Chart Aus 790

Perkin's Bay

7.39

1 **Description.** Perkin's Bay, entered between Cape Elie (40°43′S, 145°04′E), on Robbin's Island (7.25), and North Point, 9 miles E, is a large bay fronted at its head by Perkin's Island and Anthony Beach, behind which lies Duck Bay (7.40) and West Inlet.

Anthony Beach, formed of sandhills about 3 to 8 m high, extends from the entrance to Duck Bay, 6½ miles E to West Inlet; except near the latter, where it is densely wooded, the sandhills are covered with scrub.

2 West Inlet (40°48′S, 145°15′E), which dries except in a narrow shallow channel, is approached through the sandbank extending from the E shore of Perkin's Bay.

Anchorage. There is good anchorage in the bay in regular depths, sand over clay, with E winds, but a heavy swell runs in with strong N or NW winds. Vessels should avoid anchoring on the NE side of the bay where a disused submarine cable lies.

Shellfish beds, marked by buoys or beacons, exist in Perkin's Bay.

Chart Aus 178 (see 1.12)

Duck Bay

7.40

1 **Description.** Duck Bay (40°48′S, 145°06′E), entered between Kingston Point, the SE end of Perkin's Island and Eagle Point, a sandy point 2½ cables ESE, is a landlocked inlet most of which dries. There is an alternative entrance which leads from the E end of Robbin's Passage (7.26) through Perkin's Channel, between Perkin's Island and the mainland, but this dries 1·3 m.

Within the main entrance a narrow, shallow channel leads S to the town of Smithton, at the mouth of Duck River, and a similar channel leads ESE to Deep Creek.

2 **Directions.** From a position on the S side of Perkin's Bay (7.39), the alignment (194½) of a set of leading lights (40°49′S, 145°06′E) leads SSW through the entrance, which is very narrow. Thence the channel, leading S to Smithton, is marked by beacons and buoys.

Local knowledge is required.

Caution. The entrance channel is subject to change and the leads should only be used as a guide. The remains of a pier, partially covered at high tide, extend N from the W side of the entrance to Duck River.

ROCKY CAPE TO BURNIE

General information

Charts Aus 799, Aus 163

Route

7.41

1 From a position NE of Rocky Cape (40°51′S, 145°30′E) the route leads SE for a distance of about 23 miles to a position 3 miles N of Round Hill Point (41°04′S, 145°58′E), off Port of Burnie.

Prohibited anchorage

7.42

1 Anchoring is prohibited within 1 mile either side of a submarine cable laid to Jacob's Boat Harbour, as shown on the chart, see 5.67.

Local magnetic anomalies

7.43

1 Local magnetic survey results indicate that there is likely to be significant magnetic anomalies between Rocky Cape and Port of Burnie.

Principal marks

7.44

1 **Landmarks:**

The Two Sisters (40°55′S, 145°35′E), two remarkable round hills.

Radio mast (red obstruction light), standing 1¼ miles SSW of Table Cape (7.45).

Radio mast (red obstruction light, elevation 235 m) (41°02′S, 145°46′E), 3 miles W of Port Maldon.

2 Radio mast (red obstruction light) (41°03′S, 145°52′E), 7 cables SW of Cooee Point.

Radio tower (41°04′S, 145°57′E) standing on Round Hill.

Saint Valentine's Peak (chart Aus 422), 20 miles SSW of Round Hill (41°04′S, 145°57′E); a bare mass of granite and, in the early sunlight the most remarkable mountain feature on the N coast.

3 **Major lights:**

Rocky Cape Light (40°51′S, 145°30′E) (7.11).

Table Cape Light (white masonry tower and lantern, 25 m in height) (40°57′S, 145°44′E); the light is often obscured by mist and cloud.

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Round Hill Point Light (white square concrete tower, white lantern, 7 m in height) (41°04′S, 145°58′E).

Directions

(continued from 7.14)

7.45

1 From a position NE of Rocky Cape (40°51′S, 145°30′E) (7.14) the track leads SE, passing (with positions from Table Cape (40°57′S, 145°44′E)):

NE of Sisters Islands (7 miles WNW), which is comprised of an islet 4 cables NNW of a low point, surmounted by The Two Sisters (7.44), and a rock 3 cables farther NNW. A sandy bay, with depths of 3·7 m close inshore, lies on the W side of the low point; Sisters Creek flows into this bay. Between Rocky Cape and Sisters Islands the coast is bordered by rocks and sandy beaches and backed by a thickly timbered ridge. Thence:

2 NE of Jacob's Boat Harbour (5 miles WNW), which is small. The harbour is the landing site for a submarine cable laid across Bass Strait to Waratah Bay (38°50′S, 146°05′E) (5.77). Thence:

NE of Table Cape, the cliffy extremity of woody flat-topped land; a fish aggregation device, marked by a buoy (special), is moored about 1 mile NNE of the cape. A light (7.44) is displayed from the cape. Cultivated land backs the coast between Jacob's Boat Harbour and Table Cape. Thence:

3 NE of Freestone Cove (1½miles SSE) which occupies the N part of a bight formed by Table Cape and a sandy point 3½ miles SE of the cape. Inglis River, in which lies the harbour of Wynyard (7.47), discharges into the S part of the bight through reefs which extend about 5 cables offshore.

7.46

1 The track then continues SE, passing:

NE of several dangers (3 to 4 miles SE) lying E and ESE of the entrance to Inglis River. The dangers are covered by a red sector (296°-shore) of Table Cape Light. Thence:

NE of Port Maldon (7½ miles SE) at the entrance to River Cam. This river is the largest of several which intersect the coast between Table Cape and Burnie; road and rail bridges span the river close within its entrance. Somerset, a small town, stands on the W side of River Cam entrance. Thence:

2 NE of Cooee Point (8½ miles SE). Cooee, the W suburb of Burnie, stands on the point. Thence:

NE of Blackman Reef (10¼miles SE), a rocky ledge, parts of which dry, which extends 1 mile NNE of Blackman Point, on the N side of Port of Burnie. These dangers are covered by the red sector (106°–135°) of Round Hill Point Light (7.44). Thence:

3 To a position N of Round Hill Point (41°04′S, 145°58′E) in the approaches to Port of Burnie (7.48).

Caution. The coast between Cooee Point and Blackman Point is inadequately surveyed; see 7.5.

Clearing line. The alignment (136½) of two beacons (orange, diamond shaped topmarks, 1 cable apart) (chart Aus 163) (41°03′·8S, 145°57′·3E), close SW of Round Hill Point, clears 3 cables NE of the dangers off Blackman Point.

(Directions for the coastal route continue at 7.74 and for Port of Burnie at 7.64)

Minor harbour

Charts Aus 799, Aus 178 plan of Wynyard (see 1.12)

Wynyard

7.47

1 **Description.** Wynyard, a small town, stands on the S side of Inglis River close inside its entrance. There is an airfield S of the town.

2 The entrance to Inglis River (7.45) is open NE but is protected from W winds by Table Cape (7.45) and by Blackboy Rocks, a ledge of rocks, on which there is a stone embankment, extending NE from the N bank of the river; it is protected from the E by ledges of rocks which extend offshore to the E of the entrance.

The river has no known outer bar but an inner bar dries about 0·3 m and has a depth of about 2·4 m at HW. A wooden embankment, 137 m long, on the S bank is said to have resulted in moving the bar well seaward.

Local knowledge is required.

3 **Directions.** From a position to seaward of the entrance, the alignment (245¼) of a set of leading lights (40°59′·3S, 145°44′·1E), on the S bank of the river, lead into the river passing SSE of a light-beacon (starboard hand), marking the head of the stone embankment, on the N side of the river entrance.

Berths. The wharf at Wynyard is controlled by the Wynyard Yacht Club. Small craft lie afloat alongside the outer face of the wharf at all states of the tide.

PORT OF BURNIE

General information

Charts Aus 163, Aus 799

Position

7.48

1 Port of Burnie (41°03′S, 145°55′E) and the town of Burnie lie in the NW corner of Emu Bay, which is entered between Blackman Point (41°03′S, 145°55′E) and Round Hill Point, 2¼ miles ESE.

Function

7.49

1 The port handles overseas traffic and is a terminal for vessels trading between Tasmania and Melbourne. In Tasmania it is second only to Hobart as a deep-water port and is its main container port; it is the fifth largest container terminal in Australia. The town, with a population of about 19 283 in 1996, is a railway centre for N Tasmania and has some industry, principally paper milling, machinery manufacturing, cheese making and other dairy foods. The land W of Burnie is heavily cultivated, with much dairy farming and cropping.

2 Chief exports are paper, timber, woodchips, logs, mineral ores, and agricultural products including cheese, dairy products, vegetables and fruit. Chief imports are petroleum products, paper pulp, bulk products and general cargo.

Topography

7.50

1 To the SE of the harbour of Port of Burnie the shore of Emu Bay curves around to Round Hill Point. It is inadequately surveyed in parts; see 7.5. Emu River, spanned by road and rail bridges close within its entrance, flows into the head of Emu Bay. The S shore of the bay is sandy beach strewn with boulders.

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Port of Burnie from E (7.48)
(Original dated 1998)

Port limits
7.51

1 Burnie port limits are bounded to seaward by a line, radius 3 miles, centred on position 41°03′·1S, 145°55′·3E.

Traffic
7.52

1 In 2003 the port was used by 266 vessels totalling 3 383 308 dwt.

Port Authority
7.53

1 Burnie Port Corporation, PO Box 216, Burnie, Tasmania 7320.
Website: www.burnieport.com.au
Email: info@burnieport.com.au

Limiting conditions

7.54

1 **Controlling depth.** The harbour has a maintained dredged depth of 10 m although most of the berths have a greater depth alongside. For depths alongside see 7.66.
Vertical clearance. Acid Line Bridge (7.62) with a vertical clearance of 11 m.
Deepest and longest berths: deepest: Berth Nos 6 and 7 (7.66); longest: Berth No 5 (7.66).
Tidal levels. See information in *Admiralty Tide Tables*. Mean maximum range about 2·6 m; mean minimum range about 2·0 m.
Maximum size of vessel handled. Ships of up to 280 m in length can be berthed.

Arrival information

Port radio
7.55

1 There is a port radio station at Burnie. For details see *Admiralty List of Radio Signals Volume 6 (4).*

Notice of ETA
7.56

1 Prior advice of ETA should be signalled to the Port Authority via coast radio stations or by other suitable means. Immediate advice can be signalled by VHF R/T to the port radio station (7.55).

Anchorage
7.57

1 Anchorage may be obtained in Emu Bay with good holding ground, sand and clay, but open N and E. Soundings decrease rather suddenly inshore of the 5 m line and, on no account, should a vessel anchor within a depth of less than 13 m.
Temporary anchorage, near the pilot boarding ground, may be obtained on the alignment of the main approach leads (7.64).
Caution. From a position close E of the entrance (41°04′·0S, 145°55′·5E) to Emu River submarine pipelines are laid into Emu Bay, as shown on the chart, in a NNE direction for 6½cables.

Submarine cable and pipeline
7.58

1 A submarine power cable and a submarine pipeline are laid between the head of Ocean Wharf Breakwater (41°03′·0S, 145°54′·9E) and the NW end of Island Breakwater, 1½ cables NE.
For further information on submarine cables and pipelines see 1.10 and 1.33.

Pilotage and tugs
7.59

1 **Pilotage** is compulsory for merchant vessels and is available 24 hours. The pilot vessel, *William Bowen*, is 12·5 m long, with an orange hull and buff cabin aft; equipped with VHF it shows the normal international pilot signals. The pilot boarding ground is 2¼miles N of Round Hill Point (41°04′S, 145°58′E), as shown on the chart.

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For further details see *Admiralty List of Radio Signals Volume 6 (4)*.

Tugs are available.

Regulations concerning entry

7.60

1 For vessels carrying explosives 48 hours notice of ETA must be given to the Harbour Master.

Quarantine

7.61

1 Burnie is a first port of entry. Pratique must be obtained from quarantine through the ship's agent 24 hours before arrival. For further details see 1.47.

Harbour

General layout

7.62

1 The harbour, on the NW side of Emu Bay, consists of two basins protected from the NE by Island Breakwater, a detached breakwater. Island Breakwater is connected with Ocean Wharf Breakwater by Acid Line Bridge, which carries a pipeline.

Principal marks

7.63

1 **Landmarks:**

Port control tower (floodlit) (41°03′·0S, 145°54′·6E).

Water Tower (41°04′·0S, 145°54′·9E), with some prominent paper mills close N.

Tank (elevation 153 m) (41°04′·7S, 145°54′·8E) standing 9 cables SSW of the entrance to Emu River.

Chimney (elevation 26 m) (41°04′·5S, 145°55′·5E).

Radio tower (41°04′S, 145°57′E) (7.44).

Major light:

Round Hill Point Light (41°04′S, 145°58′E) (7.44).

Directions

(continued from 7.46)

Approaches

7.64

1 If approaching Port of Burnie from W pass Table Cape (7.45) at a prudent distance and thence proceed towards the pilot boarding ground, 2¼ miles N of Round Hill Point (41°04′S, 145°58′E), paying attention to the clearing marks (7.46) for the reef extending from Blackman Point.

If from NE, Round Hill (41°04′S, 145°57′E), in good visibility, will be sighted at about 20 miles; the alignment (208°) of Round Hill with Saint Valentine's Peak (chart Aus 422) (7.44), 23 miles SSW, leads towards Emu Bay.

If from E, keep in depths of more than 18 m until Round Hill Point is abeam to avoid a patch, with a depth of 10·7 m over it, 1 mile NNE of the point.

Entry

7.65

1 **Outer leading lights:**

Front light (triangle, point up) (41°03′·8S, 145°54′·9E), standing on a building on the foreshore.

Rear light (triangle, point down) (2 cables SW of front light).

From the vicinity of the pilot boarding ground, the track leads SW on the alignment (223¾) of the outer leading lights, for a distance of about 1¾ miles, to meet the harbour leading line, about 3 cables E of the SE end of Island Breakwater.

2 **Harbour leading lights:**

Front light (orange triangle, point up, on metal pole) (41°03′·2S, 145°54′·5E).

Ro Ro ramp



Burnie – Inner Leading Lights from E (7.65)

(Original dated 2004)

(Photograph – Burnie Port Corporation)

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Burnie – Outer Leading Lights from NE (7.65)

(Original dated 2004)

(Photograph – Burnie Port Corporation)

Rear light (orange triangle, point down, similar structure) (90 m WSW of front light).

3 From the position 3 cables E of the SE end of Island Breakwater the alignment (260°) of these lights leads WSW into the harbour passing close SSE of Island Breakwater, the SE end of which is marked by a light (metal tower, 8 m in height). When past the breakwater, Berth No's 1, 4 and 5 may be directly approached, whilst continuing along the alignment will lead to Berth No's 6 and 7. The shoal water on the S side of the harbour is marked by two light-beacons (piles).

4 **Caution.** If manoeuvring in the N part of the harbour keep well clear of Acid Line Bridge (7.62), especially if of light draught, on account of strong set N. Marked funnelling occurs, with strong W to N winds, between Ocean Wharf Breakwater and Island Breakwater. The bridge is marked by lights, and a light (metal tower, 8 m in height) is displayed from the NW corner of Island Breakwater.

Berths

7.66

1 (Positioned from Port Control Tower (41°03′·0S, 145°54′·6E)):

No 1 Berth (4½cables ESE). No longer used commercially; length 91 m; depth alongside 10 m; maximum permissible length of vessel 280 m.

No 4 Berth (¾ cable SE). Effective berthing length 183 m; depth alongside 10·5 m; with Ro-Ro ramp at inshore end and two dolphins lying off the seaward end, both dolphins display a light.

2 No 5 Berth (1½ cables SE). Effective berthing length 213 m; depth alongside 11 m; maximum length of vessel allowed is 250 m; there is a large mooring dolphin off the seaward end, on which stands a light. There are facilities for bulk handling, liquid acid and tallow loading points and a discharge point for petroleum products.

3 No 6 Berth (2 cables SSE). Length 198 m; depth alongside 11·5 m; can accommodate vessels up to 280 m in length. A light is displayed from the seaward end of the berth.

No 7 Berth (2½ cables SSE). Length 219 m; depth alongside 11·5 m; Ro-Ro ramp at inshore end with a width of 8·5 m; two large mooring dolphins at the seaward end enable vessels up to 280 m in length to berth. A light is displayed from the outer dolphin.

Port services

7.67

1 **Repairs.** Machinery repairs carried out; engineering firms with extensive workshops are situated nearby.

Other facilities. Deratting and deratting exemption certificates issued; reception facilities for oily waste using road tankers; garbage disposal; hospital.

Supplies. Fuel and diesel oil by road tanker; fresh water; provisions.

Communications. There is an airport, about 20 km to the W of the port near the town of Wynyard.

BURNIE TO PORT DALRYMPLE

GENERAL INFORMATION

Chart Aus 799

Area covered

7.68

1 The area covered by this section comprises:

Burnie to Devonport (7.70).

Port of Devonport (7.79).

Devonport to Port Dalrymple (7.95).

Inadequately surveyed areas

7.69

1 See 7.5.

BURNIE TO DEVONPORT

General information

Chart Aus 799, Aus 163, Aus 164 (see 1.12)

Route

7.70

1 From a position about 3 miles N of Round Hill Point (41°04′S, 145°58′E) the route leads ESE, for a distance of 20 miles, to a position about 3 miles NNE of Mersey Bluff (41°10′S, 146°21′E), in the approaches to Devonport.

Topography

7.71

1 Between Emu Bay (41°03′S, 145°56′E) and Mersey Bluff, 20 miles ESE, the coast is backed by hilly ground and by a range of mountains farther inland. Dial Range extends N between Penguin (41°07′S, 146°04′E) and River

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Leven, from the inland range, with Mount Montgomery, 2½ miles S of Penguin, being its highest summit.

Local magnetic anomalies

7.72

1 A local magnetic anomaly is reported to exist in the vicinity of 41°00′S, 146°15′E, 10 miles NNE of Ulverstone. Local magnetic survey results also indicate that there is likely to be significant magnetic anomalies between Port of Burnie and Ulverstone.

Principal marks

7.73

1 **Landmarks:**

Radio tower (41°04′S, 145°57′E) (7.44).

Saint Valentine's Peak (41°22′S, 145°45′E) (7.44).

Mersey Bluff (41°10′S, 146°21′E) which is high and covered with trees at its extremity. Mersey Bluff Light (white brick tower, red stripes, white lantern, 16 m in height) is displayed from the bluff. A white obelisk stands close ESE of the light.

Major lights:

Round Hill Point Light (41°04′S, 145°58′E) (7.44).

Mersey Bluff Light — as above.

Directions

(continued from 7.46)

7.74

1 From a position about 3 miles N of Round Hill Point (41°04′S, 145°58′E) the track leads ESE, passing (with positions from Round Hill Point Light (41°04′S, 145°58′E)):

NNE of Titan Point (5 cables E). A sewer outfall extends 1¾ miles NNE from the shore 5 cables SE of the point. Thence:

NNE of Blythe Heads (1¼ miles ESE) on the E side of the entrance to River Blythe. A road and rail bridge spans the entrance; the river is only accessible to small craft. Thence:

2 NNE of a patch (6 miles E), with a depth of 12·9 m over it which lies 2½ miles NNE of Penguin Creek (7.75), thence:

NNE of a patch (8 miles ESE), with a depth of 9·6 m (reported 1986) over it, which lies 1¼ miles NNE of Penguin Point.

The track then continues ESE, passing (with positions from Mersey Bluff Light (41°10′S, 146°21′E)):

NNE of Three Sisters (10½ miles WNW), a group of small islets standing close N of Lodder's Point. Depths of less than 10 m extend up to 8 cables N of the islets. Thence:

3 NNE of the entrance to River Leven (8½ miles W), inside of which lies Ulverstone (7.76), thence:

NNE of a rock (5½ miles WNW), with a depth of 3·8 m over it. The red sector (100°–114°) of Mersey Bluff Light (7.73) covers this danger. Thence:

NNE of Port Fenton (4¾ miles W) lying at the entrance to River Forth (7.77), thence:

4 NNE of a bluff (1½ miles WNW) standing 5 cables NW of Don Heads (7.78). There is cultivated ground on the bluff and dead trees; this bluff is higher than Mersey Bluff. An isolated patch, with a depth of 9·6 m over it, lies 7 cables NE of Don Heads. Thence:

To a position about 3 miles NNE of Mersey Bluff (41°10′S, 146°21′E) (7.73) in the approaches to Devonport.

5 **Useful marks:**

Radio mast (41°10′S, 146°19′E) standing 5 cables N of Don Hill.

Devonport Airport Aero Light (occasional) (41°10′S, 146°26′E).

(Directions for the coastal route continue at 7.98 and for Devonport at 7.90)

Minor harbours and rivers

Chart Aus 799

Penguin Creek

7.75

1 Penguin Creek (41°07′S, 146°04′E) is a boat harbour used only by small local craft. Its entrance is sheltered from W and NW winds by a small headland and by a ledge, drying 1·5 m, which extends 5 cables NW from the W side of the entrance. A ledge of drying rock also extends nearly 5 cables NNE from the E side of the entrance.

Penguin, a small town, lies at the entrance to Penguin Creek which is spanned by road and rail bridges close within the entrance.

Chart Aus 164 plan of Ulverstone (see 1.12)

Ulverstone

7.76

1 **Description.** Ulverstone (41°09′S, 146°10′E) stands close within the entrance to River Leven; vessels of 1800 tons have been berthed at the wharf but the harbour is now for the use of recreational craft only. The river is approached between rocky ledges extending 7½ cables seaward from each side of the entrance.

The river mouth is protected by a rubble breakwater on each side and is well sheltered from the prevailing W winds by the reef on the W side of the approach extending NNE from Picnic Point.

A road bridge spans River Leven close SW of the wharf and a rail bridge spans it 2 cables farther W.

2 **Depth.** There is a least depth in the fairway, between the breakwaters, of 1·2 m.

Anchorage. The best anchorage for vessels waiting for the tide is 7½ cables N of the head of the E breakwater.

Local knowledge is required.

Directions. Leading lights:

Front light (orange triangle, point up, on grey pole) (41°09′·2S, 146°10′·0E).

Rear light (orange triangle, point down, on similar structure) (82 m S of front light).

3 From a position about 1 mile N of the E breakwater the track leads S on the alignment (188°) of these lights, passing (with positions from the front light):

W of Channel Rock (1 mile NNE), a rock awash and is the principal danger near the entrance, and:

E of Seagull Islet (9 cables NNW), standing on the reef extending NNE of Picnic Point, thence:

Between the heads of the two breakwaters (5 cables N). The E breakwater is marked at its head by a light-beacon (port hand). Thence:

4 E of Black Jack Rock (3½ cables N), at the inner end of the W breakwater. The rock dries and extends a short distance SE towards the channel.

Then, when ½ cable from the front light, the track leads SSE towards the wharf standing on the E bank of the river.

Berth. Wharf: length 137 m; depth alongside about 2·1 m.

Facilities: hospital.

Supplies: fresh water.

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Devonport from NNW (7.79)
(Original dated 1998)

Chart Aus 164 (see 1.12)

River Forth

7.77

1 River Forth enters the sea at Port Fenton (41°09′S, 146°15′E), 4¼miles W of Devonport (7.79). Turner's Beach, a village, stands on the W side of the river entrance and the town of Leith on the E side. A rail bridge and road bridge span the river 5 cables within the entrance. There is a bar at the entrance to River Forth; and the entrance channel is unmarked.

Local knowledge is required.

Don River

7.78

1 Don River (41°10′S, 146°20′E) enters the sea on the E side of Don Heads, 1½ miles W of Devonport (7.79). A rail bridge spans the river 5 cables within the entrance. The entrance channel is unmarked and is constricted by drying rocks extending from both banks of the river.

Local knowledge is required.

PORT OF DEVONPORT

General information

Aus 164 plan of Devonport (see 1.12)

Position

7.79

1 Port of Devonport (41°11′S, 146°22′E) lies in the entrance to Mersey River, which is entered between Aikenhead Point, 6 cables SE of Mersey Bluff (41°10′S, 146°21′E), and Frederick Head, 8½ cables farther ESE. Mersey River above Devonport is navigable only by small craft which can reach the town of Latrobe, 6 miles upstream.

Function

7.80

1 Port of Devonport, next to Port Dalrymple (7.127), is the best and most secure harbour on the N coast of Tasmania. The town of Devonport, with a population of about 25 000 in 1998, lies on the W bank of Mersey River.

The port contains an interstate passenger and vehicle ferry terminal. Commodities handled include general cargo, livestock, refrigerated products, cement, tallow, grain, petroleum, LPG, salt, china clay, gypsum and fertiliser.

Port limits

7.81

1 Devonport port limits are bounded by a line, radius 3 miles, centred on Mersey Bluff Light (7.73).

Traffic

7.82

1 In 2003 the port was used by 911 vessels totalling 7 706 974 dwt.

Port Authority

7.83

1 Port of Devonport Corporation, 48 Formby Road, PO Box 478, Devonport, Tasmania 7310.

Website: www.portdev.com.au

Email: enquiries@portdev.com.au

Limiting conditions

7.84

1 **Controlling depth and width.** A dredged channel with a least width of 79 m and a depth of 9·2 m leads through the entrance to Mersey River and to a swinging basin

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Devonport Harbour from NW (7.86)
(Original dated 1998)

abreast West Wharf; the basin has a maximum width of 300 m and a maintained depth of 9·2 m.

Deepest and longest berth. No 4 West (7.93).

Tidal levels. See information in *Admiralty Tide Tables*. Mean maximum range about 2·6 m; mean minimum range about 2·1 m.

2 **Density of water.** At all berths the density is 1·025 g/cm^3, but varies after heavy rain.

Maximum size of vessel handled. Length 205 m; beam 37 m; draught 10·5 m.

Arrival information

7.85

1 **Port radio.** There is a port radio station at Devonport. For details see *Admiralty List of Radio Signals Volume 6 (4)*.

Notice of ETA. Vessels should send ETA, arrival draught, and request for pilot 12 hours in advance.

Anchorage. Good anchorage may be obtained near the pilot boarding ground, 2 miles NNE of Mersey Bluff Light (41°10′S, 146°21′E), in a depth of about 23 m.

2 **Pilotage** is compulsory for all foreign vessels and vessels over 35 m in length; it is available 24 hours. Pilots board near a position, as shown on the chart, 3 miles NE of Mersey Bluff Light (41°10′S, 146°21′E).

For further details see *Admiralty List of Radio Signals Volume 6 (4)*.

3 **Tugs** are available.

Prohibited anchorage. Anchorage is prohibited within 50 m of a submarine sewer laid across the harbour entrance channel close N of Police Point (41°10′·5S, 146°22′·0E).

Quarantine. Devonport is a first port of entry. The quarantine line referred to in The Quarantine Act (1.47) is drawn from Mersey Point Light (41°10′S, 146°21′E) to Moorland Point, 4½ miles E.

Harbour

General layout

7.86

1 The harbour is situated 1 mile inside Mersey River with two berthing areas, one along the E bank, the other along the W bank.

Tidal streams

7.87

1 At a position about 3½ cables N of the entrance to Mersey River the in-going tidal stream sets SW at ½kn, whilst the out-going stream sets N at 1½kn.

Both in-going and out-going streams attain a rate of 1 to 2 kn inside Mersey River, but after heavy rains the out-going stream has attained a rate of 4 kn.

There is always an eddy off the N end of No 1 West Berth, except for about 10 minutes at slack water. During the out-going stream it runs parallel with the wharf and is only felt about 30 m off it.

Ferry

7.88

1 A ferry operates between two piers, across the shipping channel, 2½cables S of Police Point (41°10′·5S, 146°21′·9E), linking the main town of Devonport with East Devonport. A light is displayed from the head of the W pier.

Principal marks

7.89

1 **Landmarks:**

Radio mast (41°10′S, 146°19′E) standing 5 cables N of Don Hill.

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Mersey Bluff (41°10′S, 146°21′E) (7.73).
Tower at Frederick Head (41°10′S, 146°23′E)
Radio mast (41°11′S, 146°23′E), 7 cables SE of Frederick Head.

2 Tank (41°11′S, 146°27′E), 1¾ miles SE of Pardoe Point.
Two masts (red obstruction lights) (41°10′S, 146°29′E), 2½ miles E of Pardoe Point.

Major lights:
Mersey Bluff Light (41°10′S, 146°21′E) (7.73).
Devonport Airport Aero Light (occasional) (41°10′S, 146°26′E).

Directions

(continued from 7.74)

Charts Aus 164, Aus 164 plan of Devonport (see 1.12)

Approaches

7.90

1 The approach to Devonport should be made with Mersey Bluff Light (41°10′S, 146°21′E) (7.73) bearing within the sector (114°–242°) which leads clear of dangers E and W of the entrance to Mersey River. At night this is the white sector of Mersey Bluff Light.

2 If approaching from the E along the coast keep a good look-out for Egg Island and Wright Island on the dangerous Horseshoe Reef which extends 1¼ miles N from Pardoe Point (41°10′S, 146°25′E), 2½ miles E of the entrance to Mersey River. The line of bearing, 226°, of Mersey Bluff Light, or at night a course within the white sector of its light, leads NW of Horseshoe Reef.

Caution. There are two spoil grounds, with a radius of 350 m in which the depth of water may be less than charted, 1¾ miles NNE and NE of Mersey Bluff Light close to entrance leading line.

Entering harbour

7.91

1 **Entrance leading lights:**
Front light (white tower, 8 m in height) (41°10′·6S, 146°21′·8E) standing at the head of an L-shaped rock wall.
Rear light (triangular shaped tower) (145 m SSW of front light).

From a position about 3 miles NNE of Mersey Bluff the track leads SSW on the alignment (204°) of the entrance leading lights, passing (with positions from the front leading light):

2 WNW of Egg Island (3¼ miles NE) standing on Horseshoe Reef, thence:
WNW of Wright Island (2¾ miles NE), thence:
WNW of an isolated patch (1¾ miles NE), with a depth of 4·4 m over it. A sewer outfall pipe extends from the shore for 6 cables to the E side of this patch; the seaward end is unmarked. Thence:
ESE of Mersey Bluff (1 mile NNW) (7.73), thence:

3 Between Aikenhead Point (7 cables N), from where a short breakwater extends NE, and Fairway Light-beacon (port hand) (7 cables NNE), into the narrow entrance channel. The sides of the channel are marked by light-beacons (lateral) and by two pairs of lights in line (white diamonds on white beacons) bearing 204°, standing on both sides of the entrance leading lights. Thence:

4 Between Aikenhead Spit (5 cables N) and the training wall, partly awash at HW, on the E side of the channel. Aikenhead Spit is an area of shoal water, with depths of less than 2 m, backed by a rocky shore. Thence:
ESE of Regatta Point (3 cables N), on which stands a monument, thence:

5 To a position WNW of Police Point, at the beginning of the inner leading line.

The track then leads S, for a short distance into the harbour swinging basin, on the alignment (176°), ahead of the inner leading lights, and the alignment (356°), astern, of a second pair of leading lights standing close S of Regatta Point, passing Mussel Rock, which lies close E of the entrance front leading light:

6 Inner front light (41°11′·5S, 146°21′·9E).
Inner rear light standing 90 m S on a shed NW of Mersey Slipways.
Regatta Point Front Light (white tower) (41°10′·4S, 146°21′·8E).
Regatta Point Rear Light (similar structure) (35 m N of front light).

Berths

East bank

7.92

1 Berths (positioned from inner front leading light (41°11′·5S, 146°21′·9E)):
No 1 East (Bass Strait Ferry Terminal) (6½cables N); length 115 m; depth alongside 6·7 m; Ro-Ro ramp at N end; maximum size of vessel, length 206 m, breadth 37 m.

2 No 2 East (5½cables N); length 180 m; depth alongside 8·6 m; Ro-Ro ramp at N end; handles containers and general cargo; maximum size of vessel, length 206 m, breadth 31·7 m.
No 3 East (4½cables N); length 118 m; depth alongside 10·0 m; general purpose berth; maximum size of vessel, length 206 m, breadth 31·7 m.

West bank

7.93

1 Berths (positioned from inner front leading light (41°11′·5S, 146°21′·9E)):
No 1 West (5 cables N); length 87 m; depth alongside 9·0 m; used for handling bulk cement; maximum size of vessel, length 180 m, breadth 31 m.
No 3 West (3½ cables NNW); length 167 m; depth alongside 6·1 m; general purpose berth; maximum size of vessel, length 206 m, breadth 37 m.

2 No 4 West (2½ cables NNW); length 198 m; depth alongside 10·3 m; general purpose berth; maximum size of vessel, length 206 m, breadth 31 m.
No 5 West (LPG Terminal) (1½cables N); a T-shaped jetty supported on steel piles and connected by catwalks; length 40 m across the head; depth alongside 7·5 m; also used as a small livestock berth for intrastate livestock trade; maximum size of vessel, length 110 m, breadth 20 m.

Port services

7.94

1 **Repairs.** Mersey Slipways, at Wood's Point (41°11′·5S, 146°22′·0E), has three slipways for vessels up to about 40 m in length; small repairs carried out.

Other facilities. Deratting and deratting exemption certificates issued; hospitals; reception facilities for oily waste using road tankers; garbage disposal.

Supplies. Fuel oil from road tanker; provisions; fresh water.

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Communications. There is an airport 8 km E of the port.

Harbour regulations. Immobilisation of engines not normally permitted.

DEVONPORT TO PORT DALRYMPLE

General information

Chart Aus 799

Route

7.95

1 From a position about 3 miles NNE of Mersey Bluff (41°10′S, 146°21′E) the route leads ENE, for a distance of 18 miles, to a position about 3 miles NW of Low Head (41°03′S, 146°47′E), off the entrance to Port Dalrymple.

Local magnetic anomalies

7.96

1 Local magnetic anomalies are reported to exist in the vicinity of 41°03′S, 146°35′E, about 4 miles NNE of Point Sorell, and in the vicinity of 41°06′S, 146°40′E, close W of Badger Head.

Principal marks

7.97

1 **Landmarks:**

Mersey Bluff (41°10′S, 146°21′E) (7.73).

Tank (41°11′S, 146°27′E) (7.89).

Two masts (red obstruction lights) (41°10′S, 146°29′E) (7.89).

Asbestos Range consisting of Sharp Peak (41°07′S, 146°41′E) and Asbestos Peak, 1¼ mile SE, are prominent from seaward.

2 Low Head Lighthouse (white round brick tower, red band, white lantern, 19 m in height) (41°03′S, 146°47′E) standing on Low Head, the E entrance point of River Tamar.

Mount George (41°06′S, 146°52′E).

Major lights:

Mersey Bluff Light (41°10′S, 146°21′E) (7.73).

Low Head Light — as above. An auxiliary light is also displayed from the lighthouse.

Directions

(continued from 7.74)

7.98

1 From a position about 3 miles NNE of Mersey Bluff (41°10′S, 146°21′E) the track leads ENE, passing (with positions from Point Sorell (41°07′S, 146°32′E)):

NNW of Horseshoe Reef (5 miles WSW) on which stands Egg Island (7.91), thence:

NNW of an outfall pipe (4 miles WSW) which extends from the shore, close E of Moorland Point (chart Aus 164), NNW for 1 mile; the seaward end is unmarked. Thence:

NNW of Point Sorell; the mouth of Rubicon River, inside of which is situated Port Sorell (7.99), lies 1½miles SE of the point. Thence:

2 NNW of Little Badger Head (4¾ miles E), a rocky point. Between the entrance to Rubicon River and Little Badger Head the low coast is fronted by a sandy beach. Thence:

NNW of Badger Head (5½miles ENE), another rocky point. Little Badger Head and Badger Head form the NW end of Asbestos Range, so named from the mineral found in them. Thence:

NNW of West Head (8¾miles NE) fronted by dangerous rocks. West Head rises to 81 m about 2½cables within the headland; Wentworth Hill stands 2 miles SE. Thence:

3 NNW of Hebe Reef (10¼ miles NE) (7.114) from where a light is displayed. The red sector (082°–108°) of Low Head Auxiliary Light covers Hebe Reef and the dangerous rocks fronting West Head. Thence:

To a position about 3 miles NW of Low Head (12 miles ENE) (7.97).

(Directions for the coastal route continue at 7.170, and for Port Dalrymple and Launceston at 7.113)

Port Sorell

General information

7.99

1 **Description.** Port Sorell (41°10′S, 146°34′E) is entered through the mouth of Rubicon River which is navigable for small craft for about 7 miles within. The town of Port Sorell, where there is a jetty, lies on the W shore 3 miles SSE of Point Sorell (41°07′S, 146°32′E).

Directions. The entrance channel, 1 mile SE of Point Sorell, leads across a bar with a depth of 1·6 m over it, which lies between an islet and reefs, on the W side, and a drying reef extending from the SE entrance point, on the E side.

2 A narrow, tortuous channel leads S and SE from the bar for about 2 miles to Shell Islands, which lie in mid-river on the outer edge of a drying sandbank extending from the W shore. Two above-water rocks lie in mid-channel 5 cables SW of the SE entrance point of the river.

PORT DALRYMPLE AND LAUNCESTON

GENERAL INFORMATION

Charts Aus 356, Aus 167, Aus 168, Aus 799

Description

7.100

1 This section describes the route through River Tamar to the harbours of Port Dalrymple, consisting of Beauty Point, Bell Bay and Long Reach, and thence to the port of Launceston. Bell Bay is the name generally used for Port Dalrymple. The section is arranged as follows:

Approaches to Port Dalrymple (7.106).

Port Dalrymple (7.127).

Port Dalrymple to Launceston (7.148).

Topography

7.101

1 River Tamar flows through a valley formed by two irregular chains of mountains, one extending N from Great Western Tiers to the coast at Badger Head (41°06′S, 146°39′E) (7.98) and the other NW from Stack's Bluff (41°38′S, 147°41′E) to Low Head (41°03′S, 146°47′E). In some places the mountains are wide apart and in others they nearly meet. The ends of the chains, when seen directly off the entrance to River Tamar, appear as two groups of hills somewhat like each other; in fine weather the distant summits of the mountains inland are seen over

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both groups. These features are the best distant marks for identifying the entrance.

Port limits

7.102

1 Port of Dalrymple is included under Port of Launceston, the seaward limits of which are an arc with a radius of 3 miles centred on Low Head Lighthouse (41°03′S, 146°47′E). It is bounded within by the shores of Tamar River, and the South Esk River to Picnic Rock, and the North Esk River to Hobbler's Bridge.

Pilotage

7.103

1 Pilotage is compulsory for vessels of 35 m LOA or greater, unless a pilotage exemption certificate for the Port of Launceston is held. No vessel drawing more than 6 m should attempt to enter River Tamar without the assistance of a local pilot, and it is advisable for those without local knowledge to secure his services as soon as practicable, especially at night. Arrival time of a vessel at the pilot boarding station should be signalled 24 hours in advance and amendments made as early as possible.

2 Vessels approaching River Tamar and wishing to take a pilot on board should not proceed S of latitude 41°01′S. Vessels will be advised by VHF radio of the pilot boarding time. The boarding ground is in the vicinity of 41°00′·7S, 146°44′·3E, as shown on the chart, 3½ miles NW of Low Head Light. Vessels that anchor (7.123) to await a pilot should be under way by the appointed boarding time.

3 A vessel, not at anchor, should wait offshore to the NE of the boarding ground. When the pilot launch is approaching, course and speed can be adjusted to meet the pilot launch at the recommended position, such that the course offers a suitable lead with a speed of about 6 kn. The pilot launch is painted blue and orange and marked "Pilot".

4 If a pilot is not immediately available, a vessel shall be informed by lamp or VHF radio, from the pilot station. Should the weather prevent the pilot boarding outside, vessels less than 107 m in length, when so directed by the pilot launch, enter the river and are boarded just inside Shear Rock Light. This procedure is too hazardous for vessels over 107 m in length which should lie off till the pilot can board outside.

5 The Pilot Station and its boat harbour are located on the N side of Pilots Bay (41°04′S, 146°48′E). For further information see *Admiralty List of Radio Signals Volume 6 (4)*.

Inadequately surveyed areas

7.104

1 Several areas in the approaches to River Tamar and in the river itself, as shown on the chart, are inadequately surveyed; see 7.5.

Local magnetic anomalies

7.105

1 There are considerable magnetic anomalies in different parts of River Tamar; however there is not much use for a compass in the upper reaches.

APPROACHES TO PORT DALRYMPLE

General information

Charts Aus 799, Aus 167

Route

7.106

1 The main entrance to River Tamar passes through Middle Channel which leads between Yellow Rock (41°03′·7S, 146°46′·4E) and Shear Rock on the SW side, and Middle Bank, Barrel Rock and Barrel Spit on the NE side, into the river. The channel has a least width of 1 cable with depths of not less than 15·2 m on the leading line; but it should be noted that the inner lead passes less than 50 m off Middle Bank Light. The route then leads SSE and E through a narrow and winding channel into Bell Bay and Long Reach.

Topography

7.107

1 Between Friend Point (41°05′S, 146°46′E) and Kelso Bay, 2½ miles SE, the W shore of River Tamar is low and wooded. Stockyard Hills stand 1½ miles SW of Friend Point, of which Sea Hill is the highest point.

Controlling depth

7.108

1 In the lower reaches of River Tamar there is a least depth of 10·8 m in the fairway as far as Beauty Point, Bell Bay and Long Reach. Vessels are required to have an under-keel clearance of 1·4 m so that the permissible draught at LW is 9 m and at HW 11·5 m.

Tidal levels

7.109

1 **Tidal levels.** See information in *Admiralty Tide Tables*. For Georgetown (41°06′S, 146°49′E) (7.126), mean maximum range about 2·4 m, mean minimum range about 2·0 m.

Prohibited anchorages

7.110

1 Anchorage is prohibited within the areas marked on the chart in the vicinity of the following submarine cables and pipelines:

Between Ashman's Point (41°07′·6S, 146°48′·6E) and Saltpan Point, 3½ cables NE; two submarine cables cross the river at this point. The landing places of the cables are marked by beacons, either with white triangular topmarks, or with yellow and black striped diamond shaped topmarks.

2 Between Anchor Point (41°08′·3S, 146°49′·1E) and the N point of Deceitful Cove, 5 cables NE.

Off Point Effingham (41°08′·2S, 146°49′·7E); a submarine pipeline extends W from the shore, a ½ cable NE of the point.

In the entrance to West Arm where a submarine cable is laid from close W of Anchor Point (41°08′·3S, 146°49′·1E) to the shore at Ilfraville.

For further information on submarine cables and pipelines see 1.10 and 1.33.

Tidal streams

7.111

1 **Offshore.** About 3 miles offshore of the entrance to River Tamar the flood stream sets W at a rate of 1 to 2 kn.

Caution. Vessels may be set by the E-going stream between Two Mile Reef and Low Head. During onshore gales keep an offing of at least 2 miles between these points; inside this limit the sea breaks heavily.

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2 **Approaches.** In the approach to the river the tidal streams are as follows:

The in-going stream, at a position 1 mile NE of Hebe Reef, sets S with a rate of 1 kn (springs). At a position 1 mile WNW of the reef it sets WSW at the same rate (springs).

The out-going stream, at a position 7½ cables W of Low Head, sets NNW at a rate of 1 kn (neaps). At 1 mile NW of Low Head it sets E at the same rate (neaps).

3 **Port Dalrymple.** In Port Dalrymple, the in-going stream runs for about 5¾ hours and the out-going stream for about 6½hours, at a rate varying from 2 to 5 kn according to whether the river is confined or open. Between the entrance to River Tamar and Georgetown the in-going stream runs for 45 minutes after HW.

4 **Beauty Point Harbour.** In the vicinity of Orari Bank Light-beacon the in-going stream begins at half flood and flows until nearly half ebb; the out-going stream begins at half ebb and continues to half flood. There is practically no slack water at half flood, the in-going stream coming with a well defined tide rip, and only about 30 minutes slack water at half ebb.

5 Near the N end of Beauty Point Wharf, the in-going stream runs from about 5½ hours after HW to 1 hour before the following HW; the out-going stream runs from HW to 5 hours after HW.

Principal marks

7.112

1 **Landmarks:**

Two radio masts (red obstruction lights) (41°06′·2S, 146°47′·0E).

The Buffalo (41°05′S, 146°51′E), a hill.

George Town Sugar Loaf (41°05′S, 146°52′E), a hill.

Mount George (41°06′S, 146°52′E).

Low Head Lighthouse (41°03′S, 146°47′E) (7.97).

Major light:

Low Head Light — as above. An auxiliary light is also displayed from the lighthouse.

Directions

(continued from 7.98)

Approaches

7.113

1 **Main approach.** The shoals at the entrance to the port are mostly covered at half tide, so that half-flood, or even shortly before, is the best time to enter for almost all the dangers are then visible.

From the pilot boarding ground, the recommended approach to the river entrance is made on the line of bearing, 160°, of two radio masts (41°06′·2S, 146°47′·0E) (7.112), standing on the W side of the river. Thence from a position about 9 cables from Yellow Rock Light (41°03′·7S, 146°46′·4E) the track leads SE on the alignment (127¾) of Middle Channel Outer Leading Lights (7.114).

2 This approach leads between Hebe Reef, to the SW, and the 15 m depth contour to the NE. If the radio masts cannot be identified then the following approaches may be made.

From the west. Initially take care not to bring Low Head (41°03′S, 146°47′E) (7.97) to bear less than 110° by day, nor enter the red sector (082°–108°) of Low Head Light by night, before Middle Channel Outer Leading Lights are brought into line. Thence follow the directions given at 7.114.

3 **From the north or east.** From the E, Stony Head (40°59′S, 147°01′E) (7.169), with Tenth Islet, 2¾miles NW, indicate the vicinity of the entrance to River Tamar; Low Head, the E entrance point with a prominent lighthouse on it, lies 11½ miles WSW of Stony Head and will also be seen.

Proceed towards Low Head Light until a position is reached about 3 miles N of the light, then head SW until Middle Channel Outer Leading Lights are sighted SE. Thence head S onto the alignment of these lights and follow the directions given at 7.114.

Entry — Hebe Reef to Shear Rock

7.114

1 **Middle Channel Outer Leading Lights:**

Front light (white round stone tower) (41°04′·8S, 146°48′·2E) standing on She-Oak Point.

Rear light (white round stone tower, red stripe) (2 cables SE of front light).

From a position about 2½miles N of West Head (41°04′S, 146°42′E) (7.98) the alignment (127¾) of these lights leads SE for a distance of about 4 miles, passing (with positions from Low Head Light (41°03′S, 146°47′E)):

2 NE of Hebe Reef (2¼ miles WNW), which dries, lying 1½miles NE of West Head. It is the outermost danger on the SW side of the entrance. A light (red and white chequered tower) is displayed from the S side of the reef. The red sector (082°–108°) of Low Head Auxiliary Light covers Hebe Reef and two 9·4 m patches, 6 cables SW and 7 cables W respectively of it, and the rocks extending from West Head. Thence:

3 NE of a 4·3 m patch (1 mile WSW) fronting West Reef and Black Reef to a position at the beginning of the Middle Channel Inner leading line. West Reef and Black Reef, part of which remains uncovered near its centre, lie on a bank, with depths of less than 5 m, extending 1¼miles NNW and 1 mile N, NE and E from Friend Point (1¾miles SSW).

7.115

1 **Middle Channel Inner Leading Lights:**

Front light (41°04′·5S, 146°48′·3E), standing on the S entrance point of Lagoon Bay.

Rear light (1 cable SE of front light).

The alignment (122½) of these lights leads SE for a further 9 cables, passing (with positions from Low Head Light):

2 NE of Yellow Rock Light-beacon (starboard hand) (8 cables SW), which stands close N of Yellow Rock, and:

Close SW of Middle Bank Light-beacon (port hand) (6 cables SW) standing on the S side of Middle Bank, a rocky shoal, thence:

3 SW of Dotterel Point (3 cables S). Dotterel Rock, above water, lies 1 cable W of the point. The sea breaks heavily over the shoals W of Low Head and NW of Dotterel Point in bad weather and there are always tide-rips on both in-going and out-going tidal streams. Thence:

4 To a position between Barrel Rock (6 cables S), a drying rock marked by a beacon (port hand) and Shear Rock Light-beacon (E cardinal) (7 cables SSW). Barrel Rock lies on the NW side of Barrel Spit, a shoal with depths of less than 5 m over it. Shear Rock Light-beacon lies 1 cable E of Shear Rock, which fronts Shear Reef.

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5 **Caution.** Strong tide-rips occur near Shear Rock Light-beacon and Barrel Spit Light-beacon (7.116).

Useful marks:

Flagstaff at the Pilot Station, on the N side of Pilots' Bay (41°04′S, 146°48′E), and another 2½cables N.

Shear Rock to Georgetown

7.116

1 **Caution.** The tidal streams set obliquely across the channel between Kelso (41°06′·5S, 146°47′·7E) and Bombay Rock, 4 cables NE. The out-going stream, for example, crosses from Kelso Bay to Bombay Rock with such strength as to form whirlpools; both in-going and out-going streams attain rates up to 5 kn at times.

From the position between Barrel Rock and Shear Rock the track leads SSE, passing (with positions from She-Oak Point (41°04′·8S, 146°48′·2E)):

2 WSW of Barrel Spit Light-beacon (port hand) (8 cables NW), thence:

To a position about 4 cables NW of She-Oak Point at the beginning of the Sea Reach leading line.

Sea Reach Leading Lights:

Dotterel Point Light (white round tower, 6 m in height) (41°03′·7S, 146°47′·5E).

Rear Light (same structure as Low Head Light (7.97)) (660 m NNW of front light).

3 The alignment (344¾°), astern, of these lights leads SSE for about 1¼ mile to the She-Oak/Kelso Bay leading line, passing:

ENE of North West Bank Light-beacon (starboard hand) (4 cables), which marks an extension of the coastal bank on the SW side of Middle Channel, thence:

4 WSW of She-Oak Point, thence:

WSW of Simmon's Mistake Light-beacon (port hand) (4½cables S) marking the W edge of a drying shingle and rocky bank, thence:

ENE of Elbow Spit Light-beacon (starboard hand) (6½cables SSW).

7.117

1 **She-Oak/Kelso Bay Leading Lights:**

She-Oak Front Light (41°04′·8S, 146°48′·3E); the She-Oak leading line is fractionally offset from the Kelso Bay leading line.

She-Oak Rear Light (same structure as Middle Channel Outer Front Light (7.114)) (160 m N of front light).

Kelso Bay Front light (white wooden beacon) (41°06′·9S, 146°48′·1E).

Kelso Bay Rear light (similar structure) (140 m S of front light).

2 The alignment (004½°), astern, of She-Oak Leading Lights, and (181¾°), ahead, of Kelso Bay Leading Lights leads about 6 cables S to the Stone Quarry/North Kelso leading line, passing (with positions from She-Oak Point (41°04′·8S, 146°48′·2E)):

Over Toroa Patch (9 cables S), depending on draught, thence:

E of Honduras Bank Light-beacon (starboard hand) (1 mile S). The beacon marks a bank lying on the outer edge of the same drying bank as Elbow Spit. Thence:

3 W of Bombay Rock Light-beacon (port hand) (1¼miles S) marking the NW side of Bombay Rock, which is steep-to on its W side.

To avoid overshooting the Stone Quarry/North Kelso leading line alter course gradually SE when the alignment (about 145°) of Bombay Rock Light-beacon with Long Tom Reef Light-beacon, 3½ cables SE, is seen, shortly before passing Bombay Rock Light-beacon.

7.118

1 **North Kelso/Stone Quarry Leading Lights:**

North Kelso Front Leading Light (orange triangle, point up, on beacon) (41°05′·9S, 146°47′·5E).

North Kelso Rear Leading Light (orange triangle, point down, on beacon) (55 m NW of front light).

Stone Quarry Front Leading Light (orange triangle, point up, on beacon, 9 m in height) (41°07′·0S, 146°49′·5E), standing on the S side of Stone Quarry Bay.

Stone Quarry Rear Leading Light (orange triangle, point down, on beacon, 11 m in height) (50 m SE of front light).

2 The alignment (305¾°), astern, of North Kelso Leading Lights, and (125¾°), ahead, of Stone Quarry Leading Lights leads about 9 cables SE, passing (with positions from She-Oak Point (41°04′·8S, 146°48′·2E)):

SW of Long Tom Light-beacon (port hand) (1½miles S). The beacon marks the SW edge of Long Tom Reef lying at the S end of a shingle bank extending up to 3 cables offshore between She-Oak Point and Windmill Point. Lover's Islet is the S-most of several islets standing on this bank. Thence:

3 NE of Foul Ground Light-beacon (starboard hand) (1¾miles S), which marks the outer edge of the shoal bank between Kelso and Garden Island. A beacon (black) stands 1½cables SE of the light-beacon. Thence:

Between the N end of Garden Island (2¼miles SSE) and Windmill Point (2 miles SSE), on which stands a monument. Garden Island is marked on its E side by four lights (wooden masts). Thence:

To a position about 1½ cables S of Windmill Point, which fronts Georgetown (7.126).

Georgetown to Point Effingham

7.119

1 From the position 1½cables S of Windmill Point (41°06′·6S, 146°49′·0E) the track leads SSW with Ashman's Point Light ahead bearing about 200°, passing (with positions from Windmill Point):

WNW of Garrow Rock (1½ cables SSE); a deep channel leads each side of the rock. Thence:

ESE of Garden Island (2½cables SSW) (7.118), thence:

ESE of Arthur's Head (6 cables SSW), thence:

WNW of Porpoise Rock (6½cables S), favouring the W shore.

The track then leads SSE, passing:

2 Between Saltpan Point (7 cables S), from where a light (red metal framework tower) is displayed, and Clarence Point (8 cables SSW). Pipeclay Bay lies in the S part of a bight close E of Saltpan Point. Thence:

Between Ashman's Point (1 mile SSW), from where a light (wooden framework tower) is displayed, and Roundabout Point (9 cables S), from where a light (red post) is also displayed. There is a small boat ramp 2½ cables SSW of Ashman's Point. Thence:

3 ENE of Bryant's Bay (1¼miles SSW), in which there is an anchorage (7.125), thence:

ENE of Anchor Point (1¾ miles S), thence:

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WSW of Point Effingham (1¾miles SSE), from where a light (red metal framework tower) is displayed; tugs usually meet in-bound vessels off Point Effingham. And:

4 ENE of Shag Rock (1¾ miles S), drying and steep-to N, which lies at the N end of a bank, with depths of less than 10 m over it, which extends 6 cables NW of Inspection Head; a beacon (black) marks its N side. Shag Rock Light-beacon (black triangle on black column) stands ½ cable SE of the rock. Thence:

5 To a position about 2½ cables S of Point Effingham off the entrance to Beauty Point Harbour.

Useful mark:

Two flare chimneys (elevation 69 m) (41°07′·8S, 146°51′·2E).

(Directions for Beauty Point Harbour continue at 7.141)

Charts Aus 167 plan of Bell Bay, Aus 168

Point Effingham to Long Reach

7.120

1 From the position about 2½ cables S of Point Effingham (41°08′·2S, 146°49′·7E) the track leads SE, E and NE, passing (with positions from Middle Island Light (41°08′·7S, 146°51′·8E)):

NE of Orari Bank (1½ miles W), which has depths of less than 5 m over it. Orari Bank Light-beacon (N cardinal) marks the NW end of the bank. Thence:

2 Through a channel, marked by light-beacons (lateral), which passes between the spit extending 6 cables SE from Lawrence's Bluff (9 cables WNW), on the N shore, and Middle Bank (1 mile SW) which fills the bight in the S shore between Beauty Point, 5 cables SE of Inspection Head, and Middle Point, 2 miles ENE. Middle Bank dries on its W side off Beauty Point. Thence:

3 NW of Middle Island, standing on the NE part of Middle Bank, and SE of the commercial berths (7.145) on the N shore of Bell Bay. A light-beacon marks the N point of Middle Island and lights are displayed from the berths. Thence:

To a position N of Wolverine Light-beacon (N cardinal) (8 cables ENE), which marks the NW edge of Wolverine Shoal.

4 The track then leads SE, passing (with positions from Wolverine Light-beacon (41°08′·4S, 146°52′·7E)):

NE of No 1 Light-beacon (starboard hand) (5½cables ESE). The SW shore of Long Reach is fronted for about half its length above Middle Point (6 cables S) by a drying bank. And:

SW of Donovan's Bay (9 cables E), which is small and shallow, thence:

5 SW of Hydro Electric Berth (1 mile ESE), standing on the NW side of Big Bay. A light is displayed from the berth. Thence:

To a position off the S entrance point (1¼miles ESE) of Big Bay at the beginning of the Long Reach leading line. The shore on the NE side of Long Reach is backed by a range of stony but thickly wooded hills.

6 **Long Reach Leading Lights:**

Front light (41°10′·2S, 146°55′·2E).

Rear light (30 m from front light).

The alignment (144½) of these lights then leads SE, passing:

NE of Little Dragon Beacon (starboard hand) (1¾miles SE).

The track then leaves the leading line and passes:

SW of No 2 Light-beacon (port hand) (2 miles SE).

7 **East Arm Leading Lights:**

Front light (41°10′·9S, 146°56′·6E).

Rear light (41°11′·0S, 146°56′·8E).

The alignment (132°) of these lights then leads SE, passing:

NE of Great Dragon Rock (2¼ miles SE), marked on its NE side by a light-buoy (starboard hand), and:

SW of Nos 1 and 2 Woodchip Berths (2½miles SE) (7.146), marked by lights, on the NE shore, thence:

8 To a position close E of No 3 Light (black beacon) (3 miles SE), about 5 cables NNE of Point Rapid (41°11′S, 146°55′E).

Useful mark:

Power station chimney (elevation 106 m) (41°08′·7S, 146°54′·1E).

(Directions for Launceston continue at 7.153)

Side channels

Chart Aus 167

Eastern Channel

7.121

1 Eastern Channel, an alternative entrance to River Tamar, leads between Low Head (41°03′S, 146°47′E) and Middle Bank but is unmarked and only used by local boats.

West Arm

7.122

1 West Arm is entered between Inspection Head (41°09′·0S, 146°49′·3E) and Anchor Point, 7 cables NNW, and extends 2½ miles to York Town at its head. The entrance to West Arm is obstructed by banks and a 2·6 m bar.

2 The entrance is marked by beacons (lateral) and a light-beacon (starboard hand) and by the alignment (267°) of a pair of leading lights (orange triangles) (41°08′·6S, 146°48′·4E) standing close S of Redbill Point. This leading line initially passes over the edge of the bank extending NNW from Inspection Head. The channel within is marked in places by beacons and light-beacons.

Caution. The arm is inadequately surveyed; see 7.5.

Anchorages

Outer anchorage

7.123

1 Vessels may anchor, in depths of 24 to 31 m, 2½miles NNW of Low Head Light. The limits of the anchorage are shown on the chart.

Lagoon Bay

7.124

1 Anchorage may be obtained SW of Cordell Point (41°04′S, 146°48′E), the N entrance point of Lagoon Bay, in a depth of about 15 m, about 2½ cables SE of Barrel Spit Light-beacon. If approaching from seaward follow the directions given at 7.114 to 7.116 until Barrel Spit Light-beacon is reached. Thence round the light-beacon on

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its S side and head E to anchor E of the Sea Reach leading line between the Middle Channel Outer and Inner leading lines.

Bryant's Bay

7.125

1 Anchorage may be obtained in Bryant's Bay (41°08′S, 146°49′E) midway between Ashman's Point and Anchor Point, 9 cables SE, in depths of 15 m and about 2 cables offshore.

Georgetown

General information

7.126

1 Georgetown (41°06′S, 146°49′E), a small town, stands on the shores of York Cove, which is entered between Windmill Point and Hospital Point, 3 cables SE.

A small ferry terminal, built for a Bass Strait passenger and freight service, is situated at Hospital Point, on the S side of York Cove. The terminal has a depth of 3 m alongside with a Ro-Ro ramp 4 m in width. A small ramp and jetty, 1 cable E of Windmill Point, along with another jetty 1 cable farther E, provide facilities for small boats.

PORT DALRYMPLE

General information

Chart Aus 167 plans of Port Dalrymple and Bell Bay

Position

7.127

1 Port Dalrymple (41°08′S, 146°52′E), also known as Bell Bay, is situated on the banks of the River Tamar, 7 miles within its entrance.

Function

7.128

1 Port Dalrymple is the largest port in Tasmania. It imports alumina, manganese ore, coal, coke, petroleum products, grain and general cargo. Exports include aluminium, ferro and silicon manganese, steel scrap, timber, logs, woodchips, bulk tallow and general cargo.

Port limits

7.129

1 The waters of Port Dalrymple, in which Captain Matthew Flinders first dropped anchor on 3rd November 1798, comprises Bell Bay, Beauty Point Harbour and Long Reach and extends seaward to the limits defined under Port Launceston at 7.102.

Approach and entry

7.130

1 The approach to Port Dalrymple lies between West Head (41°04′S, 146°42′E), 3 miles NE of Badger Head (Aus 799), and Five Mile Bluff 8 miles ENE. Entry is made through the lower reaches of River Tamar, directions for which are given at 7.113.

Traffic

7.131

1 In 2003 the port was used by 407 vessels totalling 9 886 366 dwt.

Port Authority

7.132

1 Port of Launceston Authority, Mobil Road, Bell Bay, Tasmania 7253. Alternative address; PO Box 257c, Launceston, Tasmania 2750.

Website: www.portlaun.com.au

Email: portlaun@portlaun.com.au

Limiting conditions

7.133

1 **Controlling depth.** See 7.108.

Minimum draught. All vessels in ballast or light cargo condition should be ballasted and trimmed in accordance with accepted standards of seamanship. All ships should have a minimum draught of 2% of LOA forward and 3% of LOA aft, as well as having the propeller immersed. Vessels with less than this draught may be required to re-ballast until these draughts are achieved.

2 **Deepest and longest berths.**

Deepest berth; Hydro Electric Berth (7.146).

Longest berth; No 6 Common User Berth (7.145).

Maximum size of vessel handled: *Barber Texas*, LOA 262 m; *Silverland*, 103 739 dwt.

Arrival information

Port radio

7.134

1 There is a port radio station at Bell Bay through which port control is exercised and port information broadcast. For details see *Admiralty List of Radio Signals Volume 6 (4)*.

Notice of ETA

7.135

1 See 7.103.

Restricted area and prohibited anchorage

7.136

1 A restricted area exists in Beauty Point Harbour (41°09′S, 146°49′E), at the S end of Inspection Head Wharf around the National Underwater Training Centre pontoon. The area is the width of the wharf and extends S to the nearest pile.

Anchorage is prohibited, in Beauty Point Harbour, in an area E of Maritime College Jetty as shown on the chart.

Pilotage and tugs

7.137

1 Tugs are available and may be ordered through port control. For pilotage see 7.103.

Guidelines for entry and departure at Bell Bay

7.138

1 **Vessels up to 170 m in length:**

Inbound and outbound there are no restrictions unless at or near maximum draught (7.108), when a vessel may be classed as over 170 m.

2 **Vessels from 170 to 200 m in length:**

Inbound. Pilot boards from 15 minutes before LW until 15 minutes after HW.

Outbound. Depart 1 hour before until 1 hour after HW or LW. Vessels over 180 m in length may be restricted to the period of 1 hour before sunrise until sunset depending on the draught of the vessel and the visibility from the bridge which would be assessed on the inward passage.

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Lawrences Bluff

Bell Bay and Long Reach from W (7.140)

(Original dated 1998)

3 **Vessels from 200 to 230 m in length:**

Inbound. Pilot boards from 15 minutes before LW until 15 minutes after HW and from 1 hour before sunrise until sunset.

Outbound. Depart from 30 minutes before until 30 minutes after HW or LW, and from 1 hour before sunrise until sunset.

Vessels over 230 m and/or 45 m in breadth:

The Harbour Master should be consulted; vessels up to 265 m in length have visited the port.

Guidelines for entry and departure at Long Reach

7.139

1 **Vessels up to 170 m in length:**

Inbound and outbound there are no restrictions unless at or near maximum draught (7.108), when a vessel may be classed as over 170 m.

Vessels from 170 to 180 m in length:

Inbound. Pilot boards from 15 minutes before LW until 15 minutes after HW, and from 1 hour before sunrise until 1½ hours before sunset.

Outbound. If berthed starboard side to, depart 1½hours before until 30 minutes after HW or LW. If berthed port side to, depart 2 hours before until HW or LW.

2 **Vessels from 180 to 230 m in length:**

Inbound. Pilot boards from 15 minutes before LW until 15 minutes after HW, and from 1 hour before sunrise until 1½ hours before sunset.

Outbound. If berthed starboard side to, depart 1 hour before until HW or LW, and from 1½hours before sunrise until 30 minutes before sunset. If berthed port side to, depart from 1½ hours before until 30 minutes before HW or LW, and from 30 minutes before sunrise until 1 hour before sunset.

3 **Vessels over 230 m and/or 45 m in breadth:**

The Harbour Master should be consulted.

Harbour

General layout

7.140

1 Port Dalrymple consists of three berthing areas as follows:

Beauty Point Harbour (41°09′S, 146°49′E) on the SE side of Inspection Head. Beauty Point, a small town, stands on the shore S of Inspection Head and is fronted by the wharves of the harbour. The harbour, where there is a marina, is easy of access and completely safe in all weathers.

2 Bell Bay, containing the main commercial berths, is an indentation in the N shore of River Tamar between Sawyer's Point (41°08′·4S, 146°51′·4E) and the E entrance of Donovan's Bay, 1¾miles E. The bay is well sheltered from prevailing winds and has ample width and depth to allow large vessels to swing and to berth under their own power. The berthing area is backed by an industrial complex of which the Comalco Works is a prominent feature.

3 Long Reach, which extends 3 miles SE of Bell Bay (41°08′·0S, 146°52′·5E), is indented on its NE side by shallow bays and creeks. There are three berths in the reach, arranged along its NE side.

Directions for entering the harbours

Beauty Point Harbour

(continued from 7.119)

7.141

1 The berths at Beauty Point are approached through Beauty Point Channel, which is about 1 mile long. It has a least width of about 1 cable with deep water between the shoal bank extending N from Inspection Head (41°09′·0S, 146°49′·3E) and Orari Bank and then off the berths a least width of ½cable. Depths vary from more than 20 m off Orari Bank to less than 12 m off Maritime College Jetty.

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Beauty Point Harbour from NE (7.144)
(Original dated 1998)

From a position about 2½ cables S of Point Effingham (41°08′·2S, 146°49′·7E) the track leads S, passing (with positions from Orari Light-beacon (41°08′·7S, 146°49′·7E)):

2 Between Orari Light-beacon (7.120) and the bank N of Inspection Head (4 cables SW), which is marked on its E edge by a light-beacon (starboard hand), thence:

Between Inspection Head Wharf (3½ cables SSW) and a light-beacon (port hand) (3½cables S), marking the W side of Middle Bank (7.120), thence:

3 E of Examiner Rock (5 cables SSW), marked by a beacon (starboard hand), thence:

E of Oyster Bank (6 cables S), marked by a beacon (starboard hand), thence:

E of Maritime College Jetty (8 cables S).

The track then leads 1 mile farther S through Middle Arm, a shallow arm of which Beauty Point Channel is part, passing NE of Wybia Spit (9 cables S), to its head near the town of Beaconsfield.

Bell Bay and Long Reach

7.142

1 The berths in Bell Bay and Long Reach may be directly accessed from the directions given at 7.120.

Berths

Anchorages

7.143

1 Anchorage may be obtained in Bell Bay (41°08′·0S, 146°52′·5E) in depths of 13 to 14 m. To assist in anchoring the following leading lines are of use.

The alignment (284°) of ANL Leading Lights:

Front Light (41°08′·1S, 146°51′·9E) displayed from the SW corner of a Ro-Ro ramp.

Rear Light (wooden pole) (239 m from front light).

The alignments (005¼ and 345½) of Comalco Leading Lights:

2 Common rear light (pole) (41°07′·8S, 146°52′·5E).

Front W light (pole) (82 m from rear light).

Front E light (pole) (75 m from rear light).

The alignment (064¾) of Lauriston Leading Lights:

Front light (41°08′·0S, 146°53′·2E).

Rear light (45 m from front light).

Anchorage may also be obtained, in depths of about 8 m, 2 cables NW of Bell Bay No 4 Light-beacon (port hand) (41°08′·7S, 146°51′·2E) over a soft, regular bottom, out of the strength of the tidal streams.

Beauty Point Harbour

7.144

1 **Inspection Head Wharf** (41°09′·0S, 146°49′·5E): Two berths; total length 335 m; depth alongside 9·9 m; an area on the E side of the channel abreast the S part of the wharf is dredged to 9·9 m giving about 200 m swinging room in this depth.

Bell Bay

7.145

1 With positions from No 1 Comalco Berth (41°08′·0S, 146°52′·2E):

No 1 Comalco Berth: length 152 m; depth alongside 10·8 m; mooring dolphins 330 m apart.

No 2 Ro-Ro Berth (1½ cables WSW): length 86 m; depth alongside 8·3 m; Ro-Ro ramp 20 m wide; mooring dolphin 228 m E of the end of the ramp; container handling facilities.

No 3 Bell Bay Wharf (3 cables SW): length 152 m; depth alongside 11·2 m; mooring dolphins 240 m apart.

2 No 4 Tanker Berth (5 cables SW): length 50·3 m; depth alongside 11·5 m; vessels moor to dolphins, 262 m apart, and/or trip hooks ashore; maximum permissible length of vessel 240 m.

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Bell Bay from ENE (7.145)
(Original dated 1998)

No 5 Container Berth (7 cables SW): length 210 m; depth alongside 12 m.
No 6 Common User Berth (8 cables SW): length 314 m; depth alongside 9·0 to 12·4 m; Ro-Ro ramp 8·23 m wide.

Long Reach
7.146

1 With positions from Hydro Electric Berth (41°08′·7S, 146°54′·0E):

Hydro Electric Berth: T-shaped berth; berthing face 62 m with mooring dolphins 162 and 291 m apart; depth alongside 12·3 m.
No 1 Woodchip Berth (1½ miles SE): T-shaped berth; length 217 m with mooring dolphins about 130 m off each end; depth alongside 11·5 m.
No 2 Woodchip Berth (1¾ miles SE): T-shaped berth; length 228 m with mooring dolphins about 125 m off each end; depth alongside 11·2 m.

Port services
7.147

1 **Repairs** can be carried out; see also 7.159.

Other facilities. Deratting and deratting exemption certificates issued; hospital at Georgetown; reception facilities for oily waste using road tankers; garbage disposal.

Supplies. Fuel; fresh water; provisions.

Communications. There is an airport 11 km SSW of Launceston (41°26′S, 147°08′E).

PORT DALRYMPLE TO LAUNCESTON

General information

Chart Aus 168

Route
7.148

1 From the SE end of Long Reach (41°10′S, 146°55′E) to Launceston (41°26′S, 147°08′E), a distance of about 23 miles, the route leads generally SE through a narrow and tortuous channel.

Controlling depth and length
7.149

1 In the upper reaches of River Tamar, leading to the City of Launceston, vessels are limited to a length of 100 m with a maximum draught of 5·5 m, depending on the height of tide.

Local knowledge
7.150

1 Local knowledge is required.

Prohibited anchorages
7.151

1 Anchorage is prohibited within the areas marked on the chart in the vicinity of the following submarine cables:

In the entrance to East Arm (41°11′·0S, 146°57′·0E).
Between Point Rapid Light (41°10′·8S, 146°55′·6E) and the E shore, 4 cables SE; a beacon marks the place where the cable lands on the E shore.
Between Swan Point (41°15′·3S, 146°58′·3E) and Hillwood, 6 cables NNE. The alignment of this cable is indicated by pairs of beacons at both ends.

2 Between Gravelly Beach (41°17′·7S, 146°58′·3E) and the E shore, 4½ cables ESE.

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Between Fresh Water Point (41°20′·6S, 147°04′·6E) and the E shore; the landing places of the cable are marked by beacons.

Close E of Haystack Point (41°24′·1S, 147°06′·3E), 2 miles downstream from Launceston.

Vertical clearances

7.152

1 **Overhead power cable** spans the head of East Arm (41°11′·0S, 146°57′·0E) and another power cable, supported by towers, with a safe overhead clearance of 33 m, spans River Tamar 9 cables NNW of Town Point (41°26′·1S, 147°07′·7E).

Batman Bridge (41°13′S, 146°55′E), with a vertical clearance of 28 m, spans the narrowest part of Whirlpool Reach. The highest part of a vessel must not exceed 26·7 m. Lights are displayed from the bridge.

Directions

(continued from 7.120)

Long Reach to Barrett's Point

7.153

1 From a position close E of No 3 Light (41°10′·4S, 146°55′·7E), at the SE end of Long Reach, the track initially leads SSW through Moriarty Reach, passing (with positions from Point Rapid Light (41°10′·8S, 146°55′·6E)):

WNW of East Arm (7 cables E), thence:

ESE of Point Rapid, from where a light (white wooden structure, 8 m in height) is displayed, thence:

2 WNW of Sheep Tail Point (6 cables S), from where a light is displayed. A shallow spit extends N from the point to almost halfway across the river. Thence:

ESE of Ragged Island (1 mile SSW). A beacon (black) stands close N of the island). Thence:

ESE of Lockwood's Point (1½ miles SSW), and:

WNW of Reid's Rock (1½ miles SSW), drying 1·5 m and marked by a beacon (port hand), lying in the centre of the entrance to Redwood Bay, which is shallow.

3 The track continues to lead SSW passing (with positions from Sidmouth Leading Light, (Front) (41°12′·9S, 146°54′·4E)):

WNW of Redwood Island (4 cables NNE), thence:

ESE of Drumstick Island Light (4 cables N), standing close E of Drumstick Island, and:

ESE of the entrance to Devil's Elbow Bay (6 cables NNW), which dries at its head. A beacon which marks the E entrance to the bay, stands close S of Drumstick Island.

7.154

1 When a position is reached 2½ cables NNE of Sidmouth Front Light head S to pass E of a patch (1½ cables N), with a depth of 6·7 m over it, and then pass close W of Whirlpool Rock (1½ cables E), with a depth of 4·2 m over it.

Whirlpool Rock lies at the N end of Whirlpool Reach and reduces the width of the channel SW of it to about ½ cable.

2 The track then leads through Whirlpool Reach on the following leading line:

Sidmouth Leading Lights:

Front light (white tower) (41°12′·9S, 146°54′·4E).

Rear light (similar structure) (275 m from front light).

The alignment (305°), astern, of these lights leads SE, under Batman Bridge (7.152), to a position SW of Barrett's Point (41°13′·3S, 146°55′·2E). Note that this alignment leads very close to the light which is displayed from Barrett's Point.

Barrett's Point to Cimitiere Point

7.155

1 From the position close SW of Barrett's Point (41°13′·3S, 146°55′·2E) the track continues to lead SE, passing (with positions from Barrett's Point):

NE of Brickmakers' Point (3 cables SSE), thence:

SW of Middle Bank (6 cables E), which fronts Spring Bay, thence:

SW of Mowbray Point (1¼ miles ESE), thence:

NE of Supply Bay (2 miles E), which is almost filled by a shallow flat; Supply River flows into its head. And:

2 SW of Egg Island (2½ miles ESE), from the W end of which a light (red metal tower) is displayed, thence:

Between Swan Point Light-beacon (starboard hand) (3 miles SE) and Hillwood. A drying bank, with a beacon on its NW edge, extends almost half way across the river from Swan Point. Robigana, a small town, lies close SW of Swan Point with the town of Exeter 2½ miles farther S.

3 The track then curves gradually around to the S, passing (with positions from Swan Point (41°15′·3S, 146°58′·3E)):

E of the light-beacons (starboard hand) marking the edge of the bank lying between Swan Point and Little Swan Point, 1¼ miles S, thence:

W of Swan Bay (2 miles SE) indenting the E shore, thence:

E of Gravelly Beach (2½ miles S), thence:

E of Gem Rock (2¾ miles S), marked by a beacon (starboard hand), thence:

4 Between Blackwall (3¼miles S), a suburb, and Native Point. A disused lighthouse (white beacon) stands on the shore at Blackwall.

The track then curves SE to a position N of Cimitiere Point (41°19′·4S, 147°00′·2E); a light-beacon (metal pole, 3 m in height), stands close N of the point. The small town of Rosevears stands on Cimitiere Point.

Useful mark:

Church at Windermere (41°19′·0S, 147°00′·2E).

Cimitiere Point to Launceston

7.156

1 From Cimitiere Point (41°19′·4S, 147°00′·2E) the track leads for a further 10 miles to Launceston through a channel, with a least depth of about 2·5 m, which is narrow and tortuous. The channel is marked by light-beacons, beacons, leading beacons which are shown on the chart.

Launceston

General information

7.157

1 **Position and function.** Launceston (41°26′S, 147°08′E), the second city in Tasmania, lies in a valley overlooked by

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Launceston from NW (7.157)
(Original dated 1998)

Mount Barrow (chart Aus 422), standing 14 miles E. In 2004 its population was 98 400. The harbour no longer handles cargo but is used for fitting out and repairing small vessels.

Port limits. See 7.1023.

Port Authority. See 7.132.

2 **Tidal levels.** See information in *Admiralty Tide Tables*. Mean maximum range about 3·1 m; mean minimum range about 2·4 m.

Port radio. See 7.134.

Pilotage. See 7.103.

Climatic table. See 1.133 and 1.140.

Berths

7.158

1 Positioned from Town Point (41°26′·1S, 147°07′·7E):

Town Pier (1½ cables ENE): a fitting out berth; length 135 m; depth alongside less than 3 m; subject to silting.

Synchrolift Berth (4½cables NW) at the N end of the disused King's Wharf: length 105 m; depth alongside 4·5 m; subject to siltation.

Caution. Owing to the narrowness of the channel, passing vessels cause a considerable scend making it necessary for vessels alongside to keep a close watch on their moorings.

Port services

7.159

1 **Repairs** can be effected:

Small dry dock: capacity 2000 tonnes, length up to 62·5 m.

Synchrolift: capacity 2160 tonnes, length up to 60 m.

Other facilities: limited capacity for the reception of oily waste and garbage; several hospitals; deratting and deratting exemption certificates issued.

Supplies: fuel; fresh water; provisions.

Communications: airport 11 km SSW of the city.

Anchorages

7.160

1 **Moriarty Reach.** Anchorage may be obtained, in a depth of about 15 m, on the E side of the reach 1¼miles SSW of Point Rapid Light (41°10′·8S, 146°55′·6E).

Egg Island. Anchorage may be obtained, in a depth of about 11 m, 4 cables WSW of Egg Island (41°14′·6S, 146°57′·9E).

Landings

7.161

1 There is a jetty (41°18′·4S, 146°58′·2E), 1½cables N of the disused lighthouse (7.155), at Blackwall, and a boat jetty extends S from the N shore at Windermere (41°19′·0S, 147°00′·2E).

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PORT DALRYMPLE TO EDDYSTONE POINT

GENERAL INFORMATION

Chart Aus 356

Area covered

7.162

1 The area covered by this section comprises:
Port Dalrymple to Cape Portland (7.165).
Banks Strait — Cape Portland to Eddystone Point (7.176).

Historic wrecks

7.163

1 Along the coastline described in this chapter there are several historic wrecks. For further details see 1.52.

Inadequately surveyed areas

7.164

1 See 7.5.

PORT DALRYMPLE TO CAPE PORTLAND

General information

Charts Aus 799, Aus 798

Route

7.165

1 From a position about 3 miles NW of Low Head (41°03′S, 146°47′E) the coastal route leads NE and then ENE, for a total distance of about 59 miles, to a position N of Cape Portland (40°44′S, 147°56′E).

Submarine pipeline

7.166

1 A submarine gas pipeline is laid generally in a N direction, from position 41°02′S, 146°54′E to a position 5 miles E of Hogan Island (6.17), continuing NNE, thence NNW to position (38°22′S, 147°12′E).

For further information on submarine pipelines see 1.33.

Exercise area

7.167

1 A Military Exercise Area lies N of Stony Head (7.169).

Tidal streams

7.168

1 The tidal streams set generally parallel with the coast, with the flood stream W-going and the ebb stream E-going.

In the channel between Tenth Islet (40°56′S, 146°59′E) and Stony Head, and off salient points, such as West Sandy Point (40°56′S, 147°17′E) and East Sandy Point, 3 miles farther E, the streams attain a rate of about 1 kn. At an increasing distance from the coast the streams become weaker and are much affected by prevailing winds.

Near Cape Portland (40°44′S, 147°56′E) the NE-going stream attains a rate of 5 kn at spring, causing very dangerous overfalls.

Principal marks

7.169

1 **Landmarks:**
Low Head Lighthouse (41°03′S, 146°47′E) (7.97).
Mount George (41°06′S, 146°52′E) (7.97).
Stony Head (40°59′S, 147°01′E) a prominent headland with cliffs and broken ground about 40 m high seaward of its summit. It forms the N end of a range of hills sloping down from the mountains inland. Ryan's Hill, standing 2 miles S of the headland, and Turquoise Bluff 2 miles farther SE, are the most remarkable hills of the range.

2 Radio mast standing on the W side of Hardwicke's Hill (40°52′S, 147°38′E).
Mount Cameron (40°59′S, 147°57′E) shaped like a haycock, standing 7½miles SSE of Boobyalla Inlet.

Major light:
Low Head Light (41°03′S, 146°47′E) (7.97).

Directions

(continued from 7.98)

Low Head to West Sandy Point

7.170

1 From a position about 3 miles NW of Low Head (41°03′S, 146°47′E) the track leads ENE, passing (with positions from Stony Head (40°59′S, 147°01′E)):
NNW of Two Mile Reef (9¾ miles WSW), which extends 5 cables NW from the shore and dries near its centre, thence:
NNW of Four Mile Bluff (8 miles WSW), cliffy and fronted by shingle, thence:
NNW of Five Mile Bluff (7 miles WSW), 33 m in height fronted by a shingle bank, thence:

2 NNW of the entrance to Currie's River (4 miles SW). Between Five Mile Bluff and the entrance to Currie's River sandy beaches, alternating with rocky stretches, front the coast. Thence:
Either side of Tenth Islet (2¾miles NNW). The islet, which is rocky, may be passed on any side at a distance of 2½ cables. Thence:
NNW of Stony Head (7.169), thence:

3 NNW of Black Rock Point (1½ miles E), 32 m in height and steep-to. Tam O'Shanter Bay lies on the E side of the point with the village of Lulworth at the head of the bay. Thence:
NNW of Noland Bay (6½miles E) which lies between a W entrance point, close NNW of Fanny's Bay (4½miles ESE), and Flat Rocks Reef, 6 miles ENE. Piper's River enters the sea on the W side of Piper's Head (41°01′S, 147°10′E) at the head of the bay. The town of Weymouth stands on the W entrance point of the river. Thence:

4 NNW of Flat Rocks Reef (10 miles ENE), which dries. A patch, with a depth of 9·7 m over it, lies 1½miles N of Flat Rocks Reef. Thence:
To a position NNW of West Sandy Point (12 miles ENE); the point is formed by low sandhills fronted by dangerous rocks. A narrow bank, with a dangerous rock lying on it, extends 1½miles N of the point; a patch, with a depth of 6·9 m over it, lies on the N edge of this bank.

West Sandy Point to Cape Portland

7.171

1 From the position NNW of West Sandy Point (40°57′S, 147°17′E) the track continues ENE, passing (with positions from West Sandy Point):
Either side of Ninth Island (6¼ miles N). The island is flat-topped and devoid of trees though nearly covered with grass. And:
NNW of Saint Alban's Bay (1 mile E), thence:
NNW of East Sandy Point (3 miles E), the W entrance point of Anderson Bay. The point terminates in a remarkable sandhill, 38 m high, showing a bare face seaward, except W. Thence:

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2 NNW of Anderson Bay (6½ miles E) (7.173).

The track continues ENE, passing (with positions from Waterhouse Island Light (40°47′S, 147°39′E)):

NNW of Croppie's Rock (5½ miles SSW) fronting South Croppie's Point, thence:

NNW of Croppie's Point (4½ miles SSW); an airfield lies about 2 miles E of the point. Croppie's Bay lies between South Croppie's Point and Croppie's Point. Thence:

3 NNW of Barret Rock (3½ miles SSW) lying on the S side of Waterhouse Passage (7.172), thence:

NNW of Waterhouse Island; the island, 44 m high, has a flat summit and falls gradually at its N end. A light (white GRP hut, 4 m in height) is displayed from the N point of Waterhouse Island. And:

Clear of Papanui Rock (4 miles NNW), over which the sea breaks, thence:

4 NNW of Ringarooma Bay (7 miles ESE) (7.174), thence:

To a position about 5 miles N of Cape Portland (40°44′S, 147°56′E), which is low and rocky. Close N and E of the cape lie dangerous rocks and a drying reef and to the W and NNW, within 3 miles, lie several banks, the shallowest having a least depth of 11·4 m over it.

(Directions continue at 7.182)

Side channel

Chart Aus 179 plan Waterhouse Passage (see 1.12)

Waterhouse Passage

7.172

1 **Description.** Waterhouse Passage leads between Waterhouse Island (40°48′S, 147°38′E) and the mainland coast between Croppie's Point (40°51′S, 147°36′E) and Waterhouse Point, 3¾ miles ENE. The passage itself leads close SE of Waterhouse Island and NW of dangers off the S end and SE side of the island including that of Little Waterhouse Islet, giving access to two safe anchorages.

There is also a navigable channel, 2 cables wide with a least depth of 5·3 m, between Little Waterhouse Island and a shallow spit, with an above-water rock on its central part, extending NW from a small point on the mainland.

2 **Topography.** Waterhouse Point is the rocky termination of a range of hills descending from Hardwicke's Hill (7.169) and One Tree Hill, 1¼ miles SW of the point. The coastline between Croppie's Point and Waterhouse Point is fronted by numerous drying rocks and rocks below water extending up to 3 cables offshore; there is a sandy beach at the NE end.

Tidal streams set SW and NE, at a rate of 2 kn at springs, through the passage and anchorages.

3 **Directions.** From a position about 1½ miles NW of Croppie's Point the track leads ENE, passing (with positions from Waterhouse Point (40°49′S, 147°40′E)):

NNW of Barret Rock (3½ miles W), thence:

NNW of a group of dangerous rocks (2¾ miles W), which dry, thence:

Between the SW point of Waterhouse Island (2 miles NW) and Little Waterhouse Island (2 miles W).

The track then leads NE through the anchorages passing:

4 Between the SE side of Waterhouse Island and a sandy shoal (1¼ miles NW). The shoal has rocky patches on it and has a least depth of 1·3 m over it. Thence:

NW of several detached shoals (1 mile NNW), the least with a depth of 4·1 m over it, lying within 6½ cables NE of the sandy shoal, thence:

Close SE of a 3·5 m patch (1½ miles NNW), and then out into open water.

5 **Clearing line.** The line of bearing, 222°, of the NW end of Little Waterhouse Island with Croppie's Point, clears NW of the sandy shoal, with a depth of 1·3 m over it.

Caution. Waterhouse Island Light (7.171) is of little use in navigating this passage as it is obscured to the S by the island.

Anchorages. Safe anchorage, with shelter from E and W gales, may be found in the passage SE of Waterhouse Island either near its SW end in a depth of 9·1 m, off the only sandy beach on the SE side of the island, or in the same depth, sandy bottom, in the N part of the passage on the 222° clearing line, near a 5·3 m patch.

Bays and anchorages

Chart Aus 798

Anderson Bay

7.173

1 **Description.** Anderson Bay (40°57′S, 147°25′E) is a large bay with Bridport, a small town, lying at its head. It is entered between East Sandy Point (40°56′S, 147°21′E) (7.171) and South Croppie's Point, 11½ miles NE.

The SW shore is indented and rocky with the most significant features being the entrance to Little Forester River, 2¼ miles SSE of East Sandy Point, and Granite Point (40°59′S, 147°24′E), a further 1½ miles SE. A ruined jetty lies close S of Granite Point.

2 The S and SE shore of the bay is formed by Barnbougle Beach and Waterhouse Beach; the two beaches are separated by the entrance to Great Forester River, 2¼ miles ESE of Granite Point.

Bridport lies between Granite Point and the entrance to Brid River, 1¼ miles SSE; above-water rocks extend 5 cables NE from the river entrance. A light is displayed from Bridport Western Breakwater. There is an airfield 1½ miles SE of the town.

3 **Dangers in approaches.** On the W side of the bay there is a dangerous rock 1¼ miles SSE of East Sandy Point along with Forester Rock, a further 9 cables SSE. A further danger is that of Southern Cross Reef, unmarked, lying in the centre of the bay, 2½ miles NE of Granite Point.

On the E side of the bay the main danger is Sanderson Rocks, consisting of a drying rock and two rocks, of which the highest is 7 m high, lying at the outer end of a shoal spit extending 1 mile offshore from a position 2¾ miles SW of South Croppie's Point (40°51′S, 147°36′E). There is also a dangerous rock lying 1 mile S of Sanderson Rocks close to the beach.

4 **Anchorage.** Anderson Bay generally affords good shelter only in S winds but fair shelter has been obtained in W gales 5 cables SE of East Sandy Point, in a depth of about 9 m, sand and good holding ground. In approaching the anchorage take care to avoid Southern Cross Reef and the dangerous rock on the rocky ledge projecting from a point 1 mile SSE of East Sandy Point.

Ringarooma Bay

7.174

1 Ringarooma Bay, a large bay, is situated about 10 miles SW of the W entrance to Banks Strait. It is entered between Waterhouse Point (40°49′S, 147°40′E) and Cape Portland, 13 miles ENE.

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Between Waterhouse Point and Tomahawk Point, 4½miles ESE, the shore is formed by some rocky points and West Tomahawk Beach. Pinnacle Rock lies on the outer end of a rocky spit which extends 5 cables NE from the W end of West Tomahawk Beach. Tomahawk Island, close NE of Tomahawk Point, is connected with the point at LW.

2 Between Tomahawk Point and Boobyalla Inlet, 5½miles E, the shore is initially fringed by rocks for about 3½miles and then formed by a beach. Tomahawk River, which is closed by a drying sand bar, enters the sea 5 cables S of Tomahawk Point.

Boobyalla Inlet (40°52′S, 147°53′E) is the common entrance to Boobyalla River and Ringarooma River. The inlet has a narrow mouth and a depth of 0·3 m on its bar. No attempt to cross this bar should be made during N and W winds when the surf becomes dangerous.

3 Between Boobyalla Inlet and Cape Portland the E shore of Ringarooma Bay is initially formed by a beach, stretching 5½miles NNE to Petal Point, and then by Foster Inlet (7.175), in which there is an anchorage.

Caution. Ringarooma Bay is inadequately surveyed; see 7.5.

Chart Aus 179 plan of Foster Inlet (see 1.12)

Foster Inlet

7.175

1 **Description.** Foster Inlet (40°46′S, 147°57′E), situated on the NE side of Ringarooma Bay, lies between Cape Portland and Petal Point, 2¼ miles S.

The outer part of the inlet is obstructed by Maclean Island and Bayne's Island, surrounded by rocks above and below water, all of which lie on a bank with depths of less than 10 m over it, extending about 1½ miles NNW from Petal Point. Rocks that dry extend about 1½ cables N of Maclean Island and are nearly always visible as the sea usually breaks over them; Mack Rocks lie close S of Maclean Island.

2 The head of the inlet is formed by Lemon's Beach, at its S end, and by Home Beach, separated from Lemon's Beach by a round rocky point. Sandhills from about 9 to 12 m high back the beaches; the highest land is that of Semaphore Hill, standing on the N side of the inlet, near which lies a small village.

Tidal streams in Foster Inlet seldom attain a rate of over ½kn.

Anchorage. The inlet, which is entered between Maclean Island and the coast NE of it, affords excellent shelter for small vessels in E gales; the holding ground appears to be very good.

BANKS STRAIT — CAPE PORTLAND TO EDDYSTONE POINT

General information

Chart Aus 798

Route

7.176

1 From a position N of Cape Portland (40°44′S, 147°56′E) the coastal route leads ESE, for a distance of about 11 miles, through Banks Strait. Thence the route leads SE for a further distance of 23 miles to a position E of Eddystone Point (41°00′S, 148°21′E).

Description

7.177

1 Banks Strait leads between Cape Portland and Eddystone Point, on the S side, and Cape Sir John (40°25′S, 148°00′E), the SW point of Cape Barren Island, and Cape Barren, the E point of that island, on the N side. A detailed description of the N side of Banks Strait is given at 2.83 in Chapter 2.

2 At its narrowest part, between Swan Island (40°44′S, 148°07′E) and Clarke Island (40°32′S, 148°10′E), Banks Strait is 8½miles wide. The strait demands careful navigation because of the many dangerous rocks in it. The bottom is sand and rock; depths in the fairway are from 20 to 60 m.

For a description of Furneaux Group on the N side of Banks Strait see 2.64.

Tidal levels

7.178

1 **Swan Island,** towards the N entrance of Banks Strait; Mean maximum range about 1·2 m; mean minimum range about 1·0 m.

Eddystone Point, at the the S entrance of Banks Strait; Mean maximum range about 1·3 m; mean minimum range about 0·3 m.

For further information see *Admiralty Tide Tables*.

Tidal streams in Banks Strait

7.179

1 The flood stream is the W-going stream and the ebb stream the E-going. The streams are each of 6¼hours duration at springs but during neaps the flood stream runs 7 hours and the ebb stream 5½hours. The interval of slack water never exceeds 15 minutes; the streams begin as follows:

Interval from HW	*Remarks*
–0600	W-going stream (springs) begins
–0530	W-going stream (neaps) begins
–0010	E-going stream (neaps) begins
+0040	E-going stream (springs) begins
+0600	Slack water

2 In the narrowest part of the strait the tidal streams run at a rate of 3 kn at springs. The E-going stream is accelerated by strong W winds which cause this stream to run 2 hours longer; at such times it occasionally attains a rate of 5 or 6 kn.

At springs, in the middle of Banks Strait the E-going is the stronger of the tidal streams. At these times either stream, when opposed to the wind, causes a high topping sea, which can be dangerous for small craft.

Tidal streams off Eddystone Point (41°00′S, 148°21′E) set N and S, but without any strength S of Banks Strait.

Climatic table

7.180

1 For Eddystone Point see 1.133 and 1.144.

Principal marks

7.181

1 **Landmarks:**

Swan Island Lighthouse (white masonry tower and lantern, 27 m in height) (40°44′S, 148°08′E) standing on the NE end of Swan Island.

Mount Cameron (40°59′S, 147°57′E) (7.169).

Mount William (40°54′S, 148°11′E) which rises gradually to a rounded summit.

2 Bayley's Hill (40°59′S, 148°14′E), a broad-tipped hill.

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Eddystone Point Lighthouse (grey round granite tower, 35 m in height) (41°00′S, 148°21′E) standing 2 cables NW of Eddystone Point.

Major lights:

Swan Island Light — as above.

Eddystone Point Light — as above.

Directions

(continued from 7.171)

Cape Portland to the east side of Banks Strait

7.182

1 From a position N of Cape Portland (40°44′S, 147°56′E) the track leads ESE, passing (with positions from Swan Island Light (40°44′S, 148°08′E)):

NNE of a shoal (7½ miles WNW), with a depth of 3·8 m over it, which lies on the NW end of a bank, with depths of less than 10 m over it, 2¼miles NNE of Cape Portland; the sea breaks heavily over the shoal. Thence:

2 NNE of Foster Islands (7 miles W) which consists of two islets. A shallow spit, with a least depth of 1·9 m over it, extends 1½miles E of Foster Islands, and between the islets and the mainland there is another shallow bank with a least depth of 2·5 m over it. The coastline behind Foster Islands is fringed with dangerous rocks. And:

3 SSW of Lookout Rock (10¼ miles N), lying 1 mile SSW of Spike Cove; a rock, above water, lies 3 cables N of Lookout Rock. Spike Cove, on the W side of Clarke Island, is deep but is obstructed by islets and rocks lying off its SE side. Thence:

SSW of Napper Rock (10 miles N), which dries, thence:

4 SSW of Lookout Head (9 miles N), part of the SW side of Clarke Island on the N side of Banks Strait. A rock 0·6 m high, with drying rocks 5 cables ESE, is the outermost of scattered rocks lying off the SE end of Lookout Head. Thence:

NNE of Harry Rock (2¾ miles NW), over which the sea breaks, thence:

5 NNE of Cygnet Islet (2¼miles ENE) and Little Swan Islet (2 miles E). These islets, with dangerous rocks between them, lie on the NW side of an area of shallow water extending 2 miles NW from Swan Island.

7.183

1 The track then continues ESE, passing:

SSW of South Head (8½ miles NNE), the S most point of Clarke Island. Moriarty Point, the SE point of Clarke Island, lies 1 mile ENE of South Head. Thence:

NNE of a patch (1¼miles N), with a depth of 10·2 m over it, which is marked by strong tide-rips. A dangerous wreck lies 6 cables S of this patch. Thence:

2 NNE of the NE point of Swan Island from where a light (7.181) is displayed. The island is formed of granite covered by sandhills, giving the impression that it is wholly sandy. Thence:

SSW of Moriarty Bank (9½miles NNE) (7.183) marked by heavy breakers; Moriarty Rocks, two rocks, lie at the E end of this 2½mile long bank. Thence:

3 To a position SSW of East Bank (11¼miles NNE); the sea breaks heavily over this bank, which has a least depth of 1·3 m over it.

Clearing bearing:

The line of bearing, 290° or more, of South Head (40°36′S, 148°11′E) clears S of Moriarty Reef and East Bank.

(Directions for the S side of Furneaux Group are given at 2.86)

East side of Banks Strait to Eddystone Point

7.184

1 From the position SSW of East Bank (40°36′S, 148°19′E) the track then leads SE, passing (with positions from Cape Naturaliste (40°51′S, 148°13′E)):

NE of Musselroe Point (2½miles NW), the E entrance point of Great Musselroe Bay (7.190) in which anchorage may be obtained, thence:

2 NE of Mussel Rock (1¾miles N), over which the sea sometimes breaks, thence:

NE of Black Reef (1¼ miles NE) which fronts Cape Naturaliste; the cape is faced by conspicuous sand cliffs. The reef lies on a shoal bank with dangerous rocks extending 4 cables NW. An above-water rock, surrounded by rocks below water, lies on the SE part of the shoal 7 cables ESE of Black Reef. Thence:

3 NE of Eucalyptus Rock (3¾miles ESE), lying 3 miles ENE of Stumpy's Bay; the sea rarely breaks over Eucalyptus Rock but its position may be identified by kelp in the vicinity. Stumpy's Bay is entered between Cape Naturaliste and Boulder Point, 2½ miles SE; the bay is fringed with rocks, the most notable being Stumpy's Rock (1¾miles SSE). Cobbler Rocks lie 8 cables E of Boulder Point; many other granite boulders lie off this part of the coast. Thence:

4 Either side of Salamander Rock (6¾ miles E) which is the outermost danger off this stretch of the coast; no distinct break of sea has been seen on this rock. Tide rips form between Salamander Rock and Black Reef, 5 miles W. Thence:

NE of Leprena Rocks (5¼ miles SE), a dangerous rock on which the sea sometimes breaks, fronting Cod Bay.

7.185

1 The track then continues SE, passing:

NE of George Rocks (6¾ miles SE), a group of granite boulders up to 20 m high. All except the two largest are quite barren and most are from 3 to 9 m high, with a few drying rocks scattered amongst them. The passage between George Rocks and the shore, is not recommended because of Leprena Rocks at the N end, and at the SE end, Cabbage Rock close S of George Rocks, and Lipstick Rock lying 1 mile farther S; a dangerous wreck (mast) also lies on the SW side of the passage. Thence:

2 NE of Lipstick Rock (7¾ miles SE), a rock awash, 5 cables offshore of Purdon Bay, thence:

NE of Half Tide Rock (9 miles SE) which dries, thence:

3 NE of Victoria Rocks (11 miles SE) lying within 1 mile of Eddystone Point. This group is comprised of Eddystone Rock, Norgate Rock, the outermost rock, and Greyhound Rock, a dangerous rock. Eddystone Rock lies at the outer end of a shallow spit extending 5 cables SE of Eddystone Point; two rocks which dry 1·1 m, and other dangerous rocks, lie between Eddystone Rock and

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the point. The shore about Eddystone Point is higher than that about Cape Naturaliste. Thence:

To a position about 5 miles E of Eddystone Point (41°00′S, 148°21′E).

7.186

1 **Clearing bearings:**

The line of bearing, 177°, of Bayley's Hill (40°59′S, 148°14′E) seen over Cape Naturaliste clears W of Mussel Rock.

The line of bearing, 171°, of Eddystone Point Light open E of George Rocks, N of the point, clears E of Eucalyptus Rock.

2 The line of bearing, 246°, of the S round hill (41°00′S, 147°57′E) of Mount Cameron Range open S of Mount William clears SE of Salamander Rock. The line of bearing, 242°, of the same hill open N of Mount William clears NW of the rock.

(Directions for the E coast of Tasmania are given in the reverse direction at 10.49)

Anchorages and landing

Caution

7.187

1 All anchorages in Banks Strait which are exposed to the SE require great caution in their use because of the uncertain nature of the winds.

Little Musselroe Bay

7.188

1 **Description.** Little Musselroe Bay (40°46′S, 148°03′E) fronted by Swan Island and the islets NW of Swan Island is entered between the low point 4½ miles E of Cape Portland (40°44′S, 147°56′E) and Tree Point, 2½miles farther ESE. Little Musselroe River flows into the W end of the bay; boats can enter the river at half tide.

Tidal streams in the channel W of Swan Island leading to Little Musselroe Bay are strong.

2 **Anchorage.** Small vessels may obtain anchorage in the bay but it is much more exposed than the anchorage in Great Musselroe Bay.

Caution. Swan Island Light is obscured SW by Swan Island, as shown on the chart.

Swan Island

7.189

1 Anchorage may be obtained off a small sandy bay on the SE side of Swan Island (40°44′S, 148°08′E), but as the bottom is sand, or sand over rock, the holding ground is bad. It is not advisable to anchor off Swan Island if W gales are expected as, in and near Banks Strait, such gales often end with the wind shifting to the SE. This wind seldom blows inshore with much strength, but with the swell which rolls in simultaneously, it is necessary to leave this anchorage as it is exposed to the SE.

Great Musselroe Bay

7.190

1 **Description.** Great Musselroe Bay (40°49′S, 148°10′E) is formed by a curve in the coast between Tree Point (40°46′S, 148°02′E) and Musselroe Point, 5 miles SE. Great Musselroe River enters the sea 5 cables S of Musselroe Point; only boats can use it.

2 The main danger within the bay is Cockle Bank, a sandy shoal, lying 1¾ miles WNW of Musselroe Point on an extension of the shore bank; there is also a dangerous rock lying close inshore, 1½miles WSW of Musselroe Point.

Anchorage. There is good anchorage in the bay, in depths of about 12 m, sand, about 5 cables NW of Cockle Bank.

Eddystone Point

7.191

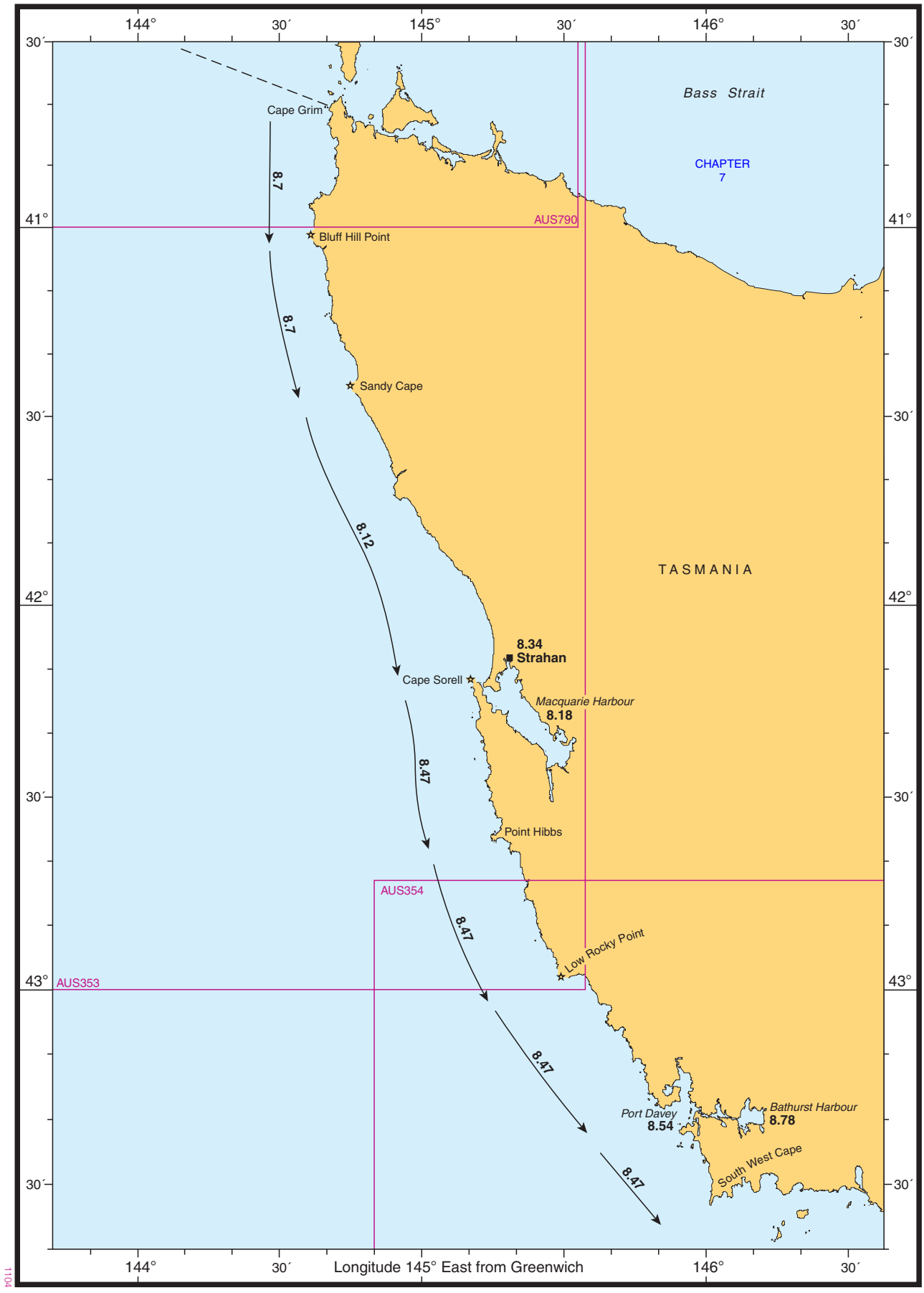
1 There is good landing on the N side of Eddystone Point (41°00′S, 148°21′E).

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NOTES

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Chapter 8 - Cape Grim to South West Cape



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CHAPTER 8

WEST COAST OF TASMANIA — CAPE GRIM TO SOUTH WEST CAPE

GENERAL INFORMATION

Chart Aus 422

Scope of the chapter

8.1

1 The area covered by this chapter comprises the passage along the W coast of Tasmania from Cape Grim (40°41′S, 144°41′E) to South West Cape, about 180 miles SSE.

The only harbours on this coast are Macquarie Harbour (8.18) with its entrance (42°13′S, 145°14′E), about midway along the W coast, and Port Davey (43°20′S, 145°55′E) (8.54), near its S end; only the latter can be used by deep-draught vessels.

The chapter is divided into the following sections:

Cape Grim to Cape Sorell (8.6).
Cape Sorell to South West Cape (8.46).

Topography

8.2

1 The W coast of Tasmania is mostly rocky and of sterile appearance with reefs extending up to 4 miles offshore in places. The N part of this coast is fairly low but from abreast West Point (40°57′S, 144°37′E), 16 miles S of Cape Grim, the land rises and attains an elevation of about 1450 m halfway along the coast. The S half of the coast is backed by ranges between about 600 m and 1400 m high.

Rescue

8.3

1 See 1.66 and *Admiralty List of Radio Signals Volume 5*.

Natural conditions

8.4

1 **Winds.** Prevailing winds are SW and bring much bad weather, particularly in the winter months of June, July and August.

Swell. A heavy swell from SW is usually felt all along this coast.

Caution

8.5

1 The waters off the W coast of Tasmania have been little surveyed and, as shown on the charts, in some places unsurveyed; there may be unknown dangers and less water than charted.

CAPE GRIM TO CAPE SORELL

GENERAL INFORMATION

Charts Aus 790, Aus 353

Area covered

8.6

1 The area covered by this section comprises:

Cape Grim to Sandy Cape (8.7).
Sandy Cape to Cape Sorell (8.12).
Macquarie Harbour (8.18).

CAPE GRIM TO SANDY CAPE

General information

Charts Aus 790, Aus 353

Route

8.7

1 From a position W of Cape Grim (40°41′S, 144°41′E) the coastal route leads SSE, for a distance of 45 miles, to a position WSW of Sandy Cape (41°25′S, 144°45′E).

Principal marks

8.8

1 **Landmarks:**

Cape Grim (40°41′S, 144°41′E) (7.11); a radio mast stands on the headland.

Mount Balfour (41°17′S, 144°54′E), Mount Frankland (41°17′S, 144°57′E) and Mount Hazelton (41°21′S, 144°56′E), forming the W end of Lofty Range.

Major light:

Bluff Hill Point Light (white concrete tower and lantern, brown hut, 13 m in height) (41°01′S, 144°37′E).

Directions

Cape Grim to Bluff Hill Point

8.9

1 From a position W of Cape Grim (40°41′S, 144°41′E) the track leads SSE, passing (with positions from Cape Grim):

WSW of Valley Bay (5 cables SSE) with Steeple Rock (7.11) forming its N entrance point, thence:

WSW of Bluff Point (4½ miles S), N of which stands Flat Topped Bluff; the coastline from Cape Grim to Bluff Point consists of black cliffs. Thence:

2 WSW of Studland Bay (5 miles S), Calm Bay (7 miles S) and Canal Bay (7¾ miles S), all of which are exposed. Studland Bay and Calm Bay are separated by Dodgers Point; Canal Bay lies on the N side of Maxie's Point (8 miles S). And:

3 Either side of Hally Bayley Shoal (15 miles SW); the sea breaks over this shoal, the position of which is approximate. Thence:

WSW of Ann Bay (12½ miles S) which is entered between a point, behind which lies Mount Cameron West (11 miles S), and Green Point, 3 miles SSW. The town of Marrawah lies within the SE corner of the bay.

8.10

1 The track then continues SSE, passing:

WSW of Green Point (13¼ miles S); a rock above-water lies close N of the point and a reef lies 8 cables W of the point. Thence:

Either side of Porpoise Shoal (18¾ miles SSW), on which the sea breaks occasionally; deep soundings have been obtained between the shoal and the coast. Porpoise Shoal has not been examined. And:

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WSW of West Point (15½ miles S), which is sandy with above-water rocks extending 1 mile from it. Nettley Bay, a small indentation, lies close NE of West Point. Thence:

2 WSW of Mawson Bay (19¼ miles S) lying at the S end of a bight formed between West Point and Bluff Hill Point. A dangerous rock (reported 1940), lies in the N approaches to Mawson Bay. Thence:

To a position WSW of Bluff Hill Point (20 miles S) from where a light (8.8) is displayed; Sherston's Hill rises 7½ miles ENE of the point. Church Rock, on which there is a dangerous wreck, lies close SW of Bluff Hill Point. This rock has not been examined and its position is approximate.

Bluff Hill Point to Sandy Cape

8.11

1 From a position WSW of Bluff Hill Point (41°01′S, 144°37′E) the track continues SSE, passing (with positions from Bluff Hill Point):

WSW of Gardiner Point (3½miles SE), the S entrance point of Arthur River, thence:

WSW of Nelson Bay (8½ miles SSE), at the head of which Nelson Bay River enters the sea. A dangerous rock lies 5 cables W of the N entrance point of Nelson Bay with a similar rock 2½miles S of it. Thence:

2 WSW of Temma Harbour (13¾ miles SSE) which is entered S of Gaffney Point; the village of Temma lies at the head of the harbour. Rocks above and below water extend 1¼ miles SW from Richardson Point, the S entrance point of the harbour. Thence:

WSW of Hazard Bay (15½miles SSE), fronted by foul ground extending 1¼ miles offshore, thence:

3 WSW of Gannet Point (17¾ miles SSE), from where foul ground extends 5 cables offshore. Dawson Bay lies close N of the point; foul ground extends about 1 mile offshore from Dawson Bay and also from the bay S of Gannet Point. Thence:

WSW of Ordnance Point (19 miles SSE), the S entrance point of the bay to the S of Gannet Point; rocks above and below water extend 1 mile W and SW from Ordnance Point. Thence:

4 WSW of the bight (23 miles SSE) lying between Ordnance Point and Sandy Cape; Kenneth Bay lies at the S end of the bight. Foul ground extends up to 1½ miles offshore in the bight. Thence:

To a position WSW of Sandy Cape (25½miles SSE); rocks above and below water extend 5 cables W and 1½ miles N from the cape. A light (white square concrete tower, 6 m in height) is displayed from the SW point of Sandy Cape.

(Directions continue at 8.15)

SANDY CAPE TO CAPE SORELL

General information

Chart Aus 353

Route

8.12

1 From a position WSW of Sandy Cape (41°25′S, 144°45′E) the coastal route continues SSE, for a distance of about 51 miles, to a position WSW of Cape Sorell (42°12′S, 145°10′E).

Topography

8.13

1 From Sandy Cape (41°25′S, 144°45′E) to Lagoon River, 6½miles SSE, the land behind the coast is low. Thence from Lagoon River to Pieman Head, 10 miles SSE, the coast rises sharply to the 120 m (400 ft) contour and remains high for a further 26½ miles SSE to Henty River. The land then decreases in height towards Cape Sorell (42°12′S, 145°10′E).

Landmarks

8.14

1 Mount Norfolk (41°27′S, 144°58′E), which is prominent.

Mount Sunday (41°31′S, 145°01′E).

Interview Pinnacle (41°31′S, 145°02′E).

Mount Donaldson (41°37′S, 145°04′E).

Mount Livingstone (41°41′S, 145°16′E).

2 Parson's Hood (41°41′S, 145°20′E).

Yarrana Hill (41°42′S, 144°56′E).

Mount Heemskirk (41°51′S, 145°10′E), conspicuous and visible 30 miles from seaward.

Mount Agnew (41°54′S, 145°14′E).

Mount Zeehan (41°56′S, 145°19′E).

Mount Dundas (41°54′S, 145°28′E), the W summit of Great Western Tiers Range (7.2).

Directions

(continued from 8.11)

8.15

1 From a position WSW of Sandy Cape (41°25′S, 144°45′E) (8.11) the track leads SSE, passing (with positions from Sandy Cape):

WSW of Native Well Bay (1 mile SE); foul ground extends 8 cables SW from this small bay. Thence:

WSW of Johnson Bay (4½ miles SSE), thence:

WSW of the entrance to Lagoon River (6½miles SSE). A sandy beach forms the coast for 5¾miles SSE of Lagoon River, thence S to Rupert Point, a further 2½ miles S, it is rock fringed. Thence:

2 WSW of Rupert Point (14½ miles SSE); rocks above and below water extend 5 cables NW from the point. Thence:

WSW of Pieman Head (16½miles SSE) (8.17), the N entrance point to Pieman River, thence:

WSW of Conical Rocks Point (17½miles SSE) (8.17), thence:

To a position WSW of the NW entrance point of Ahrberg Bay. Between Conical Rocks Point and the NW entrance point the coast is fronted by rocks above and below water extending about 7½cables offshore.

8.16

1 From the position WSW of the NW entrance point the track continues SSE, passing (with positions from Cape Sorell (42°12′S, 145°10′E)):

WSW of Ahrberg Bay (30 miles NNW), thence:

WSW of Granville Harbour (24½ miles NNW), a small indentation in the coast which is fronted by rocks, below water, up to 5 cables offshore, thence:

2 WSW of Trial Harbour (16 miles N), which is dangerous, being entirely exposed SW and NW although, in fine weather, a small vessel might find anchorage here; local knowledge is necessary and the anchorage is not recommended. The village of Remine lies at the head of the harbour. Thence:

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WSW of the entrance to Little Henty River (13¾miles N); an unexamined shoal, with a depth of 15 m (49 ft) over its lies 1 mile W of the river entrance. Thence:

WSW of the entrance to Henty River (9¾miles NNE), thence:

3 WSW of Ocean Beach (5 miles NE), the S part of a long sandy beach which stretches from Trial Harbour to Braddon Point (8.30), about 18 miles S. There are depths of about 23 m (12½fm) 1¼miles off the beach to within 3 miles of Braddon Point. Thence:

To a position WSW of Cape Sorell (42°12′S, 145°10′E). The cape, from where a light (white masonry tower and lantern, 37 m in height) is displayed, is rocky and fairly high.

(Directions for the coastal route continue at 8.50)

(Directions for Macquarie harbour are given at 8.30)

Pieman River

General information

8.17

1 **Description.** Pieman River enters the sea about 2 miles SSE of Rupert Point (41°38′S, 144°54′E) (8.15), between Pieman Head on its N side and Conical Rocks Point on its S side. Rocks, above and below water, extend about 8 cables SW from the entrance of the river and three bare rocks lie on the N side of the entrance. Hardwicke Bay lies between the entrance of the river and Conical Rocks Point, with foul ground extending about 8 cables W from the latter.

2 **Entrance.** The bar of Pieman River is subject to frequent change; in fine weather the channel silts up and becomes narrower, but after heavy rains the current scours it deeper and wider. With NW or W winds the bar is very dangerous, with heavy breakers, but, with S winds the foul ground W of Conical Rocks Point partially breaks the sea. Within the river the depths are greater than over the bar; the river extends many miles inland.

Tidal levels. See information in *Admiralty Tide Tables*. Mean maximum range about 1·0 m; mean minimum range about 0·4 m.

Local knowledge is essential.

MACQUARIE HARBOUR

General information

Charts Aus 353, Aus 177 (see 1.12)

Description

8.18

1 From its entrance Macquarie Harbour extends as a narrow entrance channel for about 5 miles SE and E before dividing into two parts. The N area extends 5 miles N to Port of Strahan (8.34); the SE area extends 13 miles SE to the mouth of Gordon River (8.45).

Approach and entry

8.19

1 Macquarie Harbour is approached between Cape Sorell (42°12′S, 145°10′E) and Ocean Beach, 5 miles NE, and entered through Hell's Gates (42°12′·7S, 145°13′·0E).

From a position about 2 miles NNE of Cape Sorell Light (42°12′S, 145°10′E) the route leads SSE for 2¼miles, crossing over the bar lying between West Breakwater and Kawatiri Shoal. Thence the route leads for a further 2½miles SSE, through the narrow entrance channels to Kelly Channel. Kelly Channel, an extension of the inner entrance channel, then leads ESE and E for about 3 miles to a position close SE of No 10 Light-beacon (port hand) (42°13′·9S, 145°18′·6E), from where Port of Strahan and the SE part of Macquarie Harbour can be directly accessed.

Controlling depths

8.20

1 Although the harbour is deep above its entrance there are depths of less than 4 m in the inner channels and on the outer bar.



Macquarie Harbour Entrance from NW (8.18)

(Original dated 1998)

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Tidal levels

8.21

1 See information in *Admiralty Tide Tables*. At Cape Sorell, Pilot Bay (42°12′S, 145°13′E), mean maximum range about 0·8 m; mean minimum range about 0·4 m. Tidal information can also be obtained from the Pilot Station at Macquarie Heads.

Notice of ETA and pilotage

8.22

1 **Notice of ETA.** Vessels bound for Strahan should advise the Harbour Master at Hobart of their estimated time of arrival at Macquarie Harbour bar at least 72 hours in advance confirming or amending the time 24 hours in advance.

2 **Pilotage.** Vessels should contact the Pilot Station at Macquarie Heads (42°12′·8S, 145°12′·8E), where a watch is kept when a ship is expected, when within VHF range. The pilot boards from a motor launch 1 cable N of the head of West Breakwater (42°12′·0S, 145°12′·4E).

For further details see *Admiralty List of Radio Signals Volume 6 (4)*.

Local knowledge

8.23

1 Local knowledge is required for entering Macquarie Harbour as the depths over the outer and inner bars are liable to change.

Speed restriction

8.24

1 Vessels are to reduce speed to a minimum consistent with safe navigation in the vicinity of Macquarie Heads.

Anchoring

8.25

1 There is no shelter from winds between W and N for any but small vessels outside the bar in the approach to Macquarie Harbour. Gales from NW and W frequently blow here with great violence, and when there is a prospect of the wind blowing from these quarters it is unsafe for vessels to anchor outside the bar.

However, in fine weather, vessels waiting for a favourable tidal stream, or for the pilot, may anchor in depths of about 22 m about 1½ miles NW of the head of West Breakwater (42°12′·0S, 145°12′·4E).

Submarine cable

8.26

1 A submarine cable is laid across the inner entrance channel in a WNW direction from the S side of Braddon Point (42°13′·2S, 145°13′·4E) to the W shore; two beacons mark the landing place.

Marine farms

8.27

1 A number of marine farms have been established in Macquarie Harbour. They consist of floating or fixed structures with associated moorings, being generally marked by beacons or buoys which may be lit. Their positions can be seen on the chart.

Tides and tidal streams

8.28

1 The tides are mainly diurnal and have a small mean range, but the rate and duration of the tidal streams are greatly influenced by large freshets which flow into the harbour from the high mountains in the interior during the prevalence of rainy weather, and also by the change in the level of water due to the winds; with SW winds the level of the water is lowered and with N winds it is raised. The out-going stream may continue to run while the tide is rising, especially after heavy rains, and at such times there may be a sub-surface in-going stream.

2 During freshets, the out-going stream in the entrance channel runs very strongly. At such times the tidal stream will run out of the harbour for two or more days; with strong N winds it will run in for the same period.

Landmarks

8.29

1 **In the approach to Macquarie Harbour:**

Mount Strahan (42°15′S, 145°31′E).

Mount Sorell (42°16′S, 145°33′E).

Watts Hill (42°12′S, 145°11′E), remarkable and rocky.

Mount Antill (42°13′S, 145°12′E), like Watts Hill but with a double summit.

Wellington Head (42°14′S, 145°13′E), easily recognised by its table top and a prominent quarry on its E side.

Directions

Chart Aus 177 (see 1.12)

Approach and entry

8.30

1 **Caution.** In NW gales or when a heavy W swell is running dangerous breakers form across Macquarie Harbour approaches, E of Cape Sorell, in depths of 7 to 9 m. No attempt should be made to enter the harbour in these conditions.

2 **Directions.** From a position about 2 miles NNE of Cape Sorell (42°12′S, 145°10′E) (8.16) the track leads SSE on the line of bearing, 156°, of Bonnet Island Light (42°13′·4S, 145°13′·3E) (8.31), visible between Entrance Island Light (42°12′·7S, 145°12′·9E) (white six-sided wooden tower) and the light on the NE point of Macquarie Heads, although more in line with the latter, passing (with positions from Entrance Island Light):

3 ENE of Prater Rock (1 mile NW), which lies close SE of Lucas Point (1 mile NW), the NW entrance point of Pilot Bay, thence:

Between the head (7½ cables NNW) of West Breakwater and the NW edge of Kawatiri Shoal (5 cables N). Kawatiri Shoal extends 1½ miles NNW of Braddon Point. The sea breaks heavily on the NW end of the shoal, parts of which dry. Thence:

4 Close ENE of the knuckle (6 cables NNW) of West Breakwater, thence:

ENE of Outer Bay (2 cables NW); two dangerous wrecks, shown on the chart, lie in the bay. Thence:

Through Hell's Gates, that part of the channel which passes between Entrance Island and Macquarie Heads (close WSW). Entrance Island is a rocky mass with rocks extending ½ cable N of it; landing on the island is prohibited. Thence:

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ENE of Kidney Cove (1 cable SW), a small cove with a tide gauge on its S side, thence:

5 To a position close ENE of a drying rock (1 cable S), which lies close inshore on the E side of Nigger Head, the S entrance point of Kidney Cove.

At night the intensified white sector (155°–157°) of Bonnet Island Light leads to the entrance.

Caution. All vessels proceeding through Hell's Gates should guard against being set on to Entrance Island by the tidal streams which run obliquely across the passage.

Inner entrance channel

8.31

1 **Inner Leading Lights:**

Front Light (42°13′·2S, 145°13′·0E).

Rear Light (25 m S of front light).

From a position close ENE of Nigger Head (42°12′·8S, 145°12′·9E) the alignment (177½) of the above lights leads S for about 3 cables, passing (with positions from Entrance Island Light (42°12′·7S, 145°12′·9E)):

E of a T-shaped jetty (2 cables SSW), thence:

To a position close W of the bank extending 3 cables W from Braddon Point (6 cables SE).

2 **Main Leading Lights:**

Front Light (42°12′·9S, 145°12′·8E).

Rear Light (90 m NW of front light).

The alignment (322½), astern, of the above lights then leads SE for about 4½ cables, passing:

SW of Bowra Rock (7 cables SE), thence:

To a position close NE of Bonnet Island (8 cables SSE), from the N end of which Bonnet Island Light (white six-sided wooden tower) is displayed.

3 From the position close NE of Bonnet Island (42°13′·4S, 145°13′·3E) the track leads SSE, passing (with positions from Bonnet Island):

ENE of The Cap (½ cable S), a rock above water, thence:

ENE of a training wall (1½ cables S), which extends 1 cable N from the shore to form the E side of Bonnet Bay, which is filled with a drying sand bank, thence:

4 To a position abreast Wellington Head (3½ cables SSE) (8.29) at the beginning of Bonnet Bay Leads leading line.

Thence the alignment (318½), astern, of Bonnet Bay Leads (42°13′·5S, 145°13′·2E), a pair of beacons 80 m apart, leads from abreast Wellington Head to a position E of No 1 Light-beacon (three-pile beacon) (42°14′·3S, 145°14′·1E).

Kelly Channel

8.32

1 Kelly Channel, an extension of the inner entrance channel, extends 3 miles ESE from a position E of No 1 Light-beacon (42°14′·3S, 145°14′·1E). It is bounded N by Fraser Flats and S by the SE part of the training wall and by sandbanks fronting the shore SE of Round Head (42°14′·7S, 145°14′·2E).

Mosquito Cove Leads:

Front beacon (triangular topmark, point up) (42°14′·0S, 145°13′·3E).

Rear beacon (triangular topmark, point down) (26 m from front beacon).

2 From the position E of No 1 Light-beacon (8.31) the alignment (296½), astern, of these beacons passes SW of No 2 Light-beacon (port hand) and leads through the W part of Kelly Channel for 1 mile. Thence the channel, marked by light-beacons (port and starboard hand) and beacons, leads E and NE to a position close SE of No 10 Light-beacon (port hand) (42°13′·9S, 145°18′·6E).

(Directions for Port of Strahan continue at 8.37)

Side channel

Back Channel

8.33

1 **Description.** Back Channel entered 3 cables SE of Braddon Point (42°13′·2S, 145°13′·4E), is a narrow, shallow channel, which passes close off the shore between Braddon Point and River Point, 2 miles ESE. Sheltered anchorage may be obtained in the entrance to the channel, 4 cables ESE of Braddon Point. A T-shaped jetty, with a berthing face of 6 m in length, projects 18 m from the N shore of the channel, 5 cables E of Braddon Point.

Port of Strahan

General information

8.34

1 **Position and function.** Port of Strahan is situated on the N side of Macquarie Harbour. At one time important as the port of shipment for the mines at Queenstown, 20 km ENE, it is now used only by inter-state shipping and fishing vessels.

Port limits. Port of Strahan includes all the waters of Macquarie Harbour and all bays and estuaries opening into that harbour, S of a line drawn 000° from a position close W of Lucas Point (42°12′S, 145°12′E) for a distance of 0·5 miles, thence 090° to the shoreline.

2 **Approach and entry.** The port is approached through the N arm of Macquarie Harbour which is entered between Yellow Bluff (42°13′·7S, 145°17′·4E) and Sophia Point, 3½ miles ESE. A deep channel extends between shore banks through the N arm to Port of Strahan which is situated in Long Bay at the head of the arm.

Port Authority. Port of Strahan is under the jurisdiction of Hobart Ports Corporation, GPO Box 202, Hobart, Tasmania, 7001.

Limiting conditions

8.35

1 **Controlling depth.** See 8.20.

Maximum size of vessel handled. Vessels of up to 72 m in length and of 4·1 m draught can be accommodated.

Arrival information

8.36

1 **Port operations.** Berthing and unberthing operations are during daylight hours only.

Notice of ETA. See 8.22.

Anchorage. See 8.25.

Pilotage. See 8.22.

Regulations. Vessels over 35 m LOA require a pilot, unless the Master of the vessel has a pilotage exemption.

Climatic table. See 1.133 and 1.141.

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Port of Strahan from SW (8.34)

(Original dated 1998)

Directions

(continued from 8.32)

8.37

1 From a position close SE of No 10 Light-beacon (port hand) (42°13′·9S, 145°18′·6E) the track leads N, passing (with positions from No 10 Light-beacon):

E of No 10 Light-beacon (port hand), which marks the E edge of the bank extending 1 mile ESE of Yellow Bluff, thence:

To a position 1¼ miles W of King Point (2¼miles NE).

2 The track then continues N into Long Bay, passing (with positions from Regatta Point Light (42°09′·6S, 145°19′·6E)):

W of a beacon (2½ miles SSE) lying close W of the bank extending from King Point, thence:

E of Neck Island (2¾ miles SSW); Swan Basin, which mainly dries, lies behind the island. Thence:

W of the entrance (2¼ miles SSE) to King River; only accessible to boats. And:

3 E of Cat Island (2 miles SW) and Magazine Island (1¾miles SW) lying at the NE end of Swan Basin, thence:

Close E of No 12 Light-beacon (port hand) (1 mile S) standing on the outer end of a rocky spit, with depths of less than 5·0 m over it, which extends 2½cables SE from Buoy Point, thence:

4 Between Buoy Point (1 mile SSW) and Dead Horse Point into Long Bay from where the port can be directly approached. Lettes Bay (8 cables SE), which is shallow and unsurveyed, lies close E of Dead Horse Point.

Caution. The remains of a jetty, with wooden piles close above and below water, lies about 1 mile N of Dead Horse Point.

Anchorage and berth

8.38

1 **Anchorage.** A designated anchorage has been established in Risby Cove to the NE of Regatta Point (42°09′·6S, 145°19′·6E). Anchorage is prohibited within 150 m of Regatta Point Wharf.

Berth. Town Wharf, with depths from 3·7 to 5·5 m alongside, lies on the NW shore of Risby Cove. It is used mainly by ferries and fishing vessels.

Port facilities

8.39

1 **Repairs:** Two modern slipways for small craft, W of the town wharf.

Other facilities: hospital at Queenstown, 30 km from Strahan, and small craft moorings and anchorage in Mill Bay (42°09′S, 145°19′E).

Supplies: diesel oil; fresh water.

Anchorage and bay in the North arm of Macquarie Harbour

Local knowledge

8.40

1 Local knowledge is essential for navigating the coves and anchorages within Port Macquarie.

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Pine Cove

8.41

1 Pine Cove (42°12′·4S, 145°21′·7E), on the E side of King Point, affords good anchorage in a depth of 5·5 m. Tidal streams here are barely perceptible.

Caution. A dangerous rock lies in the middle of the entrance to the cove.

Smith Cove

8.42

1 Smith Cove (42°10′·5S, 145°18′·6E), 1¼ miles SSW of the town of Strahan, forms a natural dock in the greater part of which there are depths of 3·7 m or more. There is a depth of 3 m in the entrance, from the W side of which a rocky ledge extends ESE; from the E side rocks extend a short distance S. However, the cove and its approaches have not been surveyed.

South-east arm of Macquarie Harbour

Description

8.43

1 The SE arm of Macquarie Harbour extends about 11 miles SE of a line joining Sophia Point (42°15′S, 145°22′E) and Butt of Liberty, 3 miles SW. The head of the arm divides into three branches, Kelly Basin, Gordon River and Birch's Inlet.

2 The SW shore is indented by Double Cove (42°20′S, 145°20′E), which has depths of 0·9 to 1·8 m and affords good shelter for small craft in all weathers. Between Double Cove and Sarah Island, 6 miles SE, the shore consists of rocky points and small bights fringed, for the most part, with rocks below water fronting thickly wooded land. A jetty with a depth of 1·2 m alongside lies on the S side of Sarah Island; it is used by ferries.

3 Thence 2 miles SSE of Sarah Island the shore is broken by Birch's Inlet. The inlet is entered between Rum Point (42°24′S, 145°27′E) and Gordon Point, 2 miles SE; it is navigable only by small craft. Sorell River flows into the head of Birch's Inlet.

The NW shore between Sophia Point and Coal Head, 4½ miles SE, is thickly wooded. Coal Head, bold, with thick scrub on it and with forest behind, is easily identified by a patch of yellow clay on it. Thence for about 4 miles SE to Gould Point the shore is heathy and barren, rising to mountains inland.

4 Philips Island lies 5 cables offshore at the S end and close within the outer edge of rocky ground which fills the bight between Coal Head and a point 1½ miles SE of it. Farm Cove is entered between Gould Point (42°22′S, 145°29′E) and Pine Point, 8 cables ESE; Soldiers Island lies near the centre of the cove which is much obstructed by sandbanks and reefs.

Local knowledge. The SE arm of Macquarie Harbour is incompletely surveyed making local knowledge essential for navigation.

Anchorages

8.44

1 **Sarah Island.** Anchorage in depths of 5·5 to 9·0 m may be obtained between Sarah Island (42°23′S, 145°27′E) and a reef, with rocks above and below water, which extends 7½ cables ENE from Rum Point, 1 mile S of Sarah Island.

Sarah Island lies on the inner part of a reef extending 1¼ miles from the shore; a few rocks above water lie on the reef and Grummet Island lies at its outer end. The passage between Sarah Island and Grummet Island is regularly used by tourist ferries from Strahan.

2 **Birch's Inlet.** Good anchorage may be found anywhere along the W side of Birch's Inlet (42°28′S, 145°28′E) (8.43), with shelter from SW to NW winds, in depths of 3 to 4 m, mud.

Kelly Basin. This is the NE of the three branches into which the head of SE arm divides. This natural basin affords excellent anchorage to small craft in all weathers, but local knowledge is required.

3 Kelly Basin was developed by the North Lyell Company as its port during 1898 to 1899 but was abandoned in 1903. The remains of a wharf and railway facilities may be seen in the NW corner of the basin.

Gordon River

8.45

1 Gordon River (42°25′S, 145°31′E), which enters the head of the SE arm, is obstructed at its entrance by a bar with a depth of 3 m over it. The channel within the bar lies mainly in the centre of the river and small craft can ascend it for about 20 miles. Tourists boats operate from Port of Strahan into the river, which is part of Wild Rivers National Park.

CAPE SORELL TO SOUTH WEST CAPE

GENERAL INFORMATION

Charts Aus 353, Aus 354

Area covered

8.46

1 The area covered by this section is arranged as follows:

Coastal route (8.47).
Port Davey (8.54).

COASTAL ROUTE

General information

Charts Aus 353, Aus 354

Route

8.47

1 From a position WSW of Cape Sorell (42°12′S, 145°10′E) the coastal route leads SSE, for a distance of 94 miles, to a position SW of South West Cape (43°34′S, 146°02′E), passing WSW of the entrance to Port Davey (43°20′S, 145°55′E).

Topography

8.48

1 Between Cape Sorell (42°12′S, 145°10′E) and Point Hibbs, 25 miles S, the coast is formed of rocky bights and points. The land rises gently for 2 or 3 miles behind this coast and appears smooth and uniform but without trees and almost barren. Between Point Hibbs and Low Rocky Point (43°00′S, 145°30′E) the land is higher and more wooded than N of Point Hibbs.

2 For about 25 miles SSE of Low Rocky Point, to the N entrance point of Port Davey, the coast remains high, and inland are several white bare peaks, which appear as if covered with snow. Thence the land between Port Davey (43°20′S, 145°55′E) and South West Cape, 12 miles SSE,

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the SW point of Tasmania, is mountainous, barren and of desolate appearance.

Principal marks

8.49

1 **Landmarks:**

Hibbs Pyramid (42°36′S, 145°16′E) conspicuous and so named from its shape, lies near the edge of foul ground extending 1½ miles NE from Point Hibbs. Seen from S of Point Hibbs, on NNE bearings, it resembles the crown of a hat over the end of the point.

2 Mount Lee (42°37′S, 145°35′E) (chart Aus 422), the summit of Daguilar Range, rising 15 miles E of Point Hibbs.

Mount Osmund (42°52′S, 145°32′E), the S summit of Daguilar Range.

South West Cape (43°34′S, 146°02′E), which is bold and remarkable with a sharp and rugged outline.

Major light:

Low Rocky Point Light (white GRP hut, 4 m in height) (43°00′S, 145°30′E).

Directions

(continued from 8.16)

Chart Aus 353

Cape Sorell to Point Hibbs

8.50

1 **Caution.** Breakers have been reported about 3 miles offshore between Sloop Point (42°19′S, 145°12′E) and Point Hibbs, 18 miles S.

From a position WSW of Cape Sorell (42°12′S, 145°10′E) the track leads SSE, passing (with positions from Cape Sorell):

WSW of Sloop Point (7 miles S). Between Cape Sorell and Sloop Point the coast is fronted by a rocky bank, with rocks above and below water, extending 1½miles offshore. Sloop Rock lies on this bank 1½miles N of Sloop Point. However, the area of Sloop Point has not been surveyed. Thence:

2 WSW of Gorge Point (10¼ miles S); a rock lies 2 miles NW of the point (as shown on chart Aus 177). Thence:

WSW of Albina Rock (13 miles S), 14 m high, lying on the W end of a rocky ledge which dries and extends E for 3 cables; thence:

WSW of Birthday Bay (15¼miles S), prominent sand dunes lie to the N of the bay. The area around Birthday Bay has not been surveyed; thence:

3 WSW of Varna Bay (18½miles S); dangerous rocks extend 5 cables W from the entrance to Modder River, which enters the sea at the head of the bay. Thence:

WSW of two rocks awash (21 miles S) reported in 1955 to lie 2¾ miles and 4¾ miles NNW of Point Hibbs, thence:

4 WSW of Hibbs Bay (23¼miles S); rocks above water extend 7½ cables SW from the N entrance point and Hibbs River enters the sea at the N end of the bay. Thence:

To a position WSW of Point Hibbs (25 miles S); the point is higher than the neck of land connecting it with the mainland. Rocks above and below water extend 5 cables W, 1 mile S and 1½miles SE from the point. Hibbs Pyramid (8.49) stands 1 mile NE of the point.

Point Hibbs to Low Rocky Point

8.51

1 From the position WSW of Point Hibbs (42°37′S, 145°15′E) the track continues SSE, passing (with positions from Point Hibbs):

WSW of Conder Point (4¼miles SE) which separates Spero Bay, NW, from Endeavour Bay, SE; a rock above water lies close S of the point. Thence:

2 WSW of Christmas Cove (9 miles SSE); it is said that the cove affords anchorage for small vessels but local knowledge is required. Wanderer River enters the sea at the head of the cove. Thence:

WSW of High Rocky Point (11½miles SSE), fronted by high rocks extending 7½ cables SW and by foul ground extending 1 mile NNW, thence:

3 WSW of Mainwaring Inlet (17½miles SSE); Mainwaring River enters the sea at the head of the inlet. Thence:

WSW of Acacia Rocks (17¾ miles SSE), standing near the outer edge of dangers which extend up to 1½miles offshore between Mainwaring Inlet and Diorite Point, 3½ miles SE, thence:

4 WSW of the entrance (23 miles SSE) to Lewis River, thence:

To a position WSW of Low Rocky Point (25 miles SSE). Rocks above and below water extend 7½cables NW and SW of the point. A light (8.49) is displayed from the S end of the point.

Chart Aus 354, Aus 176 (see 1.12)

Low Rocky Point to North Head

8.52

1 From the position WSW of Low Rocky Point (43°00′S, 145°30′E) the track continues SSE, passing (with positions from Low Rocky Point):

WSW of a 7·3 m (24 ft) patch (1¼miles SSE), lying in the W approach to Elliott Bay (3 miles E), which breaks occasionally. Elliott Bay is part of a bight in the coast between Low Rocky Point and Elliott Point. Thence:

WSW of a drying rock, (5¾miles SE), reported 2001, thence:

2 WSW of Nye Bay (8¾miles SE); Giblin River enters the sea in the SE part of the bay. Thence:

WSW of Briar Holme Head (13 miles SSE), thence:

WSW of Svenor Point (16½ miles SSE) fronted by a shoal; a stranded wreck lies in the bay 1 mile E of the point. Thence:

WSW of Hobbs Island (18¾ miles SSE). Horseshoe Reef, a rocky reef which dries, lies 5 cables W to 5 cables SSW of the island. Thence:

3 WSW of Trumpeter Islets (22 miles SSE), a group of three islets; Gulches Reef lies 3 cables W of the islets, thence:

WSW of West Pyramid (23¼miles SSE); The Coffee Pot and Sharksjaw Reef, an area of dangerous rocks, lies from 5 cables SW to 6 cables SSW, thence:

To a position WSW of North Head (24½miles SSE).

(Directions for Port Davey continue at 8.62)

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North Head to South West Cape

8.53

1 From a position WSW of North Head (43°19′·0S, 145°50′·4E) the track continues SSE, passing (with positions from North Head):

WSW of Stokes Rock (2¼ miles SSE) an unexamined rock; the sea occasionally breaks over the rock. Thence:

WSW of Hilliard Head (5½ miles SSE), the S entrance point of Port Davey. Hilliard Head is a high, craggy, projecting point rising to the summit of Going Hill, about 7 cables SE. Thence:

2 WSW of East Pyramids (7 miles SSE), a group of peaked islets more or less connected by rocks; Sugarloaf Rock, the S islet, 106 m high, is the highest of this group and is similar in appearance to Big Caroline Rock (8.62) standing inside the entrance to Port Davey. There are no known dangers outside East Pyramids. Thence:

WSW of Mutton Bird Island (8½ miles SSE). The island is low with no defined summit and appears, from seaward, as part of the coast; rocks below water lie between this island and East Pyramids. Thence:

3 WSW of Windowpane Bay (12 miles SSE), lying midway between Port Davey and South West Cape. It is so called because of the glittering mica-schist of its hill sides, an effect best appreciated in the evening sunlight. Thence:

To a position SW of South West Cape (17¼ miles SSE) (8.49).

Caution. See 9.10.

Useful mark:

Maatsuyker Light (43°39′S, 146°16′E) (9.12).

(Directions continue at 9.14)

PORT DAVEY

General information

Charts Aus 354, Aus 176 (see 1.12)

Description

8.54

1 Port Davey is entered between Point Saint Vincent (43°19′S, 145°52′E) and Hilliard Head, 4 miles SSE. The port extends 4 miles ENE from its entrance and then divides into two arms. The N arm extends about 5 miles to the entrance of Davey River; the E arm, Bathurst Channel, extends 7 miles to Bathurst Harbour.

Topography

8.55

1 In the approaches to Port Davey the land on each side appears rugged and barren and to the E is steep and mountainous. Two well-defined conical peaks, easily identified in the approach, stand 1½ miles E of North Head (43°19′S, 145°50′E), above Point Saint Vincent, and the entrance may be identified by Big Caroline Rock, standing 1 mile N of Hilliard Point (43°23′S, 145°55′E).

Port limits.

8.56

1 Port Davey port limits are bounded to the W by a line joining Hilliard Head (43°23′·1S, 145°55′·3E) and North Head (43°19′·0S, 145°50′·4E).

Approach and entry

8.57

1 From a position about 6 miles SW of North Head (43°19′S, 145°50′E) the main route leads ENE and E through the outer entrance to Port Davey, and thence through South Passage (43°20′S, 145°58′E), which leads between Shanks Islands and Breaksea Islands, for a total distance of about 11 miles, to a position 1½ cables N of Turnbull Head (43°20′S, 145°59′E), off the entrance to Bramble Cove (8.72).

Thence from the position N of Turnbull Head the route leads ESE, for a further distance of 7 miles, through Bathurst Channel (8.64) and Bathurst Narrows into Bathurst Harbour (43°21′S, 146°10′E) (8.78).

2 Bathurst Channel connecting the outer part of Port Davey with Bathurst Harbour has a deep fairway throughout its length with a least navigable width, in Bathurst Narrows (8.65), of about 60 m. The water in the channel is coffee-coloured and this entirely hides any signs of uneven bottom; this effect is due to the colour picked up by fresh water streams flowing through the peaty soil of the button-grass plains in their course to the sea and is noticeable under all wet conditions.

Tidal levels

8.58

1 **Tidal levels.** In Bramble Cove (43°19′S, 146°00′E) the mean maximum range is about 0·8 m, mean minimum range about 0·4 m. From observations made over a short period in Port Davey it appears that the height of tide is much influenced by the strength and direction of wind. A wind from the W may raise the water level by about 1 m.

For further information see *Admiralty Tide Tables*.

Anchoring

8.59

1 Bramble Cove (43°19′S, 146°00′E) (8.72), which lies immediately N of the W end of Bathurst Channel, affords the most secure anchorage in Port Davey. Vessels should avoid anchoring anywhere seaward of this cove as a wind-shift to S or SW will bring a heavy sea right into the port.

Tidal streams

8.60

1 In Bathurst Narrows, the passage leading to Bathurst Harbour, the maximum rate is about 2 kn; the W-going stream is stronger and of longer duration than the E-going stream.

Landmarks

8.61

1 **In the vicinity of Bramble Cove and the entrance to Bathurst Channel** (with positions from Turnbull Head (43°20′S, 145°59′E)):

Morning Hill (3 cables SSW).

Stainer Hill (6 cables SSW).

Mount O'Brien (1 mile SSW).

Mount Milner (8 cables N).

Mount Misery (1½ miles NE), with a very steep S slope and directly overlooking Bramble Cove, hides the higher Mount Berry 7½ cables farther NE.

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Breaksea Islands

Approaches to Bramble Cove and Bathurst Channel from W (8.63)

(Original dated 1998)

Directions

(continued from 8.52)

Charts Aus 176 (see 1.12)

Entrance

8.62

1 **Caution.** The coastline on both sides of the entrance to Port Davey and the N arm are unsurveyed, and the entrance itself is inadequately unsurveyed. Accordingly mariners should proceed with caution in these areas as unidentified shoals, reefs and other navigation hazards may exist.

2 **Directions.** From a position about 6 miles SW of North Head (43°19′S, 145°50′E) the track leads ENE, passing (with positions from Point Saint Vincent (43°19′S, 145°52′E)):

Either side of Stokes Rock (2 miles SSW) (8.53); the rock should be given a wide berth. And:

3 SSE of North Head (1½ miles WNW), thence:

SSE of Point Saint Vincent; there is a rocky ledge that dries close off this point, and a dangerous rock lies 4 cables NE of this point in Outer Saddle Bight. Thence:

NNW of Big Caroline Rock (3 miles SSE), lying 1 mile N of Hilliard Head (8.53), thence:

4 NNW of Swainson Island (3½ miles SSE), standing 6 cables NNW of Forbes Point. There is an above-water rock close off Swainson Island's NW side and there are below-water rocks close around it. Close E of Forbes Point lies Norman Cove, in which there are depths of 7·1 m; a heavy swell always sets into this cove making it impossible for a boat to land at any time. Thence:

5 To a position SSE of Point Lucy (1¼ miles ENE), the W entrance point of Saddle Bight.

Useful mark:

Whalers' Point Light (43°18′·1S, 145°55′·3E) (8.69).

(Directions for N arm continue at 8.69)

Point Lucy to Turnbull Head

8.63

1 From the position SSE of Point Lucy (43°19′S, 145°54′E) the track then leads E, passing (with positions from Point Lucy):

N of Nares Rock (3¼ miles SSE), partly awash, which lies 7 cables NW of Knapp Point, the E entrance point of Norman Cove. Hay Island lies close off Knapp Point. Thence:

2 Close N of Shanks Islands (3½ miles SE) lying in the W entrance to South Passage. There are eight in number, the highest and largest having an elevation of about 61 m. Rocks, below water, lie close round these islands and a 5·3 m patch lies 1¾ cables N of the summit of the largest island. Thence:

3 To a position close S of the S end of Breaksea Islands (3½ miles ESE). The islands, of which there are three, are all faced with cliffs. The middle and longest island is 76 m high near its centre; the S island is almost joined to it. A rock 4 m high lies 1 cable WSW of the S end of the S island. There is deep water about 1 cable off the W sides of the islands and depths of not less than 5 m from about 1 cable off their E sides.

4 **South Passage.** The track then leads NE and E to a position 1½ cables N of Turnbull Head (4 miles ESE), off

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the entrance to Bramble Cove (8.72), passing through South Passage.

5 This passage, deeper than North Passage (8.66) N of Breaksea Islands, leads between the S side of Breaksea Islands, and Shanks Islands and the mainland to the E. It has a least width of 2 cables and a least depth of 10·8 m in it. A patch with a depth of 8·3 m over it lies on the S side of South Passage, 4½ cables SSE of the S Breaksea Island. On the SE side of this passage, between O'Brien Point (43°21′·3S, 145°58′·7E) and Turnbull Head, 1½ miles NNE, depths of less than 11 m extend up to 2 cables offshore.

6 **Useful mark:**

Whalers' Point Light (43°18′·1S, 145°55′·3E) (8.69).

(Directions for Bramble Cove continue at 8.74)

Charts Aus 176 (see 1.12)

Bathurst Channel — Turnbull Head to Little Woody Island

8.64

1 From a position 1½ cables N of Turnbull Head (43°20′S, 145°59′E) the track leads SE, passing (with positions from Turnbull Head):

SW of Sarah Island (3½ cables E), which fronts the S side of Bramble Cove (8.72), thence:

SW of Hixson Point (4½ cables E), thence:

NE of Boabey Point (7 cables SE), thence:

SW of Hammond Point (8 cables ESE); Heather Hill stands close N of Hammond Point. Thence:

SW of May Point (1 mile ESE); small shallow bays lie on either side of the point. Thence:

2 NE of Forrester Point (1 mile SE); Schooner Hill stands 4 cables W of Forrester Point. And:

SW of Munday Island (1¼ miles ESE) which divides the channel into two branches. The main fairway passes SW of the island; a secondary fairway leads N of the island passing S of Helby Point (1 mile ESE). Munday Island is thickly wooded; Cover Ledge, with depths of less than 5·0 m over it, extends ½ cable E from the E end of the island. Thence:

3 NE of Schooner Cove (1¼ miles SE), shallow in its S part being only suitable for small craft. Night Islet lies close offshore at the E end of the cove. Thence:

To a position SW of Deep Point (1½ miles ESE).

The track then leads ESE and E, passing (with positions from Deep Point (43°20′·3S, 146°00′·9E)):

NNE of Noon Point (5 cables S). Between Noon Point and Pim Point (8.65), 1¾ miles E, the S side of the channel is backed by a ridge on which stand the summits of Mount Nares, Mount Nicholls and Mount Curan. Thence:

4 S of Branson Point (5 cables ESE). Mount Parry stands 8 cables N and Mount Mackenzie 1 mile NE respectively of the point. Thence:

To a position close S of Little Woody Island (1½ miles E). The depths N of a line joining Branson Point with Little Woody Island are shallow.

Bathurst Channel — Little Woody Island to Bathurst Harbour

8.65

1 From the position S of Little Woody Island (43°20′·4S, 146°02′·9E) the fairway leads 8 cables ENE and E, passing (with positions from Little Woody Island):

NNW of the entrance (5 cables SSE) to Horseshoe Inlet. The inlet, entered close SW of Pim Point, is only about 1·8 m deep and can only be used by small local craft. Thence:

S of Opossum Point (5 cables NE), the W entrance point of Joe Page Bay (8.77), thence:

2 N of Pim Point (5 cables ESE). Balmoral Beach, of pure quartzite granite, 3 cables E of Pim Point, is conspicuous; Balmoral Hill, with a bare summit, stands 2½ cables SSE of the beach.

The fairway then curves SE, E and NE round shoals, with depths of less than 5·0 m over them, which extend 5 cables WSW and 7½ cables NW from Farrell Point (43°20′·5S, 146°05′·0E), to a position close S of Farrell Point.

3 **Bathurst Narrows**, from its W entrance between Farrell Point and Joan Point, leads 2 miles ESE into Bathurst Harbour (8.78). The fairway, less than ½ cable wide at the W entrance, follows the general contour of the shores.

From the position between Farrell Point and Joan Point the track leads ESE, passing (with positions from Farrell Point):

SSW of Ila Bay (2 cables NNE), a narrow shallow bay, thence:

4 NNE of Clytie Cove (6 cables SSE), indenting the S shore between Joan Point and Eve Point, thence:

Through the narrow gap between Eve Point (8 cables ESE) and the N shore; at this point the navigable width is only 60 m. Thence:

SSW of Starvation Bay (1 mile ESE); Mount Rugby, rugged-topped and precipitous except on its N side, stands about 1 mile N of the bay. Thence:

5 NNE of Iola Bay (1½ miles ESE); Mount Beattie stands 5 cables S of the head of this bay. Thence:

NNE of Gull Islet (1¾ miles ESE), lying on the outer end of a reef which extends halfway across the channel from the S shore, thence:

SSW of Platypus Point (2 miles ESE), thence:

To a position in Bathurst Harbour, about 2 cables NNE of Nixson Point (2¼ miles ESE).

A description of Bathurst Harbour is given at 8.78.

Caution. Shoal banks extend some distance from the points in Bathurst Narrows.

Side channel

North Passage

8.66

1 North Passage leads between the N end of Breaksea Islands (43°20′S, 145°58′E) and Boil Rock, 3½ cables N. It has a least width of 2 cables and a least depth of 8.3 m in it. It affords an alternative approach to Bramble Cove (8.72) from the outer part of Port Davey.

North arm of Port Davey

Chart Aus 176 (see 1.12)

General information

8.67

1 The N arm of Port Davey is entered between Whalers' Point (43°18′·1S, 145°55′·3E) and Ashley Point, 1½ miles ENE. The arm leads 4½ miles N to the entrance to Davey River (8.71) in the NW part of Payne Bay.

Payne Bay, the N part of the N arm, is shallow and obstructed by rocks N of a line joining Curtis Point (43°14′·9S, 145°55′·5E) with Fitzroy Islands, 1 mile NE. Fitzroy Islands lie close SW of Fitzroy Point.

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Depths

8.68

1 Depths in the fairway decrease from about 16·3 m at the S end to 8 m about 2 miles N, at the S end of Payne Bay. The shores of the arm from Whalers' Point (43°18′·1S, 145°55′·3E) to Earles Point, 2 miles N, on the W side, and from Ashley Point to Berry head on the E side, may be approached to within 3 cables in depths of about 10 m, but off Earles Point, and between Berry Head and Woody Point on the E shore, there are depths of 5·5 to 7·0 m about 5 cables offshore.

Directions

(continued from 8.62)

8.69

1 **Caution.** See 8.62.

Directions. From a position SSE of Point Lucy (43°19′S, 145°54′E) the track leads NNE for 2 miles, passing (with positions from Whalers' Point Light (43°18′·1S, 145°55′·3E)):

ESE of Point Lucy (1½ miles WSW), thence:

WNW of Breaksea Islands (2¼ miles SE) (8.63), thence:

To a position ESE of Whalers' Point. A light (square metal framework tower, 4 m in height) is displayed from the point.

2 The track then leads N, passing:

W of Kathleen Island (1¾ miles ESE), which is faced with cliffs. Toogelow Beach, backed by cliffs, fronts the coast 7½ cables ESE of the island and Mavourneen Rocks, a group of islets and rocks below water, lie between Kathleen Island and the shore; a clear passage, useful for boats, leads between the island and the rocks. Thence:

E of Whalers' Cove (5 cables NNW), a small indentation lying between Whalers' Point and an islet close offshore about 1 mile N of the point, thence:

3 W of Ashley Point (1½ miles ENE), the S entrance point of Wallaby Bay, thence:

W of Berry Head (1¾ miles NE). Ashley Point and Berry Head are fringed by a rocky ledge but may be approached within 1 cable in depths of not less than 10 m. Thence:

E of Earles Point (2 miles N). The shore between Whalers' Point and Earles Point is fringed by reefs and rocks below water. Thence:

4 W of Schooner Point (3 miles NNE), fringed by a rocky ledge, which dries; thence:

E of Bond Bay (2½ miles N). This bay, entered between Earles Point and Curtis Point, 1¼ miles N, is mostly shallow; its head leads into James Kelly Basin, also shallow. Thence:

To a position between Curtis Point (3¼ miles N) and Woody Point (3¾ miles NNE), in Payne Bay. The shore from Woody Point to Fitzroy Point, 1¾ miles NW, is mostly fronted by islets and rocks.

Anchorage

8.70

1 Fairly sheltered anchorage may be obtained in the SE part of Whaler Cove (43°17′·7S, 145°55′·3E) during W or NW gales but it is exposed to the wind and sea if blowing hard from the SW.

Davey River

8.71

1 Davey River (43°13′S, 145°55′E) flows into the NW part of Payne Bay (8.67). Where it crosses its bar, it is 5 cables wide, between Carvers Point (43°13′·6S, 145°55′·4E), on the W shore, and Bar Point, ENE. A channel, with a depth of 0·7 m over hard sand, leads across the bar. The depth is greater after freshets.

Bramble Cove

General information

8.72

1 Bramble Cove (43°19′S, 146°00′E) is entered between Turnbull Head (43°20′S, 145°59′E) and Milner Head, 4 cables NNW. The cove forms a safe and spacious harbour surrounded by hills and protected by Breaksea Islands, across the entrance, from the heavy sea which rolls into Port Davey.

2 On the SW side of the cove, between Turnbull Head and Sarah Island, 3½ cables E, lies the entrance to Bathurst Channel (8.57). Sarah Island is separated from Hixson Point, on the mainland, by a boat passage ½ cable wide. On the N side of the cove, sandy beaches extend between Datum Point and Aylen Point, 2½ cables E, and also close E of the latter point. Elsewhere rocks fringe the cove.

Depths

8.73

1 Depths within the entrance to Bramble Cove decrease regularly from about 30·5 m in mid-channel to 5 m about 1 cable offshore. Both sides of the cove are bold and may be approached to within 1 cable in depths of 5 m.

Directions

(continued from 8.63)

8.74

1 Bramble Cove may be entered by either passing N of Breaksea Islands, through North Passage (8.66), or by passing S of the islands, through South Passage. South Passage affords the main approach to the cove and also to Bathurst Channel.

Anchorages

8.75

1 The best anchorages in Bramble Cove are in depths of about 11·1 to 11·7 m, hard sand, about 1¾ cables SSW and 1½ cables SSE of Datum Point (43°19′·3S, 145°59′·7E), which lies about midway along the N shore of the cove. These positions give good shelter from NW winds, reputedly the strongest here.

Minor bays and harbour

Outer part of Port Davey

8.76

1 **Spain Bay.** This bay, with two rocks above water in the middle of its entrance, lies between Hannant Point (43°21′·5S, 145°58′·1E) and Knapp Point, 8 cables W. The bay has not been surveyed. However with winds between E and S a boat may land on the SW side of the bay; this is impossible with winds from SW to NW.

Hannant Inlet. This inlet is entered between Hannant Point (43°21′·5S, 145°58′·1E) and O'Brien Point, 2 cables N. It is nearly closed across by Lourah Island close inside the entrance and is useless for any but very small craft.

Joe Page Bay

8.77

1 **Description.** Joe Page Bay (43°19′·0S, 146°03′·5E), also known as Long Bay, on the N side of Bathurst Channel,

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extends 1½ miles N from its entrance E of Opossum Point (43°20′·0S, 146°03′·4E). The S end of the bay affords useful anchorage for vessels of moderate draught, giving good protection from NW winds which blow with force between Little Woody Island (43°20′·4S, 146°02′·9E) (8.64) and Farrell Point, 1½ miles E.

2 **Dangers in the entrance** and S part of the bay include (positioned from Opossum Point):

A 4·8 m patch (2 cables NE).

Cone Rock drying 0·5 m (5 cables NE), lying at the outer end of a spit.

An Islet (5½ cables NE).

About 7 cables NNW of Opossum Point and 5 cables N of Cone Rock, spits with depths of less than 5·0 m over them, extend from each side of Joe Page Bay, almost joining to form a bar. The head of the bay, with Hehir Islet on its W side, is unsurveyed; reefs extend 2½ cables ENE of the islet.

3 **Spring River**, enters the head of the bay, and is navigable by boats, with a maximum draught of 1·5 m, for about 3½ miles. The bar at its entrance should be navigated with caution keeping about 27 m from the bluff on its E side. The channel at the head of the bay, close inside the river mouth, is very shallow and dries in places.

Bathurst Harbour

8.78

1 **General information.** Bathurst Harbour (43°21′S, 146°10′E) extends 4 miles E from the E end of Bathurst Narrows (8.65). Depths decrease rapidly E of Bathurst Narrows to a least depth of 4·8 m and there is a 3.9 m rocky patch 1¾ miles ENE of the E entrance, near the centre of the harbour. Otherwise the bottom is very even with depths of 5·3 to 8·5 m, with the deeper water being in the E part.

2 **Caution.** A very short, steep sea, dangerous for boats, forms rapidly with W or NW winds.

South side. The S shore is indented on its SW side by Melaleuca Inlet, also known as New Harbour Creek and on its SE side by Moulters Inlet, which extends about 1 mile S. Celery Top Islands, of which there are six, lie across the entrance to Melaleuca Inlet; White Rock, which is conspicuous, lies close off the NW end of the islands.

3 Melaleuca Inlet, navigable by boats with a maximum draught of 1·5 m, is a narrow channel which extends about 4 miles SSE to Melaleuca Lagoon, a large shallow basin. Kings Jetty is situated on the N side of the entrance to Melaleuca Lagoon.

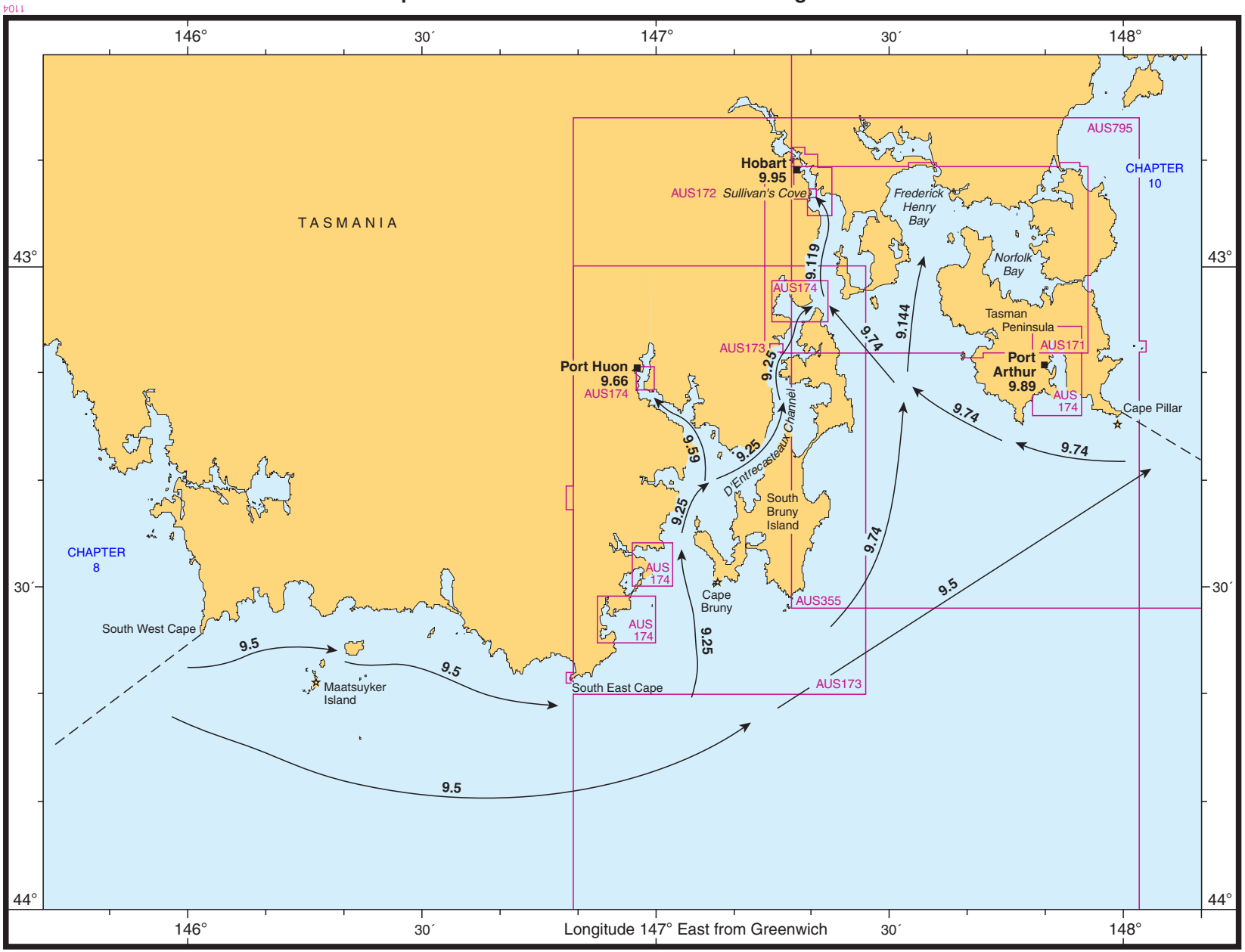
Dixon Islet, which is conspicuous, lies on a shallow spit extending 2 cables off the middle of the S shore.

4 **North side.** The N shore is indented on its NW side by North Inlet, on its NE side by Swan Cove and in the middle of the N shore lies Rowitta Harbour. Near the middle of North Inlet, which is the largest and extends 1½ miles N, lies Black Swan Island, with a very foul channel W of it and foul ground extending about 2½ cables S of it. North River flows into the head of North Inlet and Old River flows into Swan Cove, the smallest of the three bays. All three bays have not been surveyed.

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Chapter 9 - South Coast of Tasmania including Hobart



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CHAPTER 9

SOUTH COAST OF TASMANIA — SOUTH WEST CAPE TO CAPE PILLAR INCLUDING HOBART

GENERAL INFORMATION

Chart Aus 354

Scope of the chapter

9.1

1 The area covered by this chapter comprises the S coast of Tasmania extending 90 miles ENE from South West Cape (43°34′S, 146°02′E) to Cape Pillar (43°14′S, 148°01′E), the SE end of Tasman Peninsula. Included in the description are the anchorages in Adventure Bay (43°18′S, 147°21′E) (9.89), Port Arthur (43°10′S, 147°52′E) (9.85), Norfolk Bay (43°00′S, 147°48′E) (9.154) and River Derwent (42°55′S, 147°23′E) (9.108), suitable for deep-draught vessels, and the ports of Huon (43°10′S, 146°58′E) (9.66) and Hobart (42°53′S, 147°20′E) (9.95).

2 The chapter is divided into the following sections:

South West Cape to Cape Pillar (9.5).
D'Entrecasteaux Channel and Huon River (9.20).
Hobart and main approaches (9.72).
Frederick Henry and Norfolk Bays (9.141).

Topography

9.2

1 The W part of the S coast of Tasmania, between South West Cape and South East Cape, 35 miles E, is rugged, abrupt and barren, with projecting headlands supported by basalt columns like those of the Giants Causeway in Ireland. Although the coast is indented by several bays none afford shelter from onshore winds. Islands, islets and rocks lie up to 14 miles off this part of the S coast.

2 Between South East Cape and Cape Pillar the coast is deeply and extensively indented. South Bruny Island and North Bruny Island lie off the W part of this coast; the approaches to River Derwent, on which the city of Hobart stands, lead each side of these islands.

Fishing

9.3

1 **General.** Fleets of small fishing craft work in Storm Bay (43°10′S, 147°35′E), Frederick Henry Bay (42°55′S, 147°35′E) and along the E coast of Tasmania. Dunalley (42°53′S, 147°49′E), where there are canneries, is the headquarters of the fishing industry. Crayfish are the chief of several species caught.

2 **Marine farms.** Numerous marine farms have been established in the area covered by this chapter. They consist of floating or fixed structures with associated moorings and are generally marked by beacons or buoys which may be lit; they should be given a wide berth. The marine farms are shown on the charts but only the ones that affect navigation are described in this chapter.

Rescue

9.4

1 See 1.66 and *Admiralty List of Radio Signals Volume 5*.

SOUTH WEST CAPE TO CAPE PILLAR

General information

Charts Aus 354, Aus 795

Routes

9.5

1 From a position SW of South West Cape (43°34′S, 146°02′E) the coastal route (9.14) leads ESE, for a distance of 20 miles, passing SSW of Maatsuyker Island and Mewstone. Thence the route leads ENE, for a further 84 miles, passing SSE of South East Cape and NNW of the off-lying dangers of Pedra Branca, Eddystone and Sidmouth Rock, thence SSE of the entrance to D'Entrecasteaux Channel and across the main approaches to Storm Bay and Hobart, to a position SE of Cape Pillar (43°14′S, 148°01′E).

2 An inshore route (9.16) is also described which is used by local coasting vessels bound from the W coast to Hobart. From a position close SW of South West Cape this route leads E and ESE, for about 37 miles, passing between Flat Witch Island and De Witt Island, to a position close S of South East Cape (43°39′S, 146°50′E).

Topography

9.6

1 The W part of this coastline is rugged and abrupt. From a position S of South East Cape (43°39′S, 146°50′E) a picturesque view may be obtained on a clear day of the hilly country backing the coast, for a distance of 20 miles ESE, from Louisa Bay (43°31′S, 146°21′E) (9.19) to the cape.

2 Iron Bound Range stands in the foreground W of Prion Bay (43°32′S, 146°33′E) and farther E lies Precipitous Bluff (9.11). The great valley of New River lies between these mountain features with Arthur Range, a very picturesque comb-like ridge, in the far distance at its head. A massive rock formation at Fluted Point, close NW of South Cape (43°38′S, 146°42′E), is a distinctive feature in the foreground.

3 Mount La Perouse (9.11) stands 9 miles NNW of South East Cape. Catamaran River flows into Recherche Bay, through a valley lying between a spur extending E from Mount La Perouse and another extending SSE to the hills on South East Cape. From Mount La Perouse a ridge trends NW, and the main range runs 25 miles N, the highest part being Adamson's Peak, about 10 miles N of

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Mount La Perouse. From Mount Alexander, a not very remarkable peak, 1050 m (3446 ft) high, situated about 2 miles N of Mount La Perouse, a ridge trends E terminating in Lune Sugar Loaf (9.11); this ridge separates the valley of D'Entrecasteaux River, S, from that of Lune River, N, the former flowing into The Pigsties at the head of Recherche Bay, and the latter into Southport Narrows at the head of Southport.

4 The higher parts of the mountain ranges, above about 900 m, are usually rocky and precipitous but below this height the mountain sides and valleys are very thickly wooded.

The E part of this coast is dominated by South Bruny Island (43°25′S, 147°15′E) and Tasman Peninsula (43°07′S, 147°50′E) which are both hilly with rugged and cliffy shores.

Tidal levels

9.7

1 See information in *Admiralty Tide Tables*. For Maatsuyker Island (43°39′S, 146°16′E) the mean maximum range is about 1·2 m, mean minimum range about 0·2 m.

Local magnetic anomalies

9.8

1 Local magnetic survey results indicate that there are likely to be significant magnetic anomalies between Whale Head (43°38′S, 146°52′E) and Cape Pillar (43°14′S, 148°01′E), including the whole of South Bruny Island.

Climatic table

9.9

1 For Cape Bruny (43°30′S, 147°09′E) at 1.133 and 1.142.

Caution

9.10

1 At times there is broken water and evidence of breakers 5 cables S of South West Cape (43°34′S, 146°02′E) which seems to indicate the existence of a submerged rock; vessels should give the cape a berth of at least 1 mile. Caution is also necessary when approaching from the E as the prevailing winds are from the W and the long swell which rolls in with great force, in conjunction with the current, which generally sets E and towards the cape, sets a vessel very quickly to leeward.

Principal marks

9.11

1 **Landmarks:**

South West Cape (43°34′S, 146°02′E) (8.49).

Precipitous Bluff (43°28′S, 146°36′E), which stands out distinctly.

Pinder's Peak (43°32′S, 146°41′E), a prominent sharp-pointed cone with a spur extending S to South Cape; the most remarkable part of this spur is a dome-shaped wooded summit, 488 m high, which rises abruptly from flat country surrounding it.

2 Mount La Perouse (43°30′S, 146°45′E) standing out as a remarkable table-topped summit with precipitous cliffs on its S and SE sides.

Lune Sugar Loaf (43°28′S, 146°53′E), about 430 m high and appearing as a cone from all directions, standing at the E end of a ridge about 6 miles ENE of Mount La Perouse.

Cape Pillar (43°14′S, 148°01′E), the SE point of Tasman Peninsula, consisting of vertical basalt columns forming a flat surface on top. This is the most remarkable headland on the coast; the high land near it is mostly treeless.

9.12

1 **Major lights:**

Maatsuyker Island Light (white GRP hut, 2 m in height) (43°39′S, 146°16′E), standing near the centre of Maatsuyker Island.

Whale Head Light (white GRP hut, 4 m in height) (43°38′S, 146°52′E).

Cape Bruny Light (white GRP hut, 4 m in height) (43°30′S, 147°09′E).

Tasman Island Light (white round metal tower and lantern, 29 m in height) (43°15′S, 148°00′E); frequently obscured by cloud or fog.

Other aid to navigation

9.13

1 **Racon:**

Maatsuyker Island (43°39′S, 146°16′E); the racon transmits from Maatsuyker Lighthouse.

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

Directions for the coastal route

(continued from 8.53)

South West Cape to Cape Bruny

9.14

1 **Caution.** Maatsuyker Island Light (43°39′S, 146°16′E) (9.12) is obscured by Needle Rocks, within a narrow sector (072°–078°), when closer than 6 miles to the island.

From a position SW of South West Cape (43°34′S, 146°02′E) (8.49) the track leads initially ESE, passing (with positions from South West Cape):

2 SSW of Maatsuyker Island (11¾ miles ESE), one of a number of islands, islets and rocks, extending up to 12 miles S of Red Point, which make up Maatsuyker Group. There are mutton bird rookeries on the larger islands. Needle Rocks lie on a reef extending 1½ miles SW of Maatsuyker Island. A light (9.12) is displayed from the island and a disused lighthouse (white round brick tower, 13 m in height) stands near its S end. Thence:

3 To a position S of Mewstone (18 miles SE), the S-most islet of Maatsuyker Group, which is cliffy with rocks close E and W of it. It is the breeding place of the albatross and other birds.

The track then leads ENE, passing (with positions from South East Cape (43°39′S, 146°50′E)):

SSE of South Cape (5½ miles W); Soldier Bluff, a small point, lies close E of the cape. Thence:

4 SSE of South Cape Bay (2 miles NW), lying between South Cape and South East Cape. At the head of the bay, 4 miles ENE of South Cape, is Black Hole, a small cove, into which flows Black Hole Creek and South Cape Rivulet, via a common entrance. Thence:

SSE of South East Cape, 152 m high, with three hills on it. The cape is a double-headed promontory forming the S extremity of Tasmania. Thence:

5 SSE of Whale Head (2 miles E), 55 m high. A light (9.12) is displayed from the head; Bare Hill rises 2 miles N of the head. And:

NNW of the off-lying dangers of Pedra Branca, Eddystone and Sidmouth Rock, lying on a reef (14½miles SSE) with several rocky heads. Pedra Branca at the W end of the reef is a breeding place for gannets, and Eddystone, on the centre of the reef, resembles an irregular tower; Sidmouth

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Rock is the E-most danger of the reef. Another danger is that of Flying Scud Rock lying 2¾miles S of Pedra Branca; it has not been examined. Thence:

6 SSE of Second Lookout Point (5 miles ENE), a rocky projection, thence:

SSE of South Break (8 miles NE), with a depth of 2·7 m (charted as 2·4 m (8 ft) on Aus 354) over it. The sea breaks over this S danger of Actaeon Islands Group (9.31). Thence:

SSE of Southeast Break (9½ miles NE), a detached patch on which the sea breaks in heavy weather, thence:

7 To a position about 9 miles S of Cape Bruny (16½miles NE), off the entrance to D'Entrecasteaux Channel. Cape Bruny, the SW end of South Bruny Island, is a double-headed projection 89 m high; the land near it is covered with grass and scanty scrub. A light (9.12) is displayed from the cape; a disused lighthouse (white round stone tower) stands 2 cables WNW of this light.

8 **Useful marks:**

Fisher's Point Light (43°34′S, 146°55′E) (9.43).

Actaeon Island Light (43°32′S, 147°00′E) (9.31).

(Directions for D'Entrecasteaux Channel continue at 9.30)

Cape Bruny to Cape Pillar

9.15

1 From the position about 9 miles S of Cape Bruny (43°30′S, 147°09′E) the track continues ENE, passing (with positions from Tasman Head (43°31′S, 147°18′E)):

2 SSE of The Friars (1 mile SSW), which consist of several islets, some fertile, and numerous rocks, lying on a bank extending about 2 miles SSE and 1½miles SSW from Tasman Head. The largest and most prominent islet is 99 m (325 ft) high, and lies about 5 cables S of Tasman Head. From this islet a chain of smaller islets and rocks extends about 6 cables SE, terminating in a rock which is nearly awash and on which the sea usually breaks; the highest islet in this group is 29 m high; these islets are pyramidal in shape, and except where whitened by sea birds, have a black weather-beaten appearance. Another group, the biggest of which is 76 m (250 ft) high and appears to split in two when seen from SE or NW, lies about 5 cables SW of the largest islet of The Friars. And:

3 SSE of Tasman Head, the S point of South Bruny Island. Tasman Head is high, abrupt and composed of basalt pillars; it rises 5 cables N to an elevation of about 300 m. Bridge Rock, 1 cable E of Tasman Head, is 52 m high with some detached rocks within 1 cable of its S side. Thence:

SSE of Boreel Head (1½ miles ENE) (9.79).

The track then continues ENE across the approaches to Storm Bay, passing (with positions from Tasman Island Light (43°15′S, 148°00′E)):

SSE of Cape Raoul (9 miles W) (9.80), thence:

4 SSE of West Arthur Head (6½ miles WNW) (9.86), the W entrance point of Port Arthur (9.85), thence:

SSE of Tasman Island, which is 247 m (811 ft) high, rocky, bare, rugged and flat-topped; a light (9.12) is displayed from the island. At its SW end is a partly detached rock, with two peaks, the gap between this rock and island being perfectly straight and square; on one of these peaks is a large stone resembling a lighthouse on E or W bearings. Thence:

To a position SE of Cape Pillar (1 mile N) (9.11).

(Directions for the main approaches to Hobart are given at 9.79; directions for the coastal route along the E coast of Tasmania continue at 10.9)

Directions for inshore route

South West Cape to Flat Witch Island

9.16

1 **Local knowledge** is required. From a position about 3 miles SW of South West Cape (43°34′S, 146°02′E) (8.49) the track leads E, passing (with positions from South West Cape):

S of Karamu Bay (1 mile NE), thence:

S of Wilson Bight (2¾ miles NE); Wilson Rocks lie on the SW side of this bight. Thence:

S of Telopea Point (3½miles ENE), off which lies an islet; on the E side of the point is a small indentation known as Amy Harbour. Thence:

S of Ketchem Bay (4¼ miles NE), in which there are three islets, thence:

2 S of New Harbour Point (5½ miles NE), the W entrance point of New Harbour; the point is fringed with dangerous rocks. The entrance to New Harbour, with two islets in it, is 1 mile wide; Falls Creek enters the head of the harbour. Thence:

S of Cox Bluff (7½ miles ENE), a massive quartzite mountain separating New Harbour from Cox Bight (9.18). The S and SE sides of the bluff are high cliffs; a dangerous rock lies close off its SW end and another off its SE end. Thence:

S of Red Point (11½ miles ESE) (9.18), and:

3 To a position close N of Flat Witch Island (11½miles ESE). Flat Witch Island is the N islet of several lying off the N end of Maatsuyker Island (43°39′S, 146°16′E) (9.14). A light (9.12) is displayed from Maatsuyker Island.

Caution. Maatsuyker Island Light is obscured, within a large sector (170°–259°), N and E of the island.

See also caution at 9.10.

Flat Witch Island to South East Cape

9.17

1 From the position close N of Flat Witch Island (43°37′S, 146°17′E) the track leads ESE, passing (with positions from Flat Witch Island):

2 Between Flat Witch Island and De Witt Island (3¼miles ENE). In 1985 it was reported that a shoal, with a depth of 11 m (36 ft) over it, lay midway between De Witt Island and Flat Witch Island. De Witt Island, with Temple Point its E point and known locally as Big Witch, is the largest of Maatsuyker Group. The NE point of the island is a very prominent bluff of white quartzite or conglomerate, known as Baldy. Black Witch Reef, with dangerous rocks on it, extends 1½miles N of the NE point of De Witt Island. Thence:

3 NNE of Round Top Island (4 miles ESE) and Flat Top Island, close NE, thence:

SSW of Havelock Bluff (8¾ miles NE) and NNE of Mewstone (8 miles SW) (9.14), thence:

SSW of Isle Du Golfe (11 miles ENE), lying in the centre of the approach to Prion Bay; the bay is open S. Thence:

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SSW of Hen Islet (13 miles ENE). New River Lagoon, forming the mouth of New River (9.6), is entered 1¾ miles N of Hen Islet. Thence:

4 SSW of Point Vivian (14 miles ENE); Chicken Islet lies close off the point. Rocky Boat Harbour lies in the SE corner of the bay on the NW side of Point Vivian. Thence:

SSW of Surprise Bay, which is entered between Shoemakers Point (16 miles E) and Pretty's Point, 1½miles NNW. Surprise Creek enters the head of Surprise Bay. Thence:

SSW of South Cape (18 miles E) (9.14); Fluted Point (9.6) lies close NW of South Cape. Thence:

To a position S of South East Cape (23¼ miles E) (9.14).

(Directions for D'Entrecasteaux Channel are given at 9.30 and for the coastal route to Cape Pillar at 9.14 and 9.15)

Minor bays

Cox Bight

9.18

1 Cox Bight is entered between Cox Bluff (43°32′S, 146°12′E) (9.16) and Red Point, 4¼ miles E. The bight is open S but sheltered from W and NW winds by Cox Bluff.

From its entrance Cox Bight recedes about 4 miles to a sandy beach which forms its N shore; there is a lagoon at the W end of this beach. The beach is divided by Point Eric, on the W side of which there is a landing in good weather.

The E shore of the bight is considerably indented, the principal projections being Bridge Point, 1½miles NW, and Scrub Point, 2 miles NNW, respectively of Red Point.

Louisa Bay

9.19

1 Louisa Bay (43°31′S, 146°21′E), 2 miles E of Red Point, has a width of about 1 mile and recedes about the same distance. An islet lies close off its W entrance point, and Louisa Islet, which is larger, lies on the E side of the entrance. Two rivers, of which the E-most is Louisa River, flow into this bay.

Between Cox Bight (9.18) and Louisa Bay is a spur, from where hills rise to the Bathurst Range. Mount Counsel lies at the S end of this range, which extends about 5 miles NNW.

D'ENTRECASTEAUX CHANNEL AND HUON RIVER

GENERAL INFORMATION

Charts Aus 173, Aus 171

Area covered

9.20

1 This section describes D'Entrecasteaux Channel, a smooth water passage, and Huon River leading to Port Huon (9.66). D'Entrecasteaux Channel may also be used as an alternative approach to Hobart (9.95). The principal activities on the shores of this waterway are timber felling, fruit growing and farming.

The section is arranged as follows:

D'Entrecasteaux Channel (9.25).
Huon River (9.59).

Port limits

9.21

1 D'Entrecasteaux Channel, Huon River and Port Huon lie within the port limits of Hobart. The S limit of the port of Hobart, within the area covered by this section, is an imaginary line, as shown on the chart, drawn 052° from Southport Bluff (43°29′S, 147°00′E) to the NW end of Labillardiere Peninsula, 5¼ miles NE.

Notice of ETA

9.22

1 Requests for pilots should be made to the Harbour Master, Hobart, giving ETA at least 24 hours in advance. Confirmation or amendment should be made as follows:

Six hours in advance of ETA if embarking the pilot at the S end of D'Entrecasteaux Channel, off Burnett Point.

Two hours in advance of ETA if embarking pilot off Kelly's Point.

Pilotage

9.23

1 Pilotage is compulsory for all vessels over 35 m in length. The pilot boards in the following positions:

For the S approach, through D'Entrecasteaux Channel to Port Huon and Hobart, in the vicinity of 43°26′·3S, 147°03′·8E, off Burnett Point.

For the N approach to Port Huon, in the vicinity of 43°03′·8S, 147°23′·3E, off Kelly's Point.

For further details see 9.111 and *Admiralty List of Radio Signals Volume 6 (4)*.

Marine farms

9.24

1 See 9.3.

D'ENTRECASTEAUX CHANNEL

General information

Chart Aus 173

Route

9.25

1 From a position about 9 miles S of Cape Bruny (43°30′S, 147°09′E) the route leads N and NNE, for a distance of about 40 miles, through D'Entrecasteaux Channel, passing between South Bruny Island (43°25′S, 147°15′E) and North Bruny Island and the mainland between South East Cape (43°39′S, 146°50′E) and Pierson's Point, 42 miles NNE, to the mouth of River Derwent. The fairway has a least depth of 11 m over a least width of about 4 cables.

Yacht marker buoys

9.26

1 Permanent yacht marker buoys (cylindrical and orange) and temporary yacht marker buoys (cylindrical and yellow) may be found close off the shores of D'Entrecasteaux Channel. The permanent buoys are shown on the chart.

Care should be taken to avoid confusing these with normal navigational marks.

Prohibited anchorages

9.27

1 Anchorage is prohibited within ½cable of the following submarine cables:

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Between Woodcutters' Point (43°07′S, 147°18′E) and Simmond's Point, 1 mile WNW. The landing points are each marked by a beacon (yellow diamond topmark).

Between Dennes Point (43°04′S, 147°21′E) and Tinderbox Point on the W shore, about 8 cables NW.

For further information on submarine cables see 1.33.

Natural conditions

9.28

1 **Local magnetic anomalies.** Local magnetic survey results indicate that there is likely to be a significant magnetic anomaly in the vicinity of Southport (43°27′S, 146°59′E) (9.48). See also 9.8.

Flow. A N-going current with a rate of 1 to 2 kn, but much influenced by the winds, prevails in D'Entrecasteaux Channel, except during spring tides after a continuation of light winds. Under these latter conditions, the tidal streams predominate and set N and S; their strength is greatest off Three Hut Point (43°16′S, 147°15′E) and off Middleton (43°14′S, 147°15′E), where they attain a rate of ¾to 1 kn.

Principal marks

9.29

1 **Landmarks:**

Lune Sugar Loaf (43°28′S, 146°53′E) (9.11).

Red cliffs (43°19′S, 147°04′E), 46 m high, which are conspicuous.

Mount Wellington (42°54′S, 147°14′E) (chart Aus 171) (9.78).

Major light:

Cape Bruny Light (43°30′S, 147°09′E) (9.12).

Directions

(continued from 9.14)

Approach

9.30

1 When approaching D'Entrecasteaux from the W do not attempt to pass W of Actaeon Islands Group in the S entrance and do not allow Whale Head (43°38′S, 146°52′E) to bear less than 246° until Burnett Point (43°26′S, 147°01′E) bears 353°, thence head into the channel.

From seaward to Rossel Point

9.31

1 From a position about 9 miles S of Cape Bruny (43°30′S, 147°09′E) the track leads NNW, passing (with positions from Cape Bruny):

WSW of The Friars (6¾miles ESE) (9.15), thence:

WSW of Tasman Head (6¾miles ESE) (9.15), thence:

ENE of Southeast Break (7 miles SW) (9.14), lying off the SE side of a 3 mile long elongated area of dangers, which includes Actaeon Island, Sterile Islet and many shoals, rocks and reefs, thence:

2 WSW of East Cloudy Head (4½ miles E). Between East Cloudy Head and Tasman Head, 2½miles SE, the coast is bold, rocky and precipitous. The land behind it rises in smooth grass and scrub covered summits, from about 250 to 300 m high, to Mount Bruny, a saddle-shaped summit covered with scrub. And:

ENE of Deepwater Bank (6½ miles SW), a small bank over which the sea breaks. Sterile Islet lies on the reefs 1 mile WSW of Deepwater Bank; it is covered with grass and bushes and its NW end is marked by an obelisk, thence:

3 ENE of Actaeon Island (6½ miles WSW), covered with grass and scrub and almost divided into three parts, the N neck being dry at LW and the S neck above water. The island is a mutton bird reserve. A light (metal pedestal, 4 m in height) is displayed from the N summit of the island. And:

4 WSW of Court's Island (5 cables WSW), close off the SW head of Cape Bruny (9.14), from where a light (9.12) is displayed; a group of rocks, the highest 15 m high, lies close S of the cape. Court's Island is flat-topped, grassy and precipitous; Court's Rock, steep-to on its S side, lies 1 cable SW. A rocky bank with depths of 22 to 30 m extends 2¼ miles SW from Cape Bruny; the sea breaks on this bank in heavy weather.

9.32

1 The track then continues NNW, passing (with positions from Cape Bruny):

WSW of Elephant Rock (1 mile NNW), lying at the S end of a bight formed by the W side of Labillardiere Peninsula, and:

2 ENE of George III Rock (7 miles WSW), a dangerous rock surrounded by kelp, but, except in heavy weather, the sea seldom breaks on this rock. The coastline to the W of the rock for about 1 mile N of Eliza Point (43°32′S, 146°57′E) (9.41) is rocky and then extends 2 miles NNE as a narrow tongue to the entrance of Southport Lagoon; the entrance is about 1 cable wide and generally has a heavy surf across it. Thence:

3 ENE of Blanche Rock (6 miles W) which is bare; a few rocks, drying and below water extend 1 cable SSE of the rock. Thence:

WSW of Standaway Bay (2½miles NNW); detached rocks, 0·6 m high, lie in this bay up to 2½cables offshore but everywhere in the bay there is deep water 5 cables offshore. And:

4 ENE of Southport Island (6 miles WNW), behind which stands Southport Bluff. The island has cliffy sides and a flat grass-covered top; a smaller islet lies midway between it and the shore. Southport Bluff is 20 m high and surmounted by a tomb. Thence:

WSW of Hen and Chicken Rocks (3¾miles NNW), thence:

5 To the vicinity of the pilot boarding station ENE of Rossel Point (6½miles NW), the N entrance point of Southport (9.48). Stack of Bricks, steep-to, lies close off Rossel Point.

Useful mark:

Hopwood Point Light (43°25′S, 147°06′E) (9.33).

Rossel Point to Esperance Point

9.33

1 From the position ENE of Rossel Point (43°27′S, 147°01′E) the track leads N, passing (with positions from Hopwood Point Light (43°25′S, 147°06′E)):

E of Burnett Point (3 miles WSW), near where there are cliffs 30 m high, thence:

W of Point Labillardiere (7 cables S); some rocks, 6 m high, lie close off the point and Mount Bleak, with scrub on its SW slopes, stands 2½cables E. Thence:

W of Pineapple Rocks (3½ cables S), thence:

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2 W of Hopwood Point from where a light (metal pedestal, 2 m high) is displayed. The point forms the NW end of Labillardiere Peninsula, about 90 to 150 m high, which extends about 5 miles NW from Cape Bruny. Thence:

E of Brown's Point (3 miles W), a rocky promontory separating Sisters Bay, S, from Lady Bay, N; there are dangerous rocks along the shores of these bays in which depths range from about 5 to 20 m. A rocky islet, 2 m high lies on the outer part of a reef extending 2 cables E from the S entrance point of Sisters Bay. And:

3 W of Partridge Narrows (7 cables NNE), a drying channel which separates Partridge Island from the N end of Labillardiere Peninsula. The narrows are covered by the red sector (210°–224°) of Hopwood Light. Thence:

To a position W of Partridge Island (1 mile N), wooded and 70 m high. The island, and a small jetty on its E point, are privately owned.

9.34

1 The track then leads NNE, passing (with positions from Hopwood Point Light):

ESE of Tower Bay (3 miles NW); the shore from Tower Bay to Scott Point, 2½miles NNE is cliffy and rocky. Thence:

ESE of Lippie's Point (3¼ miles NW) on the S side of which lies Little Garrett's Bight, thence:

ESE of Scott Point (4 miles NNW), the S entrance point of Port Esperance (9.50). Lomas Point lies close N of Scott Point and Garrett's Bight lies on the S side of Scott Point. Thence:

2 To a position ESE of Esperance Point, the S part of Blubber Head and the N entrance point of Port Esperance.

Caution. Hopwood Light is obscured (198°–210°) to the N and E by Partridge Island.

Useful marks:

Fire watchtower on Tyler's Hill (43°23′S, 147°00′E).
Hope Island Light (43°20′S, 147°03′E) (9.50).
Huon Island Light (43°18′S, 147°08′E) (9.35).
Zuidpool Rock Light (43°20′S, 147°10′E) (9.35).

(Directions for Huon River continue at 9.62)

Esperance Point to Three Hut Point

9.35

1 From a position ESE of Point Esperance (43°20′S, 147°04′E) the track leads NE, passing (with positions from Zuidpool Rock Light (43°20′S, 147°10′E)):

SE of a group of red cliffs (4 miles WNW) (9.29), thence:

SE of Huon Point (3½ miles NW) (9.62), thence:

2 Clear of Zuidpool Rock which is steep-to, lying near the middle of D'Entrecasteaux Channel. A light (yellow framework tower) is displayed from the rock. Two isolated shoals, with depths of 10·0 m and 7·9 m over them, lie about 1 mile SE and ESE, respectively, of Zuidpool Rock; a marine farm lies 2½ miles WNW of it. And:

3 NW of Ventenat Point (1¾miles SSE), the N point of a tongue of land which separates Great Taylor's Bay (9.52) from Little Taylor's Bay (9.53). The point is scarred by a quarry; a dangerous rock, the N side of which is marked by a beacon (green), lies close N of the point. And:

4 SE of Huon Island (2¼miles NNW), which is remarkably green and wooded in its centre, with a height of 76 m to the tops of the trees. A light (silver framework tower on concrete base) is displayed from the SW side of the island. Thence:

SE of Ninepin Point (2½ miles N) the E entrance point of Huon River; a group of rocks lies close off the point. Thence:

5 SE of Arch Rock (2¼miles NNE), 15 m high; anchorage may be obtained in a depth of 11 m about 2 cables N of the rock which is covered by the red sector (260°–308°) of Garden Island Point Light (9.62). A remarkable white cliff stands 7 cables NNE of the rock.

9.36

1 The track then continues NE, passing (with positions from Zuidpool Rock Light):

NW of Satellite Island (2¼ miles ENE) which is connected to the shore, 5 cables ESE, by Mills Reef; its coast is formed by accessible cliffs between about 12 and 21 m high. The island is cultivated, with a thick growth of trees on its W side. Thence:

2 NW of Alonnah (3½ miles ENE), a village. There is a breakwater off the village, from where a light is displayed. Thence:

NW of Sheepwash Light (white pedestal, red lantern, 2 m in height) (4 miles ENE) standing on the W entrance point of Sheepwash Bay, thence:

3 SE of Pensioners Bay (4½ miles NE), close SW of Three Hut Point; Mount Royal, 363 m high, stands behind the bay. Thence:

To a position SE of Three Hut Point (4¾ miles NE) from where a light is displayed. Two small jetties lie off the village of Gordon which stands on Three Hut Point. Anchorage may be obtained, with shelter from W and NW winds, off the point; there is a good berth in a depth of 8·2 m, mud, 2 cables SE of the jetties.

Useful mark:

Fire watchtower on Pybus Hill (43°20′S, 147°14′E).

Three Hut Point to Kinghorne Point

9.37

1 From the position SE of Three Hut Point (43°16′S, 147°14′E) the track continues NNE keeping slightly to the E side of the channel, passing (with positions from Three Hut Point):

2 ESE of Long Bay Shoal (close NNE), which fronts the W shore of D'Entrecasteaux Channel between Three Hut Point and Fleurty's Point, 4¾ miles N, taking care not to close the E shore within 5 cables in order to clear the rocky shoal ridge SSW of Simpson's Point, thence:

ESE of a light-beacon (red pile, port hand) (2 miles NNE), from where a submarine cable is laid to the shore, thence:

3 WNW of Simpson's Point (2¾miles NE), a low and rocky point, lying at the N end of a tongue of land forming the W side of Isthmus Bay (9.54). A ridge of hills S of the point attains a height of over 240 m at the S end of this tongue of land. A shoal spit, with a least depth of 8·8 m over it, extends 1¼miles SSW of Simpson's Point and there are isolated shoals, with depths of 9·7 m over them, 3 cables NW and 8 cables N of the point. Thence:

4 ESE of Middleton (2¼ miles NNE), a small village; anchorage may be obtained in a depth of about 8 m, 4 cables off Middleton. Magpie Hill stands

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close N of Middleton; from the hill a range rises to a height of over 600 m about 5 miles NW and farther N to over 700 m with long spurs extending to the shore, the mountains and valleys being everywhere thickly wooded. Thence:

5 To a position ESE of Whaleboat Rock (2¾miles NNE). The W shore of North Bruny Island, opposite Whaleboat Rock, is indented by several bays and coves, including those of Fancy Bay (5 miles ENE) and Little Fancy Bay (5½miles NE).

9.38

1 The track then leads NNW, passing (with positions from Three Hut Point):

ENE of Dripstone Point (3½ miles N) and WSW of the entrance to Great Bay (6 miles NE); Ford Bay lies at the S end of Great Bay and Adam's Bay at the N end. Thence:

Clear of Green Island (4¾ miles NNE) keeping about 3 cables off. The island is grass covered with a few bushes on it; a light (white metal tower, 2 m in height) is displayed from the island. And:

2 WSW of Stockyard Point (6½ miles NNE), the E entrance point of Missionary Bay; the bay is shallow. Thence:

ENE of Flowerpot Rock (4¼ miles N) taking care, if passing W of Green Island, to avoid the outer part of Long Bay Shoal abreast the rock, thence:

WSW of Soldiers Point (5¾ miles NNE), the W entrance point of Missionary Bay. A shoal, with a reported depth of 7·5 m, lies 4 cables WSW of Soldiers Point, thence:

ENE of Fleurty's Point (4¾ miles N), and:

3 WSW of Snake Islet (6 miles NNE) which is grass covered and stands in the middle of a bay. A beacon (pile, starboard hand) marks a rocky shoal, with a depth of 1·2 m over it, at the outer end of dangers extending 2½cables SW from Snake Islet. Thence:

ENE of Birch's Bay (5½miles N); Yellow Point and Green Patch Point project into the bay. And:

WSW of Umbrella Point (6 miles NNE), thence:

4 To a position in mid-channel between Kinghorne Point (6¼miles N) and Birch's Point, 1¼miles W. A light (white framework tower, 6 m in height) is displayed from Kinghorne Point.

Clearing line:

From a position ENE of Three Hut Point (43°16′S, 147°14′E) the line of bearing, 015°, of Green Island kept ahead, clears all dangers off the W and E shores, to a position E of Whaleboat Rock.

Charts Aus 173, Aus 171

Kinghorne Point to Pierson's Point

9.39

1 From the position between Kinghorne Point (43°10′S, 147°17′E) and Birch's Point, 1¼miles W, the track leads NNE, passing (with positions from Bligh Point (43°05′S, 147°19′E)):

ESE of Peppermint Bay (5¾ miles SSW), where a jetty fronts the village of Woodbridge; a light is displayed from the jetty. Anchorage may be obtained in a depth of 11 m, mud, 3½cables E of Woodbridge. Thence:

2 ESE of Helliwell's Point (5¼ miles SSW), which separates Little Peppermint Bay from Peppermint Bay. A stranded wreck lies on the S side of Little Peppermint Bay, which is shallow. Thence:

WNW of Apollo Bay (4¼miles SSW), entered between Kinghorne Point and Robert's Point, 1¼miles N, thence:

WNW of Robert's Point (4 miles SSW) from where a light (red metal framework tower, 3 m in height) is displayed, and:

3 ESE of Deadmans Point (4¼ miles SSW), which separates Trial Bay, a shallow bay to the N, from Perch Bay, to the S, thence:

ESE of Little Oyster Cove (3¾ miles SW) (9.55), thence:

WNW of Lennonville Point (3 miles S), the S entrance point of Barnes Bay (9.56). A light (red tripod, 3 m in height) is displayed from the point. And:

ESE of Oyster Cove Point (3 miles SSW), a rounded point which separates Oyster Cove, to the N, from Little Oyster Cove, to the S, thence:

4 WNW of Speculator Point (2¼miles S). Shelter Cove lies E of this point; a jetty lies near the head of the cove close off the quarantine station for the port of Hobart. Anchorage may be obtained in a depth of 18 m, mud, at the entrance to Shelter Cove, partially sheltered from the NW. And:

ESE of Channel Rock (2¼ miles SSW), a steep-to rock lying at the end of a shoal spit extending 2 cables S from Simmond's Point. When passing this rock keep slightly to the E of the channel.

9.40

1 The track then continues NNE, passing (with positions from Bligh Point):

Between Simmond's Point (2¼miles SSW) and Woodcutters' Point (2 miles S), thence:

ESE of Peartree Bay (1½ miles SW), thence:

WNW of Langford's Point (4 cables S), the S entrance point of Killora Bay; there is a jetty in Rat Bay 3 cables S of this point. Thence:

ESE of Snug Point (1 mile W), a high and rocky point, thence:

2 WNW of Bligh Point, from where a light (white metal pedestal, 2 m in height) is displayed. Between Bligh Point and Dennes Point, 1½miles NE, the coast is fronted by Nebraska Beach behind which stand several buildings, thence:

ESE of Tinderbox Point (1½ miles N); there is a beacon (S cardinal) close S of this point. Anchorage may be obtained in Tinderbox Bay, to the W of the point, about 7 cables from the shore in depths of 15 m, mud, thence:

3 WNW of Dennes Point (1½miles NE), the N entrance of a small bay; Dennes Point, a village which is fronted by a jetty stands at the S end of this bay. thence:

ESE of Pierson's Point (2¼ miles NNE), which is high and cliffy; a light (white framework tower, 5 m in height) is displayed from the point. Thence:

To a position E of Pierson's Point in the entrance to River Derwent.

4 **Useful marks:**

Leading lights, in line bearing 194°, standing 6 cables ENE of Robert's Point (43°09′S, 147°17′E), which lead to a ferry terminal.

Little Oyster Cove Leading Lights (43°07′·7S, 147°15′·3E) (9.55).

(Directions for Hobart continue at 9.119)

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Recherche Bay

Charts Aus 173, Aus 174 plan of Recherche Bay

Description

9.41

1 Recherche Bay (43°33′S, 146°54′E), a large bay at the SW end of D'Entrecasteaux Channel, is entered between Fisher's Point (43°34′S, 146°55′E) and Eliza Point, 2½miles NNE. The bay is divided into Rocky Bay (9.45), the S area, and The Pigsties (9.46), the N area.

Catamaran River, spanned by a bridge near its mouth, flows into the head of the bay. Between Eliza Point (43°32′S, 146°57′E) and Sullivan Point, 1¾miles WSW, a low shore formed by Little Lagoon Beach, fronts Blackswan Lagoon.

Caution

9.42

1 The N approach to Recherche Bay, between Eliza Point, and Actaeon Island, 2 miles E, is partially obstructed by several reefs. Black Reef, the most prominent, consists of a group of drying rocks lying about 1 mile ESE of Eliza Point; kelp grows thickly around the reef. Another danger is that of Bowden's Mistake, a dangerous rock lying on a shoal bank which extends 2 cables S from Eliza Point.

Directions are only given for the S approach to Recherche Bay.

Directions

9.43

1 From a position about 5 miles ENE of Whale Head (43°38′S, 146°52′E) (9.14) the track leads NNW, passing (with positions from Fisher's Point Light (43°34′S, 146°55′E)):

ENE of Three Tree Reef (2¼ miles S), thence:

ENE of Second Lookout Point (1¾ miles S) (9.14); there is a landing place in Mouldy Hole, close N of this point. Thence:

WSW of South Break (2¾ miles E) (9.14), thence:

ENE of First Lookout Point (7 cables S); the shore S of this point is bold and rocky. Thence:

2 To a position about 1¼ miles E of Fisher's Point from where a light (white metal framework tower, 6 m in height) is displayed. Fisher's Point is low and grassy.

The track then leads NW, passing:

SW of Blind Reef (1½ miles NE) which is steep-to except on its N side; there are patches of kelp to the N and NW of the reef. The sea breaks very little over this reef even in moderate weather. Thence:

NE of Fisher's Point, thence:

3 SW of Foxy Break (1½miles NNE), marked by kelp. In ordinary weather it may not break for hours until suddenly a very big roller sweeps over it. Thence:

NE of Denmark Reef (6 cables NW), marked by kelp, lying on the N side of the entrance to Rocky Bay (9.45), thence:

NE of Kelly Rocks (7 cables NW), a reef with some above-water rocks on it, and:

4 SW of The Images (1½ miles N), a group of small islets lying midway between Foxy Break and Sullivan Point, thence:

Between Needle Point (9 cables NW) and Sullivan Point (1½ miles N) to the main anchorage, as shown on the chart. An area of dangerous below-water rocks, reported 1992, lie 3 cables NW of Needle Point.

Useful marks:

Obelisk on Sterile Islet (43°33′·2S, 146°59′·5E) (9.31).

Actaeon Island Light (43°32′S, 147°00′E) (9.31).

Anchorage

9.44

1 The anchorage in Recherche Bay, in depths of about 13 to 17 m sand, is much exposed to E and SE gales; these are not of frequent occurrence but when they do occur send in a heavy sea. Vessels of light draught should anchor well W in the bay and on the approach of gales from the E and SE take shelter in The Pigsties (9.46).

Rocky Bay

9.45

1 **Description.** Rocky Bay, on the S side of Recherche Bay, is entered between Fisher's Point (43°34′S, 146°55′E) and Needle Point, 9 cables NW. The N side of its entrance is partially obstructed by Denmark Reef (9.43) and Kelly Rocks (9.43). The E side of the bay is shallow. Hills, which are thickly wooded and from about 180 to 275 m high, border the shores of Rocky Bay.

2 The W and NW sides of the bay are indented by several small coves, with The Waterhole, in which there are two piers, being the most significant.

The SW part of Rocky Bay is partially obstructed by Pearl Rock lying 3 cables N of the mouth of Cockle Creek which enters the head of the bay through Blowhole Valley.

3 **Directions.** If bound for Rocky Bay give Fisher's Point (43°34′S, 146°55′E) a berth of at least 2 cables and avoid the kelp off it. Then, with Gagen's Point, 9 cables WNW of Fisher's Point, ahead bearing about 270°, pass between Denmark Reef and the coastal bank WNW of Fisher's Point. Thence pass about 1 cable S of Gagen's Point and head towards The Waterhole.

4 **Anchorage.** Rocky Bay is unsafe as an anchorage and several vessels have been lost due to a heavy swell accompanying NE and E winds. Also heavy squalls can sweep down Blowhole Valley with great violence. However, in S winds and fine weather, vessels may anchor in a depth of 6·4 m, about 3 cables E of The Waterhole.

The Pigsties

9.46

1 **Description.** The Pigsties (43°32′S, 146°54′E), surrounded by thickly wooded country, lies between Bennett's Point, 7 cables NW of Sullivan Point, and Ryan's Point, 4 cables W. Shag Rock, which dries, lies in the middle of the entrance; the edge of the kelp is a good guide for the channel leading close E of this rock. The least depth in mid-channel is 9·1 m decreasing to 5·5 m inside. Foul ground, marked by kelp, extends 1½cables SW of the S side of Bennet's Point; the sea breaks on this ground in bad weather.

2 **Local knowledge** is required for entry.

Anchorage. The Pigsties is an excellent harbour for small craft, with very smooth water and a soft mud bottom on which vessels can safely lie aground.

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Caution. The N part of The Pigsties is covered by marine farms; see 9.3.

Other bays and anchorages

Chart Aus 173

Cloudy Bay

9.47

1 **Description.** Cloudy Bay (43°28′S, 147°13′E), a large bay, is entered between East Cloudy Head (9.31) and West Cloudy Head, 3 miles W; it is exposed to the full force of SW gales.

The S half of the E side of Cloudy Bay is rocky and irregular. On this side of the bay the principal dangers are Blue Devil Rock, lying on the W extremity of a reef, 1¾miles N of East Cloudy Head, and Cloudy Reef, with thick kelp on it, lying 3 cables NNE of Blue Devil Rock.

2 The W side of Cloudy Bay consists of steep cliffs falling from grassy downs about 90 to 200 m high. Mabel Bay, 1 mile N of West Cloudy Head, has depths of about 11 to 22 m, sand, within it; kelp grows up to 2 cables off the head of the bay. Point Grand stands on the N side of Mabel Bay.

The head of Cloudy Bay is formed by a long narrow tongue, on which there is often a heavy surf, separating Cloudy Bay Lagoon from the bay; a narrow channel leads from the NW corner of the bay into the lagoon. Low, swampy land lies up to 1½ miles N of the lagoon.

3 **Anchorage and shelter.** Except for small craft no vessel should anchor in Cloudy Bay, but if it is absolutely necessary to do so the best position is in Mabel Bay on the SW side of Cloudy Bay. Cloudy Corner, on the E side of Cloudy Bay, affords complete protection to small craft in all weathers.

Chart Aus 174 plan of Southport, Aus 173

Southport

9.48

1 **Description.** Southport (43°27′S, 146°59′E), in which vessels may anchor, is a large bay on the W side of the S entrance to D'Entrecasteaux Channel. It is entered between a rocky point 1 mile N of Southport Bluff (43°29′S, 147°00′E) and Rossel Point (1½ miles NNE) (9.32).

The S side of Southport, thickly wooded and from about 60 to 90 m high, is indented at the W end by The Deep Hole.

2 The N shore is formed by two bays separated by Burying Ground Point, a rocky point with kelp growing for about 1 cable S of it. A sandy beach fronts the W part of the E bay. Southport, a village where there is a jetty, stands behind the N side of the W bay; a light is displayed from the head of the jetty. There are depths of 5 to 8 m in the W bay, which has a thick bed of kelp extending W of Burying Ground Point, into it.

3 The W shore of Southport is fronted by a shallow bank which extends about 7½cables E of the entrance to Southport Narrows, at its S end. Pelican Islet, a low, grass-covered rock with some trees on it, lies on the E part of this bank, at the E edge of which there is thick kelp.

Southport Narrows is a shallow, muddy inlet, marked at its entrance by buoys. At the W end of the narrows is Major Honner's Bay, above which it opens into two branches, Ida Bay and Hastings Bay; Lune River (9.6) flows into the former, and at the N end of the latter is the village of Hastings.

9.49

1 **Anchorages.** The E bay on the N side of Southport is very much exposed E and SE and with winds from these quarters it would be unwise to anchor there. But it is well sheltered from NW gales with good holding ground E of Burying Ground Point. The best berth is 3 cables ENE of this point in a depth of about 13 m.

2 The W bay on the N side of Southport affords anchorage in a depth of 6·4 m, mud and sand, but is exposed S and SE; anchorage W of the kelp extending from Burying Ground Point might help to break the sea. The best berth, as shown on the chart, is in a depth of 6·7 m, 4 cables S of the jetty at the village of Southport.

3 On the SW side of Southport, anchorage may be obtained in The Deep Hole. This anchorage is more protected with winds from E, but the depths decrease rapidly on its NW side, and the deep water area is too narrow to allow anchoring near its head. The best berth is in a depth of 11 m about 2 cables SSW of Pelican Islet.

4 **Directions for the anchorage off the village of Southport.** From a position about 3 cables E of Pelican Islet the track leads NW into the W bay, keeping clear of the kelp, to a position N of Pelican Islet. Thence the E end of Pelican Islet, bearing about 188°, astern, leads to the anchorage S of the jetty, as shown on the chart.

Clearing line:

The line of bearing, about 140°, of Southport Island, just hidden by the land on the S side of Southport, clears SW of the kelp in the middle of the W bay.

Chart Aus 173

Port Esperance

9.50

1 **Description.** Port Esperance (43°20′S, 147°02′E), situated on the W side of D'Entrecasteaux Channel, S of Huon River, contains an anchorage and a jetty off the town of Dover, in the NW part of the port.

Port Esperance is entered between Scott Point (43°21′S, 147°03′E) (9.34) and Esperance Point, (1½miles N) (9.34). Inside the entrance the most prominent feature is Hope Island, with a few trees near its summit; a light (white metal pedestal, 2 m in height) is displayed from the E side of the island. Faith Islet, with a few trees on it, lies on the N edge of a bank extending 3 cables N of Hope Island.

2 The N side of Port Esperance is partially obstructed by Charity Islet, which lies on a reef near the outer end of a shoal spit, extending 8 cables SSE from the shore at Knobby's Point. A narrow channel, with a least depth of 12·8 m, leads between the outer end of this spit and the bank on which Faith Islet lies.

On the W side of Port Esperance lies Esperance Narrows, entered between Slack's Point and Hawker's Point, into which Esperance River flows. Rabbit Island lies in the entrance to Esperance Narrows and Chale Bay leads off SW about 1 mile WNW of the island. There is a depth of 9·1 m in the entrance on the N side of Rabbit Island.

9.51

1 **Anchorages.** The main anchorage in Port Esperance lies 1 mile WNW of Hope Island, in a depth of about 25 m, as shown on the chart. Anchorage with all round shelter may also be obtained in the channel, 3 cables wide, with depths of 11·9 to 40 m, mud and sand, S of Hope Island.

Other places to anchor lie in depths of about 7 to 15 m N of Hope Island, and in depths of about 11 to 15 m, sand and rock, between Faith Islet and Esperance Point with convenient anchorage 4 cables E of the islet.

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Berth. A jetty at the town of Dover, with a frontage of 31 m and a depth of 6·1 m alongside, can be used by vessels of up to 5·5 m draught. A light is displayed from the head of the jetty.

Great Taylor's Bay

9.52

1 **Description.** Great Taylor's Bay (43°26′S, 147°09′E), a large indentation in the E shore of D'Entrecasteaux Channel, is entered between the N end of Partridge Island (43°24′S, 147°06′E) (9.33) and Ventenat Point (4½miles NE) (9.35).

The main dangers within the bay are the drying reefs within Tinpot Bay, on the E side, and Taylor's Reef lying 4 miles SE of the W entrance point of the bay, 3 cables off the W shore. Taylor's Reef is marked by a beacon (isolated danger).

2 Mickey's Bay is the largest of several indentations between Tinpot Point and Oak Point on the E shore of the bay. Curlew Islet, grass covered, lies off the N entrance point of this bay. A sandy bay lies at the head of Great Taylor's Bay between Oak Point and Whare's Point, the S-most points on the E and W shores of the bay respectively.

Anchorage. Vessels may anchor off the E side of Partridge Island in a depth of 18 m, mud and sand. However Great Taylor's Bay is too large to afford shelter from gales at all times. In the bay the bottom is generally black mud, but hard; vessels have dragged their anchors even with a long scope of cable.

Little Taylor's Bay

9.53

1 **Description.** Little Taylor's Bay (43°22′S, 147°12′E), a moderately-sized bay on the NW side of South Bruny Island, is entered between Ventenat Point (9.35) and a point 1½miles ENE. The head of the bay is shallow and the E shore is fringed with The Big Reef extending up to 4 cables offshore between Point Winifred and the E entrance point about 1 mile N; there is a depth of 3·9 m on its outer edge about midway along the reef.

2 Daniel's Bay, on the E side of Little Taylor's Bay, is entered S of Winifred Point and is shallow; the village of Lunawanna stands at the head of the bay.

Anchorage. Large vessels may anchor in Little Taylor's Bay but it cannot be considered a good anchorage. Daniel's Bay is not recommended as an anchorage, being exposed to the NW from which the strongest gales, soon raising a heavy sea, are experienced.

Isthmus Bay

9.54

1 Isthmus Bay (43°15′S, 147°19′E) is a large bay approached from the N part of D'Entrecasteaux Channel. It is entered between Simpson's Point (9.37) and The Bluff, 2½miles E. The Bluff is composed of reddish cliffs with a rocky N point. A narrow isthmus (9.89), forming the E shore of the bay, joins South Bruny Island to North Bruny Island.

At the head of Isthmus Bay lies Simpson's Bay, on the W side of which stands the village of Simpson's Bay; there is a jetty at the village.

Charts Aus 173, Aus 171

Little Oyster Cove

9.55

1 **General information.** Little Oyster Cove (43°07′·5S, 147°15′·0E), lying at the N end of D'Entrecasteaux Channel on its W shore, contains two marinas, moorings for small craft, several small piers, and a vehicle ramp for the ferry connecting the mainland with North Bruny Island. Oyster Cove Marina lies at the head of the cove and South Haven Marina lies midway along the S shore; a light is displayed at the entrance to South Haven Marina.

2 The cove has depths of 6 to 11 m on its S side with shoal ground extending more than halfway across the cove from its N shore. The SE edge of the shoal ground off the N shore is marked by a beacon (starboard hand). The NW head of the cove dries.

Directions. The alignment (249°) of a pair of leading lights, standing close S of South Haven Marina, lead WSW into the cove to the ferry landing.

Barnes Bay

9.56

1 **General information.** Barnes Bay (43°08′S, 147°20′E), on the NW side of North Bruny Island, is entered between Lennonville Point, from where a light (9.39) is displayed, and Quarantine Point, a rounded point 6 cables ENE.

Quarantine Bay. The N part of Barnes Bay is formed by Quarantine Bay which lies on the E side of Quarantine Point; a pier stands on the W side of the bay.

2 **Simmond's Bay.** The E end and head of Barnes Bay is formed by Simmond's Bay, with depths of 5·5 to 7·3 m in it. The bay is entered through a narrow channel; a light (white tripod) is displayed from the SE point of the channel.

There are two jetties on the W side of the N arm of Simmond's Bay, on the E side of which is a vehicle ferry ramp. A light is displayed from a position close by the ramp.

3 **Sykes Cove.** The S part of Barnes Bay is formed by Sykes Cove. Dangerous rocks fringe the E entrance point of this cove and a shoal, with a depth of 3·6 m over it, lies 2 cables off the same point. Roberts Hill stands 7 cables SW of the head of Sykes Cove; it is a thickly wooded, double-topped hill and the summit of the peninsula between Barnes Bay and Great Bay, S of it.

Anchorage. Vessels may anchor in a depth of 13 m, mud, in a small cove close S of Lennonville Point.

Charts Aus 171, Aus 174 plan of North West Bay

North West Bay

9.57

1 **Description.** North West Bay (43°04′S, 147°17′E), a large bay, lies at the N end of D'Entrecasteaux Channel. The bay is approached, either from the S through D'Entrecasteaux Channel or from the E through River Derwent, and entered between Snug Point (43°05′S, 147°18′E) (9.40) and another high, rocky point, 1¾miles NNE.

2 On the S shore, which is cliffy in places, stands the small town of Coningham. Snug Bay lies at the W end of the S shore.

The W shore of the bay, on which stand the small towns of Snug, Electrona and Barretta, is lower and more accessible. It is indented by several small bays with Snug River flowing into the bay at its S end; the river is spanned by a bridge at its entrance.

3 The E shore of North West Bay is formed by a lofty peninsula on which stand Tinderbox Hills, separating the bay from River Derwent; the SW end of the peninsula forms the N entrance of the bay.

The N part of North West Bay terminates in a small bay, N of Dru Point (43°01′·7S, 147°16′·7E) covered with drying sand flats. The town of Margate stands 8 cables W

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of Dru Point and North West Bay River and Margate Rivulet enter the small bay close NNE of Margate.

9.58

1 **Landmark:**

Chimney (43°03′·6S, 147°15′·8E) standing in the carbide works S of Electrona.

Caution. There is a marine farm, off the carbide works at Electrona where a former commercial jetty stood. A beacon (port hand) marks the S edge of the sandbank off Barretta, 6 cables farther NNE.

2 **Anchorages.** Vessels may anchor, in depths of about 13 m, 5 cables NNW of Hurst Point (43°04′·6S, 147°16′·7E), off the town of Snug. There is also an anchorage, in depths of about 12 m, 6 cables SE of Dru Point.

3 **Berths:**

Fish cannery jetty (43°02′·4S, 147°16′·4E) on the NW side of North West Bay; a light (pole) is displayed from its head.

Explosives jetty (43°02′·8S, 147°18′·1E), T-shaped, midway along the E shore of North West Bay.

HUON RIVER

General information

Charts Aus 173, Aus 174

Route

9.59

1 From a position ESE of Esperance Point (43°20′S, 147°04′E), in D'Entrecasteaux Channel, the route leads N for 3¼ miles, entering Huon River between Huon Point (43°18′S, 147°06′E) and Ninepin Point, 3 miles E. The route then leads NW and N for 10 miles, along the centre of the river, to Hospital Bay and Port Huon.

Submarine cable

9.60

1 Care should be taken not to anchor near a submarine cable laid across the river from Shipwrights Point (43°09′·6S, 146°58′·7E), at Port Huon, ESE for 7½cables to the opposite bank. A beacon marks the landing place on the E bank.

For further information on submarine cables see 1.33.

Landmark

9.61

1 Disused lighthouse standing on the S end of Garden Island (43°16′S, 147°08′E).

Directions

(continued from 9.34)

Esperance Point to Beaupré Point

9.62

1 From a position ESE of Esperance Point (43°20′S, 147°04′E) the track leads initially N, passing (with positions from Huon Island Light (43°18′S, 147°08′E)):

W of Zuidpool Rock (2¼miles SSE) (9.35), thence:

E of a group of red cliffs (3¼ miles SW) (9.29), thence:

Clear of a marine farm (9.35), thence:

To a position between Huon Point (1¾ miles W), the W entrance point of Huon River, and Huon Island (9.35). On the W side of Huon Point lies Roaring Bay.

2 The track then leads NW, passing:

SW of Garden Island Point (1¼ miles N) from where a light is displayed; Charlotte Cove lies on the N side of the point. Between Garden Island Point and Ninepin Point, the E entrance point of Huon River, 1¼miles SE, the shore is fronted by Burgess Bank, a patch of hard sand and gravel with a least depth of 11 m over it, thence:

3 SW of Butts Reef (1¼miles NNW) which has dangerous rocks lying on it. Two beacons mark the reef. The reef is covered by the red sector (302°–320°) of Beaupré Point Light and by a red sector (064°–090°) of Garden Island Point Light, thence:

SW of Garden Island (2 miles NNW), and:

NE of Surveyors' Bay (2½ miles NW), thence:

4 SW of a marine farm (2 miles NW), thence:

SW of Garden Island Bay (2½miles NNW), entered between Garden Island Point and Cray Point, 2 miles NW; the bay is unsurveyed. Randall's Bay, with a pier close to its W entrance point, lies in the NW part of Garden Island Bay, thence:

NE of Barrett's Bay (3¼ miles NW), and:

SW of Cray Point (3 miles NNW), thence:

SW of Eggs and Bacon Bay; a beacon stands close off the S entrance point, thence:

5 SW of Cygnet Point (3½ miles NW), the E entrance point of Port Cygnet (9.71), thence:

NE of Granny Gibbon's Bay (4½miles NW) in which lies a dangerous rock, thence:

NE of Desolation Point (5¼ miles NW) on the W side of which lies Desolation Bay, thence:

To a position SW of Beaupré Point (5½miles NW); a light (white column, 5 m in height) is displayed from the point.

6 **Clearing marks:**

The alignment (327°) of Cygnet Point (43°15′S, 147°05′E) with Mount Windsor, 4½ miles farther NW, clears 2½ cables SW of Huon Island and Butts Reef.

Charts Aus 173, Aus 174 plan of Port Huon

Beaupré Point to Port Huon

9.63

1 From the position SW of Beaupré Point (43°14′S, 147°04′E) the track continues NW, passing (with positions from Brabazon Point (43°11′S, 146°59′E)):

SW of Gourlay's Bay (3¾ miles SE), lying between Beaupré Point and Poverty Point, 3 cables NW, thence:

NE of Brooks Bay (3 miles SE), thence:

NE of White Bluff (2½ miles SE), thence:

NE of Flowerpot Rock (2¼ miles SE), thence:

NE of Killara Bay (1¾ miles SSE), thence:

SW of Wheatleys Bay (1¾ miles SE), with a rocky spit extending 1 cable from its N end, thence:

2 NE of Surges Point (1¼ miles SE) on the SE side of which lies Surges Bay, thence:

SW of Petcheys Bay (1¼miles ESE), which is shallow with a dangerous rock in it, thence:

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Port Huon from SE (9.66)
(Original dated 1998)

NE of Hawson Bank (6 cables SSE), which extends 2 cables from the SW shore with depths of less than 10 m over it; the bank consists of hard sand and rock, thence:

NE of Waterloo Bay (8 cables S) to a position SW of Brabazon Point; a light (white metal column, 5 m in height) is displayed from the point.

3 The track then leads N, passing:

E of Cairns Bay (8 cables W), in which there is a jetty, thence:

W of Bullock Point (7 cables N), and:

E of Pillings Bay (1 mile NW); there is a jetty on the S side of the bay. Thence:

To a position close E of Whale Point (1¼miles NNW) from where the berths at Port Huon, in Hospital Bay, may be directly approached. A light (metal column, 4 m in height) is displayed from the point.

9.64

1 When manoeuvring within Port Huon keep well clear of the shoal bank on the E side of the river, extending 5 cables W from Lower Wattle Grove Jetty (43°10′·1S, 146°59′·6E); an obstruction lies 5 cables W of the head of the jetty. A shoal spit also extends 1¾ cables S from Shipwrights Point (43°09′·6S, 146°58′·7E), its S end being marked by a beacon and a buoy (port hand). On the NW side of the harbour the E edge of the shoal flat extending from the head of Hospital Bay is marked by Light-beacon B (port hand).

2 **Cautions:**

Beaupré Point Light (9.62) is obscured over a narrow sector (116°–122°) by trees on Poverty Point.

From Brabazon Point (43°11′S, 146°59′E) to Whale Point, 1¼ miles NNW, the width of navigable passage is restricted by marine farms, as shown on the chart; see also 9.3.

The submerged ruins of a jetty along with several mooring buoys lie close SE of the APM Jetty (9.69).

Huon River upper reaches

9.65

1 From Shipwrights Point (43°09′·6S, 146°58′·7E), the E entrance point of Hospital Bay, Huon River decreases in depth to less than 5 m and splits into narrow channels winding between drying banks and shoals. The channels lead NNE for about 8 miles to Huon Bridge, spanning the river. The river is obstructed by Egg Islands, 4 miles in length, which are low.

Local knowledge is required.

Port Huon

Chart Aus 174 plan of Port Huon

General information

9.66

1 **Position and function.** Port Huon (43°10′S, 146°58′E) is situated in Hospital Bay on Huon River, 23 miles SSW of Hobart, the capital city of Tasmania.

No commercial shipping has used the port since 1992. It was formerly used for exporting apples and wood pulp, and most recently for the import of bulk fishmeal.

Port limits. See 9.21.

Port Authority. Hobart Ports Corporation, PO Box 202, Hobart, Tasmania, 7001.

Limiting conditions

9.67

1 **Controlling depth.** In 2004 there was a least depth of 9 m in the approach channel to the berths.

Deepest and longest berth. Port Huon Wharf (9.69).

Maximum size of vessel handled: length 190 m; draught 9 m.

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Arrival information

9.68

1 **Notice of ETA.** See 9.22.

Pilotage. See 9.23.

Tugs. Obtained from Hobart.

Quarantine. The quarantine line for the port is drawn E from Whale Point (43°10′·3S, 146°58′·4E) to the E shore. See also 1.47.

Berths

9.69

1 **Anchorage.** Hospital Bay affords good anchorage, with plenty of room in its outer part, in a depth of 9 m, soft thick mud, 3 cables SSW of Shipwrights Point (43°09′·6S, 146°58′·7E).

Alongside berths:

APM Jetty, standing 4 cables NW of Whale Point, on the S side of Hospital Point: This jetty is no longer used and is partially dismantled.

2 Port Huon Wharf, standing on the NE side of Hospital Bay: E side, length 172 m, depth 7·6 m alongside; W side, length 203 m, depth 9·8 m alongside; a light (hut) is displayed from the head of the wharf.

Port services

9.70

1 **Facilities:** garbage disposal; local district hospital and Royal Hobart Hospital at Hobart.

Supplies: limited supplies of fuel delivered by road tanker; fresh water; provisions.

Communications: airport, 75 km from Port Huon.

Minor inlet

Chart Aus 173

Port Cygnet

9.71

1 Port Cygnet (43°12′S, 147°05′E), entered between Cygnet Point (43°15′S, 147°05′E) (9.62) and Beaupré Point, 1¾miles NW, contains several jetties for the use of small craft. General depths in the port vary from 10 to 20 m gradually decreasing towards its head, NNW of Crooked Tree Point, which dries. Cygnet, a small town, lies at the head of Port Cygnet, about 4 miles N of the entrance.

The sides of the inlet are indented by the following bays (positioned from Cygnet Point):

Sandrock Bay (5 cables NNE).

Abels Bay (7 cables NNE).

2 Kangaroo Bay (1 mile N).

Deep Bay (2 miles NNE), which dries, entered S of Deep Bay Point.

Rocky Bay (2½ miles N).

Copper Alley Bay (2½miles NNW), on the N side of Shag Point.

Purcells Bay (2¾ miles N).

Gardners Bay (3½miles N), which is shallow, entered N of Green Point.

Caution. Beaupré Point Light (9.62) is obscured within Port Cygnet.

HOBART AND MAIN APPROACHES

GENERAL INFORMATION

Charts Aus 795, Aus 171, Aus 172, Aus 173

Area covered

9.72

1 This section describes the main approaches to Hobart, through Storm Bay and River Derwent, and the port of Hobart.

The section is arranged as follows:

Main approaches to Hobart (9.74).

Hobart (9.95).

Fishing

9.73

1 See 9.3.

MAIN APPROACHES TO HOBART

General information

Chart Aus 795

Description

9.74

1 Storm Bay forms the main approach to River Derwent and Hobart from the S and E. It is bounded W by the E side of North Bruny Island from Cape Queen Elizabeth (43°15′S, 147°25′E) to the entrance of River Derwent, between Cape de la Sortie, 11 miles N of Cape Queen Elizabeth, and Iron Pot, an islet 2¼miles ENE. To the N the bay is bounded by the land between Cape Direction (43°03′S, 147°25′E), the E entrance point of River Derwent, and Cape Deslacs, 7 miles ENE. To the E the bay is bounded by the W coast of Tasman Peninsula between Cape Raoul (43°15′S, 147°48′E), the S point of the peninsula, to North West Head, 16 miles NNW.

Routes

9.75

1 Initially two routes are described, one for the S approach, leading from a position SSE of Tasman Head (43°31′S, 147°18′E), for a distance of 25 miles NNE, to a position NE of Cape Queen Elizabeth (43°15′S, 147°25′E), in Storm Bay, and one for the E approach, leading from a position SE of Cape Pillar (43°14′S, 148°01′E), for a distance of 26 miles W and NW, to the position NE of Cape Queen Elizabeth.

2 These combine to form a common route, which then leads NW, for a distance of about 12 miles, from Cape Queen Elizabeth, through Storm Bay, to a position about 1½miles E of Pierson's Point (43°03′S, 147°20′E), in the entrance to River Derwent.

Topography

9.76

1 The W side of the approach to Storm Bay is formed by the E coast of South Bruny Island between Tasman Head (43°31′S, 147°18′E) (9.15) and Cape Queen Elizabeth (9.79). A ridge of mountains, mostly thickly wooded, extends N along the E part of South Bruny Island.

2 The W side of Storm Bay is formed by the E coast of North Bruny Island. Between Cape Queen Elizabeth (43°15′S, 147°25′E) and Trumpeter Point, 5 miles N, the E coast of North Bruny Island is formed by flat-topped hills about 180 m high. The land behind the head of Trumpeter Bay, entered N of Trumpeter Point, is much lower but rises again N in undulating wooded heights of between about 90

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to 240 m as far as Cape de la Sortie, 6 miles N of Trumpeter Point.

3 The S and W coast of Tasman Peninsula forms the E side of Storm Bay and its E approaches. The peninsula is composed of wooded hills and fertile valleys, with many streams.

Local magnetic anomaly

9.77

1 A local magnetic anomaly, deflecting the compass up to 13° each way, is experienced in an area W of Betsey Island (43°03′S, 147°29′E), bounded approximately by a line drawn 144° from Iron Pot and 190° from the S end of Betsey Island. In 1930 HMS *Canberra* experienced an anomaly of 17° in this locality.

See also 9.8.

Principal marks

9.78

1 **Landmarks:**

Cape Pillar (43°14′S, 148°01′E) (9.11).

Mount Wellington (42°54′S, 147°14′E), conspicuous with a table top. Two radio towers, one painted white and the other, red and white stand on the summit.

Major light:

Tasman Island Light (43°15′S, 148°00′E) (9.12).

Directions

Charts Aus 173, Aus 795

South approach

9.79

1 From a position SSE of Tasman Head (43°31′S, 147°18′E) the track leads NNE, passing (with positions from Tasman Head):

Well clear of The Friars (1 mile SSW) (9.15), thence:

ESE of Tasman Head (9.15), thence:

ESE of Boreel Head (1½miles ENE), a double-headed point forming a bold headland, rising to 232 m at its N end, thence:

ESE of Mangana Bluff (5 miles NNE), a similar formation to that of Boreel Head. Arched Islet, flat-topped, lies close S of the bluff. Thence:

2 ESE of Cape Connella (8¼ miles NNE). Between Mangana Bluff and Cape Connella the coast is indented by small bays; an islet lies close offshore 8 cables SW of Cape Connella, thence:

ESE of Fluted Cape (10 miles NNE). The coast in the vicinity of the cape is bold and precipitous being backed by cliffs, composed of basalt columns, 210 to 235 m high; the summit of the cape is thickly wooded like the country near it, thence:

ESE of Penguin Islet (10½ miles NNE). The islet is wooded, cliffy and steep-to N and E, thence:

3 ESE of Adventure Bay (12½miles N) in which there is an anchorage (9.89), thence:

ESE of Cape Queen Elizabeth (17 miles NNE), the N entrance point of Adventure Bay. The cape is a precipitous grassy bluff with The Hound's Tooth, a bare conical rock 76 m high, lying close off it, thence:

To a position NE of Cape Queen Elizabeth.

(Directions for Hobart continue at 9.83, and for Frederick Henry Bay and Norfolk Bay at 9.147)

Chart Aus 795

East approach — Cape Pillar to Cape Raoul

9.80

1 From a position SE of Cape Pillar (43°14′S, 148°01′E) the track leads initially E, passing (with positions from Cape Pillar):

S of Tasman Island (1 mile S) from where a light (9.12) is displayed, thence:

S of Black Head (3 miles WNW), thence:

S of West Arthur Head (6¼ miles WNW) (9.86), thence:

S of Black Rock (6½miles WNW) (9.86), thence:

2 S of Basket Bay (7½ miles WNW), entered close W of Maingon Blowhole (9.86); there is a remarkable cave at the head of this bay. On the SW side of the W entrance point to Basket Bay lies a square cave, 18 m high, which shows up well from the S and SW. From this point a cliffy shore trends about 2 miles SW to a point immediately S of which is a cliffy gully with caves at its head; about midway between these two points there is a remarkable waterfall. Thence:

3 To a position S of Cape Raoul (9½miles W), which is 80 m high and forms the S extremity of a cliffy headland. The cape, formed of high basalt columns, presents a very remarkable appearance, falling in steep cliffs from a plateau covered with dense scrub. The basalt columns are separated from the cliffs by a deep crevasse 2 cables NW of the cape; the first isolated column S of the crevasse is 162 m high. Between this column and the cape there is a narrow neck of land composed of basalt columns which become more separated towards the cape. These basalt cliff formations cease N of Burton Islet (9.81), in Raoul Bay. The E side of the headland N of Cape Raoul, for a distance of about 1 mile, consists of cliffs about 120 to 215 m high, diminishing in height farther N. The SW side of the headland extends 1 mile NW and consists of cliffs about 240 m high; the summit of the headland stands 4 cables NW of the cape.

East approach — Cape Raoul to Storm Bay

9.81

1 From the position S of Cape Raoul (43°15′S, 147°48′E) the track then leads NW, passing (with positions from Cape Raoul):

SW of Hill Rock (8 cables WNW), 4·3 m in height, lying about 1 cable off the W side of the headland, thence:

2 SW of Raoul Bay (2 miles NW), which is entered between the W side of Cape Raoul and Ship Stern Bluff, 2 miles NW. Depths of 37 m (20 fm) off Hill Rock decrease across the bay to 24 m (13 fm) off the bluff. Bartlet Rock lies in the S part of Raoul Bay, about 1½cables offshore; the rock is 4 m high and limpet shaped. Burton Islet, close NE of Bartlet Rock, has two sharp rocky summits; the N and higher summit being 40 m high. Along the

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shore of Raoul Bay there are cliffs which attain a height of 445 m about 1 mile N of the S entrance point of the bay. Mount Raoul rises behind the bay. Thence:

3 SW of Ship Stern Bluff (2¾miles NW), 88 m high, composed of yellow sandstone; after prolonged NE winds landing can be made on a small pebble beach 1½ cables NE of that bluff. Yellow cliffs, nearly 50 m high, extend from Ship Stern Bluff to the head of Tunnel Bay, 7 cables NNW. Thence:

4 SW of Tunnel Bay (3½ miles NW), entered between Tunnel Point, 5 cables NNW of Ship Stern Bluff, and a yellow, cliffy point about 150 m high, 5 cables farther NW. Depths of 26 m (14 fm) at the entrance of the bay decrease to 18 m (10 fm) about half-way within and thence gradually decrease towards its head, which is formed of large boulders. A rock, on which the sea always breaks, lies ½cable SW of the NW entrance point. Thence:

5 SW of Salter's Point (4½ miles NW), which is low and rocky, and forms the W entrance point of a small cove; there are depths of 26 m (14 fm) in the entrance to the cove, decreasing gradually towards its head. Thence:

SW of Dart Bank (5 miles WNW), lying 1½miles SW of Salter's Point; the bank has a least depth of 22 m (12 fm) over it, with depths of 46 to 55 m (25 to 30 fm), sand and shell, close round it.

9.82

1 The track then continues NW, passing (with positions from Cape Raoul):

SW of Winsor Islet (4½ miles NW), a square-topped rock 45 m high, lying close offshore 3 cables NNW of Salter's Point; the rock provides a good mark from NW and SW. Another rock, 3 m high, lies on the SE side of the entrance to Three Beach Bay, 7 cables NNW of Salter's Point. Thence:

2 SW of Three Beach Bay (5 miles NW). The bay is 6½cables wide with depths of 29 m (16 fm) in the entrance decreasing to 14·5 m (48 ft) about 1 cable off its shores and off a pebble beach at its head. There is also a pebble beach close E of the SE entrance point and another midway between this point and the head of the bay. The SE shore is cliffy, about 40 m high, and kelp extends out to depths of about 9 m off the beaches. A rock, about 6 m high, with a 3 m high rock close NW, lies off the NW entrance point of Three Beach Bay. Thence:

3 SW of Two Island Bay (6½ miles NW), one of two small bays lying between Three Beach Bay and Low Point. The heads of these bays are filled with kelp extending out to depths of 13 m and their shores are low and rocky. Between Three Beach Bay and Two Island Bay the shore is formed by low cliffs. Thence:

SW of Low Point (7¾ miles NW), which is low and shelving, with kelp extending out to depths of 10 m, thence:

4 SW of Wedge Island (8¼ miles NW); the W side of the island is formed by sheer basalt cliffs. Its summit is a plateau sloping gradually N and more abruptly E. Castle Rock, 25 m high, lies close off the S end of Wedge Island, with rocks and a shoal bank extending up to 3½ cables from its E side into Quoin Channel (9.93). Crown Rock, a dangerous rock, lies 1½ cables E of the N end of the island. Thence:

To a position NE of Cape Queen Elizabeth (16 miles W) (9.79).

(Directions for Frederick Henry Bay and Norfolk Bay continue at 9.147)

Charts Aus 795, Aus 171, Aus 173

Cape Queen Elizabeth to River Derwent

(continued from 9.79 and 9.82)

9.83

1 From a position NE of Cape Queen Elizabeth (43°15′S, 147°25′E) the track leads NW, passing (with positions from Iron Pot Light (43°04′S, 147°25′E)):

SW of Hayward Rock (10½miles ESE) (9.147), and:

NE of Variety Bay (8¼miles S) (9.90) on the E side of North Bruny Island. Between Variety Bay and Cape Queen Elizabeth, 3 miles S, the W shore is high and cliffy and immediately backed by a coastal ridge, 135 to 200 m high, falling in places vertically from the summit. Thence:

2 NE of Winnie Rocks (7¾miles S), a group of above-water rocks, and:

SW of Outer North Head (9¼miles E) (9.147), thence:

NE of Trumpeter Point (6½ miles S), the S entrance point of Trumpeter Bay (9.91), thence:

NE of Top Slip Point (5 miles S), the N entrance point of Trumpeter Bay, thence:

3 NE of The Yellow Bluff (4¼ miles S), which may be identified by its yellow cliffs. Between Top Slip Point and The Yellow Bluff the shore is indented, cliffy and rocky. And:

SW of a shoal bank (3¼ miles ESE) and Little Betsey Islet (3 miles ESE), which is rocky. Several small rocks, above water, stand at the N end of the shoal bank, and a dangerous rock, on which the sea only breaks in heavy weather, lies near the S end.

9.84

1 The track then continues NW, passing (with positions from Iron Pot Light):

NE of One Tree Point (3 miles SSW), low and rocky, forming the S side of Patrick's Bight. The bight is fringed with rocks. And:

SW of Betsey Island (2¾ miles E). The island has dark red sandy soil which shows in numerous landslips on its E side, and it is bold and precipitous; landing is possible only on its N side on a cobblestone beach. Thence:

2 NE of Bull Bay Point (2½miles SW), the S entrance point of Bull Bay (9.92); the point is broad and rocky. And:

SW of Iron Pot, an islet lying at the S end of a rocky spit extending 6 cables S of Cape Direction, from where a light (white square tower, red band, 12 m in height) is displayed, thence:

NE of Cape de la Sortie (2¼miles WSW), fringed by dangerous rocks, and:

3 SW of Cape Direction (6 cables N). To the NE of the cape lies Hope Beach, low and narrow, separating the S end of Ralph's Bay (9.130) from Storm Bay; a heavy surf may be found on the beach. Thence:

NE of Kelly's Point (2½ miles W), thence:

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To a position E of Pierson's Point (3¼miles WNW) (9.40).

(Directions for Hobart continue at 9.119)

(Directions for the N end of D'Entrecasteaux Channel are given at 9.39)

Port Arthur

Chart Aus 174 plan of Port Arthur

General information

9.85

1 **Description.** Port Arthur (43°10′S, 147°52′E), at the head of Maingon Bay, is entered between Budget Head (43°11′·6S, 147°53′·7E), 6 miles WNW of Cape Pillar (9.11), and West Arthur Head, 1½ miles SW.

It affords good anchorage off the small town of Port Arthur (43°09′·0S, 147°50′·9E), which lies at the head of Mason Cove, within Carnarvon Bay (9.87); the town stands in a sheltered position and experiences a mild climate all year round. Oakwood, a small village, lies on the NW side of Long Bay (9.88) at the head of Port Arthur.

2 **Topography.** The shores of Port Arthur are backed by wooded hills and mountains which rise to a summit, 497 m high, about 4 miles NW of West Arthur Head; Mount Arthur stands 5 cables NNE of this summit.

The entrance to Port Arthur is easily identified from seaward by the dip in the high land and by Mount Brown standing above West Arthur Head. The E shore of the inlet is mostly steep-to and little indented but the W shore is much indented by bays and coves, most of which afford anchorage.

3 **Port limits**. Port Arthur port limits are bounded to the S by a line connecting West Arthur Head and Budget Head.

Landmarks:

Mount Brown (43°12′·5S, 147°52′·1E), a long, flat, precipitous hill standing above West Arthur Head. It appears as an island against the land behind.

A remarkable pillar rock on Budget Head (43°11′·6S, 147°53′·7E) which stands out alone when seen from S; above it, 5 cables NE, stands Arthur's Peak.

Directions

9.86

1 **Caution.** Kelp extends off most of the points inside Port Arthur, within depths of less than 20 m, and should be avoided as it always grows from a rocky bottom.

From a position about 2 miles S of Budget Head (43°11′·6S, 147°53′·7E) the track leads N, passing (with positions from Budget Head):

2 E of Black Rock (2 miles SW), which is steep-to and lies 2½ cables S of a sharply projecting point; a rock below water on which the sea always breaks lies about midway between Black Rock and the projecting point. About 1 mile NNW of Black Rock lies Maingon Blowhole, said to be a magnificent sight in heavy S gales. Thence:

3 E of West Arthur Head (1½miles SW), the W entrance point of Port Arthur, standing at the head of Maingon Bay, thence:

E of Crescent Bay (1 mile WSW). The bay is not suitable for anchoring in as there is always too much swell; a wooded hill, 64 m high, stands about midway along the sandy beach at the head of the bay. Thence:

4 E of Standup Point (9 cables W), the N entrance point of Crescent Bay. The point is cliffy and flat-topped. Thence:

W of Budget Head (9.85); The Budget, a small rock, lies close offshore 1¼ cable NW of Budget Head. Thence:

E of Safety Cove (1¾ miles WNW) (9.87), thence:

E of the cliffs (2¼ miles NNW), 30 m high, which extend 1 mile N from the N side of Safety Cove, thence:

E of Point Puer (2½ miles NNW), thence:

5 To a position NE of Dead Island (2¾ miles NNW). From this position the bays at the head of Port Arthur and Carnarvon Bay can be directly accessed. Dead Island was formerly a burial ground. A rocky spit, with depths of less than 10 m over it, extends 1½ cables NW from the N end of Dead Island; kelp grows on this spit.

Useful marks:

Light (43°08′·9S, 147°51′·1E), displayed from the head of the E jetty in Mason Cove.

Beacons standing on the N and S shores of Stewart's Bay (43°08′·4S, 147°51′·5E).

Anchorages and berths

9.87

1 **Safety Cove** (43°10′·8S, 147°51′·5E), a small bay, lies behind a steep point and a precipitous point, 30 m high, 8 cables N. A sandy beach at the head of the cove is backed by swampy ground. Anchorage may be obtained in the middle of the cove, as shown on the chart, in depths of 10 to 25 m, but there is always some swell.

2 **Carnarvon Bay** (43°09′·2S, 147°51′·5E), which affords the best anchorage in Port Arthur, is entered between Dead Island and Frying Pan Point, on which there are tall trees, 5 cables NW. Its S shore is fringed by a flat of sand and mud.

On the NW side of Carnarvon Bay there is excellent anchorage, in depths of 10 to 20 m, sand, off Mason Cove, a shallow inlet on the N side of Commandant's Point.

3 Two jetties and a slipway lie on the N side of Mason Cove; another jetty lies 5 cables SSW of Commandant's Point. There is a jetty on the SW side of Dead Island, and a small jetty lies 6 cables ESE of Commandant's Point on the E arm of Carnarvon Bay. A light stands at the head of the jetty.

Stewart's Bay (43°08′·4S, 147°51′·5E) is entered between Frying Pan Point and Garden Point, 4 cables NE. Garden Point is the extremity of a peninsula with a long, flat, cleared top. A small vessel may obtain anchorage in this bay in depths of 10 to 15 m.

Minor bays

9.88

1 **Denman's Cove** (43°08′·4S, 147°53′·4E), on the E side of Port Arthur, is a shallow inlet.

Stinking Bay (43°07′·7S, 147°52′·8E), with a sandy beach at its head, is entered between the N entrance point of Denman's Cove and Evandon's Point, 9 cables NW.

Long Bay (43°07′·2S, 147°51′·5E), at the head of Port Arthur, is entered between Garden Point and Evandon's Point, 5 cables NNE. Small craft can get within 5 cables of the head by keeping to the E side, although the SE side of the bay is obstructed by a marine farm; see 9.3.

Stingaree Bay, which is shallow with many rocks in it, lies on the W side of Long Bay, 8 cables NW of Garden Point.

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Other bays and anchorages

Chart Aus 173

Adventure Bay

9.89

1 **Description.** Adventure Bay (43°18′S, 147°21′E), lying between the S side of North Bruny Island and the NE side of South Bruny Island, is entered between Penguin Islet (9.79), close NE of Grass Point (43°21′S, 147°22′E), and Cape Queen Elizabeth (9.79), 6 miles NNE.

A bight, with a sandy beach at the head, lies at the S end of the bay between Blackfellow's Point, 1 mile SW of Grass Point, and Quiet Corner about 1 mile farther WNW. The village of Adventure Bay stands close S of Quiet Corner.

2 Two Tree Point lies 1 mile N of Quiet Corner, with Coal Point 1 mile farther N; the coast from about 5 cables S of the former point to 5 cables N of the latter is steep, cliffy and bordered by kelp. Thence a sandy beach, forming the E side of the isthmus joining South Bruny Island to North Bruny Island, extends 5½ miles NE. The SW part of the isthmus is flat, with some scattered trees, but the NE part is formed by sandhills, the SW and highest of which is 43 m high and covered with scrub. Lagoons back the NE end of the beach.

3 Moorina Bay, at the N end of Adventure Bay, is entered between Cape Queen Elizabeth and Mars Bluff, 1¼miles NW, which forms the S end of Church Hill, standing 1 mile N.

Anchorage. Depths in Adventure Bay are regular over a sandy bottom, with 20 m, in general, found about 5 cables offshore. The bottom in Moorina Bay, however, is rocky and uneven and anchorage here should be avoided.

4 The best berth, in a depth of 18 m , sand and mud with good holding, may be found 7½ cables WSW of Penguin Islet with protection, except from N and NE. Gales from NE occasionally blow with great strength sending a heavy sea into the bay.

Variety Bay

9.90

1 Variety Bay (43°12′S, 147°25′E), entered N of Variety Point, is thickly bordered by kelp up to 2 cables offshore; Red Reef lies on the N side of the bay. A small vessel might obtain anchorage, as shown on the chart, in the S part of the bay with some protection from SE winds in a depth of about 18 m, sand, 1 cable outside the kelp.

Trumpeter Bay

9.91

1 Trumpeter Bay (43°10′S, 147°24′E), although not affording much shelter from S winds, has an anchorage, as shown on the chart, in depths of about 16 m, off the best landing place, which is on a sandy beach near the centre of the bay.

Chart Aus 171

Bull Bay

9.92

1 Bull Bay (43°05′S, 147°22′E), a small bay on the NE side of North Bruny Island, lies between Bull Bay Point and Cape de la Sortie, 1 mile N. Anchorage may be obtained in a depth of 13 m, sand, 3 cables N of the bay's S entrance point.

Wedge Bay

9.93

1 **Description.** Wedge Bay (43°07′S, 147°42′E), situated on the W side of Tasman Peninsula, is entered between Low Point (9.82) and Lory Point, 2½miles N; a remarkable cliff, 183 m high, stands 3 cables N of Lory Point. The head of Wedge Bay is divided into two by Apex Point (43°06′S, 147°43′E). A hill, 227 m high, stands 2¼miles NE of Apex Point with Mount Clark, 547 m high, about 2 miles SE of it. These hills are thickly timbered with clearings and patches of cultivation in places.

2 White Beach lies at the head of the bay, S of Apex Point, with Wades Corner, backed by thickly wooded hills, at its S end. Brother and Sister, two islets, lie close offshore 5 cables SE of Apex Point.

Parson's Bay, on the N side of Apex Point, has kelp growing close offshore on each side of its entrance. A hill, 84 m high, stands 6 cables ENE of Apex Point; here the bay bends SE to its head, which is shallow. Badger Cove lies 6 cables ENE of the NW entrance point of Parson's Bay.

3 **Tidal levels.** See information in *Admiralty Tide Tables*. For Parson's Bay; mean maximum range is about 1·2 m, mean minimum range about 0·3 m.

Side channel. Quoin Channel (43°08′S, 147°41′E) leading between Wedge Island (9.82) and the coast near Low Point (9.82) has a least depth of 10·5 m in the fairway over a width of about 2 cables. It is clear of dangers but during heavy S gales the sea often breaks across it.

4 **Anchorages and berth.** Wedge Bay affords no protection from the W except for small vessels which may obtain secure anchorage 6 cables S of Brother and Sister, in depths of about 6·5 m.

Anchorage, with good shelter, may be obtained by small vessels in the inner part of Parson's Bay in depths of 7 to 15 m, stiff mud. Nubeena, a village on the E shore near the head of Parson's Bay, has a pier which can be used by vessels with draught up to 3 m. A light is displayed from the pier.

Betsey Island

9.94

1 In ordinary weather a small vessel may obtain good anchorage in depths of about 10 m off the beach on the N side of Betsey Island (43°03′S, 147°29′E) (9.84).

HOBART

General information

Charts Aus 171, Aus 172

Position

9.95

1 Hobart (42°53′S, 147°20′E), the capital city and principal port of Tasmania, is situated on River Derwent.

Function

9.96

1 Hobart, with an estimated population of 189 300 in 2004, exports timber, fish, and general cargo. Imports include petroleum products, iron and steel products, ores and general cargo. Hobart is also increasingly becoming a popular cruise ship destination.

There is an electrolytic-zinc works at Risdon, on the N side of Hobart, which treats large quantities of local and imported zinc concentrate and phosphate rock to produce zinc, sulphuric acid, superphosphate, sulphate of ammonia, cadmium and other products for export.

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Hobart from SSE (9.95)
(Original dated 1998)

Topography
9.97

1 **River Derwent.** From its entrance, between Cape de la Sortie (43°04′S, 147°22′E) and the islet of Iron Pot, 2½miles ENE, River Derwent extends 11 miles N to Hobart and thence 120 miles to its source near Mount Ossa, which is the highest summit in Tasmania. The entrance may be identified by Mount Louis on its W side, standing behind Pierson's Point, and by Betsey Island and the lighthouse on Iron Pot on its E side.

2 **East shore.** From Cape Direction (43°03′S, 147°25′E) and Gellibrand Point, 5 miles N, the E shore of the river is formed by a peninsula, mostly covered with open forest, which separates the S part of Ralph's Bay (9.130) from River Derwent. The peninsula is low and undulating but there are two hills, Fort Hill, 5 cables N of Cape Direction and the other, 122 m high, 2 miles S of Gellibrand Point.

Thence from Trywork Point (42°56′S, 147°24′E), the N entrance point of Ralph's Bay, to the suburb of Tranmere, 2 miles N, the E shore of the river is formed by another peninsula on which stand Rokeby Hills, grassy and partly cultivated.

3 **West shore.** From Pierson's Point (43°03′S, 147°20′E) to Boronia Point, 3¾ miles N, the W shore of the river is formed by a peninsula separating North West Bay (9.57) from River Derwent. The shore is then indented by a bay, lying between Boronia Point and Bonnet Point, 1 mile farther NNE, into which Brown's River flows.

From Brown's River to the SW end of Taroona Beach, 1½miles NNE, Alum Cliffs, rising to over 60 m 2½cables N of Bonnet Point, show up well. Bonnet Hill stands 8 cables NW of Bonnet Point and is the S summit of a timbered range extending 2½ miles N to Mount Nelson. Thence from Taroona Beach to Hobart the shore is formed by a succession of rocky points and small beaches.

Port limits
9.98

1 Port of Hobart limits encompass:

The waters of River Derwent and its estuary which lie N of an imaginary line, drawn 239°, from Low Point (43°08′S, 147°41′E) to Cape Queen Elizabeth on North Bruny Island, 13 miles SW.

The waters of D'Entrecasteaux Channel (9.21).

All bays and estuaries opening into River Derwent and D'Entrecasteaux Channel.

Approach and entry
9.99

1 The main approach to Hobart is made through Storm Bay, the directions for which are given at 9.79. An alternative approach may be made from the SW through D'Entrecasteaux Channel, the directions for which are given at 9.30.

From either approach the port is entered through River Derwent.

Traffic
9.100

1 In 2003 the port was used by 301 vessels totalling 5 462 414 dwt.

Port Authority
9.101

1 Hobart Ports Corporation, PO Box 202, Hobart, Tasmania, 7001.
Website: www.hpc.com.au
Email: hpc@hpc.com.au

Limiting conditions

Vertical clearances
9.102

1 **Tasman Bridge** (42°52′·0S, 147°20′·5E). The bridge has three adjacent spans for navigation:

Central and main navigational span; width 73 m with a vertical clearance of 45 m at its centre.

Adjacent secondary navigational spans; width 44 m with a vertical clearance of 44 m at their centres.

Lights are displayed horizontally from the piers dividing the spans to indicate the sides of the main and secondary channels. The arrangement of the lights is shown on the chart.

For regulations concerning navigation under this bridge see 9.113.

2 **Bowen Bridge** (42°49′·2S, 147°18′·3E). The bridge has eight spans of 109 m and two shorter end spans. The main navigation channel leads between piers four and five, width

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93 m, with a vertical clearance of 15·2 m over a width of 46 m.

Overhead power cable, with a vertical clearance of 46 m, spans River Derwent close SE of Risdon Wharf (42°49′·9S, 147°19′·1E).

Deepest and longest berth

9.103

1 Deepest Berth: Macquarie Wharf No 4 Berth (9.128).
Longest berth: Risdon Wharf (9.128).

Tidal levels

9.104

1 Mean maximum range about 1·3 m, mean minimum range about 0·3 m. For further information see *Admiralty Tide Tables*.

Abnormal conditions. At Hobart the tides have a considerable diurnal inequality:

Higher high water follows moon's upper transit when declination is N.

2 Higher high water follows moon's lower transit when declination is S.

Greatest range occurs with the moon's maximum declination N or S.

Least range occurs when moon's declination is 0°.

The range is not affected by the phases of the moon.

The height of tide is much affected by the barometer, a low barometer being accompanied by an abnormally high tide.

Maximum size of vessel handled

9.105

1 *Queen Elizabeth II* with a LOA of 293 m.

Arrival information

Port control

9.106

1 Port control is exercised by the port radio station at Hobart. The aerial used for the control channels is sited on Mount Rumney (42°52′S, 147°27′E) and is of sufficient height to enable contact to be maintained with vessels on the E and S coast of Tasmania; Mount Wellington (42°54′S, 147°14′E) aerial is for emergency use only. The port control tower (white, mushroom shaped, 34 m in height) stands on the N side of Sullivan Cove (42°53′S, 147°20′E).

For details see *Admiralty List of Radio Signals Volume 6 (4)*.

Notice of ETA

9.107

1 Requests for pilots should be made to the Harbour Master, Hobart giving ETA at least 24 hours in advance. Confirmation or amendment should be made as follows:

Two hours in advance of ETA if embarking pilot off Kelly's Point or John Garrow Shoal Light.

For D'Entrecasteaux Channel ETA requirements see 9.22.

Anchorages

9.108

1 **General.** Anchorage may be obtained in any part of River Derwent, clear of the prohibited anchorages shown on the chart, over a muddy bottom. The safest anchorage is always to be obtained on the W side of the river, especially for small vessels, as several have been lost on the E side.

Quarantine. For Hobart the quarantine anchorage, as shown on the chart, lies between a line, drawn 090°, from John Garrow Shoal Light-tower to the E shore, and a line, drawn 270°, from White Rock Point to the W shore, excluding Ralph's Bay to the E.

Prohibited anchorages

9.109

1 Anchorage is prohibited in the following areas:

Five cables either side of a disused submarine cable lying between Blackman's Bay (43°00′S, 147°20′E) and the N side of Halfmoon Bay, 3½ miles E. The landing places on each shore are marked by beacons.

In Sullivan's Cove (42°53′S, 147°20′E) within a 5 cable radius, NE and SE of the head of Elizabeth Street Pier.

Within 150 m of Tasman Bridge (42°52′·0S, 147°20′·5E); the N and S limits of the area are marked by beacons (white).

Submarine cables

9.110

1 Care should be taken to avoid anchoring near the following submarine cables laid between:

Macquarie Point (42°52′·7S, 147°20′·4E) and Rosny Point, 5 cables E.

Pavilion Point (42°52′·0S, 147°20′·1E) and Beauty Bay, 1 mile NNE.

Self's Point Oil Jetty (42°50′·8S, 147°19′·7E) and a position 1½ cables N.

2 Woodman Point (42°50′·4S, 147°19′·3E) and Shag Bay, 3½ cables ENE.

Stanhope Point (42°50′·2S, 147°19′·3E) to Bedlam Walls, 2½ cables ENE.

Dowsing's Point (42°49′·5S, 147°18′·3E) and the S entrance point of Prince of Wales Bay, 2 cables SSE.

There are also two cables laid from close E of Pavilion Point, SSE for 3 cables, under Tasman Bridge.

For further information on submarine cables see 1.33.

Pilotage

9.111

1 Pilotage is compulsory for all vessels over 35 m in length, and for all vessels carrying dangerous cargoes even though the Master may hold an exemption certificate. Masters of vessels proceeding above Tasman Bridge, direct from sea, must inform the Harbour Master of the vessels air draught and draught at ETA.

The pilot boards as follows:

In the vicinity of 43°03′·8S, 147°23′·3E, off Kelly's Point.

For vessels less than 60 m in length the pilot need not be embarked until off John Garrow Shoal Light (42°55′·0S, 147°21′·9E).

2 Pilotage boarding points for D'Entrecasteaux Channel are given at 9.23.

The boundaries of the pilotage limits in areas where pilotage is required are as follows:

Hobart Zone A. Bounded S by an imaginary line (090°/270°) along the parallel of latitude 42°55′·5S across the width of the River Derwent. The N limit is an imaginary line drawn from a pair of beacons (diamond shaped, orange), standing 450 m S of Tasman Bridge on the W shore, to a similar pair of beacons on the E shore.

3 Hobart Zone B. Bounded S by the N limit of Zone A and to the N by an imaginary line, drawn 082°, from Dowsing Point to the E bank of the River Derwent.

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Hobart Zone C (Port Huon). Bounded to the S by an imaginary line, drawn 043°, from Southport Island (43°29′S, 147°01′E) to the S end of Partridge Island, 5½ miles NE. The N limit is an imaginary line, drawn 138°, from Pierson's Point (43°03′S, 147°20′E) to Kelly's Point, 1 mile SE.

4 The regular pilot boat used is a blue-hulled vessel, 13 m long, with a white and orange cabin and the word "PILOTS" painted in white on either side of the hull. Relief pilot boats are also blue-hulled with white super-structures.

Tugs

9.112

1 Tugs are available.

Tasman Bridge regulations

9.113

1 The main navigational channel leads through the central span of Tasman Bridge (42°52′·0S, 147°20′·5E) with adjacent secondary navigational channels on either side. Navigation within these channels is subject to certain regulations. The limits of the area in which these regulations apply are marked as follows:

S limit. By pairs of light-beacons (white), standing on the E and W banks of River Derwent, about 3 cables S of the ends of the bridge.

2 N limit. By a pair of beacons (yellow) standing on the W side of the river, 3½ cables NW of the W end of the bridge, and by a light-beacon (yellow) standing 3 cables NNE of the E end of the bridge.

The regulations are as follows:

The central and main navigational span is for vessels over 25 m in length.

The adjacent secondary navigational spans are for vessels between 15 to 25 m in length. The E span next to the centre span is for N-bound vessels. The W span is for S-bound vessels.

3 Vessels less than 15 m in length may use any but the centre and adjacent spans.

Vessels more than 50 m in length may not approach within 2½ cables of the bridge when visibility is less than 1½ miles.

Pilotage is compulsory for all vessels exceeding 35 m in length passing under the bridge. Pilotage exemption certificates are not issued for such vessels.

A vessel intending to pass under the bridge shall sound one long blast, of at least 10 seconds duration, on entering the main navigational channel.

4 A vessel S-bound has the right of way over a vessel N-bound once the former is S of Beltana Point Front Leading Light (42°51′·2S, 147°20′·6E). When N-bound vessels are approaching the main navigational channel the leading vessel to cross a line joining Macquarie Point (42°52′·7S, 147°20′·4E) to Rosny Point, 5 cables E, has prior right of passage under the bridge. For S-bound vessels the line giving prior right to the leading vessel is a line drawn W from Beltana Point Front Leading Light.

Quarantine

9.114

1 Hobart is a first port of entry. The quarantine line referred to in the *Quarantine Act* (1.47) is drawn 270° from White Rock Point (42°58′·7S, 147°23′·5E) to close NE of the mouth of Brown's River. Vessels liable to medical inspection must proceed to the quarantine anchorage (9.108).

Harbour

General layout

9.115

1 The port contains several separate berthing areas, all of which stand on the W side of River Derwent, between 10½ and 14 miles from the river's entrance off Cape de la Sortie (43°04′S, 147°22′E).

Sullivan's Cove (42°53′S, 147°20′E) and the berths S of Macquarie's Point make up the largest area, whilst N of



Sullivan's Cove

Hobart from SE (9.115)

(Original dated 1998)

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Tasman Bridge lie the specialist berths of Self's Point Oil Jetty and Risdon Wharf.

Measured distance

9.116

1 Between Howrah Point (42°53′·3S, 147°24′·1E) and Kangaroo Bluff, 1½ miles WNW, there is a measured distance for the use of small vessels.

East limit. Two beacons 4½ cables NW of Howrah Point.

West limit. Two beacons (triangular topmarks) 4½cables NE of Kangaroo Bluff.

Distance 1853 m (6080 ft).

Running track. The course is 282°–102° indicated by the alignment (102°) of a pair of beacons on the N side of Howrah Point and by the alignment (282°) of two beacons on Kangaroo Bluff.

Natural conditions

9.117

1 **Tidal streams.** In the entrance to River Derwent the in-going stream is barely perceptible between Kelly's Point (43°04′S, 147°21′E) and Iron Pot, 2½ miles E, but it is stronger on the W side by Pierson's Point (43°03′S, 147°20′E). It then follows the course of the river at a rate of about ½kn.

Between Macquarie Point (42°52′·7S, 147°20′·4E) and Rosny Point the out-going stream sets S at a rate of 1½kn. Off Battery Point, 6 cables farther S, it sets SSE sweeping around Sandy Bay SE at a rate of ¾ kn. After passing Sandy Bay Point its strength decreases gradually to ½kn at the river entrance.

2 In 1980 it was reported that under Tasman Bridge there was invariably an out-going stream and at Self's Point (42°51′S, 147°20′E) the out-going stream can set at a rate of 4 kn on the ebb and 1 kn on the flood.

Caution. A short sea is sometimes raised by strong S winds during the out-going tidal stream or a heavy freshet, but never of a serious nature. However sudden squalls are frequent and those in charge of small craft should take care.

Climatic table. See 1.133 and 1.143.

Landmarks

9.118

1 Mount Wellington (42°54′S, 147°14′E) (9.78); Colin's Bonnet (not charted), 1259 m high, stands 4 miles W of Mount Wellington.

Conspicuous building close S of Sandy Bay Point (42°54′·7S, 147°21′·3E).

Chimney of Mount Saint Canice building (42°54′·9S, 147°20′·9E).

Casino and hotel standing on Wrest Point (42°54′·2S, 147°20′·2E) (9.131).

2 Spire of Saint George's Church (42°53′·6S, 147°19′·8E).

Port control tower (42°53′·0S, 147°20′·2E) (9.106) on the N side of Sullivan's Cove.

Cenotaph Obelisk, 2 cables WSW of Macquarie Point (42°52′·7S, 147°20′·1E).

Radio mast (red obstruction light) on Mount Rumney (42°52′S, 147°27′E); there is a large cairn on the summit.

Directions for entering harbour

(continued from 9.40 and 9.84)

Charts Aus 171, Aus 172

Pierson's Point to John Garrow Shoal

9.119

1 From a position E of Pierson's Point (43°03′S, 147°20′E) the track leads N, passing (with positions from White Rock Point Light (42°58′·7S, 147°23′·5E)):

W of Cape Deliverance (4¼miles S), with Pot Bay S of it and Seacroft Bay on its N side, thence:

E of Lucas Point (4¼ miles SSW); Fishermans' Haul, a village lies W of the point, thence:

2 W of Halfmoon Bay (2¾ miles S), entered between John's Point and The Pigeon Holes, 1¾miles N; the bay has a sandy beach. Within the bay, 7 cables NE of John's Point, stands South Arm, a small town with a pier, thence:

E of Blackman's Bay (3¼ miles SW), entered N of Flowerpot Point; Blackman's Bay, the S suburb of Hobart, stands on the W side of the bay. Thence:

E of Boronia Point (2¾ miles WSW), and:

3 W of Opossum Bay (6 cables SSE); the small town of Opossum Bay lies at the S end of the bay which has a sandy beach, thence:

W of White Rock Point from where a light (white framework tower) is displayed; the point is steep-to. And:

E of Bonnet Point (2¼ miles W) backed by Alum Cliffs (9.97). Taronga, a suburb of Hobart, stands 8 cables N of Bonnet Point with a shot tower close N of it.

9.120

1 The track then continues N, passing (with positions from White Rock Point Light):

W of Gellibrand Point (1 mile NNE), the S entrance point of Ralph's Bay (9.130). Mary Ann Bay lies between White Rock Point and Gellibrand Point; the bay is fringed with rocks at its SW and NE ends and is backed by cliffs, thence:

E of Crayfish Point (2 miles NW); a beacon (red) stands close S of the point and Taroona, a suburb of Hobart, stands 4 cables N, thence:

W of Trywork Point (2¼miles NNE), the N entrance point of Ralph's Bay, thence:

2 E of Cartwright Point (3 miles NNW); Porter Hill stands 6 cables NW of the point along with Mount Nelson (9.97), 4 cables farther W, thence:

W of Tranmere Point (3½ miles N), thence:

To a position E of John Garrow Shoal (3¾miles NNW) from where a light (red metal and concrete tower) is displayed.

Useful marks:

Dish aerial standing on the summit of Rokeby Hills (42°55′·5S, 147°25′·2E).

Radio mast (42°55′·1S, 147°19′·2E).

John Garrow Shoal to Sullivan's Cove

9.121

1 The track then leads NW, passing (with positions from John Garrow Shoal Light (42°55′·0S, 147°21′·9E):

SW of Punch's Reef (2 miles NE), with depths of less than 10 m over it extending 2 cables from the shore, thence:

SW of Howrah Point (2¼ miles NE), and:

NE of Blinking Billy Point standing behind John Garrow Shoal. The point is rocky and submarine pipelines extend E and ESE from it terminating at

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the 5 and 20 m depth contours respectively. Thence:

2 NE of Sandy Bay Point (6 cables NW), which is low, flat and backed by higher land. Little Sandy Bay lies between Sandy Bay Point and Blinking Billy Point; Long Beach forms the shore of the bay and a dolphin stands close inshore at the S end. Thence:

SW of Second Bluff (2¼ miles NNE) which divides the coast into two bays between Howrah Point and Kangaroo Bluff. Bellerive Beach is situated in the W bay. Thence:

3 NE of Wrest Point (1½ miles NW) (9.131), which divides Sandy Bay (9.131) into two parts, thence:

SW of Kangaroo Bluff (2 miles N), thence:

NE of Secheron Point (2 miles NW), thence:

To a position about 4½ cables NE of Battery Point (2¼miles NW), from where the berths (9.128) in Sullivan's Cove and those S of Macquarie Point can be directly accessed. A light (pile) is displayed from Battery Point.

4 **Useful marks:**

Radio mast (42°55′·1S, 147°19′·2E).

Two reservoirs, one, 87 m high, standing 9 cables NNE of Kangaroo Bluff (42°53′·0S, 147°22′·0E), and the other, 79 m high, standing 1¾miles ENE of the same bluff.

Radio tower standing on Rosny Hill (42°52′·2S, 147°21′·5E).

Chart Aus 172

Sullivan's Cove to Pavilion Point

9.122

1 **Aids to navigation.** North of Sullivan's Cove the centreline of the main navigational channel which passes under Tasman Bridge is marked by a combined direction light and pair of leading lights, ahead. The central span of Tasman Bridge is marked by a fixed green light. When the main navigational channel is closed this light is replaced by a flashing red light.

Beltana Point Front Light (42°51′·2S, 147°20′·5E).

Beltana Point Direction Rear Light (2½ cables N of front light). The light's narrow green sector (353·5°–354·5°) has a width of 21 m under the central span.

2 **Directions.** From a position about 4½ cables NE of Battery Point (42°53′·3S, 147°20′·3E), with Nutgrove Beach Leading Light (column) (42°54′·6S, 147°21′·0E) bearing 174°, astern, and the alignment (354°) of Beltana Point Leading Lights and direction light, ahead, the track leads N, passing (with positions from Macquarie Point Light (42°52′·7S, 147°20′·4E)):

W of Kangaroo Bay (8 cables E) (9.133), thence:

3 W of Rosny Point (5 cables E), from where a light is displayed. The point forms the SW end of a hilly wooded promontory which rises NE to Rosny Hill (9.121). Thence:

E of Macquarie Point, from where a light is displayed, thence:

4 E of Ross Bay (3 cables NNW) (9.134). The Queen's Domain lies behind the shore of the bay and Government House and a flagstaff stand at the N end of the bay, thence:

E of an area of foul ground (5 cables N), with a swept depth of 3·9 m over it, thence:

5 W of Montagu Bay (8 cables NE), in which there is a small craft anchorage, entered S of Montagu Point, thence:

Under Tasman Bridge (7 cables N); for information on this bridge see 9.102 and 9.113. Thence:

To a position about 4 cables NE of Pavilion Point (7½cables N).

Pavilion Point to Dowsing's Point

9.123

1 The fairway of River Derwent for about 3 miles above Tasman Bridge to Dowsing's Point, on the W shore, is deep but above Bedlam Walls Point, on the E shore 1½miles above Tasman Bridge, the fairway is only 1 cable wide.

From the position about 4 cables NE of Pavilion Point (42°52′·0S, 147°20′·1E) the track then leads NNW, passing (with positions from Beltana Point Front Leading Light (42°51′·2S, 147°20′·6E)):

2 WSW of Rose Bay (5 cables SE) (9.135); thence

WSW of Lindisfarne Point (3 cables ESE), the W entrance point of Lindisfarne Bay (9.135). A monument stands on the point and a beacon marks the edge of the coastal bank close S of the point. Thence:

3 WSW of Beltana Front Leading Light (9.122) and a light-beacon (starboard hand) (1 cable W) marking the 10 m depth contour off Beltana Point. The line of bearing 135°, astern, of a direction light (orange beacon) (42°51′·7S, 147°21′·0E) passes close WSW of the light-beacon and marks the fairway in the approach to Self's Point Oil Wharf. Thence:

Clear of a raft (3 cables W), carrying a current meter, from where a light is displayed, thence:

WSW of Koomela Bay (2 cables N), NW of Beltana Point, in which there is a small craft anchorage.

9.124

1 The track then continues NNW, passing (with positions from Beltana Point Front Leading Light):

ENE of Cornelian Bay Point (7 cables W), the N entrance point of Cornelian Bay (9.136), and:

WSW of a light-beacon (starboard hand) (4 cables NW) standing close off Limekiln Point, thence:

ENE of Self's Point Oil Wharf (7 cables NW) (9.128), lying off the NE part of a peninsula which separates Cornelian Bay from New Town Bay. There is an area of foul ground, the site of a former jetty, close S of the wharf. Thence:

2 Between a light-beacon (port hand) (8½cables NW), marking the edge of shoal water extending 2 cables NNE from the S entrance point of New Town Bay (9.138), and Bedlam Walls Point (8 cables NNW), the NW entrance point of Geilston Bay (9.137); a beacon (starboard hand) stands on the point. Thence:

3 WSW of Shag Bay (1 mile NNW), a small narrow inlet, entered midway along Bedlam Walls. For over 5 cables NNW of Bedlam Walls Point, Bedlam Walls, cliffs of about 12 to 15 m high, form the E shore of the river. The cliffs are almost steep-to and vessels should keep within 1 cable to avoid the shoal water off the W shore. And:

4 ENE of Woodman Point (1¼miles NW), the N entrance point of New Town Bay (9.138), thence:

To a position close ENE of the light-beacon (port hand) off Stanhope Point (42°50′·2S, 147°19′·3E).

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The shore between this point and Woodman Point, and for a further 7 cables WNW, is rocky, cliffy and backed by the suburb of Lutana.

9.125

1 The track then leads NW, passing (with positions from Stanhope Point Light-beacon):

SW of Tommy's Bight (2½ cables N), thence:

NE of Risdon Wharf (2½ cables NW) (9.128), from the ends of which lights are displayed; close NW of the wharf lies two short piers, the former landing place of the Risdon Ferry. And:

SW of Porter Point (4 cables NNW), the NW entrance point of Porter Bay, thence:

2 SW of Store Point (6 cables NNW), from where a light (aluminium post) is displayed; the former NE terminal of the Risdon Ferry lies close SE of the point. Thence:

To a position NE of Dowsing's Point (1 mile NW), the N entrance point of Prince of Wales Bay (9.139).

Useful mark:

Radio tower (42°51′·8S, 147°19′·1E) standing near the N end of Queen's Domain (9.122).

Risdon Turning Area

9.126

1 Bowen Bridge (9.102) Leading Lights:

Front Light (orange triangle, apex up)

Rear Light (orange triangle, apex down)

The alignment (308°) of the above lights is an aid for vessels turning off Risdon Wharf (9.128). A light-buoy (starboard hand) marks the outer edge of the 10 m contour on the E side of the channel in this vicinity.

River Derwent above Dowsing's Point

9.127

1 From the position NE of Dowsing's Point (42°49′·5S, 147°18′·3E) River Derwent continues NW and then W. The river widens above Dowsing's Point and passes under Bowen Bridge (9.102), but about 2 miles above the point it contracts to 2½ cables wide off Dogshear Point, a narrow tongue extending from the W bank.

Austin Ferry crosses the river about 1 mile NNW of Dogshear Point and a horizontal lift span bridge crosses the river at the town of Bridgewater, about 4 miles NW of Dogshear Point. The river becomes much narrower 2 miles above the latter bridge.

Berths

9.128

1 **Sullivan's Cove and Macquarie Point.** The following berthing areas lie in or close N of Sullivan's Cove (with positions from the light at Battery Point (42°53′·3S, 147°20′·3E):

Prince's Wharf (3 cables W) with five berths, the longest being No 1 Berth, length 138 m, and the deepest being No 4 Berth. Depths alongside are from 6·6 to 9·1 m (2003). Nos 1 and 4 are Ro-Ro berths. Berths No 3 and No 4 are private berths and not generally used for commercial traffic.

2 Elizabeth Street Pier (3 cables NW), the S side only being available for commercial vessels; length 157 m, depth alongside 7·8 m (2003).

Macquarie Wharf (3 cables N) with six berths, the largest being No 4 with a length of 244 m and a depth of 12 m alongside (2003). Nos 5 and 6 are Ro-Ro berths.

3 **Self's Point Oil Wharf** (42°50′·8S, 147°19′·7E) consists of a jetty extending about 190 m ENE from the shore to a T-shaped head. The head of the jetty is 100 m long with a depth of 14 m alongside. Pairs of mooring dolphins stand close N and S of the head allowing tankers up to 230 m in length to berth.

Risdon Wharf (42°49′·9S, 147°19′·1E), and the manufacturing plant which its serves, lie 2½ cables NW of



Hobart from NNE (9.128)

(Original dated 1998)

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Stanhope Point. The main wharf is about 400 m long with a depth of 9·8 m alongside.

Port services

9.129

1 **Repairs.** Minor repairs can be effected. There are several slipways, the largest having a capacity of 1200 tonnes and vessels up to 60 m LOA.

Other facilities. Several hospitals; compass adjustment; deratting and deratting exemption certificates issued; reception facilities for oily waste using road tankers; garbage disposal.

Supplies. Fuel; provisions; fresh water.

Communications. There is an airport about 17 km E of the city.

Minor bays and anchorages in River Derwent

Chart Aus 171

Ralph's Bay

9.130

1 Ralph's Bay is entered between Gellibrand Point (42°58′S, 147°24′E) (9.120) and Trywork Point, 1½miles N. The entrance is partly obstructed by a dangerous wreck lying 1½ miles NNE of Gellibrand Point, and by Gipsy Shoal lying in the middle of the entrance, 9 cables NNE of the same point.

2 Ralph's Bay divides into two arms. The NE arm is entered 1 mile E of Trywork Point, between Droughty Point and Dixon Point, 1½ miles farther SE; Richardson's Beach lies on the N side of Dixon Point. The head of this part of Ralph's Bay, which terminates in a narrow cutting spanned by a road bridge, reaching almost to the W side of Frederick Henry Bay (9.144), is shallow; a submarine power cable crosses this part of the bay, as shown on the chart.

The S arm of Ralph's Bay, entered 1½ miles SE of Gellibrand Point, between Icehouse Bluff and Maria Point, is very shallow. It contains Mortimer Bay on its E side.

Chart Aus 172

Sandy Bay

9.131

1 **Description.** Sandy Bay is entered between Sandy Bay Point (42°54′·7S, 147°21′·3E) (9.121) and Battery Point, 1½miles NW, and is backed by the suburb of Sandy Bay. The bay is roughly divided into two parts by Wrest Point, on which a casino stands. Midway between Sandy Bay Point and Wrest Point the shore is fringed by several rocks above and below water.

2 **Anchorage and berths.** There is a small craft anchorage within the bay, the limits of which are shown on the chart. In the S part of the bay a dolphin stands ¾cable WNW of Nutgrove Beach Leading Light (42°54′·6S, 147°21′·0E) along with a small jetty 1 cable farther W. There are also two small jetties within 2 cables S of Wrest Point.

3 In the NW part of Sandy Bay, between Wrest Point and Battery Point, there are numerous jetties, mainly small, including those of Derwent Sailing Squadron Marina, 2 cables NW of Wrest Point, and Royal Yacht Club of Tasmania Marina, 1 cable farther N.

Directions. A beacon (port hand) marks the S side of Wrest Point and the marinas are marked by lights. At night the alignment (290°) of a pair of leading lights (42°54′·0S, 147°20′·0E), displayed from Royal Yacht Club of Tasmania Marina, leads WNW towards that marina.

Sullivan's Cove

9.132

1 **General information.** There are facilities for recreational craft and fishing vessels within Victoria Dock and Constitution Dock at the head of Sullivan's Cove (42°53′S, 147°20′E). A marina, protected by breakwaters, fronts the wet docks between Elizabeth Street Pier and Macquarie Wharve's No 1 Berth; lights are displayed from the heads of the breakwaters.

2 The bridges across the entrances to Victoria Dock and Constitution Dock are normally kept closed, except at certain specified times.

Traffic control. Vessels wishing to enter or exit either dock must contact Hobart Port Control, for further information see *Admiralty List of Radio Signals Volume 6 (4).*

Kangaroo Bay

9.133

1 Kangaroo Bay, entered between Kangaroo Bluff (42°53′S, 147°22′E) and Rosny Point, 7 cables NW, contains a marina at its NE end and has an area, the limits of which are shown on the chart, for small craft to anchor in.

The shores of this bay are rocky but, for about 4 cables within the entrance, they may be approached to about ¾cable, in depths of not less than 5 m; farther within the bay is shallow.

Ross Bay

9.134

1 Ross Bay lies between Macquarie Point (42°52′·7S, 147°20′·4E) and Pavilion Point, 7½ cables N. Within the bay two naval piers, each with depth of 4 m alongside, lie about 1 cable WNW of Macquarie Point, along with two small jetties, 1 cable farther NW, and Domain Slipyard, 2 cables farther NW.

There is also a small craft anchorage, the limits of which are shown on the chart, in the vicinity of Domain Slipyard. Powder Jetty lies at the head of Ross Bay.

Lindisfarne Bay

9.135

1 Lindisfarne Bay (42°51′·3S, 147°21′·1E), entered S of Lindisfarne Point (9.123), contains a small craft anchorage along with two small jetties on the NE shore. There are pontoon berths for small craft, and a ramp, forming Motor Yacht Club of Tasmania, on the SW shore. Rose Bay lies in the S part of Lindisfarne Bay. On the N side of Rose Bay the shore is fringed by a rocky shoal the edge of which is marked by a beacon (starboard hand).

2 Anchorage may be obtained, in a depth of 10 m, about 1 cable S of Lindisfarne Point. This anchorage is not recommended being exposed W and rather close to a submarine cable NW.

Caution. Small craft should also take care when anchoring as there is a submarine cable laid across the middle of Lindisfarne Bay.

For further information on submarine cables see 1.33.

Cornelian Bay

9.136

1 Cornelian Bay (42°51′·3S, 147°19′·4E), on the W side of River Derwent above Tasman Bridge, contains a small craft anchorage, the limits of which are shown on the chart. The head of the bay dries. Anchorage may also be obtained, in a depth of about 8 m, mud, 1¾cables S of Cornelian Point.

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Geilston Bay
9.137

1 Geilston Bay (42°50′·6S, 147°20′·2E), mostly filled by shoal banks, is entered between Bedlam Walls Point (9.124) and Limekiln Point, 3½ cables SSE. It contains a small craft anchorage, the limit of which is shown on the chart.

New Town Bay
9.138

1 New Town Bay (42°50′·6S, 147°19′·3E) is entered between Woodman Point (9.124) and a peninsula, 4 cables S. On the N side of the bay stands Rock Cod Point, 2 cables SW of Woodman Point, faced with cliffs about 5 m high; a beacon (starboard hand) marks the outer end of foul ground, drying 0·3 m, which extends nearly 1½cables E from the point.

Anchorage for small vessels may be obtained 3½cables SSW of Woodman Point in a depth of about 5·5 m. There is also a small craft anchorage at the head of the bay, the limits of which are shown on the chart.

Prince of Wales Bay
9.139

1 Prince of Wales Bay (42°49′·7S, 147°18′·0E) is entered between a point 4 cables NW of Risdon Wharf and Dowsing's Point, 2 cables NNW. The bay is large, shallow and divided into three areas SW of Dowsing's Point. A jetty extends 1 cable NNE from the shore close to the S entrance point; a light is displayed from the head of the jetty.

2 The W area is entered between Pauline Point, 5 cables SSW of Dowsing's Point, and Doss Point, 1½cables N, off which there is a wharf.

There are also several small jetties within the bay and at the head of the bay there are designated small craft anchorages, the limits of which are shown on the chart.

Dowsing's Point
9.140

1 Anchorage may be obtained off Dowsing's Point (42°49′·5S, 147°18′·3E) in a depth of 15 m, 2½cables E of the point.

FREDERICK HENRY AND NORFOLK BAYS

GENERAL INFORMATION

Charts Aus 171, Aus 795

Area covered
9.141

1 This section covers Frederick Henry Bay and Norfolk Bay. It also includes a description of Denison Canal situated on the NE side of Norfolk Bay.

It is arranged as follows:

Frederick Henry Bay (9.144).
Norfolk Bay (9.154).

Marine farms
9.142

1 See 9.3.

Flow
9.143

1 **Tidal streams.** Within Frederick Henry Bay and Norfolk Bay tides are similar to those at Hobart (9.117), HW and LW occurring at about the same time as at that port.

Current. Although tidal streams are weak and almost imperceptible, after a heavy gale from SW a distinct set has been felt into Frederick Henry Bay and in Flinders Channel, towards Norfolk Bay.

FREDERICK HENRY BAY

General information

Charts Aus 171, Aus 795

Route
9.144

1 Frederick Henry Bay is entered through the head of Storm Bay between Cape Deslacs (42°59′S, 147°33′E) and North West Head, 3 miles ESE. From a position NE of Cape Queen Elizabeth (43°15′S, 147°25′E), in the main approaches to Hobart, the route leads N passing E of Cape Deslacs into the bay and then continues N to a position SE of the entrance to Pitt Water (42°49′S, 147°32′E).

Local magnetic anomaly
9.145

1 Local magnetic survey results indicate that there is likely to be a significant magnetic anomaly in the N part of Frederick Henry Bay, S of the town of Sorell.

Landmarks
9.146

1 Radio mast (red obstruction light) on Single Hill (42°53′S, 147°30′E); the hill has a flat-topped summit.

Radio mast on Mount Rumney (42°52′S, 147°27′E) (9.118).

Mount Lord (42°46′S, 147°29′E) (chart Aus 795); red obstruction lights are displayed from the summit and from the SE fall.

Directions
(continued from 9.79 and 9.82)

Entrance
9.147

1 From a position NE of Cape Queen Elizabeth (43°15′S, 147°25′E) the track leads N, passing (with positions from Cape Deslacs (42°59′S, 147°33′E)):

E of Trumpeter Point (12½ miles SSW), thence:
W of Wedge Island (10½ miles SE) (9.82), thence:
E of The Yellow Bluff (10½ miles SSW) (9.83), thence:

2 W of Hayward Rock (7¾ miles SE), a steep-to rock, lying 3 cables S of Auk Point; a long S swell usually breaks on this rock. Roaring Beach Bay, with a sandy beach at its head, lies about midway between Lory Point and Auk Point. There is usually a heavy surf on this beach making landing impracticable, except after persistent NE winds. A sharp pointed sandhill, about 30 m high, stands behind this beach. thence:

3 W of Outer North Head (6 miles SSE), a yellow cliffy point. Flat Rock, on which the sea always breaks, lies at the outer end of a foul rocky spit which extends 2 cables SW from Outer North Head. Foster Rock, steep-to and over which the

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sea breaks only in heavy weather, lies 2½cables W of the head; a rocky patch, with a least depth of 10 m over it and marked by kelp, lies 1 cable NE of Foster Rock. Mount Communication, flat-topped, stands 1½ miles NE of Outer North Head. From Outer North Head to North West Head, 4½miles N, the shore is bold and rugged with the sea always breaking on it making landing practically impossible; it is mostly steep-to and fringed in places by kelp. Thence:

4 E of Betsey Island (9.84) and Little Betsey Island (5 miles SSW) (9.83), thence:

W of a yellow cliff (4½miles SE), 18 m high, separating two small bays, thence:

E of Black Jack Rocks (4¼ miles SW), 0·9 m high and usually covered with seabirds, from where a light (white obelisk) is displayed. These rocks divide the E end of a channel which separates the N end of Betsey Island from the shore W of Goat Bluff; there is a least depth of 8·2 m in the S channel. Thence:

5 W of Storm Cove (4 miles SE); the cove affords shelter for small craft in W weather behind a patch of below-water rocks, surrounded by kelp, which extends from its S side.

9.148

1 The track then continues N, passing (with positions from Cape Deslacs):

E of Cape Contrariety (2½miles SW), which is bold, cliffy and steep-to. Calvert's Beach, to the W of the cape, extends 1¾ miles WSW to Goat Bluff; heavy surf is found on this beach. And:

W of Black Jack Bight (3¾miles SE) with a sandy beach at its head, thence:

2 W of North West Head (3 miles ESE) which is surmounted by the N end, 210 m high, of Black Jack Hills, thence:

E of Cape Deslacs, a long, cliffy, flat-topped point covered with grass. Its whitish-yellow cliffs show up well from all directions. Clifton Beach lies close W of the cape; a heavy surf may be found on the beach. Thence:

3 W of a bay (4¾ miles E) indenting the SE shore of Frederick Henry Bay. Except for a sandy patch, with a depth of 7·3 m over it in the middle of the bay, depths decrease gradually to Sloping Main, a white sandy beach at its head. A pier, with a depth of 1·8 m at its head, extends from the SE shore of the bay. Thence:

4 To a position about 1¾ miles NE of Cape Deslacs (42°59′S, 147°33′E). The W shore of Frederick Henry Bay, for about 1½miles N of Cape Deslacs, is cliffy and rises to 96 m behind the cliffs 1¼miles N of the cape.

(Directions for Norfolk Bay continue at 9.158)

Cape Deslacs to Pitt Water

9.149

1 From the position about 1¾ miles NE of Cape Deslacs the track continues N, passing (with positions from Sloping Island Light (42°56′·7S, 147°38′·4E)):

E of the entrance to Pipe Clay Lagoon (4¾miles WSW) (9.152). Calvert's Hill, which is prominent with several large trees on its summit and a marsh W of it, stands 1 mile NNW of the entrance. And:

2 W of Sloping Island, which has a few scattered trees on it. The island slopes down from its summit, near the S end, to a low point at its N end. A light (framework tower, 4 m in height) is displayed from the N point. A narrow rocky ledge, 6 m high, lies 4 cables WNW of the S end of the island. Thence:

E of May's Point (6 miles WNW) standing at the N end of May's Beach. The point is fronted by a remarkable white cliff. A radio mast stands 8½cables SW of the point. And:

3 W of Bass Shoal (1½miles N), sandy, with depths of less than 10 m over it; there is a least depth of 5·8 m over it near its SE corner. Isle of Caves (2¼miles N), bare of trees, lies on the NE corner of Bass Shoal; it takes its name from two caves in the cliff at its SW corner. A light (red rectangular tower, 2 m in height) is displayed from the islet. Thence:

E of Roche's Beach (7½ miles NW). This stretch of sand extends 1½miles N of May's Point and fronts the small town of Lauderdale.

9.150

1 The track then continues N, passing (with positions from Sloping Island Light):

W of Carlton Bluff (3½ miles N) lying on the S side of the entrance to Carlton River; from Frederick Henry Bay the bluff resembles an island. Steele's Island lies across Carlton River close within its entrance. On the N bank of the river, stands the village of Carlton. Thence:

W of Whale Rock (4¼ miles NNW) on which the swell breaks heavily; the rock lies in the centre of a rocky shoal. And:

2 E of a point (7 miles NW) surmounted by Single Hill (9.146). From the N fall of Single Hill to Sandy Point, 5 miles ENE, the head of Frederick Henry Bay is formed by Seven Mile Beach, which is sandy. The E part of the beach is formed by a low narrow peninsula which terminates at Sandy Point. The town of Seven Mile Beach stands at the SW end of the beach. Thence:

3 To a position about 8 cables E of Spectacle Island (5 miles NNW) off the entrance to Pitt Water (9.153); two above-water rocks lie close N of the island, the N-most rock having two holes through it. Spectacle Head lies 2½ cables E of the island with Carlton Beach extending 1½miles ESE, from the E side of the headland, to the entrance to Carlton River; there are several houses behind the beach and on the headland.

Anchorage

9.151

1 In Frederick Henry Bay anchorage may be obtained almost anywhere according to draught. However a swell nearly always sets in from Storm Bay onto the E side of Frederick Henry Bay and it must be noted that the heaviest and most sudden blows begin from between SW and NW. Holding ground is good everywhere, generally sand and shells in the main part of the bay with mud and clay in the N part.

Minor inlets

Pipe Clay Lagoon

9.152

1 Pipe Clay Lagoon (42°58′S, 147°31′E), the entrance to which is indicated by a sandy beach, can be used only by small vessels which enter through a narrow, shallow

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channel. The channel leads S then WNW for a total distance of about 6 cables before opening out into the lagoon.

The lagoon, which mostly dries at LW, is named from the stiff white clay of which the bottom is composed. The village of Cremorne stands on the N entrance point.

Pitt Water

9.153

1 Pitt Water (42°49′S, 147°32′E), an extensive inland waterway, is entered from the NNE part of Frederick Henry Bay through a narrow channel passing between Sandy Point (42°51′S, 147°37′E) (9.150) and Tiger Head, 5 cables S.

Five Mile Beach extends along the N side of the narrow peninsula, forming the E end of Seven Mile Beach (9.150). Within Pitt Water the waterway is crossed by a causeway extending NE from The Bluff which lies 4½ miles WNW of Sandy Point.

NORFOLK BAY

General information

Chart Aus 171

Description

9.154

1 Norfolk Bay (43°00′S, 147°48′E) is entered between Whitehouse Point (42°57′S, 147°44′E) and the N entrance point of Dunalley Bay, 4 miles NE. It is bounded on the W and S by Tasman Peninsula and on the E by Forestier Peninsula.

The bay is completely landlocked and clear of dangers but in strong winds a short sea is quickly raised which may be troublesome for boats. Anchorage may be obtained anywhere according to draught over good holding ground, soft mud.

Routes

9.155

1 The main route into Norfolk Bay passes through Flinders Channel which leads from Frederick Henry Bay, passing close N of Sloping Island (42°57′S, 147°39′E) and S of Bass Shoal, to a position about 8 cables NNE of the N-most part of Green Head (42°56′S, 147°40′E). The fairway skirts the S shore of the approach about 5 cables off it.

The route then leads SE for about 5 miles into Norfolk Bay passing close NE of Whitehouse Point (42°57′S, 147°44′E) and SW of Smooth Island, 2½ miles E. The route leading from Green Head to Denison Canal is also described.

Tidal levels

9.156

1 For Impression Bay (43°03′S, 147°46′E) (9.166), on the S side of Norfolk Bay, the mean maximum range is about 1·3 m, mean minimum range about 0·3 m. For further information see *Admiralty Tide Tables*.

Landmarks

9.157

1 Mount Forestier (42°55′S, 147°51′E) a remarkable double summit, the S peak being the highest.

Conspicuous bare grassy hill (43°01′S, 147°43′E), 53 m high.

Remarkable bare summit which rises 5 cables NW of a 189 m high hill standing about 2 miles S of Deer Point (43°01′S, 147°44′E).

Cash's Lookout (43°02′S, 147°55′E), 7 cables SSW of Eaglehawk Neck (9.168). It is the N summit of a ridge rising to another summit, 539 m high, about 2 miles farther S.

Directions

(continued from 9.148)

Cape Deslacs to Green Head

9.158

1 From a position about 1¾ miles NE of Cape Deslacs (42°59′S, 147°33′E) the track leads initially NE and then ENE, passing (with positions from Sloping Island Light (42°56′·7S, 147°38′·4E)):

NNW of the N-most point of Sloping Island (9.149), from where a light is displayed, thence:

NNW of Hog Islet (7 cables E), and:

2 SSE of the S edge (7 cables NNE) of Bass Shoal (9.149), thence:

SSE of Isle of Caves (2 miles NNE) (9.149), thence:

NNW of Green Head (1½ miles ENE), a yellowish cliffy point, forming the N end of Tasman Peninsula. The land behind Green Head is fairly thickly wooded and up to 113 m high. The shoal bank extending N from Green Head is usually visible in good light. Thence:

3 SSE of Renard Point (2¾ miles NNE); a timbered range rising from 113 m, about 5 cables NE of Renard Point, to 437 m, about 5 miles ENE, backs the N coast of Norfolk Bay. Thence:

SSE of Primrose Point (3 miles NE). Gypsy Bay, with a village at its head, lies N of the point with Susan Bay, separated from Gypsy Bay by a broad point, 6 cables farther NE. Thence:

To a position about 8 cables NNE of the N-most part of Green Head.

(Directions for the approach to Denison Canal continue at 9.161)

Green Head to the inner part of Norfolk Bay

9.159

1 From the position about 8 cables NNE of the N-most part of Green Head (42°56′S, 147°40′E) the track leads SE, passing (with positions from Smooth Island Light (42°57′S, 147°47′E)):

SW of the N shore of Norfolk Bay, lying between Primrose Point (5 miles NW) and Fulham Point (2¼ miles NNW), which is described in the approach (9.161) to Denison Canal, thence:

NE of Lime Bay (3½ miles W), which is very shallow but affords convenient anchorage in S winds, thence:

2 NE of Whitehouse Point (2½ miles W), a cliffy point backed by land rising to an elevation of 123 m, thence:

NE of Monk Bay (2½ miles SW) entered N of Ironstone Point; Mount Stewart stands behind the bay, about 9 cables WSW. Thence:

NE of Ironstone Point (2½ miles SW), a low and thickly wooded point lying at the E end of a ridge projecting E from Mount Stewart. Ironstone Bay lies on the S side of the point. Thence:

3 To a position SW of Smooth Island, which has few trees on it; a light (white framework tower) is displayed from the centre of the island. There is

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Denison Canal from W (9.161)
(Original dated 1998)

good anchorage in depths of about 8 m, in NW winds, off the SE part of the island.

The track then leads SSE, passing:

WSW of Chronicle Point (1¾miles SE), the S entrance point of King George Sound (9.169), thence:

4 ENE of Plunkett Point (3½miles SW) which is cliffy. Between this point and Ironstone Point, 1 mile NNE, there are depths of less than 5 m extending over 5 cables offshore. Coal Mine Hill, with disused coal mines on its E fall, stands 4 cables W of Plunkett Point. Thence:

WSW of Sommer's Beach (2¾ miles SE). Flinders Bay, close SE of the beach, has gradually decreasing depths to its head. Thence:

5 To a position ENE of Deer Point (43°01′S, 147°44′E) from where the bays and inlets within the inner part of Norfolk Bay can be directly accessed. Between Deer Point and Cemetery Point, 8 cables W, there is a small bay. Saltwater River enters the sea at the head of the bay; the village of Saltwater River stands on the NW side of the river mouth.

Useful marks:

Conspicuous pine tree on King George Island (42°57′S, 147°49′E).

Dart Island Light (43°02′S, 147°51′E) (9.167).

Approach from north-west

9.160

1 From a position about 1¾ miles NW of Isle of Caves Light (42°54′·5S, 147°39′·0E) a side channel leads SE between Bass Shoal (9.149), to the SW, and Carlton Bluff (9.150) and Renard Point (9.158), to the NE. The channel has a least depth of 10 m, at its SE end, and joins Flinders Channel E of Bass Shoal.

Between Carlton Bluff and Renard Point, 1 mile SE, the N shore is indented by a bay with Primrose Beach lying at its head.

Approach to Denison Canal

(continued from 9.158)

9.161

1 From the position about 8 cables NNE of the N-most part of Green Head (42°56′S, 147°40′E) the track leads E, passing (with positions from Smooth Island Light (42°57′S, 147°47′E)):

S of Connelly Bay (4 miles NW). On the W side of the bay stands Connelly's Marsh, a village, fronted by five small piers. Thence:

S of Dorman Point (3½ miles NW), the E entrance point of Connelly Bay, and:

2 N of Whitehouse Point (2½miles W) (9.159), thence:

S of Boxall Rock (3 miles NNW), a dangerous rock lying 1½cables SW of Wykeholm Point, thence:

S of Fulham Point (2¼ miles NNW), the W entrance point of Breaknock Bay. The bay is shallow and is divided at its head by Murphy Point; the point is fringed with rocks. Thence:

To a position close SSE of Fulham Island (1¾miles N) which is partially wooded. Foul ground extends N from the island.

3 The track then leads NNE into Dunalley Bay, passing:

ESE of a rocky patch (2¼ miles N) marked by a beacon (N-cardinal). The rocky patch lies on a reef obstructing the centre of the passage between Fulham Island and a broad point, 4 cables NNE.

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Denison Canal from ENE (9.162)
(Original dated 1998)

Dunalley Bay lies between the broad point NE of Fulham Island and Dunbabin Point, 2¼miles SSE. Thence:

To a position (2½miles NNE) at the beginning of the leading line marking the SW entrance to Denison Canal.

(Directions continue at 9.163)

Denison Canal

General information

9.162

1 **Description.** Denison Canal (42°53′·5S, 147°48′·3E), at the N end of Dunalley Bay, leads through a cut in the narrow isthmus separating Dunalley Bay from Blackman Bay. It is spanned by a swing bridge close within the SW entrance, and is controlled by a Superintendent whose directions must be followed by vessels passing through. The canal, open between 0800 and 1700, should only be used by small craft.

2 **Depths.** There is a minimum depth in the canal of 2·2 m just W of the outer pair of beacons, at the E entrance. Shallow areas, with a depth of 1·4 m over them, are known to exist close NE of the E entrance.

Local knowledge is required.

3 **Traffic operations.** Vessels intending to transit the canal, from either end, should call "Denison Canal" on Marine CB Ch 88, VHF Ch 16 or 2524 kHz and advise their time of arrival in order to avoid delay. If not radio equipped the vessel should wait off the outer set of channel beacons until seen by the canal superintendant, who has an office midway along the canal which can observe each approach.

When the swing bridge over the canal has been opened the approach lights will be switched from red to green allowing a vessel to transit. On passing through the canal a fee is payable to the superintendant, who holds out a bucket at the bridge.

4 If a large number of pleasure craft are waiting to transit, the fleet will be divided into several convoys by changing the lights to red after the appropriate number of vessels have entered the approach channel. After the first convoy has passed through the canal the bridge will then be closed to clear the vehicular traffic before the next convoy proceeds.

5 **Tidal streams.** The main stream of the in-going tide sets NE through Denison Canal and SW through Marion Bay Narrows, into Blackman Bay; the reverse applies to the out-going tide. Tidal stream times are as follows:

In-going stream commences 2 hours 27 minutes after LW at Hobart.

Out-going stream commences 2 hours 16 minutes after HW at Hobart.

6 The tidal stream rate through the canal is up to 2 to 3 kn. Tidal conditions may differ due to changes in barometric pressure and the prevailing winds; it is recommended that contact is made with the canal superintendent one day prior to canal transit.

Directions

(continued from 9.161)

9.163

1 **West entrance.** The W entrance to the canal can be identified by a hotel standing on a small rise close E of the entrance. From a position about 8 cables SSW of the SW entrance the canal is approached on the alignment (024°) of a pair of leading lights (42°53′·7S, 147°48′·0E) which lead through a fairway marked by beacons (lateral).

East entrance *(continued from 10.16)*. From a position about 7 cables E of the E entrance, in Blackman Bay, the canal is approached along the line of bearing, 264°, of a direction light (42°53′·5S, 147°48′·3E) standing 2½cables

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within the entrance, which leads through a fairway marked by beacons (lateral).

Dunalley
9.164

1 **General information.** Dunalley (42°53′·3S, 147°48′·7E), the headquarters town of the local fishing industry (9.3), lies close N of the NE entrance to Denison Canal. The approach to Dunalley through Blackman Bay is described at 10.16.

Berths. A T-shaped pier and another pier front the town along with two other piers lying 2½ cables NE.

Supplies: fuel; fresh water; provisions.

Minor bays and inlets

Prices Bay
9.165

1 Prices Bay (43°02′S, 147°45′E) entered between Deer Point (9.159) and Halfway Bluff, 1½ miles SE, is a small bay situated on the S side of Norfolk Bay. A jetty extends from the W shore of the bay, with a depth of 3·7 m at its head, and there is another jetty on the W side of Halfway Bluff. The head of the bay is filled by a drying sandbank.

Impression Bay and Cascades Bay
9.166

1 These bays lie in the S-most part of Norfolk Bay between Halfway Bluff (43°02′S, 147°46′E) and Sympathy Point, 3¼ miles E.

Impression Bay, 1 mile SSE of Halfway Bluff, is filled by a drying sandbank; the village of Premaydena lies at its head. Between the E entrance point of Impression Bay and the W entrance point of Cascades Bay, 1¼ miles E, lie three shallow coves separated by limestone points. The W-most of these coves is named Ferguson's Bay.

2 **Cascades Bay**, 2½miles ESE of Halfway Bluff, is divided at its head by a small rocky point; the head of the bay is filled with drying sandbanks. Koonya, a village at which there are two waterfalls, stands at the head of Cascades Bay; it was formerly known as The Cascades.

Little Norfolk Bay
9.167

1 Little Norfolk Bay (43°03′S, 147°52′E) is entered on the S side of Eaglehawk Bay between the E end of Dart Island and Mason Point, 8½ cables E. Dart Island is grassy and partly wooded; a light is displayed from the SW extremity of the island.

The passage between the W end of Dart Island and Sympathy Point, 3 cables SW, is obstructed by Mason Rock, a dangerous rock with a depth of 1·5 m over it; the rock is covered by the red sector (334°–062°) of Dart Island Light.

2 There is very good shelter, during heavy NW weather, in a depth of about 8 m, under the lee of Dart Island, although care needs to be taken to avoid a marine farm (9.3) established S of the island. The village of Taranna stands near the head of Little Norfolk Bay on the E side.

Eaglehawk Bay
9.168

1 Eaglehawk Bay (43°01′S, 147°53′E), a narrow inlet 3½miles long, is entered between Heather Point and Dart Island (9.167), 8 cables S. The inner 1½ miles of this inlet is shallow. The head of the inlet is formed by Eaglehawk Neck, a narrow isthmus barely 20 m wide in one place, separating Eaglehawk Bay from Pirate's Bay (10.18) on the outer E coast of Tasmania.

2 The main danger in the approach to Eaglehawk Bay is that of Flinders Reef, a foul spit extending 4 cables SW from the shore, 7 cables NW of Heather Point; an islet lies on the inner part of the reef and a rocky patch, with some boulders awash, lies on its outer part.

Caution. A submarine cable is laid across the inlet about halfway along it. For further information on submarine cables see 1.33.

King George Sound
9.169

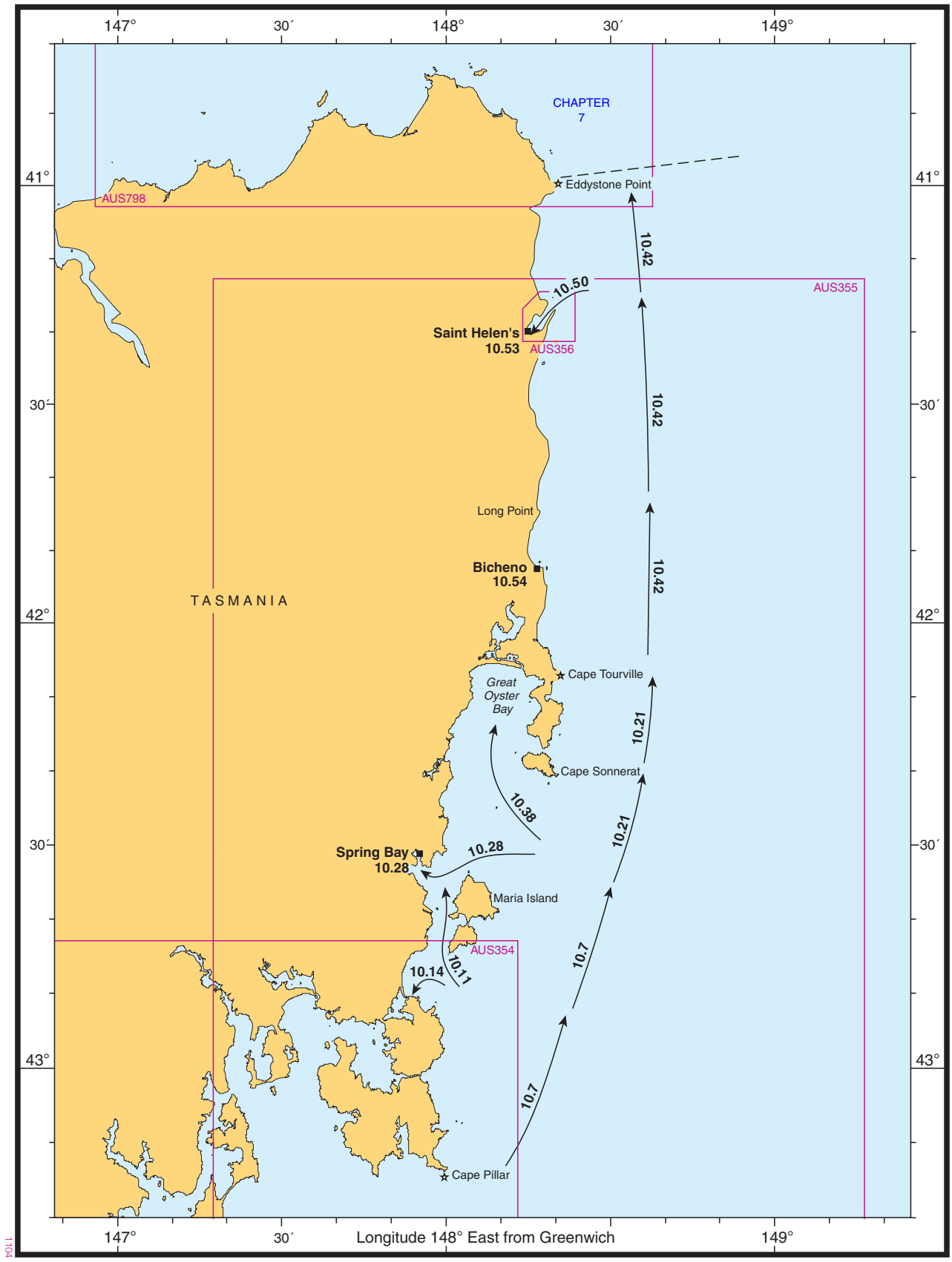
1 King George Sound (42°57′S, 147°51′E), a shallow inlet 2 miles long, is entered between King George Island and Chronicle Point, 6 cables SW. Murdunna, a small village, lies at its head.

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NOTES

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Chapter 10 - Cape Pillar to Eddystone Point



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CHAPTER 10

EAST COAST OF TASMANIA — CAPE PILLAR TO EDDYSTONE POINT

GENERAL INFORMATION

Charts Aus 354, Aus 355, Aus 422

Scope of the chapter

10.1

1 The area covered by this chapter comprises the passage along the E coast of Tasmania from Cape Pillar (43°14′S, 148°01′E) to Eddystone Point, about 130 miles N.

It is much indented but there are few sheltered anchorages; Spring Bay (10.28), 40 miles N of Cape Pillar, is the best for vessels of moderate draught. The only harbours on this coast are Spring Bay, and Saint Helen's for small craft, in George's Bay (10.50), near the N end of the E coast.

The chapter is divided into the following sections:

Cape Pillar to Cape Tourville (10.6).

Cape Tourville to Eddystone Point (10.42).

Fishing

10.2

1 **General.** Fleets of small fishing craft work along the E coast of Tasmania; Dunalley (42°53′S, 147°49′E) (9.164), where there are canneries, is the headquarters of the fishing industry. Crayfish are the chief of several species caught.

Marine farms are established in the area covered by this chapter. They consist of floating or fixed structures with associated moorings and are generally marked by beacons or buoys which may be lit; they should be given a wide berth. The marine farms are shown on the charts but only the ones that affect navigation are described in this chapter.

Rescue

10.3

1 See 1.66 and *Admiralty List of Radio Signals Volume 5*.

Local magnetic anomalies

10.4

1 Local magnetic survey results indicate that there are likely to be significant magnetic anomalies between Cape Pillar (43°14′S, 148°01′E) and Governor Island (41°52′S, 148°19′E), including within Marion Bay (42°48′S, 147°54′E) (10.14).

Caution

10.5

1 The inshore waters off the E coast of Tasmania have been little surveyed; there may be unknown dangers and less water than charted.

CAPE PILLAR TO CAPE TOURVILLE

GENERAL INFORMATION

Chart Aus 355

Area covered

10.6

1 The area covered by this section comprises:

Cape Pillar to Mistaken Cape (10.7).

Mistaken Cape to Cape Tourville (10.21).

CAPE PILLAR TO MISTAKEN CAPE

General information

Chart Aus 355

Route

10.7

1 From a position SE of Cape Pillar (43°14′S, 148°01′E) the coastal route leads NNE, for a distance of about 40 miles, to a position ESE of Mistaken Cape (42°39′S, 148°10′E).

Principal marks

10.8

1 **Landmarks:**

Cape Pillar (43°14′S, 148°01′E) (9.11).

Macgregor Peak (42°59′S, 147°57′E), the highest part of Forestier Peninsula, has a well-defined double summit that is thickly wooded.

2 Mount Maria (42°37′S, 148°06′E) with Bishop and Clerk (Mount Pedder on chart Aus 170), 1½miles farther N, are the summits of a lofty ridge on Maria Island (10.10).

Three Thumbs (42°36′S, 147°52′E), a conspicuous hill.

Major light:

Tasman Island Light (43°15′S, 148°00′E) (9.12).

Directions

(continued from 9.15)

Cape Pillar to Cape Frederick Hendrick

10.9

1 From a position SE of Cape Pillar (43°14′S, 148°01′E) (9.11) the track leads NNE, passing (with positions from Cape Pillar):

ESE of Cathedral Rock (close E), thence:

ESE of Munroe Bight (2 miles NNW), entered between Cape Pillar and Cape Hauy. The shore of the bight is cliffy and at its head stands Mount Fortescue, 505 m high. Thence:

ESE of Cape Hauy (5 miles N); The Lanterns, a group of prominent rocks, lies off the cape. Thence:

2 ESE of Hippolyte Rocks (6 miles NNE); the group consists of two rocks above water and some submerged patches. The E and highest rock is reddish-brown in colour and quoin-shaped at its W end. The passage between Hippolyte Rocks and the coast W is foul and should on no account be attempted. Thence:

ESE of Tasman Arch (11½ miles N), the S entrance point of Pirate's Bay (10.18), thence:

ESE of The Sisters (15½ miles N), a group of rocky islets lying 5 cables SE of Cape Surville, thence:

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3 ESE of High Yellow Bluff (18 miles N). Between Cape Surville and High Yellow Bluff the coast is steep and bordered by high rocks. Thence:

ESE of Humper Bluff (19¾ miles N). Between High Yellow Bluff and Humper Bluff the coast is bordered by above and below-water rocks and affords neither anchorage or shelter, the sea breaking heavily on every part of it. Thence:

4 ESE of Lagoon Bay (20½ miles N), entered between Humper Bluff and Cape Frederick Hendrick, 1¼miles NNW. The S shore of the bay is fronted by several rocks and islets of which Kelly Islets, off the N end of Humper Bluff, are the largest and farthest offshore. Thence:

To a position ESE of Cape Frederick Hendrick (42°52′S, 147°58′E). The cape is a narrow projection, formed of basalt columns, extending 1½miles ENE from the coast; rocks extend E from the cape.

Cape Frederick Hendrick to Mistaken Cape

10.10

1 From the position ESE of Cape Frederick Hendrick (42°52′S, 147°58′E) the track continues NNE, passing (with positions from Cape Frederick Hendrick):

ESE of Visscher Island (1 mile N) (10.19), thence:

ESE of Marion Bay (5 miles NW) (10.14), thence:

2 ESE of Cape Peron (7½ miles N), which is bold and forms the S-most point of Maria Island. Boy in the Boat, lying 4 cables S of the cape, is a small, steep-to pinnacle and is the outermost of three above-water rocks lying off the cape; the middle rock is 1 m high and Pyramid Rock is the inner-most. Thence:

ESE of Cape Maurouard (10 miles NNE). A point 1 mile N of the cape is steep-to, but 1 mile farther NNW foul ground extends 7 cables E from the SE entrance point of Riedle Bay (10.20). Thence:

3 ESE of Little Raggedy Head (14½miles NNE), thence:

To a position ESE of Mistaken Cape (15½miles NNE), the E-most point of Maria Island. Maria Island is high and rugged with sharp irregular peaks near its N end and is almost divided into two parts by Riedle Bay on its E side and Shoal Bay (10.12) on its W side, separated only by a low sandy isthmus. The S and E sides of the island are of granite and rise abruptly, like a wall, to about 180 m in height, but descend gradually towards the shores of Riedle Bay.

(Directions for the coastal passage continue at 10.25)

Mercury Passage

Chart Aus 170 (see 1.12)

General information

10.11

1 **Description.** Mercury Passage leads between Maria Island (42°38′S, 148°05′E) and the mainland to the W. It can only be used by vessels with a draught not exceeding 6·4 m.

Local knowledge is required.

Tidal streams set N and S in the channels each side of Lachlan Island (42°39′S, 147°59′E).

Caution. An area of shellfish beds, marked by light-buoys (special) and shown on the chart, obstructs the N entrance to the passage; entry into a part of this area, indicated on the chart, is prohibited. For information on marine farms see 10.2.

Directions

10.12

1 From a position about 2 miles SW of Cape Peron (42°45′S, 148°01′E) (10.10), at the S end of Mercury Passage, the track leads N for a distance of 8 miles, passing (with positions from Lachlan Island Light (42°39′S, 147°59′E)):

W of Cape Peron (6 miles SSE), thence:

2 E of Cape Bernier (5¼miles S), which is high, and remarkable for its conical shape; it is steep-to S and E. Between this cape and Point des Galets, 3 miles N, the W shore of Mercury Passage is steep-to. Thence:

W of Green Bluff (5 miles SSE), the S entrance point of Oyster Bay, thence:

E of Pebbly Point (4¼ miles SSW), thence:

E of Cockle Bay (3¾miles SSW), a slight indentation; there is a small inlet at the S end of the bay, W of Pebbly Point. Thence:

3 E of Point des Galets (2¼ miles SSW), and:

W of Oyster Bay (3 miles SE), entered between Green Bluff and Point Lesueur; a dangerous rock (reported 1976) lies 7 cables SE of Point Lesueur on the N side of the bay. Shoal Bay lies at the head of Oyster Bay and is entered between Point Mauge (3½miles SE) and Edina Point, 1 mile N; Goldings Reef, and a dangerous rock (reported 1992), lie close S of Edina Point.

10.13

1 The track then continues N, passing (with positions from Lachlan Island Light):

W of Point Lesueur (1¾ miles SE) which is low and narrow. Between the point and Cape Boullanger, 6 miles NNE, the W shore of Maria Island is low and wooded, forming a succession of small bays. Thence:

E of Sandspit Point (1 mile SW) fronted by a sandy beach; a small stream flows into an inlet W of the point. Thence:

2 W of Booming Bay (2 miles E), a shallow bay entered N of Point Lesueur, and:

E of Lachlan Island, which is 11 m high and covered with grass; a light (metal framework tower, 7 m in height) is displayed from the summit of the island. There is a passage for small craft, drawing less than 2 m, between the island and a small reef of rocks, lying 1½ cables NW. Thence:

To a position W of Return Point (2¼miles ENE), the N entrance point of Booming Bay.

3 From the position W of Return Point the track leads either NNE out into open water, keeping clear of a large marine farm (10.11), or NW towards Spring Bay (42°33′S, 147°55′E) (10.28).

Useful marks:

Point Home Light (42°33′·2S, 147°57′·1E) (10.24).

Ile du Nord Light (42°34′S, 148°04′E) (10.25).

(Directions for Spring Bay continue at 10.33)

Marion Bay and Blackman Bay

Charts Aus 355, Aus 171

Description

10.14

1 **Marion Bay** (42°48′S, 147°54′E), entered between Cape Paul Lamanon and Cape Bernier, 7 miles N, is exposed

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Marion Narrows from NE (10.15)
(Original dated 1998)

with the only shelter being in its S part from where a channel leads through Blackman Bay to Denison Canal (9.162). Cape Paul Lamanon is cliffy, stony, and covered with small trees and scrub. High Rocks lie close off the cape with other rocks above and below water.

2 The shore of Marion Bay is formed by a flat sandy beach which curves from the NE entrance point of Marion Narrows, 1 mile W of Cape Paul Lamanon, for about 5 miles N to Point du Ressac. Landing on this beach is always dangerous and is impossible with onshore winds which raise a heavy surf, breaking more than 2 cables offshore.

3 The coast along the N part of the bay, between Point du Ressac and Cape Bernier, is fairly high and forms two sandy bights which may be approached during offshore winds when the NE bight will be found the more convenient.

Blackman Bay (42°51′S, 147°51′E), formerly named Port Frederick Hendrick, is an extensive, shallow inlet almost separating Forestier Peninsula from the mainland. It is connected with Norfolk Bay by Denison Canal.

4 The E shore of Blackman Bay is high and irregular, rising E to Tasman Hill and S to Mount Forestier (9.157). Little Chinaman Bay lies at the NE end of the E shore, S of the Marion Narrows; there is the ruins of a jetty near the NE end of the bay.

The W shore of the bay is low, except near Dunalley (9.164) at its SW end, and is fronted by Little Boomer, about 1 mile W of the entrance to Marion Narrows, and by Boomer Island, 1¾ miles farther SSW. This part of the bay is filled with flats, with depths of 0·6 to 0·9 m over them, interspersed with deeper channels and drying spits.

Approach and entry

10.15

1 Blackman Bay is approached from the S side of Marion Bay and entered through Marion Narrows. The entrance, in which there is a bar, lies between a steep point, fronted by breakers on the E side, and on the W side by the extremity of a low, narrow peninsula, 1½ cables W. The bar in the entrance alters from time to time restricting entry to only small craft.

Depths. The channel leading into Blackman Bay had a least depth of 1 m in the vicinity of No 4 Beacon, in 1998. A sandbar encroaches into the channel between No 6 and No 8 Beacons.

2 **Caution.** As the positions of sandbanks in the area are liable to change, mariners are advised not to attempt to enter Blackman Bay through Marion Narrows in heavy NE conditions. It is recommended that yachts have a man aloft to assist in determining the deep water channel.

Local knowledge should be sought prior to passing through Marion Narrows.

Tidal streams on the bar attain rates of over 2 kn; see also 9.162.

Directions

10.16

1 **Marion Narrows Leading Lights:**

Front light (42°51′·2S, 147°53′·0E), on the SW side of Little Chinaman Bay.

Rear light (140 m from front light).

2 From a position about 1¼ miles NW of Cape Paul Lamanon (42°50′·7S, 147°55′·1E) the alignment (207½) of these lights leads SSW over the bar and through Marion

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Narrows. When abeam of the SW end of the E entrance point, follow the line of the E shore for a short distance to No 1 Beacon (starboard hand). Pass about 50 m off No 1 Beacon and about 20 m off No 3 Beacon (starboard hand). The track then leads through a narrow channel, marked by numbered light-beacons (lateral) and beacons (piles, lateral), into Blackman Bay and thence towards Denison Canal.

3 **Useful mark:**

Light (metal framework tower, 3 m in height) 2 cables E of the E entrance point to Marion Narrows.

Caution. Two structures (disused beacons, black) off the SW shore of the W entrance point are of no navigational significance. Also, as from time to time changes are made, the numbers on the beacons may differ from that shown on the chart.

(Directions for the NE end of Denison Canal are given at 9.163)

Minor bays and anchorages

Chart Aus 795

Fortescue Bay
10.17

1 Fortescue Bay (43°08′S, 147°58′E), entered between Cape Hauy and Cape Nola, 1½ miles NW, has a white sandy beach at its head. It affords shelter only from offshore winds, for Hippolyte Rocks (10.9) in its approach, are not extensive enough to protect it from seaward.

Pirate's Bay
10.18

1 Pirate's Bay (43°01′S, 147°56′E) is entered between Tasman Arch and Clydes Islets, two islets 1¼ miles N. The Isle of Fossils lies 1 cable NNW of Tasman Arch, to which it is connected by a reef; rocks, some drying and others below water, lie on the reef.

Pirate's Bay has a small sandy beach in its S part and a larger sandy beach along its W shore, forming the E side of Eaglehawk Neck (9.168). Very shallow water appears to extend from the neck 5 cables offshore and a heavy surf always rolls in.

2 The Pavement, a curious geological feature, lies on the NW side of Pirate's Bay. It consists of an extensive level of basalt rock, of regular geometry much resembling a pavement of large flat stones, which may be seen at LW.

North Bay
10.19

1 North Bay (42°52′S, 147°56′E) is entered between Cape Frederick Hendrick (10.9) and Cape Paul Lamanon (10.14), 2½ miles NW; a lagoon lies within the head of this bay.

Visscher Island, 1 mile N of Cape Frederick Hendrick, lies in the entrance to North Bay but is too small to protect it from seaward.

On the NW side of North Bay lies Tasman Bay, a cove on the S side of Cape Paul Lamanon; two reefs, on which the sea breaks heavily in rough weather, project to form an inner cove. A monument on the shore of the cove marks the site of Abel Tasman's landing in 1642.

Chart Aus 170

Riedle Bay
10.20

1 **Description.** Riedle Bay (42°40′S, 148°05′E), on the SE side of Maria Island, is entered between Cape des Tombeaux and a point, 2 miles SW. An area of foul ground extends up to 7 cables offshore from the S entrance point; John Bulls Rock lies close SE of this point.

Anchorages and landing. Depths in the SW part of the bay vary from 16 to 27 m, fine sand, and in its NE part from 9 to 11 m. The bay is entirely exposed to wind and sea from NE to S and, except for a short stay, affords only indifferent anchorage.

2 There is landing in the SW part of the bay with offshore winds, but farther N a dangerous bar prevents approach to the shore. Whalers Cove, on the NE side of the bay, provides shelter for recreational craft in depths of 12 to 15 m, rock and kelp with patches of sand; there are two above-water rocks on the NW side of this cove.

MISTAKEN CAPE TO CAPE TOURVILLE

General information

Chart Aus 355

Route
10.21

1 From a position ESE of Mistaken Cape (42°39′S, 148°10′E) the coastal route leads initially NNE, for a distance of 21 miles, to the vicinity of Cape Sonnerat (42°21′S, 148°21′E), thence N for a further 14 miles to a position E of Cape Tourville (42°07′S, 148°21′E).

Topography
10.22

1 The main features along this part of the coast are Maria Island (42°37′S, 148°06′E), described at 10.10, Schouten Island (42°19′S, 148°17′E) (10.25) and Freycinet Peninsula (42°13′S, 148°18′E). The Hazards, rising to 485 m (1590 ft), is part of a peninsula which is connected by a narrow isthmus with Freycinet Peninsula to the S.

Freycinet Peninsula on its W side is low and wooded and on its E side steep and barren, partly bordered by rocks. Freycinet Peninsula and Cape Tourville, being high and separated by low isthmuses, with Schouten Island also high, appear from seaward as a chain of islands.

Marine Protected Area
10.23

1 The NW and N coasts of Maria Island are bounded by Maria Island Marine Reserve from Return Point (42°37′·8S, 148°01′·6E) (10.13) to a point (42°35′·1S, 148°07′·2E), close NE of Bishop and Clerk (10.8).

Principal marks
10.24

1 **Landmarks:**

Mount Maria (42°37′S, 148°06′E) (10.8).
Three Thumbs (42°36′S, 147°52′E) (10.8).
Mount Murray (42°28′S, 147°59′E), a conspicuous hill.

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Mount Freycinet (42°13′S, 148°18′E), the highest part of Freycinet Peninsula.

2 **Major lights:**

Point Home Light (Point Home Lookout Light on chart Aus 355) (white concrete tower and lantern, 14 m in height) (42°33′·2S, 147°57′·1E).

Cape Tourville Light (white concrete tower and lantern, 11 m in height) (42°07′S, 148°21′E).

Directions

(continued from 10.10)

Mistaken Cape to Cape Sonnerat

10.25

1 From a position ESE of Mistaken Cape (42°39′S, 148°10′E) the track leads NNE, passing (with positions from Mistaken Cape):

ESE of Beaching Bay (2½ miles NNW); there are below-water rocks off the bay's S entrance point. Thence:

2 ESE of Cape Boullanger (6¼ miles NW), the N-most point of Maria Island; the coast between Cape Boullanger and Mistaken Cape is high and steep. Ile du Nord lies 5 cables N of Cape Boullanger; a light (white GRP hut, 4 m in height) is displayed from the N point of the island. Thence:

ESE of Ile de Phoques (White Rock) (14 miles N), a bare rock, also known as Swan Island, thence:

3 ESE of Taillefer Rocks (18½ miles NNE), which lie 9 cables off the S side of Schouten Island. The largest of this group of rocks appears as a pyramid from the W. Chicken Point Light (white GRP hut, 4 m in height), displayed from a point on the S coast of Schouten Island, 1¼miles NNW of Taillefer Rocks, is obscured (322½–333½) by these rocks. Thence:

4 To a position E of Cape Sonnerat (20 miles NNE), the SE point of Schouten Island; a group of islets and rocks lie off the cape. Schouten Island is about 460 m high, with a steep and barren E side, and a low and wooded W side.

Cape Sonnerat to Cape Tourville

10.26

1 From a position E of Cape Sonnerat (42°21′S, 148°21′E) the track leads N, passing (with positions from Cape Sonnerat):

E of Cape Baudin (1¼ miles NNW); Chain Locker Bay lies between Cape Sonnerat and Cape Baudin. Thence:

E of the E entrance to Schouten Passage (3¾miles NNW) (10.27), thence:

2 E of Cape Degerando (4 miles N), the S end of Freycinet Peninsula, fronted by rocks. Slaughterhouse Bay lies close N of Cape Degerando and is fringed with rocks, thence:

E of Gates Bluff (7 miles N); there is an area of foul ground close SW of the bluff, thence:

E of Half Lemon Rock (8¼miles N), an above-water rock lying on an area of foul ground extending 7 cables offshore, thence:

E of Cape Forestier (9¾ miles N); Lemon Rock lies close off the cape. Thence:

3 E of Thouin Bay (11 miles N) with Wineglass Bay at its head. Small craft may anchor in Wineglass Bay, in depths of 3 to 6 m, sand; the bay has a white sandy beach. Thence:

To a position E of Cape Tourville (13 miles N), which is high and projects 5 cables SE from the coast; a light (10.24) is displayed from the cape. The Nuggets, a group of islets and rocks, extends 1 mile NE from the cape and Sleepy Bay lies on its S side.

(Directions continue at 10.46)

Side channel

Schouten Passage

10.27

1 Schouten Passage (42°17′S, 148°18′E), separating Freycinet Peninsula (10.22) from Schouten Island (10.25), has a least width of 5 cables. There appear to be no dangers in the passage except for an 8·8 m (29 ft) shoal and a 14·2 m (47 ft) shoal lying 1½ miles and 2½ miles WNW of Point Geographe, the S-most point of Freycinet Peninsula, and a small above-water rock close off this point. When HMS *Pioneer* passed through this passage in 1906 the least depth obtained was 22 m (12 fm).

Spring Bay and approaches

Chart Aus 170 (see 1.12)

General information

10.28

1 **Position and function.** Spring Bay (42°32′S, 147°55′E), 32 miles NE of Hobart, derives its name from a chalybeate spring on its E side. Within the bay there is a wood chip loading facility and a fish processing plant at Triabunna.

Topography. Both of the shores of the bay are low with undulating slopes covered in gum trees.

Port limits. Spring Bay port limits are bounded to the E by a line joining Point Home (42°33′·2S, 147°57′·1E) and Stapleton Point (42°35′·7S, 147°55′·8E).

2 **Approach and entry.** Spring Bay may be approached either from seaward passing N of Maria Island or from the S through Mercury Passage (10.11). The bay is entered between Freestone Point (42°33′S, 147°56′E) and Meredith Point, 9 cables W.

Port Authority. Hobart Ports Corporation, GPO Box 202, Hobart, Tasmania, 7001.

Limiting conditions

10.29

1 **Tidal levels.** Mean maximum range about 1·1 m; mean minimum range about 0·1 m. For further information see *Admiralty Tide Tables*.

Maximum size of vessel handled: 47 152 dwt.

Arrival information

10.30

1 **Anchorages.** Large vessels may anchor in Orford Roads (42°34′S, 147°56′E), off the entrances to Prosser Bay (10.37) and Spring Bay. This is a fair anchorage, with depths of about 19 m, during W gales, but it cannot be recommended in E gales as the bottom is hard sand and a swell rolls in round the N end of Maria Island.

Vessels may also anchor at the entrance to Spring Bay in a depth of about 13 m. Within Spring Bay, which is completely sheltered, there is good holding in mud.

2 **Pilotage** is compulsory for vessels of 35 m in length and over. Requests for a pilot should be made to Harbour Master, Hobart, at least 24 hours in advance, with the ETA being amended or confirmed at least 7 hours before arrival at the pilot boarding station.

The pilot boards 1¼ miles SSW of Point Home Light (42°33′·2S, 147°57′·1E).

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Meredith Point *Spring Bay Wharf*

Spring Bay from SE (10.28)
(Original dated 1998)

Traffic Regulation. An area, shown on the chart, into which unauthorised entry is prohibited is established around Spring Bay Wharf (10.35).

3 **Prohibited anchorage.** Anchoring is prohibited within 50 m of a submarine pipeline laid from Paddy's Point (42°32′·4S, 147°55′·4E), across the bay to a point, 5 cables WSW, 2¾cables NNW of Louisville Point (10.34).

For further information on submarine pipelines see 1.33.

Quarantine. Spring Bay is a first port of entry. The quarantine line extends across the entrance to Spring Bay; the quarantine anchorage is within 2½ cables of a position 5 cables W of Freestone Point (42°33′S, 147°56′E).

For further information on quarantine see 1.47.

Harbour

10.31

1 Spring Bay, an inlet about 2¼ miles long, has a deep water berth on its E side close within its entrance. The N end of Spring Bay is formed by a shallow bay into which Victory River flows; a causeway crosses the river close within its entrance. Dead Island lies in this shallow bay and Triabunna, a village, stands at the head, where there are berthing facilities for small craft.

Directions for passing north of Maria Island

10.32

1 From the vicinity of 42°29′S, 148°12′E the track leads WSW, passing (with positions from Ile du Nord Light (42°34′S, 148°04′E)):

Clear of Sloppy Weather Bank (2½ miles N), thence:

NNW of Ile du Nord, from where a light (10.25) is displayed, thence:

SSE of Cape Bougainville (4 miles NNW); Fanella Bank lies 1½ miles NE of this cape. And:

NNW of Darlington Bay (1¼ miles SSW), at the head of which lies the village of Darlington. There is a jetty on the N side of the bay; a light is displayed from the jetty. Thence:

2 SSE of Lords Bluff (4 miles NW), the E entrance point of Okehampton Bay, thence:

NNW of a marine farm (2½ miles WSW) (10.11), thence:

SSE of Flensers Point (5 miles NW), the W entrance point of Okehampton Bay, thence:

To a position SSW of Point Home (5¼ miles W) in the vicinity of the pilot boarding station. A light (10.24) is displayed from Point Home.

Useful mark:

Lachlan Island Light (42°39′S, 147°59′E) (10.13).

(Directions continue at 10.34)

Directions from Mercury Passage

(continued from 10.13)

10.33

1 From a position about 1½ miles W of Return Point (10.13), the track leads NW, passing (with positions from Lachlan Island Light (42°39′S, 147°59′E)):

SW of a marine farm (2 miles NNE) (10.11), thence:

NE of Carrickfergus Bay (2 miles WNW), thence:

NE of Johnson's Point (2½miles NW), a steep headland, thence:

2 NE of Stapleton Point (3½miles NW), 18 m high and steep-to. From Stapleton Point to Quarry Point (10.34), 1¾ miles NW, the shore continues steep-to with cliffs over 70 m high decreasing to about 25 m high. Thence:

To a position SSW of Point Home (5½miles NNW) in the vicinity of the pilot boarding station.

Directions for entering harbour

(continued from 10.32 and 10.33)

10.34

1 From the position SSW of Point Home (42°33′·2S, 147°57′·1E), in the vicinity of the pilot boarding station, the track leads NW, passing (with positions from Point Home Light):

SW of Windlass Bay (7 cables WNW), a shallow cove, and:

NE of Quarry Point (2¼ miles WSW); there is a quarry close S of the point and a white cliff, 33 m high, stands 2 cables S of the point. Thence:

To a position about 5 cables SSW of Freestone Point (1 mile W).

2 From the vicinity of this position Spring Bay Wharf (42°32′·9S, 147°55′·7E) may be directly approached. Berthing may be assisted by using the alignment (359°) of Paddy's Point Leading Lights:

Front light (orange beacon) (42°32′·4S, 147°55′·6E).

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Rear light (similar structure) (close N).

For vessels continuing to the head of Spring Bay, the track leads NNW, passing (with positions from Freestone Point (42°33′S, 147°56′E)):

WSW of Spring Bay Wharf (2 cables NNW) (10.35), and:

3 ENE of Meredith Point (9 cables W), thence:

ENE of Louisville Point (8 cables WNW) from where a light is displayed, thence:

WSW of Sappho Spit (8 cables NNW), extending 1½cables off Paddy's Point, thence:

ENE of One Tree Point (1½ miles NNW), thence:

WSW of Horseshoe Shoal; the W edge of the shoal is marked by a light-beacon (starboard hand) and is covered by the red sector (183°–188°) of Louisville Light. Thence:

4 The track leads through a narrow channel, marked by beacons (numbered piles, lateral), to Triabunna, passing close WSW of Patten Point (2¼miles NNW).

Clearing line:

The line of bearing, about 350°, of Patten Point (42°31′S, 147°55′E) clears WSW of Sappho Spit and Horseshoe Shoal.

Useful mark:

Light at the head of a jetty, 3 cables SSE of Patten Point.

Berths

10.35

1 **Spring Bay Wharf** (42°32′·9S, 147°55′·7E). A T-shaped wharf, equipped for loading woodchips; 240 m in length, depth alongside 11·0 m. The berth is designed to accommodate specialised vessels up to 213 m in length but can handle vessels of considerably greater length. A dolphin stands N and another S of the jetty; lights are displayed from these dolphins.

Triabunna Fish Processing Plant Jetty (42°32′·2S, 147°55′·4E): length 110 m.

Port services

10.36

1 **Repairs:** light repairs possible.

Other facilities: oily waste reception using road tankers; garbage disposal; small craft facilities at Spring Bay and Triabunna; hospital at Hobart, 100 km.

Supplies: fresh water; small quantities of bunkers.

Communications: nearest airport Hobart, 79 km.

Prosser Bay

10.37

1 This bay, lying WSW of the entrance to Spring Bay, is shallow and of no use for any but small vessels; it is entered between Meredith Point (42°33′S, 147°55′E) and Luther Point, 1¼ miles SSW. Prosser River, flowing into the sea at the head of the bay, is obstructed at its mouth by a bar with a depth of 0·6 m over it. The village of Orford stands on the S side of the river entrance and a road bridge spans the river 4 cables within the entrance. A dangerous rock lies close within the river entrance.

2 Anchorage may be obtained off the entrance to the bay in a depth of about 15 m, but a vessel would not be sheltered from S gales. Gales from the E create a dangerous sea in the bay.

Two jetties lie about 1 cable SSW of Luther Point with two other jetties about 2 cables SW of them. There is a dangerous rock near these jetties, 4 cables WSW of Luther Point about 1 cable offshore.

Great Oyster Bay

Chart Aus 355

Description

10.38

1 Great Oyster Bay (42°10′S, 148°10′E), a large bay, is entered between Point Bailly (42°21′S, 148°02′E) and Cape Degerando, the S end of Freycinet Peninsula (10.22), 13 miles ENE. There are depths of 10 to 20 m (32 ft to 11 fm) in the bay, which is reported to be clear of dangers but has not been completely surveyed.

Directions

10.39

1 From the vicinity of 42°29′S, 148°12′E the track leads initially NNW, passing (with positions from Point Bailly (42°21′S, 148°02′E)):

Either side of Ile de Phoques (7 miles SE) (10.25); the land backing the coast to the W, between Cape Bougainville (10 miles S) and Point Bailly, is steep and wooded. And:

WSW of Taillefer Rocks (12¾miles E) (10.25), thence:

2 ENE of Mimosa Bank (5½ miles S), lying 7 cables ENE of Grindstone Point, the S entrance point of Grindstone Bay; the bay is a small inlet extending W. Thence:

To a position E of Point Bailly; rocks above water extend 7 cables SE from the S sides of the point with depths of 18 m (10 fm) close outside them.

The track then leads N to the head of Great Oyster Bay, passing (with positions from Point Bailly):

3 W of Cape Faure (9½ miles ENE), the SW end of Schouten Island (10.25), and:

E of Penguin Rock (1½ miles N), an above-water rock lying close to the shore, with depths of 18 m (10 fm) close E of it, thence:

E of the entrance to Little Swanport (2¾miles NNW) (10.40), thence:

W of Schouten Reef (9½ miles ENE), on which stands a light (isolated danger), which extends 1½miles NW from the NW end of Schouten Island. Thence:

4 E of Buxton Point (5½miles N), with Little Christmas Island lying 5 cables N of it, thence:

W of Weatherhead Point (12 miles NE), from where a light is displayed, thence:

W of Fleurieu Point (15 miles NE), and:

E of Webber Point (11¼ miles N), thence:

To a position ESE of Waterloo Point (13¾miles N) fronting Swansea, a village standing on the N bank of a stream; there is a jetty, with a depth of 2·4 m (8 ft) at its head, at Swansea. Meredith River enters the bay 1 mile NW of Waterloo Point.

Minor bays and anchorages

10.40

1 **Little Swanport** (42°19′S, 147°59′E). This inlet, suitable only for small boats, may be safely entered at HW by vessels with a draught up to about 1·5 m (5 ft) provided there is no swell or break on the bar. There is a boat ramp close inside the entrance on the W side.

Caution. There are marine farms within the inlet; for further information see 10.2.

2 **Great Swanport** (42°03′S, 148°10′E). This large, shallow inlet lies at the head of Great Oyster Bay. It is entered close E of Point Bagot; the point forms the E end

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of Nine Mile Beach which is the S side of a low tongue of land separating Great Oyster Bay from Great Swanport.

Great Swanport, the entrance of which appears to be only 1 cable wide, extends W along the N side of Nine Mile Beach to King Bay, its W arm, into which Swan River flows from the N. Moulting Lagoon, the N arm of Great Swanport, is connected with King Bay by a narrow opening.

10.41

1 **Coles Bay** (42°08′S, 148°18′E). This bay, with the village of Coles Bay on its N side, is entered between Hepburn Point and Fleurieu Point, 3 miles S; Picnic Island lies 1¼ miles ESE of Hepburn Point.

There are several rocks in Coles Bay but good anchorage may be found, in a depth of about 12 m (40 ft), 2½cables SSE of a pier in the bay; a light is displayed from a breakwater close to this pier. There are depths of about 8 to 13 m (27 to 42 ft) between positions about 5 cables off the entrance points of the bay.

2 **Caution.** A submarine cable is laid across the bay, in a N to S direction, from close W of the pier to The Fisheries. For further information on submarine cables see 1.33.

Promise Bay (42°11′S, 148°17′E) is entered between Fleurieu Point and Weatherhead Point (10.39), 4 miles S. There is good anchorage S of Refuge Island, which lies on the edge of a spit of foul ground extending 1 mile S of Fleurieu Point.

CAPE TOURVILLE TO EDDYSTONE POINT

General information

Charts Aus 355, Aus 356

Route

10.42

1 From a position E of Cape Tourville (42°07′S, 148°21′E) the coastal route leads N, for a distance of about 68 miles, to a position E of Eddystone Point (41°00′S, 148°21′E).

Topography

10.43

1 Between Cape Tourville and Cape Lodi, about 12 miles N, the coast is rocky and barren, but about 20 miles farther N, towards Saint Patrick's Foreland, it appears to be well wooded and there are several remarkably pyramid-shaped summits inland; the five most notable are listed under landmarks (10.45).

Climatic table

10.44

1 For Eddystone Point see 1.133 and 1.144.

Principal marks

10.45

1 **Landmarks:**

Lyne's Sugar Loaf (41°54′S, 148°08′E).
Television tower at Bicheno (41°53′S, 148°18′E) (10.54).
Mount Saint John (41°47′S, 148°05′E).
Stack's Bluff (41°38′S, 147°41′E).
Saint Patrick's Head (41°34′S, 148°14′E).
Mount Nicholas (41°33′S, 148°05′E).
Radio mast (41°20′S, 148°17′E) at Saint Helen's.

Major lights:

Cape Tourville Light (42°07′S, 148°21′E) (10.24).
Eddystone Point Light (41°00′S, 148°21′E) (7.181).

Directions

(continued from 10.26)

Chart Aus 355

Cape Tourville to Long Point

10.46

1 From a position E of Cape Tourville (42°07′S, 148°21′E) (10.26) the track leads N, passing (with positions from Cape Tourville Light):

E of Bluestone Bay (1½ miles NNW); there is an above-water rock on the N side of the bay, thence:
E of The Boot (2½ miles NNW), fringed with rocks, thence:
E of Butlers Point (10 miles N), standing at the N end of The Friendly Beaches, thence:

2 E of Cape Lodi (12½ miles N), a rounded projection. Off the coast between Cape Lodi and Bluestone Bay, 11 miles S, very few soundings have been obtained, thence:
E of Governor Island (15 miles N) lying close off the coast. Alligator Rock close S of the island is above water; Trap Reef, with a dangerous rock on it, lies close N of the island. Thence:

3 E of Maclean Bay (18 miles N), which is entered between the point close W of Governor Island and Long Point, 7½ miles N. Diamond Island, Waub's Bay and the small town of Bicheno lie at the S end of Maclean Bay; there are small craft facilities at Bicheno (10.54). Thence:
To a position E of Long Point (22½ miles N), which is a small peninsula. On the N side of Long Point there is a narrow entrance to an inlet which extends N, parallel with the shore.

Charts Aus 355, Aus 356

Long Point to Saint Helen's Point

10.47

1 From a position E of Long Point (41°45′S, 148°18′E) the track continues N, passing (with positions from Long Point):

E of Piccaninny Point (3 miles N), thence:
E of the entrance to Saltwater Inlet (5 miles N), thence:
E of Saint Patrick's Foreland (8½ miles N). Wardlaws Point fronts the middle of the foreland with Ironhouse Point at the N end; a large area of foul ground extends up to 7 cables offshore in the vicinity of Ironhouse Point. Thence:

2 E of the entrance (14¾ miles N) to Henderson Lagoon; Falmouth, a village, stands on the S side of the entrance. The shore, for about 1 mile S of the lagoon entrance to Mariposa Point, is fringed by rocks. Thence:
E of the entrance (17¼ miles N) to Scamander River; the village of Scamander stands on the N side of the entrance. Thence:
E of Puffer's Bank (18¾ miles N), thence:

3 E of Paddy's Islet (21 miles N); depths of less than 9 m (30 ft) extend 7½ cables E from the islet. Thence:
E of Diana's Basin (22½ miles N), a creek with a small arm extending NW and a larger arm SW. A

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Entrance to George's Bay from NE (10.50)
(Original dated 1998)

sandy beach fronts the coast between Diana's Basin and Saint Helen's Point, 6 miles NNE.

10.48

1 The track then continues N, passing (with positions from Long Point):

E of Saint Helen's Island (24 miles N), with rocks awash close N and S of its E end. Anchorage might be obtained by small vessels, in an emergency, between the island and the coast. Thence:

2 E of Middle Ground (26 miles N), thence:

E of Saint Helen's Rocks (27½ miles N) lying at the seaward end of a spit of foul ground extending 1¼miles SE from Saint Helen's Point; the highest rock, 6 m (20 ft) high, lies near the N end of this chain of rocks. Brooker Reef lies on the S edge of the spit with a rock, 1 m (3 ft) high, on it. Merrick Rock, an isolated rock, lies 7 cables NE of the N end of Saint Helen's Rocks. Thence:

3 To a position E of Saint Helen's Point (28½miles N). The point forms the N end of a long, narrow tongue of land on which a continuous ridge of hills extends NNE to Bare Top Hill, standing 5 cables within the point. A light (metal tower, 3 m in height) is displayed from the summit of Bare Top Hill. Bobby Halls Rock, a drying rock, lies 2½cables off the N side of Saint Helen's Point.

(Directions for Saint Helen's are given at 10.52)

Chart Aus 356

Saint Helen's Point to Eddystone Point

10.49

1 From the position E of Saint Helen's Point (41°17′S, 148°21′E) the track continues N, passing (with positions from Saint Helen's Point Light):

E of Elephant Rock (2 miles NNW). Skeleton Bay lies 8 cables W of Elephant Rock with Binalong Bay 1 mile farther W; the SE part of the latter bay is connected by a short channel with Grant's Lagoon. A dangerous rock is reported (1986) to lie 5 cables NNE of the W entrance point of Skeleton Bay. Thence:

2 E of Sloop Rock (5 miles NNW) lying on the E edge of Sloop Reef, an area of several submerged patches extending 5 cables offshore, thence:

E of Garden Reef (7½miles NNW), which consists of several patches below water extending about 1 mile offshore. Garden Lagoon, a small inlet, lies close NW of the reef. Thence:

E of Anson's Bay (14 miles N) (10.55). Bayley Hummock, 39 m (127 ft) high, stands 2 miles N of the entrance to Anson's Bay. The beach near the hummock is broken by three rocky points behind which are densely timbered hills. Thence:

3 E of Bay of Fires (15 miles N) (10.56); the land behind the beach, SW of Eddystone Point in Bay of Fires, is formed of sand and dunes. Thence:

To a position E of Eddystone Point (17½ miles N), from where a light (7.181) is displayed. The point and dangers E and SE of it are described at 7.185.

(Directions for Banks Strait, in the reverse direction, are given at 7.184)

George's Bay

Chart Aus 356 plan of George's Bay

General information

10.50

1 **Description.** George's Bay (41°19′S, 148°18′E), entered between Saint Helen's Point (41°17′S, 148°21′E) and Grant's Point, 1 mile NW, is a deep and extensive harbour within a shallow entrance channel. Shoal banks extending from each shore much obstruct the outer part of the channel and form an unstable bar which should only be crossed by small vessels.

From its entrance the bay extends 5 miles SW to Saint Helen's at its head. The N part of George's Bay is formed by Moulting Bay.

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Saint Helen's from NNE (10.53)
(Original dated 1998)

2 **Bar and approach channel.** The channel across the entrance bar is liable to change. Mariners are warned that the bar is extremely dangerous in heavy NE gales on account of waves breaking farther to seaward making it unsafe for any vessel to enter. Within the bar the channel is uncertain as it sometimes follows the NW shore.

Limiting conditions

10.51

1 In January 1988 the depth of water over the bar was approximately 3 m (10 ft) at LW while the channel between No's 1 and 10 Beacons had a least depth of 2·6 m (8½ft) at LW.

Marine farms. A number of marine farms have been established in George's Bay; for information on marine farms see 10.2.

Directions

10.52

1 **Local knowledge** is required. From a position about 8 cables NNE of Dora Point (41°16′·6S, 148°19′·7E) the track leads SSW over the bar, passing close to the W shore, towards Dora Point, on which there is a conspicuous rock.

2 On approaching Dora Point alter to the S and pass close to the training wall, which extends 1½ cables N from Blanche Point (41°16′·8S, 148°19′·8E); a light is displayed from the N end of the wall. The track then leads E of a buoy (starboard hand), 4 cables SSW of the light, to Pelican Point (41°17′·5S, 148°19′·5E). From Pelican Point a narrow channel, marked by numbered beacons (lateral) leads SW, for about 2 miles, between drying mud flats to Humbug Point. The channel, still marked by numbered beacons, then opens out and leads S and then W, for a further distance of 2½ miles, to Saint Helen's.

Saint Helen's

10.53

1 **Berths.** Saint Helen's (41°20′S, 148°15′E) stands at the W end of George's Bay. A wharf and two jetties front the village and there is another jetty 2 cables E of Jason's Gates Bridge.

Facilities: compass adjustment beacon 5½ cables E of Jason's Gates Bridge; fuel; fresh water; provisions.

Minor bays and anchorages

Chart Aus 355

Bicheno

10.54

1 At Bicheno (41°53′S, 148°18′E) there are limited facilities for small craft. In The Gulch, the channel between Governor Island (10.46) and the mainland, on which stands the village of Bicheno, there is a wharf on the W side.

There is no anchorage but temporary berthing may be had alongside the wharf where there is a least depth of about 3 m. Fuel and fresh water are available at the wharf.

Tidal levels: mean maximum range about 1·3 m. For further details see *Admiralty Tide Tables.*

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Chart Aus 356

Anson's Bay

10.55

1 Anson's Bay (41°03′S, 148°17′E) is entered 5 miles SSW of Eddystone Point (7.185); the entrance is so narrow that it cannot be made out from seaward and boats can barely enter at HW. Landing is seldom possible outside the entrance as there is generally a heavy, dangerous surf on the beach.

Bay of Fires

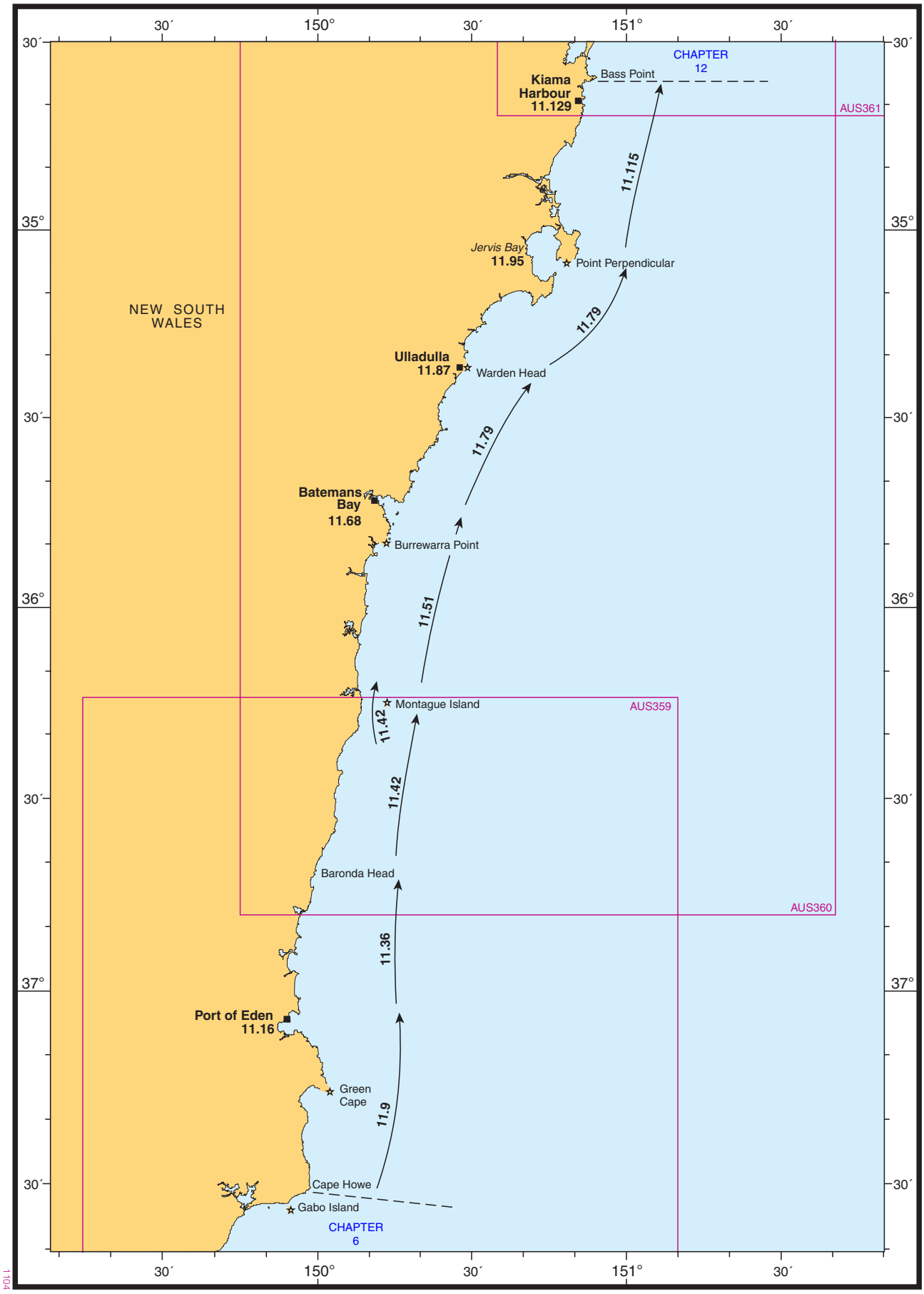
10.56

1 Bay of Fires (41°02′S, 148°20′E) extends from Garden Lagoon (10.49) to Eddystone Point, 10 miles NNE.

Anchorage may be obtained in a depth of 18 m (10 fm) near the centre of the bay, with good shelter when the wind is steady from the W. But it should be left at once if a lull occurs as the wind often shifts suddenly to SE at the end of a gale.

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Chapter 11 - Cape Howe to Bass Point



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CHAPTER 11

NEW SOUTH WALES — CAPE HOWE TO BASS POINT

GENERAL INFORMATION

Chart Aus 423

Scope of the chapter

11.1

1 The area covered by this chapter comprises the passage along the E coast of New South Wales from Cape Howe (37°30′S, 149°59′E) to Bass Point (34°36′S, 150°54′E), about 180 miles N.

The principal anchorages on this coast, providing shelter for vessels of moderate size, are at Twofold Bay (37°05′S, 149°55′E) (11.17), Batemans Bay (35°43′S, 150°13′E) (11.68) and Jervis Bay (35°04′S, 150°45′E) (11.95). The only commercial port is Port of Eden (11.16), within Twofold Bay.

2 The chapter is divided into the following sections:

Cape Howe to Batemans Bay (11.8).
Batemans Bay to Bass Point (11.78).

Topography

11.2

1 The coast between Cape Howe and Bass Point is much indented. It is formed mostly of abrupt rocky cliffs alternating with stretches of sandy beach and backed by high land.

Hazards

11.3

1 **Obstructions.** Some areas within about 1 mile of the coast of New South Wales have not been closely surveyed and uncharted obstructions may exist.

Exercise areas. Submarines exercise frequently in the approaches to Jervis Bay (11.95) and a good lookout should be kept for them when passing through this area. Firing practises and other naval exercises also take place in this locality.

For further information see *Annual Australian Notices to Mariners*.

Fishing

11.4

1 During the period November to April, lobster fishing takes place between Port Stephens (32°45′S) and Bermagui (36°30′S). When passage permits, mariners are requested to transit outside the 220 m (120 fm) depth contour.

Historic wrecks

11.5

1 Along the coastline described in this chapter there are several historic wrecks. They are shown on the charts but only those which affect navigation are described in this chapter. For further details see 1.52.

Current

11.6

1 East Australian Coast Current, which sets S along the coast of New South Wales throughout the year, is described at 1.106.

Rescue

11.7

1 See 1.66 and *Admiralty List of Radio Signals Volume 5*.

CAPE HOWE TO BATEMANS BAY

GENERAL INFORMATION

Chart Aus 359, Aus 360

Area covered

11.8

1 The area covered by this section comprises:

Cape Howe to Twofold Bay (11.9).
Port of Eden (11.16).
Twofold Bay to Baronda Head (11.36).
Baronda Head to Montague Island (11.42).
Montague Island to Batemans Bay (11.51).

CAPE HOWE TO TWOFOLD BAY

General information

Charts Aus 359, Aus 806 (see 1.12)

Route

11.9

1 From a position SE of Cape Howe (37°30′S, 149°59′E) the coastal route leads N, for about 30 miles, to a position E of Worang Point (37°03′S, 149°57′E), the N entrance point of Twofold Bay.

Topography

11.10

1 Between Cape Howe and the SW bluff of Disaster Bay, 12 miles N, the coast consists of steep rocky points with sandy indentations; behind the coast lies a barren heath.

Howe Range extends 5 miles N from Howe Hill (37°31′S, 149°53′E) (6.10) as a series of round and flat-topped hills; similar hills back the coast from 5 miles N of Cape Howe to Disaster Bay. Table Hills (Table Ridge on chart Aus 806) stand 8 miles NW of Cape Howe and rise to 539 m (1770 ft). Thus the appearance of all land about Cape Howe is mountainous.

2 Between Green Cape (37°16′S, 150°03′E) and Red Point, 11 miles NNW, the coast is bold with rocky points and sandy beaches, the land being barren for the most part but with grass on the points. The hinterland is hilly and thickly wooded. The highest of the coastal hills is Haycock Hill, 8 miles NNW of Green Cape.

Caution

11.11

1 The crossing of coastal bars is potentially dangerous. Bars are dynamic in nature, hence the depth and preferred approach may vary. Leading beacons and other navigational aids may not always indicate the best approach. If mariners

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are unsure of the conditions at a particular bar, local information should be sought prior to crossing.

Principal marks

11.12

1 **Landmarks:**

Howe Hill (37°31′S, 149°53′E) (6.10).

Mount Imlay (37°11′S, 149°44′E), a conspicuous, densely wooded peak.

Major lights:

Green Cape Light (white GRP hut on white metal framework tower; 15 m in height) (37°16′S, 150°03′E); an old disused light-tower stands 53 m NW of the light.

Gabo Island Light (37°34′S, 149°55′E) (6.10).

Directions

(continued from 6.16 and 6.136)

11.13

1 From a position SE of Cape Howe (37°30′S, 149°59′E) (6.16) the track leads N, passing (with positions from Green Cape Light (37°16′S, 150°03′E)):

E of Black Head (11¼ miles SSE); there are red cliffs close S of Black Head. Thence:

E of Green Cape, from where a light (11.12) is displayed; Disaster Bay (11.14) lies close W. The cape is low and covered with grass and patches of small bushes; it slopes gradually ESE from Green Hill. The NE side of the promontory is low and rocky. The cape is steep-to with no off-lying dangers. Thence:

2 E of Bitangabee Creek (3¼ miles NNW) (11.15), thence:

E of Mowarry Point (7½ miles NNW); Mowarry Rock stands close E of the point and shows up well from S. Thence:

E of Red Point (10¾ miles NNW) (11.30), easily identified by Boyd's Tower (11.30), thence:

To a position E of Worang Point (13½ miles NNW) (11.30), the N entrance point of Twofold Bay (11.17).

(Directions continue for the coastal route at 11.39)

(Directions for Port of Eden, within Twofold Bay, are given at 11.30)

Anchorages

Disaster Bay

11.14

1 **Description.** Disaster Bay (37°17′S, 150°00′E), a large bay, is entered SE of Green Cape (11.13). The SW side is formed by cliffs of granite and porphyry which are surmounted by steep, grassy and wooded hills. The head of the bay is formed by a long sandy beach broken by Bay Cliff, which is the S entrance point of Womboyn River. The NE side is formed by a promontory at the end of which stands Green Cape, and like the SW side it is cliffy.

2 Womboyn River, which flows into the head of the bay, is accessible to boats in fine weather, but its bar is shifting sand and entry should not be attempted without local knowledge.

Anchorage. Vessels may obtain anchorage, during NE winds, in depths of about 25 m (15 fm), sand, on the NE side of Disaster Bay.

In 1986 HMAS *Ardent*, with a draught of 2·3 m, anchored 1¼ miles ESE of Bay Cliff and found fair shelter and good holding ground in 20 m of water during winds gusting to force 9.

Bitangabee Creek

11.15

1 Bitangabee Creek (37°13′S, 150°01′E), 3¼ miles NNW of Green Cape (11.13), has a depth of 2·7 m (9 ft), sand, affording good anchorage for small vessels.

Caution. A heavy swell sets in with gales from SE.

PORT OF EDEN

General information

Chart Aus 192 with plans of Eden and East Boyd Bay wharves (see 1.12)

Position and function

11.16

1 Port of Eden lies within Twofold Bay (37°05′S, 149°56′E), 25 miles N of Cape Howe. It is a small commercial port, with a fishing centre, at Eden, a town on the N side of the bay. Woodchips and softwood logs are exported.

Topography

11.17

1 **General description.** Twofold Bay (37°05′S, 149°55′E) is comprised of three smaller bays, East Boyd Bay on the S side, Nullica Bay at its head, and Calle-Calle Bay on the N side. The land about Twofold Bay appears more mountainous and hilly than the coast N and S of it.

South side of Twofold Bay. The S side of the bay is formed by Red Point (11.30), Jews Head, a broad peninsula, and Torarago Point, and is indented by East Boyd Bay close W of Jews Head.

2 East Boyd Bay is entered between Munganno Point and Brierly Point, 1 mile SW. East Boyd, a town stands on Brierly Point. At the head of the bay, which is low and sandy, a river enters the sea through marshy ground. Close S of Brierly Point lies Kiah Inlet, the shallow entrance of Towamba River. The river is separated from the S shore of Twofold Bay by a narrow barrier of sand which extends 1 mile NW across the river entrance from Kiah Inlet to Moutrys Point.

11.18

1 **North-west side of Twofold Bay.** This side of Twofold Bay is formed by Nullica Bay and Calle-Calle Bay. Lookout Point (11.30) projects about 7 cables from the centre of the NW side of Twofold Bay, separating Nullica Bay from Calle-Calle Bay.

Nullica Bay is entered between Oman Point, 1¼ miles W of Lookout Point, and Torarago Point, 1¼ miles S. On the N side of Nullica Bay lies Quarantine Bay entered between Quondoa Point and Murrumbulga Point, 5 cables ENE. The bay is at times discoloured by flood water discharged from Towamba River.

2 Calle-Calle Bay is entered between Worang Point (11.30) and Lookout Point, 1¾ miles SW. The head of the bay is formed by a low, narrow strip of sand which separates the bay from Curalo Lagoon. The entrance to the lagoon, which is narrow, small and sometimes blocked, lies in the NW corner of Calle-Calle Bay. On the S side of the bay lies Yallumgo Cove.

Port limits

11.19

1 Port of Eden, within Twofold Bay, encompasses the waters W of a line joining Red Point (37°06′S, 149°57′E) with Worang Point, 2 miles N, as shown on the chart.

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Eden



Wood Chip Berth *Worang Point*

Twofold Bay from ENE (11.17)

(Original dated 1998)

Traffic

11.20

1 In 2003 the port was used by 29 vessels totalling 754 335 dwt.

Port Authority

11.21

1 Port of Eden, PO Box 137, Eden NSW 2551.
Website: www.eden.nsw.gov.au
Email: porteden@eden.nsw.gov.au

Limiting conditions

11.22

1 **Deepest and longest berth.** Wood Chip Berth (11.34).

Tidal levels. See information in *Admiralty Tide Tables*. Mean maximum range about 1·5 m, mean minimum range about 0·4 m.

Arrival information

Port radio

11.23

1 For details see *Admiralty List of Radio Signals Volume 6 (4)*.

Anchorages

11.24

1 Ships of more than 3000 grt should not anchor inside the port limits (11.19) without the express permission of the Harbour Master. Anchorages within the port limits are as follows:

Off East Boyd Bay to the W of Munganno Point (37°06′·2S, 149°55′·6E), in charted depths of 6 to 10 m. In SE gales this anchorage is better than that in Snug Cove.

2 Off Snug Cove, 7½ cables WSW of Lookout Point (37°04′·6S, 149°54′·8E), in a charted depth of about 10 m. This anchorage is good in NE gales but exposed to a heavy swell in E and SE gales.

In the S part of Nullica Bay off Boyd Town (37°06′·3S, 149°52′·8E), in charted depths of 5 to 7 m. This anchorage is much used by coasting vessels but is not recommended in E gales.

Caution. Anchorage in Calle-Calle Bay is not recommended as it is exposed S and SE and there is nearly always a swell.

Submarine pipeline

11.25

1 A pipeline is laid in Snug Cove (37°04′·5S, 149°54′·0E) from the head of Cattle Bay extending about 2½cables SSE.

For further information on submarine pipelines see 1.33.

Pilotage and tugs

11.26

1 **Pilotage** is compulsory for all commercial vessels over 30 m LOA. The pilot boards 1¼ miles E of Lookout Point.

Tugs are available.

Marine farms

11.27

1 A number of marine farms have been established within the limits of Port of Eden. They consist of floating or fixed structures with their associated moorings, being generally marked by beacons or buoys which may be lit. Their positions can be seen on the chart.

Harbour

General layout

11.28

1 There are two deepwater berths on the S side of Twofold Bay. One, at Munganno Point (37°06′·2S, 149°55′·6E) and the other situated 3½cables SW.

The main berthing area at Port of Eden for fishing vessels, is situated in Snug Cove (37°04′·5S, 149°54′·0E) which lies on the SW side of a narrow sandspit connecting Lookout Point with the mainland.

Landmark

11.29

1 Mount Imlay (chart Aus 359) (37°11′S, 149°44′E) (11.12), 9 miles SW of Twofold Bay; when not obscured by cloud it is an excellent mark for making the bay.

Boyd's Tower (grey, square, sandstone structure, 21 m in height) (37°06′·2S, 149°57′·2E).

Directions

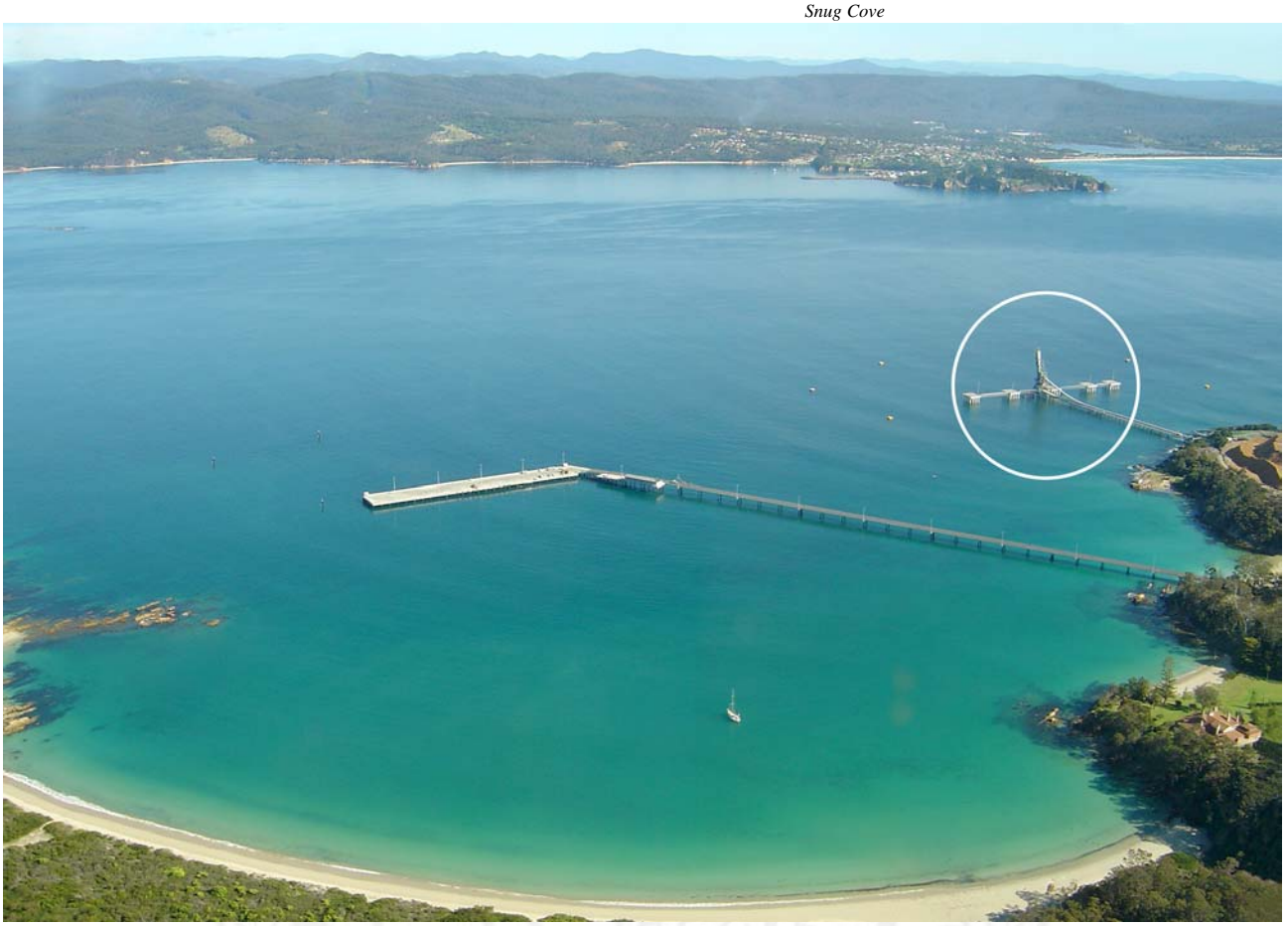
Entering harbour

11.30

1 From a position about 2¼ miles NNE of Red Point (37°06′S, 149°57′E) the track leads WSW, by night, initially within the white sector (246½–288°) of Lookout

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Snug Cove



East Boyd Bay Commercial Wharf *Woodchip Berth*

Port of Eden from SSE (11.28)
(Original dated)

Point Light (white metal framework tower, 14 m in height) (37°04′·6S, 149°54′·8E), passing (with positions from Red Point):

SSE of Worang Point (2¾miles N); the point is faced with cliffs and fringed with rocks. Mewstone Rock lies about 2 cables SE of the point. At night the dangers off Worang Point are covered by a red sector (198°–246½) of Lookout Point Light. Thence:

2 NNW of Seahorse Shoals (4 cables NNE), which, with a least depth of 6·3 m over them and steep-to, lie 3 and 5 cables NNE of Red Point; in a heavy swell the sea breaks on these shoals. At night Seahorse Shoals are covered by a red sector (288°–337½) of Lookout Point Light. Thence:

NNW of Red Point; Boyd's Tower (11.29), stands on a cliff, 18 m high, close inside the end of the point. Thence:

3 NNW of Honeysuckle Point (7½ cables WNW), the NE extremity of Jews Head (11.17), thence:

NNW of Munganno Point (1¼ miles W), the NW extremity of Jews Head off which lies a woodchip loading berth (11.34). A shoal spit extends 3½cables N of Munganno Point; a buoy (port hand) lies 1½cables N of a patch, with a depth of 5·0 m over it and steep-to, on the NE side of this spit. And:

4 SSE of Lookout Point (2½miles NW) at the end of a rocky peninsula; the point is covered with trees and scrub and appears cliffy from S and E.. Thence:

To a position about 8 cables S of Lookout Point from where vessels may proceed directly to berths on the S side of Twofold Bay or to the berths at Snug Cove, at Eden, on the N side.

11.31

1 **Clearing lines:**

The line of bearing, 115°, of Boyd's Tower (37°06′·2S, 149°57′·2E) (11.29), open N of Honeysuckle Point, 7½cables WNW, clears N of the 5·0 m patch on the shoal spit extending N from Munganno Point (37°06′·2S, 149°55′·6E).

The line of bearing, 105°, of Red Point (37°06′S, 149°57′E), open N of Honeysuckle Point, 7½cables WNW, clears N of Whale Spit, which extends 3 cables NE of Torarago Point (37°06′·0S, 149°53′·6E).

2 The line of bearing, 236°, of a large white building standing among trees behind Boyd Town, 8 cables SW of Torarago Point (37°06′·0S, 149°53′·6E), open NW of that point, clears 3½ cables SE of dangers extending from Lookout Point (37°04′·6S, 149°54′·8E).

Useful marks:

Eden Breakwater Light (mast) (37°04′·6S, 149°54′·3E).

Quarantine Bay Breakwater Light (37°04′·8S, 149°53′·0E).

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Oman Point



Lookout Point Light

Snug Cove and the town of Eden from SE (11.33)

(Original dated)

Approaching berths

11.32

1 **Snug Cove.** From a position about 8 cables S of Lookout Point the track leads NNW, into the cove, on the alignment (328°) of a pair of light-beacons (37°04′·3S, 149°53′·8E), standing on the NW side of Snug Cove.

Caution. Several mooring buoys, and a marine farm (11.27) lie in Snug Cove.

2 **Wood Chip Berth.** To assist in berthing at the Wood Chip Berth (11.34), on the S side of Twofold Bay, the S side of the approach is marked by the alignment (112°) of a pair of leading beacons (red), standing 2½ cables S of Munganno Point (37°06′·2S, 149°55′·6E).

Navy berth. From a position 8 cables S of Lookout Point the track leads S to a position close N of the berth (11.34).

Berths

Snug Cove

11.33

1 Berths (positioned from Snug Cove Breakwater Light (37°04′·6S, 149°54′·3E)):

Eden breakwater, extending 2 cables SW from the E side of Snug Cove: Fishermans Wharf, a berth, 100 m long, on the N side of the inner part of the breakwater; depth of 8·8 m at seaward end, 6·0 m halfway along shoaling to 3·0 m at the inshore end.

Eden Main Jetty (2 cables NE): length 200 m; depth at outer end 7 m decreasing to 2 m at inner end.

2 Mooring Jetty (2½ cables NE): length 150 m; for the use of fishing vessels only.

Private jetty (4 cables NNW) in Cattle Bay: length 145 m; depth of 5·2 m at the head of the jetty.

Munganno Point

11.34

1 **Wood Chip Berth.** The berth lies at the head of a T-shaped jetty extending 1½ cables NW of Munganno Point (37°06′·2S, 149°55′·6E). The berth consists of five dolphins with a four buoy mooring system, from which lights are displayed; there is a depth of 12·5 m at the berth; vessels up to 50 000 grt, LOA 230 m, with a draught of 11·0 m can be accommodated; loading rate 1000 tons per hour.

Caution. There is an area of foul ground 2 cables NNW and 1¼ cables W of the head of the jetty.

2 **Navy berth.** A multipurpose berth at the head of a jetty extending 3 cables W, 2¼ cables S of Munganno Point. The berth is 200 m in length with a depth of 12 m alongside; vessels up to 180 m LOA with a draught of 10·5 m can be accommodated. The swinging basin, marked by light-beacons (starboard hand and special) and lying W of the berth, is dredged to 11 m. This berth is used by naval vessels and commercially for the export of softwood logs.

Caution. There is an isolated patch with a depth of 9·9 m over it lying close W of the S end of the berth.

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Another isolated patch with a depth of 9·8 m over it, lies 2 cables WNW of the N end of the jetty

Port services

11.35

1 **Repairs.** In Snug Cove (37°04′·5S, 149°54′·0E) there is a slipway and repair facilities for fishing vessels and small craft.

Other facilities. Reception facilities for oily waste using road tankers; oily waste removal not available at wood chip berth; hospital at Pambula, 15 km N.

Supplies. Small quantities of fuel; fresh water; provisions.

Communications. There is an airport at Merimbula, 17 km N of Eden, with daily flights to Sydney and Melbourne.

TWOFOLD BAY TO BARONDA HEAD

General information

Charts Aus 359, Aus 806 (see 1.12)

Route

11.36

1 From a position E of Worang Point (37°03′S, 149°57′E) the coastal route leads N, for about 23 miles, to a position E of Baronda Head (36°41′S, 150°00′E).

Topography

11.37

1 From Twofold Bay (37°05′S, 149°56′E) to Merrimbula Bay, 8 miles N, the highest land behind the coast is Mount Robinson, a long hill standing about 4 miles NW of Worang Point.

The coast between Merrimbula Bay and Bournda Islet, 5½miles N, consists of pipeclay banks surmounted by grassy headlands, interrupted by sandstone cliffs at Tura Head. Thence, from Turingal Point (36°47′S, 149°58′E) to Tathra Head, a further 4 miles N, the coast is formed by an uneven line of granite and pipeclay cliffs surmounted by grassy land.

2 Between Tathra Head and Mogareka Inlet, 1½miles N, the coast is low and sandy, but thence to Wajurda Point, 8 cables NE, it is higher with rocks close offshore.

Landmark

11.38

1 Wolumla Peak (36°52′S, 149°44′E), a thickly wooded mountain, is the most remarkable peak on this part of the coast.

Directions

(continued from 11.13)

11.39

1 From a position E of Worang Point (37°03′S, 149°57′E) (11.30) the track leads N, passing (with positions from Merimbula Point (36°54′S, 149°56′E)):

E of Lennards Island (7 miles S); the islet is flat with a reef projecting a short distance from its E end, thence:

E of Quondolo Point (4¼ miles S); there are some red cliffs 8 cables S of the point, thence:

2 E of Haystack Rock (3 miles S) standing close E of Ioala Point; the rock is a remarkable round boulder. Hunter Rock (11.40) lies 5 cables N of Haystack Rock, thence:

E of Merimbula Point, the N entrance point of Merrimbula Bay (11.40); the point is a steep, cliffy headland, thence:

E of the entrance to Back Lagoon (1 mile N), thence:

E of Tura Head (3 miles N), thence:

E of Bournda Islet (4¾ miles N) lying close offshore; a small salt water lagoon lies close within the islet, thence:

3 E of Turingal Point (7 miles N); Turingal Rock lies close NE of the point. Close W of the Turingal Point lies Wallagoot Lagoon, a salt water lagoon separated from the coast by a narrow ridge without any apparent opening. Thence:

E of Tathra Head (11 miles N). The town of Tathra stands on the NW side of Tathra Head. A disused jetty, 37 m long and with depths of 6 m alongside, lies off the town and is well sheltered from S and SW. Thence:

E of the entrance to Mogareka Inlet (12¼ miles N) (11.41), thence:

4 E of Wajurda Point (13¼ miles N), the S entrance point of Baronda Inlet. The inlet, with depths of 0·6 to 0·9 m (2 to 3 ft) in it, is sometimes open after heavy rain but is always dangerous, being very narrow and with below-water rocks on each side. Thence:

To a position E of Baronda Head (13½ miles N), a rocky projection and the N entrance point of Baronda Inlet.

(Directions continue at 11.45)

Minor bay and inlet

Merrimbula Bay

11.40

1 **Description.** Merrimbula Bay (36°55′S, 149°56′E) is a sandy bay entered between Ioala Point and Merimbula Point (11.39), 2¾miles N. Merimbula Creek, entered 8 cables NW of Merimbula Point, flows into the N end of Merrimbula Bay and Pambula Inlet lies on the S side of the bay.

2 Pambula Inlet, for about 2 miles SW, from its entrance on the S side of Merrimbula Bay to Pambula Lake, is accessible for small vessels with draughts up to 1·8 m. Pambula River flows into Pambula Lake along with several other streams. Pambula, a village where there is a hospital, stands 2½ miles W of the entrance to Pambula Inlet, between Melton Hill and Mowbray Range (not charted) S.

3 Merimbula Creek, flowing in through the N end of a long sandy beach which forms the head of the bay, extends to Merimbula Lake. Its shallow bar is subject to change. Merimbula, a small town, stands on the N side of the creek 5 cables within its entrance where a road bridge spans the creek. An airfield lies close SW of the bridge.

Local knowledge is required for entering Pambula River and Merimbula Creek.

Anchorages. Good anchorage for small vessels, sheltered from S and SW, may be obtained in depths of 11 m (36 ft) close off the entrance to Pambula River.

4 There is good shelter from NE winds off a ruined jetty on the SW side of Merimbula Point in depths of about 14 m (46 ft) but a S wind sends a heavy sea into this part of the bay.

Directions. The main dangers in the bay are Haystack Rock (11.39) off Ioala Point, the S entrance point, and Hunter Rock, 5 cables N of Haystack Rock. Hunter Rock consists of two flat rocks below water over which, in SE weather, the sea breaks heavily.

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5 **Clearing bearing:**

The line of bearing, 252°, of a small sandy beach between two prominent bluffs on the W side of Pambula River entrance, open N of the N side of Ioala Point (36°57′S, 149°56′E), clears N of Hunter Rock.

Clearing marks:

The alignment (207°) of Haystack Rock with Quondolo Point, 1¾miles SSW, clears E of Hunter Rock.

Mogareka Inlet

11.41

1 Mogareka Inlet (36°42′S, 149°58′E), the mouth of Bega River, is obstructed by a bar composed of quicksands, but is occasionally open for small boats. The town of Bega stands on the banks of Bega River 10 miles from the entrance to the inlet.

BARONDA HEAD TO MONTAGUE ISLAND

General information

Charts Aus 359, Aus 806 (see 1.12)

Route

11.42

1 From a position E of Baronda Head (36°41′S, 150°00′E) the coastal route leads N, for about 26 miles, to a position E of Montague Island (36°15′S, 150°14′E).

The inshore route from the position E of Cape Dromedary (11.46), leads N, to a position between Montague Island and the mainland.

Topography

11.43

1 Between Baronda Head and Thubbul Inlet, 11 miles NNE, the coast is backed mainly by high, scrubby hills with no grass on them. The coastline itself, from Baronda Head to Bogola Head, opposite Montague Island, consists of many rocky points and headlands, with sandy beaches between, intersected in several places by small inlets.

2 Montague Island, lying 4 miles ENE of Bogola Head, is divided in two near its centre by a deep rocky chasm through which the sea breaks during strong E winds. The S part of the island is about 65 m high with grass, scrub, and large granite outcrops. A number of large granite boulders stand on the low, bare S end. Its N part, covered with grass and rocky outcrops, is 6 to 9 m lower than the S part.

Principal marks

11.44

1 **Landmarks:**

Mount Townsend or Mumbulla (36°33′S, 149°52′E), the summit of a high, thickly wooded mountain range which rises, in gradations, towards it from N and S. It appears round-topped from some directions and from others sharp and with a nipple top. Several peaks from about 460 to 640 m high stand around the summit within a radius of about 2 miles.

2 Conspicuous tank (36°26′S, 150°05′E) on a point 7 cables ESE of the entrance to Bermagui Inlet (11.48).

Murrabine Mountain (36°23′S, 149°48′E) (chart Aus 359).

Mount Dromedary (36°19′S, 150°02′E), the most remarkable feature on this part of the coast, being visible from 60 miles in clear weather. It was so named by Captain Cook on account of its two peaks.

3 Little Dromedary Mountain (Ajungagua Hill on chart Aus 359) (36°20′S, 150°05′E).

Peak Alone (36°18′S, 149°47′E).

Treble Mountain (36°17′S, 149°54′E).

Major light:

Montague Island Light (grey round granite tower, 21 m in height) (36°15′S, 150°14′E) displayed from the summit of Montague Island (11.43).

Directions

(continued from 11.39)

Baronda Head to Brothers Rocks

11.45

1 From a position E of Baronda Head (36°41′S, 150°00′E) the track leads N, passing (with positions from Baronda Head):

E of Middle Lagoon (Tanya Lagoon on Aus 359) (2 miles N); the entrance of this lagoon is similar to that of Baronda Inlet (11.39), thence:

E of Bithry Inlet (3½ miles N), thence:

2 E of Bengunnu Point (5 miles NNE); Bengunnu Rock lies on a ledge extending close offshore 2 cables NE of the point, thence:

E of Mimosa Rock (6¼ miles NNE), lying 2½cables SW of Bunga Head, with depths of 5 m (18 ft) extending 2½cables S from it. Mimosa Bay, open SE, is entered between Mimosa Rock and a point 7½cables SW. Thence:

3 E of Bunga Head (6¾ miles NNE), a steep, cliffy headland and the most prominent headland on this coast seen from S or N; the cliff is 61 m high and surmounted by a peaked summit 125 m (409 ft) high. Detached rocks, above and below water, extend up to 1 cable offshore from the base of the headland. The historic wreck of the paddle steamer *Mimosa* lies close E of Bunga Head; for further details on historic wrecks see 1.52. Thence:

4 E of Goalen Head (8½ miles NNE) which is green, smooth and sloping, with rocky sides; Erungona Creek lies 1 mile NW. Thence:

E of Thubbul Inlet (9¾ miles NNE), the estuary of Murrah River, which has a narrow, shallow mouth. A low sandy beach curves 1 mile N to Thubbul Inlet from Erungona Creek. Thence:

5 E of Baragga Point (11½miles NNE); between Baragga Point and Thubbul Inlet the coast consists of small rocky points fringed with below-water rocks. Thence:

E of the entrance (12 miles NNE) to Cuttagee Lake; it is spanned by a road bridge close within the entrance. Thence:

6 To a position E of Brothers Rocks (Burragat Rocks on Aus 359) (13½miles NNE), consisting of three above-water rocks, lying 4 cables S of Jerimbut Point (Baragoot Point on Aus 806). The entrance to Baragoot Lake, spanned by a road bridge, lies 5 cables WNW of Brothers Rocks.

Brothers Rocks to Montague Island

11.46

1 From the position E of Brothers Rocks (36°28′S, 150°04′E) the track continues N, passing (with positions from Montague Island Light (36°15′S, 150°14′E)):

E of the rocky point (12½ miles SSW) standing on the SE side of Bermagui Bay, in which lies the

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entrance to Bermagui Inlet (11.48). Between the rocky point and the NE entrance to Bermagui Inlet there is a small sandy bay with a disused jetty. A light (11.49) is displayed from the E headland of the inlet entrance. Thence:

2 E of Murunna Point (10¼ miles SSW); the shore between Bermagui Inlet and Murunna Point is formed by a low, sandy beach, backed by swamps. Thence:

E of the entrance to Wallaga Lake (9¾ miles SSW) which lies within a beach close NW of Murunna Point; the lake is spanned by a road bridge 7 cables NW of its entrance. Thence:

E of the entrance to Tilba Tilba Lake (7 miles SW), thence:

3 E of Cape Dromedary (5½ miles SW) with Boat Harbour Point close N of it; the point is the E of a series of granite and ironstone points extending about 1 mile on each side of Cape Dromedary. The historic wreck of the SS *Lady Darling* lies 1½miles ESE of the cape; for further details on wrecks see 1.52. Thence:

E of two pinnacle rocks (2 miles S), with depths of 4·6 and 4·9 m (15 and 16 ft) over them, lying close together; the sea breaks heavily on them in bad weather. Thence:

4 E of Aughinish Rock (1¼ miles S), a below-water rock pinnacle lying on the SE corner of a reef; there are several patches on the reef with depths of 6·4 to 8·2 m (21 to 27 ft) over them. The reef is steep-to and the sea breaks heavily over it in bad weather. Thence:

To a position E of Montague Island (11.43), from where a light (11.44) is displayed.

Caution. The dangers S of Montague Island should be given a wide berth as others may exist in the vicinity.

(Directions continue at 11.53)

Passage inside Montague Island

11.47

1 In navigating this part of the coast, vessels bound N are recommended to keep inside Montague Island (36°15′S, 150°14′E) and about 2 miles offshore to avoid the S-going current usually found outside the island; at this distance offshore an eddy sometimes sets N.

From a position about 2 miles E of Cape Dromedary (36°19′S, 150°08′E) (11.46) the track leads N, passing (with positions from Montague Island Light (36°15′S, 150°14′E)):

2 E of the entrance (5 miles SW) to Corunna Lake; between Cape Dromedary and the entrance to Corunna Lake, 1¼ miles NNW, rocks, above and below water, extend some distance offshore. And:

W of two rocky pinnacles (2 miles S) (11.46), thence:

E of the entrance (4½ miles WSW) to Nargal Lake, thence:

W of Aughinish Rock (1¼ miles S) (11.46), thence:

3 E of Bogola Head (4 miles WSW); between the entrance to Corunna Lake and Bogola Head there is a sandy beach with below-water rocks close offshore. Thence:

E of Barbunga Point (4 miles W), the S entrance point of Nangudga Lake, and:

W of Montague Island (11.43), from where a light (11.44) is displayed, thence:

4 E of Glasshouse Rock (4 miles WNW), a conical and remarkable rock, lying near the end of a reef extending 3 cables offshore. The coastline N and S of Glasshouse Rock consists of a series of granite and ironstone points, all bordered by reefs, with sandy bays between.

The track then leads out into open water.

Caution. There are overfalls near an 18 m (10 fm) rocky patch, 1¼ miles W of the S end of Montague Island.

Useful mark:

Fire tower standing 5 miles WSW of Wagonga Head (11.53).

Minor harbour and anchorage

Chart Aus 191 (see 1.12)

Bermagui Inlet

11.48

1 **Description.** Bermagui Inlet (36°25′S, 150°04′E), which is narrow, is formed by the mouth of Bermagui River. The entrance to the inlet is narrow with below-water rocks on the E side and a shifting sandbank on the W side. The town of Bermagui stands each side of the river within the entrance which is spanned by a road bridge with a vertical clearance of 2·9 m.

2 **Tidal levels.** Mean maximum range about 1·1 m; mean minimum range about 0·7 m. See information in *Admiralty Tide Tables.*

Anchorage. In NE winds good shelter can be found in the lee of the NE entrance point of the river, but it is exposed to other winds and a heavy swell then rolls in.

Local knowledge. The entrance of the inlet should not be attempted without local knowledge; the channels within are narrow.

3 **Bermagui Boat Harbour.** The harbour lies close W of the mouth of a small creek and on the SE side of the S of two training walls which form the mouth of Bermagui River. An outer breakwater extends N from the S training wall at the E entrance point of the creek; another breakwater, 222 m long, extends N from close N of the outer end of the N training wall, forming the W side of the entrance to the inlet. These breakwaters flank the approach channel which is narrowed by a sandbank to a least width of 9 m and, in 2004, had a least depth of 2·1 m.

4 The harbour affords good shelter for small craft in all weathers and, even in prolonged NE winds, no surge enters. There is no tidal flow in the harbour. Small local vessels can enter in all but the heaviest weather.

11.49

1 **Directions.** The inlet is approached from NNE and entered on the alignment (176¾°) of the following leading lights:

Front light (white structure, white stripe, orange triangle topmark) (36°25′·5S, 150°04′·4E).

Rear light (similar structure, 101 m from front light).

Bermagui River Entrance Light (mast) is displayed from the E headland at the river entrance. Lights (masts) are also displayed from the head of the entrance breakwater on the E side, and from close within the head of the entrance breakwater on the W side.

2 **Caution.** See 11.11.

Berths. Bermagui Boat Harbour consists of a basin, 1 cable in extent, dredged to a depth of 2·4 m mud. A wooden jetty, 61 m long, and a mooring pier, extend from the S side.

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There are also moorings for small craft in Campbells Cove, situated on the SE side of the basin in the entrance to a creek.

Chart Aus 360

Montague Island

11.50

1 Anchorage, for small vessels, may be obtained during E and SE winds in a cove on the W side of Montague Island (36°15′S, 150°14′E) (11.43), formed by its two parts; it is not recommended for large vessels. Small craft may find tolerable shelter in this cove by getting as close in as possible, with the gap in Montague Island bearing 094°. The bottom is irregular and rocky.

MONTAGUE ISLAND TO BATEMANS BAY

General information

Charts Aus 360, Aus 807 (see 1.12)

Route

11.51

1 From a position E of Montague Island (36°15′S, 150°14′E) the coastal route leads N, for about 32 miles, to a position E of North Head (35°43′S, 150°17′E), off the entrance to Batemans Bay.

Principal marks

11.52

1 **Landmarks:**

Mount Wandera (35°48′S, 150°00′E), also known as Camel's Hump from its shape, is a conspicuous partly detached mountain, standing at the SE end of Belmore Range; the range consists of five distinct and peculiar summits, mostly anvil-shaped and separated by valleys or gorges.

Mount Oldrey (35°40′S, 150°03′E), with a remarkable round summit, standing behind Batemans Bay; it is the highest mountain of Clyde Ranges.

Major light:

Montague Island Light (36°15′S, 150°14′E) (11.44).

Directions

(continued from 11.46)

Montague Island to Toragy Point

11.53

1 From a position E of Montague Island (36°15′S, 150°14′E) (11.43) the track leads N, passing (with positions from Toragy Point (35°55′S, 150°10′E):

E of Wagonga Head (18¼ miles S), a long sloping headland forming the S entrance point to Wagonga River (11.56); lights are displayed from the breakwaters at the entrance to the river. Thence:

2 E of Yellow Head (15¾ miles S); between Wagonga River and Yellow Head the coast consists of rocky points, mostly fringed by reefs, separating sandy beaches. The land behind the coast from Wagonga River to Toragy Point is low, level and thickly wooded. Thence:

E of Dalmeny Point (15¼ miles S), a low sandy point forming the N entrance point to Dalmeny Lake, thence:

E of the entrance to Lake Brou (13 miles S); the coast between Dalmeny Point and Lake Brou is fronted by a sandy beach. Thence:

3 E of Jemison's Point (11¾ miles S), the N entrance point of Lake Tarouga, thence:

E of Potato Point (11 miles S), fringed with rocks, thence:

E of Tuross Head (9 miles S); the entrance to Tuross Inlet (11.77) lies about 1 mile SSW, and the entrance to Coila Lagoon, closed by a bar, lies 5 cables N of the head. Off the entrance to Tuross Inlet, 6 cables S of Tuross Head, lies a dangerous below water rock, and a shoal with a depth of 4·3 m (14 ft) over it. Thence:

4 E of Bingie Bingie Point (6 miles S), fringed by a reef, thence:

E of Mullimburra Point (5¼ miles S) and Petro Head (4¾ miles S); Black Rock, on which the sea always breaks, lies 2 cables E of Petro Head. Thence:

E of Congo Point (3 miles S); a rocky ledge, with some patches on which the sea breaks heavily during strong SE gales, extends S towards Petro Head. Congo Creek, entered N of Congo Point, is a narrow inlet with a reef extending 4 cables from its entrance. Thence:

5 E of Pedro Point (1½ miles S), from where a rocky ledge extends 2 cables E. The point separates two beaches which extend from Congo Point to Toragy Point, 3 miles N. This stretch of coast is backed by sand dunes; depths off it are irregular and the bottom is rocky. The sea breaks on detached patches up to 7½ cables offshore. Thence:

6 To a position E of Toragy Point, the NE extremity of a rocky peninsula forming the S side of the entrance to Moruya River (11.62). There are grassy slopes on the N side of the peninsula which extends 5 cables W of the point. Steep to above water rocks lie close off Toragy Point and an 8 m (27 ft) rocky patch lies about 8 cables ENE of the point; the sea breaks on this patch in bad weather. The bottom is irregular and rocky for 5 cables E of these patches and there are depths of about 15 m (49 ft), sand, between them and Toragy Point.

7 **Useful mark:**

Tower (36°12′S, 150°05′E) standing 3 miles SW of Yellow Head.

(Directions for Moruya River are given at 11.65)

Toragy Point to North Head

11.54

1 From a position E of Toragy Point (35°55′S, 150°10′E) the track continues N, passing (with positions from Burrewarra Point Light (35°50′S, 150°14′E)):

E of a beach (5 miles SW) lying between Toragy Point and a double point, 3 miles NNE; the beach is sandy and backed by dunes. The double point is fringed by reefs and the mouth of a small stream lies about 1 mile SW of it. Thence:

2 E of Broulee Island (2¾ miles SW), fringed by a reef of rocks, above and below water, which is steep-to on its seaward side. The island is connected to the double point, to the WSW, by a ridge of sand and rocks. Thence:

3 E of Burrewarra Point, a prominent, rocky headland closely fringed by a reef of rocks, drying and below water. A light (white tower, 10 m in height) is displayed from the point; the base of the tower is partly obscured. Between Burrewarra Point and Malua Head (South Head on chart Aus 807), 2½ miles N, the sea breaks on this part of the coast. Thence:

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4 E of Malua Head (2½miles N), lying 6 cables N of Pretty Point. Between the point and headland lies Pretty Point Bay separated from Malua Bay N of it by a low, narrow point. Malua Head is low and fringed by a reef. A depth of 4·8 m (15 ft) lies at the N end of a spit extending 3 cables E from the headland. Thence:

5 E of Black Rock (3½ miles N), which is steep-to on its E and W sides. Mosquito Bay lies 7 cables SW of Black Rock; a rock, 2·0 m high high, stands 3 cables ENE of the bay's S entrance point. Thence:

6 E of Tollgate Islands (5 miles N). These two islets are connected by a drying ledge of rocks and reefs; Trennant Rock, a small steep-to pinnacle, lies 3 cables S of the S-most islet. Thence:

To a position E of North Head (7¼ miles NNE), the N entrance point of Batemans Bay (11.68); the headland is fringed with rocks.

(Directions for Batemans Bay are given at 11.72)

(Directions for the coastal route continue at 11.83)

Anchorage

Chart Aus 807 (see 1.12)

Bay north of Broulee Island

11.55

1 **Description.** This bay, entered between Broulee Island (35°52′S, 150°11′E) (11.54) and Burrewarra Point, 2½miles NE, is fringed by reefs, drying and below water, along its W and N shores.

Tomaga River enters the head of the bay on the N side of Connell's Point. There is a depth of about 2·4 m (8 ft) in the river at HW. The village of Broulee stands 2½cables inland from the coast W of Broulee Island, and Tomakin, another village, stands about 1 mile N of the entrance to Tomaga River.

2 **Anchorage.** Good anchorage, sheltered from N and NE winds, may be obtained in the NW part of the bay. Small vessels will find shelter, in a depth of about 5 m (18 ft), 4 cables NNW of the N end of Broulee Island.

Caution. The historic wreck of the vessel *John Penn* lies in the S part of the bay, 3 cables N of Broulee Island; for further details on wrecks see 1.52.

Wagonga River

Charts Aus 807, Aus 191 plan of Narooma (see 1.12)

General information

11.56

1 **Description.** Wagonga River (36°13′S, 150°08′E) enters the sea between Wagonga Head (11.53) and a sandbank. The town of Narooma stands on the S shore of the river; North Narooma stands on the N shore between the river entrance and Narooma Bridge. Several wharves lie below the bridge and there is a wharf at the town of Wagonga, 4 miles above the entrance.

Limiting conditions

11.57

1 **Controlling depth.** The channel over the bar is stabilised in position by breakwaters at the entrance. However, depths vary and in 2004 were reported to be 2·0 m, however, this should be treated with caution.

Vertical clearances:

Narooma Bridge. This bridge (36°12′·7S, 150°07′·3E), over which the Princes Highway passes, at the N end of Narooma, has a lifting span with a horizontal clearance of 15·2 m and a vertical clearance, when closed of 2·5 m.. The bridge will be opened during daylight hours; a minimum of 1 hours notice is required.

Arrival information

11.58

1 **Prohibited anchorage.** Vessels are not allowed to anchor within ½cable of a submarine cable laid across the river on the W side of Narooma Bridge.

For further information on submarine cables see 1.33.

Pilotage. The officer-in-charge, while taking no responsibility, will assist strangers to the river; there is no pilot.

2 **Local knowledge.** The entrance of the river should not be attempted without local knowledge; the channels within are narrow.

Regulations. Vessels must not exceed a speed of 8 kn between the river entrance and Narooma Bridge, 8 cables W. For regulations which apply to the navigation of small rivers in New South Wales see 1.45.

Directions

11.59

1 **Caution.** See 11.11.

From seaward the track leads SW passing midway between the breakwaters, from the heads of which are displayed lights. Immediately within the breakwaters favour the N side slightly and then alter S onto the alignment (165°) of leading lights, standing 2 cables S of Wagonga Head on the E bank.

2 The track then leads SSE for about 1½ cables passing between a groyne wall to the W, from the head of which is displayed a light, and Wagonga Head to the E, into the river. The track then leaves the alignment in the vicinity of the Maritime Services Board Jetty, 1 cable S of Wagonga Head, and follows the river, which is marked by buoys and beacons, between a training wall and training bank, around to the N and W. A light is displayed from the head of the Maritime Services Board Jetty.

Berths

11.60

1 Public Wharf, at the SE end of W training bank, with a depth of 2·7 m alongside.

Narooma Marine Centre. Situated in Forsters Bay, about 7 cables S of Narooma Bridge, the Centre provides moorings and a slipway for small craft.

Wagonga Town Wharf (36°13′·4S, 150°03′·8E), with a depth of 1·8 m alongside.

Port services

11.61

1 **Supplies:**

Public Wharf; fresh water.

Narooma Marine Centre; fuel, provisions and fresh water.

Moruya River

Chart Aus 191 Moruya River Entrance (1.12)

General information

11.62

1 **Description.** Moruya River (35°54′S, 150°09′E), which contains several wharves within it, leads from Toragy Point (11.53), at its entrance, for a distance of about 4 miles W to the town of Moruya on its S bank. A road bridge crosses the river at the town.

Entrance. The river entrance is fronted by a bar and lies between two breakwaters about 150 m apart; the bar is

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seldom smooth and is subject to frequent changes in depth and position. The navigable channel varies from about 25 to 60 m in width.

Limiting conditions

11.63

1 **Controlling depths.** The navigable channel usually has a depth of 2 m in it, but has been known to have depths of only 1·4 m.

Tidal levels. See information in *Admiralty Tide Tables* for Moruya River Bar. Mean maximum range about 1·0 m; mean minimum range about 0·6 m.

Weather. During S or E gales the sea often breaks up to 2 cables seaward of the entrance.

Current. In normal conditions a slight S-going set is experienced off the entrance and a moderate set around the N breakwater.

Arrival information

11.64

1 **Anchorage.** Vessels awaiting tide or weather may obtain good anchorage in the bay (11.55), NE of Broulee Island (35°52′S, 150°11′E).

Pilotage. The officer-in-charge, while taking no responsibility, will assist strangers to the river; there is no pilot.

Local knowledge is required.

Regulations. For regulations which apply to the navigation of small rivers in New South Wales see 1.45.

Directions

11.65

1 **Caution.** See 11.11.

Approach from south. At first keep 1 mile off Toragy Point (35°55′S, 150°10′E) (11.53) until clear of the rocky patch, which must be avoided in bad weather, lying about 8 cables ENE of the point. Thence alter towards the river entrance and bring the bar leading lights into line.

2 **Approach from north.** From a position about 1 mile off Burrewarra Point (35°50′S, 150°14′E) (11.54) the track leads SSW with Toragy Point ahead, bearing about 231°. When Broulee Island (35°52′S, 150°11′E) (11.54) is abeam, a house and flagstaff on Toragy Point should become visible in normal conditions. Thence keep the house bearing ahead until the bar leading lights come into line.

3 **Entrance channel.** The river is entered on the alignment 269° of the following leading light-beacons:

Front light (orange triangle, point up) (35°54′·4S, 150°08′·6E).

Rear light (orange triangle, point down) (585 m from front light).

4 This leading line leads to within 15 m of the N breakwater, from the head of which is displayed a light, and passing N of a drying bank lying 40 m S of the N breakwater. Thence on the alignment (232½) of a second set of leading light-beacons, displayed from the S training wall and similar to those used for crossing the bar, lead inside the river. From inside the entrance a winding channel, partly protected by training walls and marked by light-beacons and buoys, leads up the river to Town Wharf (11.66).

5 **Caution.** The light-beacons are moved to meet changes in the channel.

Useful mark:

A beacon (white, green reflector) stands near the end of a spur projecting from the inner end of the N training wall.

Berths

11.66

1 Jetty on N bank. This berth, about 2 miles above the river entrance, has depths of 2·7 m alongside; it is derelict.

Town Wharf (Public Jetty), situated at the town of Moruya on the S bank, close E of the road bridge, 4 miles W of Toragy Point. It has a length of about 25 m with a depth of 2·1 m alongside.

Port services

11.67

1 **Communications.** There is an airfield close NW of the river entrance.

Batemans Bay

Chart Aus 191 plan Batemans Bay (see 1.12)

General information

11.68

1 **Description.** Batemans Bay (35°43′S, 150°13′E) is entered between Malua Head and North Head, 4½miles NNE. Vessels may anchor in the bay and there are berths for small craft in Clyde River, which flows into the head of the bay. The river is entered over a bar which lies 5¾cables SSW of Square Head (35°43′S, 150°13′E), on the N shore of the bay.

Topography. The land about Batemans Bay is low and thickly wooded. Farther inland the country is mountainous.

Port authority. There is a Waterways Authority Representative at Batemans Bay.

Limiting conditions

11.69

1 **Controlling depth.** The depths over the bar at the entrance to Clyde River are subject to frequent change. In 2004 the least depth over the bar was reported to be 0·7 m. It is sounded regularly and the latest information is available from the Waterways Authority. There is a least depth of about 5 m between the bar and Batemans Wharf, 1 mile NW.

2 From Clyde River Bridge, 1¼ miles within the river entrance, there is a least depth of 3·7 m to Junction Wharf (May's Wharf) (11.75), about 2 miles W of the bridge. Thence there is a least depth of 2·7 m to Nelligen (35°39′·0S, 150°08′·4E), about 3 miles farther N. Above Nelligen the river is navigable by small craft for 12 miles.

3 **Vertical clearances.**

Clyde River Bridge (35°42′·2S, 150°10′·8E). This bridge, over which the Princes Highway passes, has nine fixed spans and one vertical lift span with a width of 23 m and an open vertical clearance of about 18 m at MHWS; with the latter closed there is a vertical clearance of 3·7 m.

4 When a vessel is expected from either downstream or upstream, lights are displayed as follows:

Fixed red light — span closed.

Fixed green light — span open.

Lights are also displayed from the channel dolphins on each side of the opening span. A minimum of 1 hours notice is required for the bridge to be opened.

5 **Nelligen Road Bridge.** At Nelligen (35°39′·0S, 150°08′·4E) a road bridge spans the river with a vertical clearance of 3·7 m and a navigable width of 15 m.

Overhead cables. A short distance upstream of the Clyde River Bridge, overhead cables with a vertical clearance of 15 m, span the river.

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Tidal levels. See information in *Admiralty Tide Tables*. Mean maximum range about 1·2 m; mean minimum range about 0·7 m.

Arrival information

11.70

1 **Anchorages:**

Large vessels may anchor 7½ cables NW of Black Rock (35°46′·6S, 150°14′·8E) in depths of 16 m.

Moderate sized vessels may anchor 5 cables W of Acheron Ledge (35°43′·4S, 150°14′·8E) in depths of 9 m.

2 Small vessels may anchor 1½ cables WNW of the larger Snapper Island (35°43′·6S, 150°12′·7E) in depths of 3 m.

Small craft may anchor in the lee of Tollgate Islands (35°45′·1S, 150°15′·5E) with winds from ESE through S to SW. But it would be imprudent to anchor here without local knowledge unless absolutely necessary.

3 Although the anchorages in Batemans Bay are exposed a vessel with good ground tackle may lie here in fair safety at almost any time provided the position is well chosen.

A heavy ground swell is frequently experienced at the anchorages and, in strong E or SE weather, the sea may break within the bay. With gales from E the out-going stream from Clyde River causes a heavy swell between Tollgate Islands and the mouth of the river. When the stream sets out of Clyde River an anchor should be laid out from the stern to avoid swinging broadside to the swell.

4 **Prohibited anchorage.** Vessels should not anchor within ½cable of submarine cables which are laid across Clyde River close NW of Clyde River Bridge (35°42′·3S, 150°10′·7E).

For further information on submarine cables see 1.33.

Regulations. For regulations which apply to the navigation of small rivers in New South Wales see 1.45.

Harbour

11.71

1 The harbour for Batemans Bay lies on the SW side of the entrance to Clyde River. The SW side of the entrance, for about 7½cables, is formed by a training wall constructed of stone, with a height of about 2 m, at the NW end of which lies Batemans Wharf (11.75). A light (orange tower) is displayed from the head of the training wall.

The town of Batemans Bay stands along the SW bank of Clyde River, NW of the training wall. Clyde River Bridge, a road bridge, spans the river at the N end of the town.

Directions for Batemans Bay passing south-west of Tollgate Islands

11.72

1 On approaching Batemans Bay from the S keep at least 1¼miles off Burrewarra Point (35°50′S, 150°14′E) (charts Aus 360 and Aus 807) and do not alter course into the bay until Black Rock (35°46′·6S, 150°14′·8E) bears 257°. This is to avoid dangerous rollers off the coast between Burrewarra Point and Black Rock.

Thence from a position about 8 cables ENE of Black Rock the white sector (323¾–327¼) of Square Head Light (pole) (35°42′·8S, 150°12′·7E) leads NW, passing (with positions from Black Rock):

2 NE of Black Rock (11.54), thence:

SW of Trennant Rock (1 mile NNE) (11.54), thence:

SW of Tollgate Islands (1½miles NNE) (11.54), thence:

NE of a small cove (2¼ miles NW) at the head of which lies Denhams Beach; the entrance points of the cove are formed of low cliffs fringed with rocks extending 1½ cables offshore. Thence:

NE of Sunshine Cove (2½ miles NW); Batehaven, a small town, lies close to the shore NW of the cove. And:

3 SW of Acheron Ledge (3¼ miles N), on which lie some above-water rocks, extending 3 cables SW of Reef Point, thence:

To a position about 6 cables ENE of Snapper Island at the beginning of the alignment of the river entrance leading lights. Snapper Island, lying 4 cables NNE of Observation Head, is fringed by a reef; a smaller islet, 15 m high, lies on the reef close SE of Snapper Island.

4 **Clearing line:**

The line of bearing, 017° or less, of North Head (35°43′S, 150°17′E), well open of the E tangent of Tollgate Islands, clears E of Trennant Rock.

Useful mark:

Fire tower on Round Hill (35°44′·2S, 150°10′·2E).

(Directions continue at 11.74)

Directions for Batemans Bay passing north-east of Tollgate Islands

11.73

1 From a position about 2 miles SSE of North Head (35°43′S, 150°17′E) (11.54) the white sector (300¼–304¾) of Square Head Light (35°42′·8S, 150°12′·7E) leads NW, passing (with positions from North Head):

NE of Tollgate Islands (1¾miles SSW) (11.54), thence:

SW of North Head (11.54); North Head Beach lies at the head of a small cove close W of North Head. Thence:

2 SW of Three Islet Reef (6 cables SW), which extends 2½cables S from Three Islet Point, a low point, thence:

SW of Acheron Ledge (1½miles W) (11.72) extending SW from Reef Point; two small bays, with sandy beaches at their heads, lie between Reef Point and Three Islet Point. Thence:

3 SW of Chain Bay (1½miles WNW), entered between Reef Point and a point, fringed with rocks, 6 cables NW. A sandy beach, backed by low ground, extends around the head of the bay; there are buildings and cultivated land on the low ground. White Cliff lies midway along the centre of a rocky foreshore, 4 cables NW from the NW entrance point of Chain Bay. Thence:

4 To a position about 6 cables ENE of Snapper Island (3 miles W) (11.72) at the beginning of the alignment of the river entrance leading lights.

Useful mark:

Fire tower on Round Hill (35°44′·2S, 150°10′·2E).

Directions for entering Clyde River

(continued from 11.72)

11.74

1 The best time to cross the bar is 30 minutes before HW, but care is needed not to get N of the alignment of the entrance leading lights as the in-going stream sets NW across the bar.

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Clyde River Entrance Leading Lights:

Front light (orange triangle point up, 9 m in height; blue triangle point up, 7 m in height) (35°43′·2S, 150°11′·6E) displayed close W of the base of the training wall.

Rear light (orange triangle point down, 12 m in height; blue triangle point down, 10 m in height) (275 m from front light).

2 From a position about 6 cables ENE of Snapper Island (35°43′·6S, 150°12′·7E) the charted alignment 279¾° of these lights, but see caution below, leads WNW across the bar, passing (with positions from Snapper Island):

NNE of Snapper Island, and:

SSW of Square Head (8½ cables N), from where a light (11.72) is displayed; the headland, 30 m high, is faced with cliffs and fringed with rocks. Long Beach, a sandy beach fronting swampy ground, extends from the E face of Square Head, for about 1 mile ENE, towards White Cliff (11.73).

3 Having crossed the bar the track leads towards the seaward end of the training wall and then along it, keeping about 40 m off.

Caution. As the bar is subject to change, the position of the front leading light is adjusted to lead across the bar in the deepest water.

See 11.11.

Berths

11.75

1 **Batemans Wharf** (35°42′·8S, 150°11′·1E). The wharf, 15 m in length with a depth of 3·7 m alongside, lies at the NW end of the training wall. A gap, ¼ cable wide, about halfway along the training wall, leads to a boat harbour; lights are displayed from each side of this gap.

Junction Wharf (May's Wharf) (35°42′·2S, 150°08′·0E), situated about 5 cables below the junction with Mullendaree Creek, also known as Buckenbowra River.

Nelligen. There is a private jetty and boat ramp at Nelligen (35°39′·0S, 150°08′·4E).

Port services

11.76

1 **Repairs:** no facilities available.
Other facilities: small hospital.
Supplies: fuel; fresh water; provisions.

Tuross Inlet

Chart Aus 807

General information

11.77

1 Tuross Inlet (36°04′S, 150°08′E) is entered N of a point, 1½ miles N of Potato Point (11.53), which lies at the N end of a low, narrow tongue of land. The entrance is usually closed but is sometimes open after heavy rain.

Within the entrance the inlet is obstructed by shifting sandbanks; the channel follows the N shore W to Green Point, 7½ cables within the entrance. Tuross River enters the inlet 2 miles farther W.

BATEMANS BAY TO BASS POINT

GENERAL INFORMATION

Chart Aus 360

Area covered

11.78

1 The area covered by this section comprises:

Batemans Bay to Jervis Bay (11.79).
Jervis Bay (11.95).
Jervis Bay to Bass Point (11.115).

BATEMANS BAY TO JERVIS BAY

General information

Charts Aus 360, Aus 807 (see 1.12)

Route

11.79

1 From a position E of North Head (35°43′S, 150°17′E) the coastal route leads NNE, for about 43 miles, to a position ESE of Point Perpendicular (35°06′S, 150°48′E), off the entrance to Jervis Bay.

Topography

11.80

1 From North Head, Batemans Bay, to inland of Ulladulla Harbour (35°22′S, 150°29′E), a range of hills, from 183 to 418 m (600 to 1370 ft) high, follows the trend of the coast a short distance inland.

Between Ulladulla Harbour and Saint Georges Head, 15 miles NNE, the land for the most part is low and thickly wooded with ridges of hills extending inland from the coast between Red Point (35°15′S, 150°33′E) and Wreck Bay, 6 miles NE.

Current

11.81

1 Vessels bound N encounter little or no S-going current by keeping inshore between Brush Island (35°32′S, 150°25′E) and Cape Saint George, 27 miles NNE. The S-going current strikes the bluff headlands about Jervis Bay, N of Cape Saint George, and seems to be diverted from its general direction, striking the coast again about Brush Island, leaving comparatively slack water between these limits.

Principal marks

11.82

1 **Landmarks:**

Big Bit (35°38′S, 150°13′E), a mountain.
Mount O'Hara (35°35′S, 150°20′E).
Conspicuous trees (35°33′S, 150°22′E).
Wason Heights (35°27′S, 150°19′E) (chart Aus 360).
Pigeon House (35°21′S, 150°16′E), a mountain.
Radio masts (red obstruction lights) (35°10′S, 150°44′E).

2 Point Perpendicular (35°06′S, 150°48′E), a bold cliffy headland, 80 m high, rising vertically to a flat, bare surface; it is a prominent feature of this part of the coast.

Major light:

Point Perpendicular Light (white GRP hut on white metal framework tower, 19 m in height) (35°06′S, 150°48′E); the light-tower stands 30 m S of a disused light-tower (round and white).

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Directions
(continued from 11.54)

Batemans Bay to Brush Island
11.83

1 From a position E of North Head (35°43′S, 150°17′E) (11.54) the track leads NNE, passing (with positions from Brush Island Light (35°32′S, 150°25′E)):

ESE of Flat Rock (10¾ miles SSW), an above-water rock, which lies on a reef extending 2 cables SE from a low point; Myrtle Beach lies 2 cables WNW of the point. Thence:

2 ESE of Wasp Islet (9¾ miles SSW), lying close E of a small point. Beagle Bay, entered N of Wasp Islet, affords shelter for small vessels from S and SE winds. Durass Water, an extensive lagoon, lies at the head of Beagle Bay; rocks lie off the mouth of the lagoon. Thence:

ESE of Point Upright (8 miles SSW), formed by the end of a ridge of hills extending from the W; it was so named by Captain Cook because of its sheer cliffs. Thence:

3 ESE of Grasshopper Islet (7½ miles SSW). A reef, with below-water rocks on it, extends 3 cables NNE of the islet; the sea breaks heavily over the reef. Thence:

ESE of Pebbly Beach (6½miles SSW), lying 4 cables W of a rocky point. Small vessels can find shelter off this beach except when the wind blows from the S or SE; the holding ground, sand over rock, is bad. Thence:

4 ESE of Dawson Islets (4½ miles SSW), consisting of two islets which lie on a reef extending 5 cables from the coast; O'Hara Island lies 5 cables NNE of the islets. Thence:

ESE of O'Hara Head (2¼ miles SSW); Robbie Shoal lies 6 cables ENE, and Belowla Islet stands 4 cables NNE, of the headland. Thence:

ESE of Shelly Point (1½ miles SW) which projects from the middle of the shore of a bay with a sandy beach; Kiola, a village, lies close SW of the point. Anchoring off Kiola is not recommended. Thence:

5 To a position ESE of Brush Island, lying 1 cable E of First Sandy Point; the island consists of scrub covered sandhills. A light (white hut, 3 m in height) is displayed from the summit of the island. A reef, on which the sea breaks only in a heavy swell, extends 4 cables NE from Brush Island and an above-water rock lies between the island and the shore W. A shoal, reported (1974) to have a depth of 12·8 m (42 ft) over it, lies 7 cables E of the island.

6 **Caution.** For vessels N-bound, which are keeping inshore to avoid the S-going current (11.81), Brush Island should be given a berth of at least 1 mile to avoid the dangers off it.

Brush Island to Ulladulla
11.84

1 From a position ESE of Brush Island (35°32′S, 150°25′E) the track continues NNE, passing (with positions from Brush Island Light):

ESE of Bawley Point (1½ miles NNW), consisting of two points from which reefs extend ½cable. Willinga Lake is entered 5 cables WNW of Bawley Point. Thence:

ESE of Meroo Head (3 miles NNW), the N entrance point of Meroo Lake; Nuggan Point lies on the S side of the entrance to the lake. Thence:

2 ESE of Stokes Islet (4 miles N) lying close E of Termeil Point, which is the N entrance point of Termeil Lake, thence:

ESE of Crampton Island (5 miles N) fringed with rocks. A narrow inlet, NW of Crampton Island, extends 1½ miles NNE to Lake Toubouree. The lake is separated from the sea by Toubouree Point, a long narrow tongue of land on the seaward side of which is a sandy beach. Thence:

3 ESE of Lagoon Head (7¼ miles N), which consists of steep cliffs fringed with rocky ledges, thence:

ESE of the entrance to Burrill Inlet (8 miles N) which leads 1 mile NW into Burrill Lake; the entrance is obstructed by a bar. From this inlet a sandy beach extends 7 cables NE to a prominent rocky point off which a ledge of rocks extends 8 cables SE; the sea breaks over the whole of this ledge. Thence:

4 To a position ESE of Warden Head (10¼miles NNE), from where a light (white metal tower and lantern, 12 m in height) is displayed. When seen from abreast Brush Island this headland is the N-most low point in view, and when closer to may be recognised by a cutting through the trees and by the lighthouse. From the NE the headland is difficult to identify, being low and resembling points near it.

(Directions for Ulladulla are given at 11.89)

Ulladulla to Point Perpendicular
11.85

1 From a position ESE of Warden Head (35°22′S, 150°29′E) the track continues NNE, passing (with positions from Warden Head Light):

ESE of Bannister Point (2½ miles N), thence:

ESE of Preservation Rock (3¾ miles N), which lies on a reef extending 2 cables E of the S entrance point of Nurrawhirra Inlet, thence:

2 ESE of Green Island (5½ miles N), which lies close SE of the N entrance of Lake Conjola; the island is fringed by a reef which apparently connects with the bar across the mouth of the lake. Cunjurong Point is the low S entrance point of Lake Conjola. Thence:

ESE of Red Point (7½ miles NNE), fringed with rocks extending 2 cables offshore. The historic wreck of the *Walter Hood* lies 1½ miles N of Red Point; for further details on wrecks see 1.52. Thence:

3 ESE of the entrances to Canal Lagoon (9¾miles NNE) and Swan Lake (10¼ miles NNE); between the two entrances, drying rocks and below-water rocks extend 6 cables offshore. The entrance to Swan Lake is very narrow.

11.86

1 Thence the track continues NNE, passing:

ESE of Sussex Inlet (12 miles NNE) (11.94), which is entered from the W side of Wreck Bay (11.93), thence:

ESE of Saint Georges Head (14 miles NE) which rises to nearly 90 m about 4 cables NNE of the headland, thence:

2 ESE of Cape Saint George (17½ miles NE); a small cove lies 1¼miles WSW of the cape with Steamer's Beach at its head. A hill, 169 m (557 ft)

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(charted as 547 ft on Aus 360 and as 552 ft on Aus 807) high and covered in scrub, stands 7 cables N of Steamer's Beach; there are radio masts (11.82) on top of the hill. Thence:

ESE of Governor Head (19¾ miles NE), which is about 50 m high. Between Cape Saint George and Governor Head, for 2¾ miles, the coast is sheer and cliffy. Thence:

3 ESE of Bowen Island (20 miles NE), formed on its seaward side by high vertical cliffs, with a rocky shelf. Behind these cliffs the land rises to a summit and thence gradually, but irregularly, slopes down towards Jervis Bay. The W side of the island is low and sandy with some rocks. Drying and below-water rocks lie in the channel separating the island from Governor Head but there is a narrow channel used by local boats in calm weather. Thence:

4 To a position ESE of Point Perpendicular (22½miles NE) (11.82), from where a light is displayed.

Cautions. When navigating near Saint Georges Head during bad weather accompanied by E or SE winds take great care to avoid being set into Wreck Bay (35°11′S, 150°39′E). At night, by keeping Point Perpendicular Light in sight a vessel will keep well clear of Wreck Bay.

For information on naval exercises see 11.3.

(Directions for the coastal route continue at 11.120)

(Directions for Jervis Bay are given at 11.105)

Ulladulla Harbour

Chart Aus 807, Aus 191 plan Ulladulla Harbour (see 1.12)

General information

11.87

1 **Position and function.** Ulladulla Harbour (35°22′S, 150°29′E) is primarily a fishing harbour with facilities for recreational craft.

Approach and entry. The harbour is approached through a bay, lying between Warden Head (35°22′S, 150°29′E) and Ulladulla Head, 4 cables NNW, and then entered between two breakwaters; there is a width of 85 m between the heads of the breakwaters.

Port Authority. Fishermen's Co-operative Society, Ulladulla.

Limiting conditions

11.88

1 **Depths.** In mid-channel, between the breakwaters, there is a charted depth of 6 m decreasing to less than 1 m off a sandy beach at the head of the harbour.

Tidal levels. See information in *Admiralty Tide Tables*. Mean maximum range about 1·2 m; mean minimum range about 0·8 m.

Maximum size of vessel handled. Vessels up to 45 m in length with a draught of 3·6 m can be berthed alongside the main pier.

Directions

11.89

1 From seaward, approach Ulladulla Harbour on the line of bearing, 272°, of Pigeon House (35°21′S, 150°16′E) (11.82), which leads in mid-channel N of Sullivan Reef, until the following leading line is picked up.

Harbour leading lights:

Front light (orange triangle point up, 6 m in height; blue triangle point up, 4 m in height, on white pole) (35°21′·4S, 150°28′·4E), displayed from the beach at the head of the harbour.

2 Rear light (orange triangle point down, 9 m in height; blue triangle point down, 7 m in height, on white pole) (30 m W of front light).

The alignment (269°) of these lights leads W, passing (with positions from Warden Head Light (35°22′S, 150°29′E)):

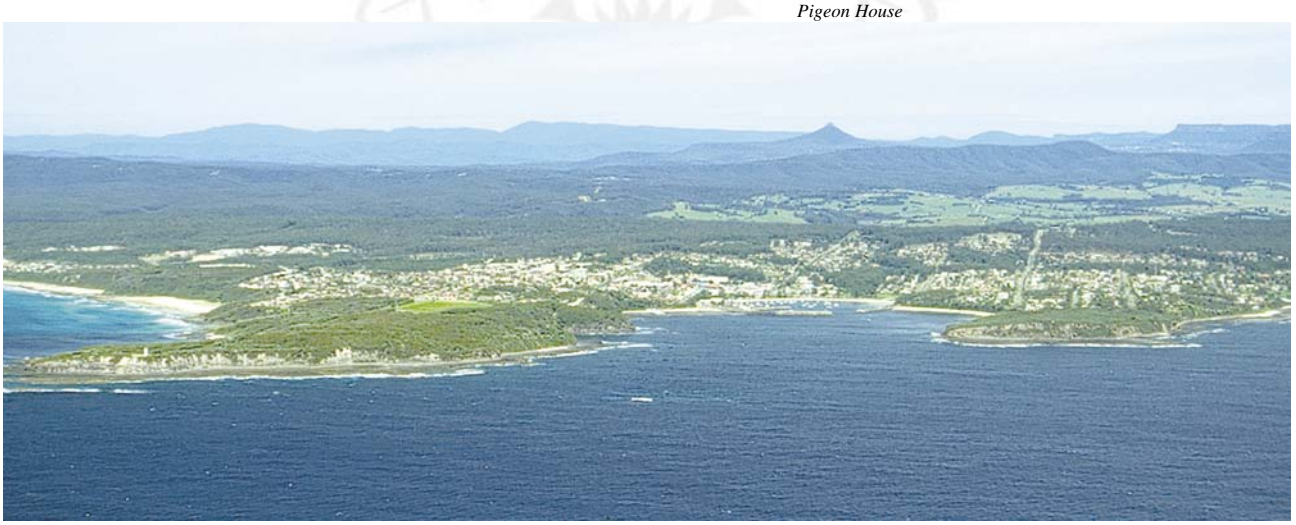
N of Sullivan Reef (4 cables NNE), a rocky patch with a least depth of 1·0 m over its centre, on which the sea always breaks. Lying across the approaches, the reef forms a natural breakwater and helps considerably to break the seas raised by E winds. Thence:

3 S of Ulladulla Head (7½ cables NNW) which is low and cliffy; the headland should not be approached closely. Thence:

N of the coastal bank extending E from the S breakwater; keep nearer to the N shore on this part of the track. Thence:

Between the breakwaters (8½ cables NW) into the harbour; a light (white post, 3 m in height) is displayed from the head of each breakwater.

Pigeon House



South Head

Ulladulla Harbour from E (11.87)

(Original dated 1998)

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4 **Caution.** Although Sullivan Reef may be passed N or S the passage N should be used as the S passage is foul with irregular currents in it.

Clearing line:

The line of bearing, 246°, of the head of Ulladulla S breakwater, open S of Ulladulla Head, clears about 1 cable S of a rock, with a depth of 3·7 m over it, lying 5 cables NE of Ulladulla Head.

Berths

11.90

1 Old Wall. A curved pier close W of the S breakwater; there is a depth of 4 m at its head. One vessel, not exceeding 45 m in length with a draught up to 3·6 m at the N end and 2·1 m at the S end, can lie alongside the outer part of the pier.

Wooden Jetty. This berth, close SW of Old Wall, is used by fishing vessels.

Port services

11.91

1 **Repairs:** two slipways available for the use of fishing boats and recreational craft.

Other facilities: hospital at Milton, 6 km N of Ulladulla.

Supplies: fuel in small quantities; fresh water; provisions.

Anchorages

Charts Aus 360, Aus 807 (see 1.12)

Brush Island

11.92

1 Good anchorage may be obtained about 4 cables NE of First Sandy Point (35°32′S, 150°24′E), off Brush Island (11.83), in a depth of 11 m (36 ft).

Wreck Bay

11.93

1 **General information.** Wreck Bay (35°11′S, 150°39′E) is entered between Sussex Inlet (35°11′S, 150°36′E) (11.94) and Saint Georges Head (11.86), 5 miles E.

Its N shore consists of a sandy beach fronted by below-water rocks and backed by sand dunes for 3½miles ENE of the inlet. Depths of less than 11 m (36 ft) extend 5 cables off this stretch of coast. Three small bays, separated by steep points, lie between the E end of the sandy beach and Saint Georges Head.

2 **Anchorages.** The best anchorage, in the summer months, is in a depth of 12·8 m (42 ft), sand, 2¼miles NW of Saint Georges Head, off the steep point at the E end of the sandy beach.

Dangerous areas. Three areas in the vicinity of Wreck Bay have been notified as dangerous for anchoring, trawling and fishing. Bounded within a circle, radius 5 cables, and positioned from Saint Georges Head, these lie as follows:

Bearing 207°, distance 3·5 miles.
Bearing 232°, distance 5·6 miles.
Bearing 270°, distance 4·4 miles.

11.94

1 **Sussex Inlet** (35°11′S, 150°36′E), entered from the W side of Wreck Bay is a narrow channel, with a least depth of 1 m (3½ft), extending about 3 miles N to Saint Georges Basin. A drying reef extends 5 cables ENE from the S entrance point and affords some shelter to the bar which has a depth of 0·8 m (2½ ft) over it.

Sussex Inlet is a very popular holiday area but the entrance is dangerous, being shallow and unpredictable. The town of Sussex Inlet stands on the W side of the inlet, which is spanned by an overhead cable; a submarine cable is also laid across the inlet.

For further information on submarine cables see 1.33.

JERVIS BAY

General information

Chart Aus 193 (see 1.12)

Description

11.95

1 Jervis Bay (35°04′S, 150°45′E), about 8 miles long and 5 miles wide, is a spacious harbour, being easily entered between Point Perpendicular (35°06′S, 150°48′E), the S end of Beecroft Peninsula, and Bowen Island, 2 miles SW.

The whole bay is reserved as a naval port, the seaward limit being defined as a line joining Governor Head (35°08′S, 150°46′E) to Longnose Point, 2¾ miles NNE.

2 There is good anchorage in Darling Road (11.109), W of Bowen Island, or in Montagu Roadstead (11.110), N of Longnose Point; the former is preferable. Darling Road and Montagu Road are naval anchorages used continuously by Royal Australian Navy ships, but parts of Darling Road and the W part of Jervis Bay are reserved for merchant shipping; for further details see Appendix I.

Tidal levels

11.96

1 **Tidal levels.** See information in *Admiralty Tide Tables*. Mean maximum range about 1·3 m; mean minimum range about 0·7 m.

Exercise areas

11.97

1 See 11.3.

Prohibited anchorages

11.98

1 Anchoring, trawling and dredging are prohibited in the S and SW part of Jervis Bay, as indicated on the chart, in an area enclosed by a line extending from the N point of Bowen Island following the coast to a position close SSE of Captain's Point, thence 2¼ miles NNE, thence 2¼miles NW to Plantation Point.

Anchoring is also prohibited in the E side of Hare Bay as shown on the chart. The W side of this area is marked by light-buoys (special).

Submarine cables

11.99

1 A submarine cable is laid from seaward through the entrance of Jervis Bay. It passes about 3 cables S of Point Perpendicular and Bombora Rock, 1½ miles WNW, and then curves SW to land in the vicinity of Captain's Point (35°07′·4S, 150°42′·4E), in the SW corner of the bay.

Another submarine cable is laid from a position 37°07′·5S, 150°42′·2E, in a NNW direction, for 4 cables, thence NE for 9½cables.

For further information on submarine cables see 1.33.

Marine farms

11.100

1 Several marine farms have been established in Jervis Bay. They consist of floating or fixed structures with associated moorings and are generally marked by beacons or buoys, which may be lit. The farms should be given a wide berth.

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Bowen Island *Point Perpendicular*

Jervis Bay entrance from ESE (11.105)

(Original dated 1998)

Environmentally Sensitive Sea Area

11.101

1 Jervis Bay and its approaches are part of Jervis Bay and Booderee Marine Parks and areas within this marine protected area have restrictions on access and activities. For details see *Annual Australian Notice to Mariners No 28*.

Swell

11.102

1 The whole W side of Jervis Bay is exposed to the heavy swell caused by gales from between E and S; more especially from the SE. Hence the W side is unsafe for anchoring off. The sea breaking on the W shore may be heard at a good distance.

Climatic table

11.103

1 See 1.133 and 1.145.

Principal marks

11.104

1 **Landmarks:**

Radio masts (red obstruction lights) (35°10′S, 150°44′E).

Point Perpendicular (35°06′S, 150°48′E) (11.82).

Clock tower (white and conspicuous) (35°07′·5S, 150°42′·4E) standing on one of the red tiled buildings of the Royal Australian Naval College.

Major light:

Point Perpendicular Light (11.82).

Directions

Entry

11.105

1 From a position about 3 miles SE of Point Perpendicular (35°06′S, 150°48′E) the track leads NW into Jervis Bay, passing (with positions from Point Perpendicular Light):

SW of Point Perpendicular; there is an area of foul ground extending out to 2½ miles S and SSE from the point, as shown on the chart. Thence:

NE of Bowen Island (2 miles SW) (11.86). An area of foul ground, shown on the chart, lies between Bowen Island and Longnose Point, 2¾ miles NNE, extending 2¼ miles into Jervis Bay. Thence:

2 Clear of Middle Ground (1¾ miles WSW), depending on draught. Middle Ground is a small rocky shoal patch, with a depth of 14·1 m over it, the vicinity of which should be avoided. And:

SW of Bombora Rock (1½ miles WNW), a rock awash, lying on the outer end of a reef extending 4 cables SSW from Longnose Point; the sea breaks over the reef and rock in heavy weather. Thence:

To a position SW of Dart Point (1¾ miles NW).

(Directions for Montagu Roadstead continue at 11.107)

(Directions for Currambene Creek are given at 11.108)

Directions for Darling Road

11.106

1 If proceeding to Darling Road (11.109), after passing Bowen Island, having kept at least 2½cables off, the line of bearing 066°, astern, of Point Perpendicular leads WSW towards the anchorage, in depths of 18 m, clearing N of the shoal bank off the W side of Bowen Island.

Useful marks (with positions from Captain's Point (35°07′·4S, 150°42′·4E)):

No 1 Light-beacon (white framework tower) (9 cables NW); another beacon stands 3 cables S of the light.

2 Beacon (triangle point down) (1½ miles W) standing on the SE fall of a hill, 106 m high.

Light displayed from the head of the breakwater at Captain's Point.

No 2 Light-beacon (white post, diamond topmark) (8 cables SE).

No 3 Beacon (white pole diamond topmark, 5 m in height) (1¼ miles SE), standing on Bristol Point.

No 5 Beacon (white pole) (2 miles ESE), standing above Hole in the wall.

No 21 Light-beacon (white pole) (2¼ miles E).

Directions for Montagu Roadstead

(continued from 11.105)

11.107

1 From a position SW of Dart Point (35°05′S, 150°46′E) the track leads N, passing (with positions from Dart Point):

W of Dart Point, thence:

W of Honeymoon Bay (1¼ miles N) (11.113); between Dart Point and the S entrance point of Montagu Roadstead (11.110), 1½ miles N, the E shore of Jervis Bay is backed by cliffs. Thence:

2 W of the S entrance point of Montague Roadstead; a rocky spit extends 1½ cables N of this point.

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Useful mark:

No 7 Beacon (35°01′·7S, 150°46′·6E) (white pole, white diamond topmark) standing 1 cable E of Montagu Point.

Directions for the approach to Currambene Creek

(continued from 11.105)

11.108

1 From a position SW of Dart Point (35°05′S, 150°46′E) the track continues NW, passing (with positions from Plantation Point (35°04′S, 150°42′E)):

NE of Hyam Point (1¾ miles S), fringed with rocks; to the S, the coast is formed by a sandy beach. From Hyam Point to Plantation Point the coast is formed by small sandy beaches between which lie rocky patches. Thence:

2 NE of Plantation Point, which is fronted by foul ground extending 2½ cables E, near the outer end of which lies a rock awash. A rocky patch, with a depth of 5·5 m over it, lies 5 cables E of the point; the sea sometimes breaks over it. A light-buoy (E cardinal) is moored 2 cables S of the patch, and marks the E side of the foul ground. Thence:

3 NE of Dent Rock (7½cables WNW), a pinnacle awash; a light-buoy (isolated danger) marks the rock. Thence:

NE of the entrance to Moona Moona Creek (1½miles NW); a sandspit, with depths of less than 5·0 m over it, extends 5 cables NE from the mouth of the creek. Thence:

NE of Tapalla Point (2 miles NW), fronting the village of Huskisson, thence:

4 To a position (2½ miles NNW) at the beginning of Currambene Creek leading line, off Callala Beach; this sandy beach, stretching from the entrance to Currambene Creek to Callala Point (11.111), 3 miles NE, is backed by sand ridges, about 3 to 5 m high, covered with coarse grass and stunted trees.

Useful mark:

Tank (35°05′·1S, 150°40′·6E) standing 1¼ miles SW of Plantation Point.

(Directions continue at 11.114)

Anchorages

Darling Road

11.109

1 **Description.** Darling Road lies in a bight in the S part of Jervis Bay between a low point 5 cables W of Governor Head (35°07′·6S, 150°45′·8E), and Captain's Point, 2¼miles farther W; a sandspit extending from the former point helps to protect the anchorage by breaking the swell. Captain's Point, the W entrance point of Darling Road, may be identified by the red tiled buildings of the Royal Australian Naval College.

2 Hole in the wall, a remarkable white cliffy projection with a hole through it, lies 5 cables SW of the low entrance point of the bight in which Darling Road lies.

Caution. There is an area of foul ground lying between 5 cables and 1½ miles NNE of Captain's Point; its corners are marked by light-buoys (special), as shown on the chart.

Anchorage. Good anchorage in depths of 11 to 20 m may be obtained in Darling Road. Fishing is prohibited in this naval anchorage.

3 **Naval boat harbour.** There is a boat harbour for the naval college at Captain's Point. It is formed by a breakwater which extends from the point, 1½cables WNW. Inside the breakwater there is a jetty with a depth of 5·5 m at its head. A pile stands each side of the jetty and between the jetty and the breakwater there are naval moorings. Flat Rock Creek flows into the bay close SW of the jetty.

Degaussing range. This range is centred 027°, distance 1¼miles, from Captain's Point (35°07′·4S, 150°42′·4E).

Montagu Roadstead

11.110

1 Montagu Roadstead (35°02′S, 150°46′E) is situated on the E side of Jervis Bay between Montagu Point and another point, 1¾ miles S. The shore of the S part of the bay, to the E of the anchorage, is rocky, and off the N part sandy.

The anchorages within the roadstead, which are secure in depths of 11 to 15 m, hard sand, are numbered as shown on the chart. However with a heavy S sea rolling into Jervis Bay ships anchored in the roads are exposed to almost its full effect.

Minor bay, inlet and landings

Hare Bay

11.111

1 **General information.** Hare Bay (35°00′S, 150°45′E), at the head of Jervis Bay, is entered between Green Point (35°01′S, 150°46′E) and Callala Point, 2¼ miles WNW. The head of the bay is formed by a sandy beach and by the entrance to Cararma Creek on the E side of the bay.

Cararma Creek is entered on the S side of Hare Point, situated 1 mile N of Green Point. The inlet is fronted by a bar of sand, mud and weed which dries in places, extending 5 cables from the entrance.

2 The main dangers are a drying reef, on which Green Island stands, extending 2 cables W from Green Point and marked on its W edge by a light-beacon (starboard hand); and a rocky spit and shoal bank extending 4 cables E from Callala Point; the E edge of the bank is marked by a light-buoy (port hand). A rocky patch, with a depth of 5·8 m over it, lies 7 cables E of Callala Point.

Useful mark:

Mast (6 m in height), standing on Green Island.

Bowen Island

11.112

1 Near the centre of the W side of Bowen Island (35°07′S, 150°46′E) (11.86) a jetty extends NW. There is a depth of 3·8 m alongside its head.

Beecroft Peninsula

11.113

1 **Point Perpendicular.** There is a landing place about 2½cables WNW of Point Perpendicular Light (35°06′S, 150°48′E) but it cannot be used with a swell from S or SE. In such conditions landing may be possible in Black Boat Cove, 1 mile NW of the light.

Target Beach (35°05′S, 150°47′E), about 5 cables NNE of Longnose Point, has a landing place on it.

Honeymoon Bay (35°03′S, 150°47′E). This small boat harbour lies on the S side of the S entrance point of Montagu Roadstead (11.110). There is a small jetty 3 cables NNE of the point.

Currambene Creek

11.114

1 **General information.** Currambene Creek (35°02′S, 150°40′E), entered 4 cables NW of Tapalla Point on the NW side of Jervis Bay, has facilities for small craft.

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Huskisson, a village from which fishing vessels operate, stands on the S side of the creek entrance.

There is a shallow bar, with a depth of 1·0 m over it, across the creek entrance.

Regulation. There is a speed limit of 8 kn in the creek. For regulations that apply to the navigation of small rivers in New South Wales see 1.45.

2 **Directions** *(continued from 11.108).* From a position about 7 cables NNE of Tapalla Point the creek is entered on the following leading line:

Front light (red triangle, point up) (35°02′·4S, 150°40′·2E).

Rear light (red triangle, point down) (64 m from front light).

3 The alignment (243°) of these lights leads WSW passing close NNW of a drying shoal, marked by a light-beacon (N cardinal), across the bar into the creek. A light-beacon (port hand) which lies on the leading line, marks the N side of the drying shoal. Above Huskisson the creek is navigable only by small boats.

4 **Berths.** Close inside the entrance, on the S side at Huskisson, there are two jetties; a public jetty, and Rotary Jetty which has a depth of about 1·7 m alongside.

About 1 mile above Huskisson, at Woollamia, there is another public jetty. There are many moorings for small craft in the creek.

Repairs. There is a slipway at Huskisson which can handle vessels up to about 10 tonnes.

JERVIS BAY TO BASS POINT

General information

Charts Aus 360, Aus 808, Aus 193 (see 1.12)

Route

11.115

1 From a position ESE of Point Perpendicular (35°06′S, 150°48′E) the coastal route leads NNE for about 30 miles to a position ESE of Bass Point (34°36′S, 150°54′E).

Topography

11.116

1 One of the main features inland of this part of the coast is Cambewarra Range (chart Aus 360), which rises about 9 miles WNW of the entrance to Shoalhaven River (34°52′S, 150°45′E), and extends about 6 miles NE to the S end of Crown Mountains. The highest summit of Cambewarra Range attains an elevation of 624 m (2048 ft); Good Dog Mountain (34°48′S, 150°35′E) stands about 2 miles E of this summit.

2 Between Black Point (34°47′S, 150°49′E) and Kiama Harbour, 7 miles NNE, Flinders Ridge extends ESE from the S end of Crown Mountains, about 9 miles WNW of Black Point, to meet the coast at Bare Bluff (11.122). Barren Grounds (chart Aus 808), 664 m (2179 ft) high, is the highest summit of Flinders Ridge, rising about 7½miles NW of Black Point.

3 Between Kiama Harbour and Bass Point, 5 miles NNE, the land slopes gradually to the foot of Crown Mountains, 6 miles inland, and then rises steeply. The principal summits of Crown Mountains are Knights Hill (34°37′S, 150°42′E) (11.119), Bell's Hill (34°37′S, 150°36′E), Hoddle's Hill (34°35′S, 150°38′E) and Mount Murray (34°34′S, 150°38′E).

Exercise areas

11.117

1 See 11.3.

Sea state

11.118

1 A heavy and confused sea is experienced, even in only moderately bad weather, between Point Perpendicular (35°06′S, 150°48′E) and Beecroft Head, 5½miles NNE. Great care is needed to manage a small craft in this vicinity.

Principal marks

11.119

1 **Landmarks:**

Point Perpendicular (35°06′S, 150°48′E) (11.82).

Round Hill (34°58′S, 150°39′E) (chart Aus 360).

Nowra Hill (34°56′S, 150°34′E) (chart Aus 360).

Coolangatta Mountain (34°51′S, 150°43′E), a remarkable isolated conical hill and the highest land near the coast.

Saddleback Mountain (34°41′S, 150°44′E).

Knights Hill (34°37′S, 150°42′E), on the top of which stands a conspicuous TV tower.

2 **Major lights:**

Point Perpendicular Light (35°06′S, 150°48′E) (11.82).

Kiama Light (white round brick tower, 15 m in height) (34°40′·4S, 150°51′·7E); a flagstaff stands 30 m N of the light.

Directions

(continued from 11.86)

Point Perpendicular to Black Point

11.120

1 From a position ESE of Point Perpendicular (35°06′S, 150°48′E) the track leads NNE, passing (with positions from Point Perpendicular Light):

ESE of Crocodile Head (1¾ miles NE); Devil's Inlet lies on the N side of the headland. Thence:

ESE of Lamond Head (3¼ miles NE); Drum and Drumsticks, four small islets, lie 1 cable N of Lamond Head, off a small bay. Thence:

2 ESE of Beecroft Head (5½ miles NNE). Between Point Perpendicular and Beecroft Head, and thence to Little Beecroft Head, 7 cables farther NNW, the coast is fronted by high cliffs. Thence:

ESE of Little Beecroft Head (5¾miles NNE). Lobster Bay, with a foul patch near its centre, lies between Little Beecroft Head and Honeysuckle Point, 4 cables W. Thence:

3 ESE of Sir John Young Banks (9 miles NNE) which consists of two groups of shoal rocky patches 3 and 5¼ miles NE of Beecroft Head. The SW group has a least depth of 13·6 m over it, with shoal and irregular depths extending over 2 miles. The NE group has a least depth of 16·2 m over it, with a 21·5 m patch close N of it and a 24 m patch close NW. A channel, with depths of about 40 m, leads between Beecroft Head and the SW

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end of the banks. However, navigation in the vicinity of these banks should generally be avoided, due to periodic strong currents, and dangerous breaking seas with S and SE winds. Thence:

4 ESE of Shoalhaven Bight (13 miles N) which is entered between Honeysuckle Point, 1 mile NW of Beecroft Point, and Black Point, 13½ miles N. Crookhaven River (11.123) and Shoalhaven River (11.123) flow into the bight. During bad weather vessels should keep outside the bight owing to heavy rips probably caused by strong tidal streams flowing out from the two rivers and setting across the S-going current. Thence:

5 To a position ESE of Black Point (19 miles N); Black Rock lies close S of the point on a reef which extends 8 cables SSW. About 1 mile W of the point, Seven Mile Beach extends 8 miles SSW to the entrance of Crookhaven River.

11.121

1 **Clearing lines:**

The line of bearing, about 232°, of Point Perpendicular Light (35°06′S, 150°48′E) (11.82), open SE of Crocodile Head, clears SE of Sir John Young Banks.

The line of bearing, 292°, of the 624 m (2048 ft) summit (34°48′S, 150°32′E) of Cambewarra Range (11.116), open S of Coolangatta Mountain (11.119), clears 1 mile N of the NE shoal patch of Sir John Young Banks.

Useful mark:

Crookhaven Head Light (34°54′S, 150°46′E) (11.126).

Black Point to Bass Point

11.122

1 From a position ESE of Black Point (34°47′S, 150°49′E) the track continues NNE, passing (with positions from Black Point):

ESE of Geering Bay (3 miles NNE), an open roadstead not recommended as an anchorage; the shore of the bay is formed by Werri Beach. Thence:

ESE of Red Cliff (3¼ miles NNE), the N entrance point of Geering Bay, thence:

ESE of Bare Bluff (4¼ miles NNE), thence:

2 ESE of South Head (7 miles NNE) from where a light is displayed; a second light (11.119) is displayed from a position 1¾ cables WSW of the South Head Light. South Head is the E extremity of a rocky peninsula forming the SE side of Kiama Harbour (11.129). An active blowhole lies 1½cables WSW of the light displayed from South Head. Thence:

ESE of Stack Island (9½ miles NNE), lying off the entrance to Minnamurra River; the island is surrounded by a reef. Thence:

3 To a position ESE of Bass Point (12 miles NNE), close E of which lies a rock awash and a rocky patch; there is also a stranded wreck lying on its N side along with two historic wrecks (see 1.52) close E and S of the point. Between Kiama Harbour and Bass Point the coast is formed of sandy bights lying between projecting headlands fronted by reefs, except for the last 2 miles which are cliffy.

Useful mark:

Flagstaff Point Light (34°25′·3S, 150°54′·6E) (12.14).

(Directions continue at 12.15)

Crookhaven River and Shoalhaven River

Charts Aus 808, Aus 191 plan Crookhaven River Entrance (see 1.12)

General information

11.123

1 **Description.** Crookhaven River (34°54′S, 150°45′E) and Shoalhaven River (34°52′S, 150°43′E) are two narrow and relatively shallow rivers, which flow into Shoalhaven Bight (11.120).

Crookhaven River is entered W of a narrow rocky point 2 miles N of Wheeler's Point (11.130). Shoalhaven River, which does not have direct access to Shoalhaven Bight, is fronted by a narrow sandy ledge, which forms the S end of Seven Mile Beach (11.120). Access to Shoalhaven River is through Crookhaven River and thence via Berrys Canal, which links the two rivers, W of Comerong Island.

2 The E side of Comerong Island forms the shore of Shoalhaven Bight between Crookhaven River entrance and Shoalhaven Heads, which lies at the N end of Comerong Island. The island is low and flat save for a small hillock on its N point by which it may be identified. The island's S side is lined with mangroves and its E part is wooded.

There are berths and facilities for small craft at Greenwell Point (34°54′·5S, 150°44′·2E), 1¾ miles WSW of the Crookhaven River entrance point, and at Nowra (34°52′·2S, 150°36′·2E), a town on the S side of Shoalhaven River, about 9 miles WNW of the entrance to Crookhaven River.

Limiting conditions

11.124

1 **Controlling depth.** The bar, which is well inside the entrance to Crookhaven River under the lee of Crookhaven Head, has a least depth of about 1·8 m over it.

Vertical clearances.

An overhead cable, with a vertical clearance of 12·2 m above MHWS, spans Berrys Canal (34°53′·4S, 150°43′·0E).

An overhead cable, with a vertical clearance of 10·7 m above MHWS, spans Shoalhaven River from its N shore to Pig Island, about 1½miles ENE of Nowra.

A bridge, with a vertical clearance of 7·3 m, spans Shoalhaven River at Nowra.

Arrival information

11.125

1 **Anchorage.** Vessels awaiting suitable conditions for crossing the bar can obtain anchorage in Crookhaven Bight (11.130), off Abraham's Bosom.

Pilotage. There is no pilot, but the officer-in-charge will assist strangers without accepting responsibility.

2 **Caution.** A vehicular ferry operates across Berrys Canal. On approaching the ferry crossing care is required, especially when passing over its wires.

Regulations. For regulations that apply to the navigation of small rivers in New South Wales see 1.45.

Current. The out-going stream from Crookhaven River sets strongly through the entrance and raises a confused choppy sea on the bar.

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Kiama Harbour from N (11.129)

(Original dated 1998)

Directions

11.126

1 From a position about 1¾ miles NNE of Crookhaven Head (34°54′S, 150°46′E) the river is entered on the following leading line:

Front light (orange triangle, point up) (34°54′·3S, 150°45′·8E).

Rear light (orange triangle, point up) (35 m from front light).

2 The alignment 206½° of these entrance leading lights leads SSW into the river, passing close WNW of Crookhaven Head, from where a light (white round tower, 7 m in height) is displayed. Thence to the inner crossing leading line.

Front light (orange rectangle) (34°54′·2S, 150°46′·0E), standing on Station Hill.

Rear light (orange rectangle) (60 m from front light).

3 The alignment (090°) of the inner crossing leading lights, astern, leads W across the bar. Thence, within the inner crossing, the channel marked by buoys (lateral), leads W for 1 mile to Greenwell Point and then NW for 2 miles, through Berrys Canal, into Shoalhaven River. From the N end of Berrys Canal the channel then leads WNW through Shoalhaven River for about 6 miles to Nowra.

Caution. The alignments of the leading lights are altered as the direction of the channel changes.

Berths

11.127

1 **Greenwell Point** (34°54′·5S, 150°44′·2E). There are two jetties at the point, Fishing Boat Jetty with Greenwell Point Public Jetty tucked in behind it. In Shaws Creek, on the N side of Greenwell Point, there is a public jetty and a council slipway.

Nowra (34°52′·2S, 150°36′·2E). There is a public jetty, with a depth alongside of about 1·7 m, at Nowra.

Supplies

11.128

1 Limited quantities of fuel; fresh water; provisions.

Minor harbour

Chart Aus 191 plan Kiama (see 1.12)

Kiama Harbour

11.129

1 **General information.** Kiama Harbour (34°40′S, 150°51′E), used by fishing vessels and recreational craft, is a cove entered 5 cables W of South Head. Robertson Basin, in the SE corner of the cove, is fronted by two breakwaters. There are depths of 3·3 to 3·4 m in the basin.

Directions. From seaward the cove is entered on the alignment (214½°) of the following leading lights:

Front light (orange triangle, point up, on white post with red bands) (34°40′·3S, 150°51′·4E) standing on the head of the W breakwater.

Rear light (orange triangle, point down, on white post with red bands) (127 m from front light).

2 **Useful marks:**

Kiama Light (34°40′·4S, 150°51′·7E) (11.119).

South Head Light (34°40′·4S, 150°51′·9E) (11.122).

Berths:

Wharf on the W side of Robertson Basin; length 46 m; a vessel 61 m long can be berthed.

Wharf on S side of basin.

Facilities: slipway; hospital.

Supplies: fresh water; provisions.

Anchorage

Charts Aus 193, Aus 808 (see 1.12)

Crookhaven Bight

11.130

1 **Description.** Crookhaven Bight lies at the S end of Shoalhaven Bight (11.120) and is entered W of Whale Point (35°00′·4S, 150°49′·7E). A reef with a rock drying 0·6 m at its outer end, and which is the site of an historic wreck (see 1.52), extends 2 cables NNW from Whale Point; an isolated patch, with a depth of 7·7 m over it, lies 9 cables NNE of Whale Point.

2 Within the bight, 4 cables SSW of Whale Point, lies Abraham's Bosom, a small bay with a sandy beach, S of which stands the small town of Currarong. The S and W side of the bight is formed by a low coast with a sandy

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beach, fronted by drying and submerged rocks. The beach extends 1¾ miles NW from Plutus Creek, at the W end of Currarong, to a narrow neck separating the bight from Carama Inlet (11.111); a reef extends 2½ cables offshore from the narrow neck and a bank, with a depth of 8·4 m over it, lies 6 cables farther E.

3 Thence Warrain Beach extends, from the N end of Crookhaven Bight, 3¾ miles N to Wheeler's Point or Kinghorn Head, (Kinghorn Point on chart Aus 808), which is low and projecting; behind this beach from about 2 miles to 5 cables S of Wheeler's Point is Lake Wollumboola, only separated from the sea by a narrow ridge.

Anchorage. Good anchorage may be obtained in a depth of 11 m about 6 cables NW of Abraham's Bosom where holding is good, with the anchor burying deep in sand.

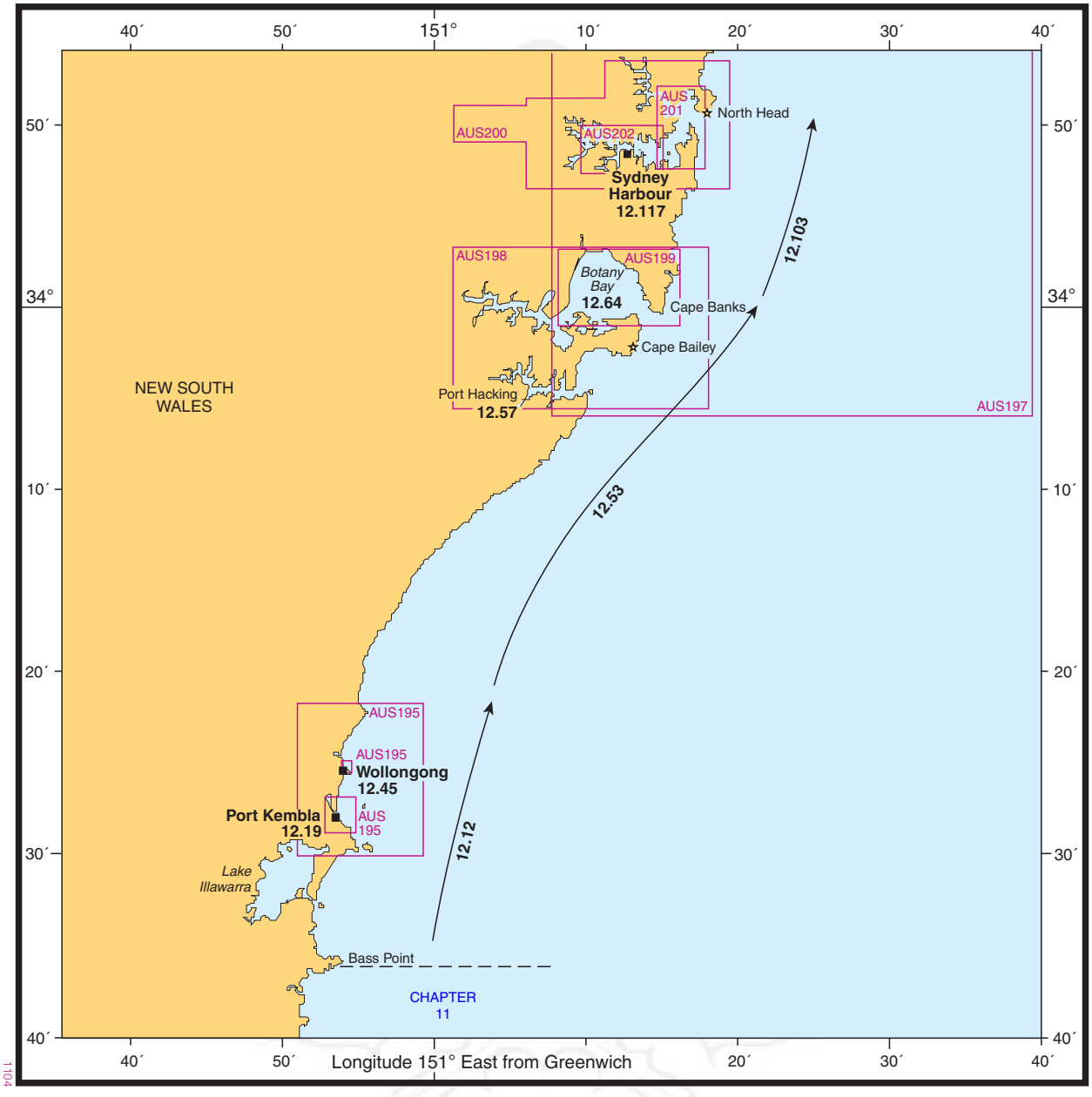
There is also an anchorage closer inshore, as shown on the chart, for small craft, 2 cables NW of Abraham's Bosom.

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NOTES

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Chapter 12 - Bass Point to Port Jackson



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CHAPTER 12

NEW SOUTH WALES — BASS POINT TO PORT JACKSON

GENERAL INFORMATION

Charts Aus 360, Aus 361

Scope of the chapter

12.1

1 The area covered by this chapter comprises the passage along the E coast of New South Wales from Bass Point (34°36′S, 150°54′E) to North Head, off the entrance to Sydney Harbour, about 51 miles NNE. The description includes the principal industrial and commercial ports of Port Kembla (12.19), Botany Bay (12.64) and Sydney Harbour (12.117).

The chapter is divided into the following sections:

Bass Point to Bellambi Point (12.10).
Bellambi Point to Port Jackson (12.51).
Port Jackson and Sydney Harbour (12.110).

Topography

12.2

1 The coast between Bass Point and Dunbar Head, Sydney, about 50 miles NNE, consists mostly of abrupt, rocky cliffs alternating with stretches of beach and backed by high land.

The coast N of Sydney is described in *Australia Pilot Volume III*.

Hazards

12.3

1 **Obstructions.** Some areas within about 1 mile of the coast of New South Wales have not been closely surveyed and uncharted obstructions may exist.

Exercise areas. Submarines exercise frequently off Port Jackson and a good lookout should be kept for them when passing through this area. Firing practices and other naval exercises also take place off Port Jackson, Botany Bay and Wattamolla.

For further information see *Annual Australian Notices to Mariners*.

Fishing

12.4

1 During the period November to April, lobster fishing takes place between Port Stephens (32°45′S) and Bermagui (36°30′S). Where practicable, mariners are requested to transit this area outside the 220 m (120 fm) depth contour.

Historic wrecks

12.5

1 Along the coastline described in this chapter there are several historic wrecks. They are shown on the charts but only those which affect navigation are described in this chapter. For further details see 1.52.

Pollution

12.6

1 The discharge overside of any pollutant or solid material of any description is prohibited on the continental shelf off the coast of New South Wales.

For further information on dumping waste at sea see 1.36.

Information service

12.7

1 Sydney Harbour Control provide an information service which covers maritime waters from 50 miles N of Newcastle (32°56′S, 151°47′E) *(Australia Pilot Volume III)* to 50 miles S of Port Kembla (34°28′S, 150°54′E), and up to 50 miles offshore. It broadcasts navigation warnings, local weather reports, and provides telephone services using interconnected radio stations.

For further details see *Admiralty List of Radio Signals Volume 6 (4)*.

Current

12.8

1 East Australian Coast Current, which sets S along the coast of New South Wales, is described at 1.106.

Rescue

12.9

1 See 1.66 and *Admiralty List of Radio Signals Volume 5*.

BASS POINT TO BELLAMBI POINT

GENERAL INFORMATION

Chart Aus 361

Area covered

12.10

1 The area covered by this section comprises:

Coastal passage (12.12).
Port Kembla and approaches (12.19).

Information service

12.11

1 See 12.7.

COASTAL PASSAGE

General information

Charts Aus 361, Aus 808 (see 1.12)

Route

12.12

1 From a position ESE of Bass Point (34°36′S, 150°54′E) the coastal route leads NNE, for a distance of about 14 miles, to a position ESE of Bellambi Point (34°22′S, 150°56′E).

Topography

12.13

1 Between Bass Point (11.122) and Red Point, 6¼miles N, the coast is backed by a range of mountains, from about

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365 m to over 790 m (1200 to 2600 ft) high, which extends from Bells Hill, 15 miles W of Bass Point in the Crown Mountains (11.116), to the coast over 25 miles NE.

Principal marks

12.14

1 **Landmarks:**

Chimney (34°31′·5S, 150°48′·5E), standing on the W shore of Lake Illawarra.

Chimney (black top with the letters ERS painted on it, floodlit, 223 m high) (34°29′·0S, 150°54′·4E).

Flagstaff Hill (34°28′·1S, 150°51′·0E), a long hill with a double summit. The hill is barren at each end and thickly wooded in the middle. A water tank (conspicuous) stands near the SE summit; a radio tower stands close W of the water tank.

2 Mount Kembla (34°26′·7S, 150°48′·5E), a conspicuous mountain, standing 6½miles WNW of Red Point, thus making this point easy to identify. Because of its shape Captain Cook named this mountain Hat Hill.

Mount Keira (34°24′·1S, 150°51′·4E), with a flat top.

Broker's Nose (34°22′·0S, 150°52′·5E); a radio mast stands on its E side.

Major light:

Flagstaff Point Light (white concrete tower and lantern, 25 m in height) (34°25′·3S, 150°54′·6E).

Kiama Light (34°40′·4S, 150°51′·7E) (11.119).

Directions

(continued from 11.122)

12.15

1 From a position ESE of Bass Point (34°36′S, 150°54′E) the track leads NNE, passing (with positions from Bass Point):

ESE of Cowrie Head (2 miles NW), the N entrance point of Shell Harbour (12.17), thence:

ESE of Barrack Point (2½ miles NW); the coast on either side of the point is formed by a beach. Thence:

ESE of Windang Island (3¼ miles NNW), which lies 2½cables E of the S entrance point of Lake Illawarra (12.18); the island is connected to the point by a drying sandbank. Thence:

2 ESE of Perkins Beach (4½miles NNE), which extends 3½miles NE from Lake Illawarra entrance; the beach is backed by sandhills about 17 m high. Thence:

ESE of Red Point (6¼ miles N), 20 m high and saddle-shaped; so named by Captain Cook from its dull red colour. Hill 60, 2 cables NW of the point, is the local name for a hill with a conspicuous sandpatch of sand on its NE side. Thence:

3 ESE of Martin Island (Martin Islet on chart Aus 808) (6½miles NNE), one of three islands forming the S group of two groups of islands collectively known as The Five Islands. Martin Island lies close SE of Big Island, the largest of the S group, on a shoal bank. Big Island is formed of two parts connected by a low isthmus and is flat and grass covered. A small, rocky shoal patch, with a depth of 3·7 m over it, lies 1½cables N of Big Island on the N edge of a shallow shelf which borders the island; in heavy weather the sea breaks over the shoal. Rocky Island, the third island of the S group, lies on foul ground which extends from the W side of Big Island to Red Point, 3 cables WSW; the island is a flat rock. Thence:

4 ESE of Tom Thumb Islands (8¼ miles NNE), which consists of Bass Island and Flinders Island, and forms the N group of The Five Islands. Thence:

ESE of Flagstaff Point (10½miles N), a rocky peninsula projecting 2 cables E from the coast; the N side of the peninsula is fronted by a sea wall. The summit of the peninsula is 18 m high and a light (12.14) is displayed from it. Thence:

5 To a position ESE of Bellambi Point (13¾miles N); the point is low and rocky with a surface covering of sand; rocks fringe the point. Bellambi Reef, on which the sea always breaks, lies 4 cables SE of Bellambi Point; foul ground connects the reef with the point.

(Directions for the coastal passage continue at 12.55)

(Directions for Port Kembla are given at 12.38)

Minor harbours

Chart Aus 808 plan Bass Point (see 1.12)

Bass Point

12.16

1 **General information.** A jetty (34°35′·7S, 150°53′·1E), at which basalt rock is loaded, projects 5 cables NNE from the shore 9 cables W of Bass Point.

Vessels, up to about 100 m in length, lie alongside dolphins close off the jetty in a depth of about 10 m. The rock is loaded at a rate of about 800 tons per hour by a conveyor belt on the jetty. There are no pilots, tugs or boats for handling lines.

2 **Directions.** The alignment (188°) of the following lights (not charted) leads from seaward to the berth:

Front light (red triangular daymark) (34°35′·8S, 150°52′·8E) standing close SW of the root of the jetty.

Rear light (similar structure).

The lights are privately maintained.

Shell Harbour

12.17

1 Shell Harbour (34°34′·7S, 150°52′·3E), a small harbour used only by small local craft, lies on the NW side of a cove, 2 miles NW of Bass Point (11.122). Within the cove the bottom is rock, covered with weed, on which anchors will not hold.

The harbour is enclosed by two short breakwaters leaving an entrance 30 m wide with a depth of about 1·7 m in it. A light is displayed from the head of each breakwater.

Chart Aus 808 (see 1.12)

Lake Illawarra

12.18

1 Lake Illawarra, 2½ miles SW of Port Kembla, is a shallow lake; Macquarie Rivulet flows into its SW end. The entrance channel to the lake is obstructed by islets and is spanned by a road bridge with a vertical clearance of 3·7 m; submarine cables are laid across the entrance near the bridge.

For further information on submarine cables see 1.33.

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PORT KEMBLA AND APPROACHES

General information

Chart Aus 195

12.19

1 **Position.** Port Kembla (34°28′S, 150°54′E) lies about 38 miles SSW of Sydney.

Function. Principal exports are coal (second largest exporting port in New South Wales) and coke, iron and steel products, grain products, mineral concentrates and logs. Imports include iron ore, fertilisers, limestone and petroleum products.

Port limits. The seaward limit of the port is defined by a circle, radius 2½ miles, centred on the head of the E breakwater; the limit is shown on the chart.

2 **Traffic.** In 2003 the port was used by 598 vessels totalling 22 700 000 dwt.

Port Authority. Port Kembla Port Corporation, PO Box 89, Corner of Darcy and Military Roads, Port Kembla 2505, New South Wales, Australia.

Website: www.kemblaport.com.au

Email: pkpc@kemblaport.com.au

Limiting conditions

Controlling depth

12.20

1 There is a depth of 16·7 m in the entrance to the outer harbour and a depth of 15·2 m in the entrance to the inner harbour. To allow for safe passage in the harbour the following under-keel clearances are required:

Inward-bound. Not less than 1·37 m; maximum arrival draught = (15·25 m + height of tide — 1·37 m).

Outward-bound. Not less than 8% of the vessel's draught; maximum departure draught = (15·25 m + height of tide) divided by 1·08 m.

2 Alongside berths. Vessels are required to have an under-keel clearance of 0·6 m in the outer harbour and 0·3 m in the inner harbour.

Caution. Depths throughout the harbour are subject to siltation, depths given in these directions should therefore be accepted only as a guide. Depth information is updated by *Australian Temporary Notices to Mariners* but the latest information should be obtained from the Harbour Master.

Minimum draught requirements

12.21

1 Vessels are required to have minimum draughts of 2% of LOA forward and 3% of LOA aft. The propeller should also be fully immersed. In windy conditions it would be prudent to have the vessel ballasted as deeply as possible.

Deepest and longest berth

12.22

1 The Multi-purpose Berth, Coal Berth No 2 and Grain Berth (12.43), in the inner harbour, are the deepest and longest.

Tidal levels

12.23

1 Mean maximum range is about 1·2 m; mean minimum range about 0·8 m. For further information see *Admiralty Tide Tables.*

Maximum size of vessel handled

12.24

1 **General information.** Maximum allowable length is 295 m; vessels with a length between 290 to 295 m require special approval from the Harbour Master. There is no maximum beam restriction, but vessels whose beam exceeds 45 m should advise the Harbour Master.

Local weather and sea state

12.25

1 The harbour is well protected except from winds between NNW and NE. During storms, a heavy scend alongside the wharves in Port Kembla Outer Harbour, may render them untenable, making it necessary for vessels to leave harbour.

Arrival information

Port operations

12.26

1 The port operates on a 24 hour basis with some minor restrictions to Cape-size vessels. Further information should be obtained from the Harbour Master.

Port radio

12.27

1 A port radio station operates from the Vessel Traffic Information Centre in the Port Corporation Office at Port Kembla. For details see *Admiralty List of Radio Signals Volume 6 (4).*

Outer anchorage

12.28

1 **Waiting anchorage.** Vessels awaiting a berth or a pilot should anchor N of a line extending E from Flagstaff Point Light (34°25′·3S, 150°54′·6E) in depths of 25 to 35 m, keeping well clear of the approaches to Port Kembla.

Foul ground. An area of foul ground, within a circle, radius 2¾ cables, centred 073°, distance 2¼miles, from Flagstaff Point Light, exists near the pilot boarding grounds. This foul ground lies within a prohibited anchorage area. In addition, anchorage is not recommended between The Five Islands as the area is foul ground.

2 **Caution.** Masters are advised that in heavy weather conditions the anchorage area off Port Kembla may not be safe. During such weather vessels should be prepared to weigh anchor and proceed to sea.

Prohibited anchorage

12.29

1 Vessels may not anchor in the approach channel to Port Kembla or within the harbour. The limits of the restricted area are shown on the chart.

Submarine pipeline

12.30

1 A submarine oil pipeline is laid across The Cut (34°27′·9S, 150°54′·0E), which forms the entrance to Inner Harbour.

For further information on submarine pipelines see 1.33.

Pilotage

12.31

1 Pilotage is compulsory and is available 24 hours. Vessels bound for the port should call Port Kembla Harbour radio 4 hours and 2 hours before arrival to confirm ETA. Pilots board at the following positions:

For vessels of 250 m LOA or greater, at the outer boarding ground, centred on position 34°24′·2S, 150°57′·6E, 4½miles NNE of the harbour entrance.

2 For vessels less than 250 m LOA, at the inner boarding ground, in position 34°25′·2S, 150°56′·7E, 3¼miles NNE of the harbour entrance.

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Port Kembla – Outer Harbour from NE (12.35)
(Original dated 1998)

Pilot ladders for entry, should be rigged 2 m above the water on the starboard side; on departure the pilot ladder should be rigged on the port side. Vessels arriving from S should rig the pilot ladder on the lee side after contact with the Vessel Traffic Information Centre and Pilot.

For further details see *Admiralty List of Radio Signals Volume 6 (4)*.

Tugs
12.32

1 Tugs are available.

Traffic regulations
12.33

1 Vessels are not to pass each other in the entrance to Outer Harbour; outward bound vessels have right of way.

Quarantine
12.34

1 Port Kembla is a first port of entry. The quarantine line is drawn from the oil berth on Northern Breakwater to the head of No 2 Jetty and thence to the head of Eastern Breakwater.

For further information on quarantine see 1.47.

Harbour

General layout
12.35

1 Port Kembla is an artificial harbour enclosed by two breakwaters and consists of an outer and an inner harbour. In the outer harbour there are three jetties on the S and W sides along with an inflammable liquids berth on the inside of Northern Breakwater, about midway along. There is also a small boat harbour lying on the W side of the root of Eastern Breakwater.

In the Outer Harbour, close S of No 6 Jetty, there is an area under reclamation (2000)

2 In the Inner harbour, on the SW side, there is an iron-ore discharge and storage complex and on the E side a coal storage and loading complex; the coal complex has an export capacity of 14 million tonnes a year.

The N part of the inner harbour is divided into Western and Eastern Basin. In the Eastern Basin, opposite the coal berths, there is a grain terminal with an export capacity of 6·8 million tonnes a year, and to the N of the coal berths a Ro-Ro terminal. In Western Basin there is another Ro-Ro terminal and a products berth. Between the two basins on the N side there is a multi-purpose berth.

Traffic signals
12.36

1 When it is necessary to close the port for bad weather conditions, or for other reasons, shipping will be notified by the Vessel Traffic Information Centre.

Principal marks
12.37

1 **Landmarks:**
Chimney (34°29′·0S, 150°54′·4E) (12.14).
Flagstaff Hill (34°28′·1S, 150°51′·0E) (12.14).
Mount Kembla (34°26′·7S, 150°48′·5E) (12.14).
Mount Keira (34°24′·1S, 150°51′·4E) (12.14).
Broker's Nose (34°22′·0S, 150°52′·5E) (12.14).
Reservoir (34°26′·0S, 150°52′·6E).
Hospital (34°25′·5S, 150°53′·0E) in Wollongong.

Major light:
Flagstaff Point Light (34°25′·3S, 150°54′·6E) (12.14).

Directions

Approach
12.38

1 If from the S pass at least 1 mile E of Bass Island and then approach Port Kembla from the N. The deep-water channel through The Five Islands Group should only be used by local craft and requires local knowledge.

At night pass at least 1½ mile E of Bass Island and continue N until well within the white sector (213°–312°) of Flagstaff Point Light (34°25′·3S, 150°54′·6E) (12.14), thence head E onto the alignment of one of the harbour entrance leading lines.

Entry
12.39

1 Entry to the port is fairly easy, but at night speed must be reduced early as the lights of vessels at anchor are hard to distinguish against the many bright background lights ashore. Two sets of leading lights lead into the harbour, the main set being for the use of deep-draught vessels.

2 **Main leading lights:**
Front direction light (orange triangle, point up, on white cylindrical metal pylon with platform) (34°28′·4S, 150°54′·3E); the light, with a narrow

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Flinders Island

Port Kembla from E (12.39)
(Original dated 1998)

white sector (212½°–213½°), is displayed throughout the day.

Rear light (orange triangular topmark, point down) (660 m from front light).

3 From a position about 3 miles NE of Flagstaff Point (34°25′·3S, 150°54′·6E) the track leads SSW on the alignment (213°) of these marks, keeping within the narrow white sector of the direction light, and passing (with positions from Flagstaff Point):

ESE of Towradgi Point (2¼ miles N), formed of bluestone boulders; Towradgi Creek, closed by a bar across its entrance, enters the sea close N of the point. Thence:

4 ESE of Flagstaff Point (12.15) from where a light is displayed. Between Flagstaff Point and Port Kembla, 2½ miles S, the coast is formed of low sandhills behind which stands the town of Wollongong (12.45) and its suburbs. Thence:

WNW of Flinders Island (2¼ miles SSE) (12.15), thence:

Between the breakwater heads (2½miles S) of Northern Breakwater and Eastern Breakwater into Outer Harbour; lights (white cylindrical metal towers with platforms) are displayed from the heads of the breakwaters.

12.40

1 **Secondary leading lights.** Port Kembla Outer Harbour may also be entered on the alignment (207¾°) of the following set of leading lights:

Front light (orange rectangle daymark on grey metal pile) (34°28′·6S, 150°54′·3E).

Rear light (similar daymark on grey metal framework tower) (5 cables from front light).

Directions within Port Kembla

12.41

1 Once inside Outer Harbour, if bound for berths within Inner Harbour, alter course onto the following leading line:

Front light (orange triangle, point up, above orange rectangle on metal framework tower, 29 m in height) (34°27′·4S, 150°53′·1E).

Rear light (orange triangle, point down, on metal framework tower, 23 m in height) (600 m from front light).

2 The alignment (300¼°) of these lights leads NW from Outer Harbour through a channel, 170 m wide, between the 15 m depth contours into Inner Harbour. The sides at each end of this entrance, known locally as The Cut, are marked by lights.

Thence a further set of leading lights provides guidance for entering Eastern Basin of Inner Harbour as follows:

Front light (red triangle, point up, on pole) (34°27′·1S, 150°53′·7E).

Rear light (red triangle, point down, on pole) (250 m from front light).

3 The alignment (357°) of these lights lead N into the middle of Eastern Basin.

Useful marks:

Light (white cylindrical metal pylon with ladder) (34°28′·2S, 150°54′·8E) on Eastern Breakwater; its visible sector (115°–155°) covers the entrance to Inner Harbour. Two other lights (white metal poles) stand on Eastern Breakwater between this light and the breakwater head light.

4 Light (square framework mast with red daymark near top) (34°28′·3S, 150°54′·7E) displayed from the head of No 4 Jetty.

Light (tower, with 1 m orange band, 3 m in height) (34°28′·1S, 150°54′·3E) displayed from the head of No 6 Jetty.

Basins and berths

Outer Harbour

12.42

1 Berths (positioned from the head (34°27′·9S, 150°54′·6E) of Northern Breakwater):

No 3 Jetty (5 cables S) is in disrepair and is no longer used except as a tug berth.

No 4 Jetty (4½ cables SSE) is a bulk liquids facility; the berth is an extension on the W side of the head of the jetty which has a depth alongside of 11·5 m.

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Flagstaff Point

Wollongong from ENE (12.45)

(Original dated 1998)

2 No 6 Jetty (3 cables SW); general cargo berths. N side; length 298 m; depth alongside 10·4 to 7·3 m. S side; length 299 m; depth alongside 9·8 to 8·5 m.
Inflammable liquids berth (1½ cables WNW); depth alongside 10·5 m; maximum length of vessel berthed 232 m.

Inner Harbour

12.43

1 Berths (positioned from Tug Berth (34°27′·8S, 150°53′·8E):

Iron-ore and steel complex:

No 1 Products Wharf (close NW); length 192 m; depth alongside 11 m.
No 1 Discharge Wharf (2 cables NW); length 278 m; depth alongside 12·8 m.
No 2 Discharge Wharf (3½cables NW); length 310 m; depth alongside 15·7 m.

2 **Western Basin:**

Ro-Ro Berth (6½ cables NW); length 183 m; depth alongside 11 m; vessels berth starboard side to, using the S corner of No 2 Products Wharf to accommodate a vessels quarter ramp.
No 2 Products Wharf (7½cables NW); length 221 m; depth alongside 12·2 m.
Multi-purpose Berth (5 cables NNW); length 300 m; depth alongside 16·2 m; used for general cargo, repairs and as a layby. It has been reported that in 2004 the Multi-purpose Berth will be extended W by 130 m.

3 **Eastern Basin:**

Grain Berth (5½cables NNW); length 290 m; depth alongside 16·2 m; allowable air draught 17·0 m; maximum vessel length 315 m.
Ro-Ro Berth (7 cables N); maximum length of vessel 170 m; depth alongside 9 m.

4 **Coal complex:**

Coal Berth No 1 (Old Coal Wharf) (3 cables NNE); maximum length of vessel 285 m; depth alongside 11·6 m; allowable air draught 17·4 m.
Coal Berth No 2 (Bulk Coal Berth) (4½cables N); maximum length of vessel 315 m; depth alongside 16·2 m; allowable air draught 22·4 m.

Port services

12.44

1 **Repairs** can be carried out; engineering services available.

Other facilities. Two hospitals; deratting and deratting exemption certificates issued; reception facilities for oily waste using road tankers; garbage disposal.

Supplies. Fuel; provisions; fresh water.

Communications. There is an international airport at Sydney, about 80 km by road.

2 **Harbour regulation.** During a vessel's stay the engines should be kept in readiness at all times and repairs only undertaken after prior consultation with the Harbour Master. Sufficient crew should be on board to allow the vessel to move at short notice. The notice periods are 4 hours for fine weather and 1 hour when advised by the Harbour Master.

Wollongong

Chart Aus 195 plans of Approaches to Port Kembla and Wollongong Harbour

General information

12.45

1 **Position and function.** Wollongong (34°25′S, 150°54′E) is one of the largest towns on the SE coast of New South Wales. It is the main business centre for the mining, commercial and agricultural industries in the area.

The town, with its suburbs, is built on rising ground W and N of Flagstaff Point and extends to the foothills of Mount Keira. The harbour is used by fishing vessels and recreational craft.

2 **Depths.** There are depths of not less than 2·1 m on the approach leading line and about 3 m alongside in a basin in the SE part of the harbour.

Pilotage. There is no pilot but the officer-in-charge, while taking no responsibility, will assist strangers to the harbour.

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Caution. In bad weather it is impossible to enter or leave Wollongong Harbour.

Harbour

12.46

1 Wollongong Harbour is protected from the N and E by two breakwaters. The E breakwater extends 1 cable NW from the NW extremity of Flagstaff Point from where a spur branches ½ cable N to form the seaward end; a light (white column, 5 m in height) is displayed from its head. The N breakwater curves E from the W shore, for about 1 cable, with its head ½ cable WSW of the head of the E breakwater; a light (post, 3 m in height) is displayed from the elbow of the N breakwater.

2 The SE side of the harbour is formed by Belmore Basin in which there are alongside berths. The SW shore of the harbour is fronted by rocky ledges and a bank, with depths of less than 2 m over it, which extends ¾ cable offshore; a buoy (E cardinal) marks the edge of the bank SW of the head of the N breakwater. A sandy beach extends between the rocky ledges and the entrance to Belmore Basin.

Directions

12.47

1 **Approaches.** The approach to Wollongong from the S and E is clear of dangers but if approaching from the N, care is needed in avoiding Bellambi Reef, off Bellambi Point (34°22′S, 150°56′E), and Para Reef, about 3 cables N of the harbour entrance. The approach from the N may be made as follows:

From a position E of Bellambi Point head SSW, passing ESE of Bellambi Reef (12.15), whilst keeping the line of bearing, not less than 212°, of the end of Flagstaff Point (34°25′·3S, 150°54′·6E) ahead until Flagstaff Hill (34°28′·1S, 150°51′·0E) is sighted.

2 **Leading marks:**

Flagstaff Point Light (12.14).

Conspicuous water tank on Flagstaff Hill (12.14).

Thence the track leads SSW on the alignment (217°) of these marks, passing (with positions from Flagstaff Point):

ESE of Towradgi Point (2¼ miles N) (12.39), thence:

To a position about 3 cables ESE of Para Reef (5 cables N), 4 cables from Flagstaff Point Light. Para Reef, with a least depth of 3·7 m over it and on which the sea breaks with an E swell, extends 5 cables SE from a position 9 cables NNW of Flagstaff Point.

12.48

1 **Entry.** The track then leads W, for about 4 cables, onto the harbour entrance leading line. The alignment (194¾°) of the following leading lights leads into the harbour:

Front light (black beacon, white stripe) (34°25′·3S, 150°54′·3E).

Rear light (similar structure, 50 m from front light).

2 **At night** the approach to Wollongong Harbour lies within the white sector (213°–312°) of Flagstaff Point Light; a red sector (188°–213°) of this light covers Bellambi Reef. Thence, keeping about 3 cables off Flagstaff Point Light, the track leads NW or W to pass about 1½ cables N of the head of the E breakwater and on to the harbour entrance leading line.

Berths

12.49

1 **West side.** Contains moorings for locally owned small craft.

Belmore Basin. There are depths of about 2·1 m, rock, in the entrance to the basin, which has about 550 m of berthing accommodation. Within the basin there are depths of 2·4 to 3·0 m alongside, except for a depth of 1·8 m in its N corner. On the S side of the entrance to the basin there is a public jetty with a depth of 1·3 m alongside, and a wharf with depths of 1·5 to 2·5 m alongside but only 0·3 m at its W end. The basin is generally entered stern first.

Port services

12.50

1 **Repairs:** engineering and shipwright services; slipway for vessels up to 21 m in length with a 5·5 m beam.

Facilities: large hospital.

Supplies: provisions; fresh water.

BELLAMBI POINT TO PORT JACKSON

GENERAL INFORMATION

Chart Aus 361

Area covered

12.51

1 The area covered by this section comprises:

Bellambi Point to Cape Banks (12.53).

Botany Bay (12.64).

Cape Banks to North Head (12.103).

Information service

12.52

1 See 12.7.

BELLAMBI POINT TO CAPE BANKS

General information

Charts Aus 361, Aus 197, Aus 808 (see 1.12)

Route

12.53

1 From a position ESE of Bellambi Point (34°22′S, 150°56′E) the coastal route leads NNE, for a distance of about 26 miles, to a position ESE of Cape Banks (34°00′S, 151°15′E), off the entrance to Botany Bay.

For vessels bound for destinations N of Botany Bay, see caution at 12.56.

Principal marks

12.54

1 **Landmarks:**

Broker's Nose (34°22′·0S, 150°52′·5E) (12.14).

Radio tower (34°15′·8S, 150°57′·3E).

Jibbon Hillock (34°05′·8S, 151°09′·3E), 85 m high (283 ft on chart Aus 361) and prominent, standing 1½ miles SSW of Port Hacking Point.

2 Two chimneys (34°01′·2S, 151°12′·9E), one 73 m high and the other 58 m high, standing close together emitting flares, in amongst other chimneys of an oil refinery, 7 cables WSW of Cape Solander.

Water tank (34°01′·0S, 151°13′·5E), 3 cables WNW of Cape Solander.

Water tank (33°59′·2S, 151°14′·3E), 1 mile NNW of Cape Banks.

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Major light:

Flagstaff Point Light (34°25′·3S, 150°54′·6E) (12.14).

Directions

(continued from 12.15)

12.55

1 From a position ESE of Bellambi Point (34°22′S, 150°56′E) the track leads NNE, passing (with positions from Bellambi Point):

ESE of Bulli Point (2¼ miles N); Bulli, a mining area SW of the point, is the N suburb of Wollongong. Thence:

ESE of Brickyard Point (4 miles N); between Bulli Point and Brickyard Point the coast is low. Thence:

2 ESE of Coalcliff (7¾ miles N), a village; between Brickyard Point and Coalcliff the shore is faced with cliffs. Thence:

ESE of Stanwell Park (9¼ miles NNE), a village which stands in a break in the cliffs. Bulgo, a hill 289 m high, the SW summit of Wattamolla Ridge, stands 2½ miles NE of Stanwell Park. Thence:

ESE of Garie Beach (13¾ miles NNE); the beach breaks the line of cliffs fronting the coast between Stanwell Park and Wattamolla. Thence:

3 ESE of Wattamolla (17 miles NNE), a small inlet in which there is a boat harbour sheltered from all winds, except S and E. Between Wattamolla and Port Hacking Point, 4½ miles NE, the coast is a continuous line of cliffs broken only by Marley Beach which lies 1½miles NNE of the boat harbour.

12.56

1 The track then continues NNE, passing (with positions from Cape Baily Lighthouse (34°02′S, 151°13′E)):

ESE of Jibbon Bumbora (3½ miles SW), a drying reef lying 4 cables SE of Port Hacking Point, the S entrance point of Port Hacking (12.57), thence:

ESE of Osborn Shoal (2¼ miles SW) (12.62), thence:

ESE of Potter Point (5 cables SW), the NE entrance point of Bate Bay; Botany Cone stands about 3 cables NW of the point. Thence:

2 ESE of Cape Baily; the coast between Potter Point and Cape Baily is cliffy. A light (white square concrete tower and lantern, 9 m in height) is displayed from the N side of Cape Baily. Thence:

ESE of Cape Solander (1¼ miles NNE); between Cape Solander and Cape Baily the coast remains cliffy and is higher than that SW of the latter cape. Thence:

To a position ESE of Cape Banks (2½miles NNE), the NE entrance point of Botany Bay (12.64).

3 **Caution.** Vessels passing the entrance to Botany Bay should keep outside the port limits (12.68), as shown on the chart, to avoid inconveniencing vessels leaving or entering Botany Bay.

(Directions for the coastal route continue at 12.109)

(Directions for Botany Bay are given at 12.88)

Port Hacking

Chart Aus 198

General information

12.57

1 **Description.** Port Hacking, a narrow inlet about 5 miles in length, is entered between Port Hacking Point (34°04′·6S, 151°10′·1E) and Glaisher Point, 7 cables WNW. Port Hacking is not used commercially but as it lies between Sydney's S suburbs and Royal National Park it is frequented by many recreational craft.

The outer part of the inlet is indented on its N side by Gunnamatta Bay and Burraneer Bay; the inner part is fairly deep and much indented by several arms. Hacking River flows into the W end of the inner part and is navigable for 2 miles as far as Audley; the channel in the river is marked by beacons.

Limiting conditions

12.58

1 **Controlling depths.** There is a depth of about 0·9 m over the outer bar, 6½cables WSW of Glaisher Point Light (34°04′·3S, 151°09′·3E), and a depth of about 0·4 m over the inner bar, 1 mile WSW of Glaisher Point.

Vertical clearance. Overhead cables, with a vertical clearance of 12 m, span the channel 2½ cables W of Burraneer Point (34°04′·5S, 151°08′·4E).



Port Hacking from ENE (12.57)

(Original dated 1998)

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Tidal levels. Mean maximum range about 1·2 m, mean minimum range about 0·8 m. For further information see *Admiralty Tide Tables*.

Speed limit. There is a speed limit of 8 kn in the entrance channel to Gunnamatta Bay.

Arrival information

12.59

1 **Anchorage** is not recommended in Port Hacking as even with S winds a swell sweeps around Bate Bay (12.62). The best place for anchoring is in a depth of 7·3 m about 5 cables W of Port Hacking Point.

Submarine cables cross Port Hacking at various points, as shown on the chart. The landing places are marked by warning notice boards.

For further information on submarine cables see 1.33.

Directions

12.60

1 From a position about 3 cables NE of Port Hacking Point (34°04′·6S, 151°10′·1E) the track leads WSW, passing (with positions from Glaisher Point Light (34°04′·3S, 151°09′·3E)):

NNW of Port Hacking Point (7 cables ESE), thence:

SSE of Glaisher Point from where a light (white mast, 5 m in height) is displayed, and:

NNW of a sandy bay (7 cables SSE) in which lies Jibbon Beach, thence:

2 To a position close S of a light-beacon (starboard hand) (3 cables SSW).

Thence the track leads W, for about 1 mile, through a channel marked by light-beacons (lateral) and a light-buoy (port hand), passing:

Close S of Hungry Point (5 cables SW), the SW extremity of Cronulla Peninsula, thence:

Over the outer bar (6½ cables WSW) (12.58), thence:

3 S of the entrance (7½ cables WSW) to a narrow channel which leads close E of Burraneer Point into Gunnamatta Bay. This channel, marked by three light-beacons, has a least depth of about 2·3 m in it; it passes W of a drying sandbank which extends almost across the entrance to Gunnamatta Bay. Thence:

Close S of Burraneer Point (8 cables WSW), from where a light is displayed, thence:

Over the inner bar (1 mile WSW) (12.58), thence:

4 To a position NE of Constables Point (1¼ miles WSW). Between Constables Point and Pulpit Point, 6 cables SE, lies Simpson's Bay. The bay dries in places and is backed by a narrow sandspit; behind the sandspit lies a small drying inlet.

Thence a narrow, irregular and shallow channel leads about 1½ miles W to the inner part of Port Hacking and thence to Hacking River. The channel is marked by light-beacons (lateral), but is suitable only for vessels of very shallow draught.

Berths and facilities

12.61

1 **Bundeena Bay**, a sandy bay, is entered between Cabbage Tree Point (34°04′·9S, 151°08′·7E) and a rocky point, 5½ cables E. A small wharf lies near the E entrance point of a creek near the middle of the head of the bay.

Gunnamatta Bay, entered between Hungry Point (34°04′·5S, 151°08′·8E) and Burraneer Point, 3½ cables W, has numerous small craft jetties along its shores.

2 **Caution.** In the middle of the bay there is a designated seaplane landing area.

Burraneer Bay, entered close E of Turriell Point (34°04′·2S, 151°07′·7E), is an inlet similar to Gunnamatta Bay. The bay contains several small jetties along with Burraneer Bay Marina situated on its NW side.

Minor bays

Bate Bay

12.62

1 Bate Bay, entered between Glaisher Point (34°04′·3S, 151°09′·3E) and Potter Point, 3¼ miles NE, is exposed and of no use as an anchorage. Osborn Shoal lies in the middle of the entrance to the bay.

The shore of Bate Bay between Glaisher Point and the SW end of Cronulla Beach, 1 mile N, is formed by an irregular line of cliffs. Thence the beach, backed by sandhills 12 to 14 m high, extends about 2½ miles NE to a rocky point. Merries Reef, on which the sea breaks in places, extends 6 cables SW from this rocky point.

2 Close NE of the rocky point, 6½ cables WNW of Potter Point (12.56), lies a boat harbour with a depth of about 1·8 m in its centre.

Charts Aus 808, Aus 195 (see 1.12)

Bellambi Bay

12.63

1 **Description.** Bellambi Bay (34°22′S, 150°56′E), 3½ miles N of Wollongong (12.45), is entered between Bellambi Point (12.15) and Collins Rock, 1¼ miles NNW, from which a rocky ledge extends 1 cable. The S part of its shore from Bellambi Point to a small creek, 5 cables WNW, consists, like Bellambi Point, of rock with a sandy surface, thence to the N entrance point the shore is a sandy beach.

2 In the S portion of Bellambi Bay there is a small bight between rocks, which extend about 1 cable N and NE, respectively, of Bellambi Point and a point about 3 cables WNW. This bight is somewhat sheltered from SE, except in heavy weather, and has depths of 3·7 m to within ¾ cable of the shore.

BOTANY BAY

General information

Charts Aus 197, Aus 198, Aus 199

Position

12.64

1 The port of Botany Bay, situated on the S side of Sydney, is entered between Cape Banks (34°00′S, 151°15′E) and Cape Solander, 1¼ mile SW.

Function

12.65

1 The port of Botany Bay, which together with Sydney Harbour comprises Sydney Ports, is of considerable importance, handling approximately 75% of Sydney's total trade throughput. The port specialises in the handling of containers and bulk liquid cargoes. It is Australia's principal oil port and is the largest container port in the southern hemisphere.

History

12.66

1 Botany Bay is of historical interest for it was here that, on Saturday 28th April 1770, Captain Cook anchored HMS *Endeavour* and afterwards took possession of New South Wales in the name of the British Crown.

Captain Cook Memorial, a monument, stands 3 cables SW of Sutherland Point on the S side of the entrance to

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Botany Bay Entrance from SE (12.64)
(Original dated 1998)

Botany Bay, and marks the navigator's landing place. There is also a memorial to the French navigator La Perouse, in the form of a prominent monument, standing about 3 cables N of Bare Island on the N side of the entrance to the bay.

Topography
12.67

1 The shores of Botany Bay are mostly low and built-over, the most notable feature being the runways of Kingsford Smith International Airport which project into the bay from the N shore.

The S shore is indented by Quibray Bay and Woolooware Bay (12.101), separated by a low flat peninsula; both bays are fringed with mangroves. Georges River enters Botany Bay to the W of Woolooware Bay. The built-over W shore is fronted by Lady Robinsons Beach, at the N end of which lies the entrance to Cook's River (12.102).

Port limits
12.68

1 The port of Botany Bay comprises all waters within the seaward arc of a circle, radius 4 miles, centred on Endeavour Light (33°59′·9S, 151°14′·3E), displayed from Henry Head.

Traffic
12.69

1 In 2003 the port was used by 1263 vessels totalling 46 001 623 dwt.

Port Authority
12.70

1 Sydney Ports Corporation, PO Box 25, Millers Point, NSW 2000, Australia.
Website: www.sydneyports.com.au
Email: enquiries@sydports.com.au

Limiting conditions

Controlling depths
12.71

1 The channel leading from seaward to Port Botany, on the NE side of Botany Bay, is 213 m wide with a minimum depth of 15·0 m. The swinging basin at Brotherson Dock is dredged to 14·6 m.

The channel leading from inside the entrance to Botany Bay to the swinging basin and berths at Kurnell, on the SE side of Botany Bay, has a minimum depth of 12·2 m.

Deepest and longest berth
12.72

1 Deepest berth: Bulk Liquids Berth (12.93).
Longest berth: Brotherson Dock (12.93).

Tidal levels
12.73

1 Mean maximum range about 1·3 m, mean minimum range about 0·7 m. For further information see *Admiralty Tide Tables*.

Maximum size of vessel handled
12.74

1 Vessels up to 160 000 tonnes can use the port.

Local weather and sea state
12.75

1 In Botany Bay, during settled weather, the sea breeze is well developed by day, especially during the summer, and the land breeze blows at night, especially in winter.

The "Southerly Buster" (1.120), although of short duration, reaches gale force in bursts and is an important feature in the summer. Strong winds from E and S in autumn and early winter are associated with depressions off the coast in the N part of the Tasman Sea. Strong W winds blow in winter and early spring.

2 Visibility is generally good but fog and misty rain sometimes occur and occasionally dust and smoke may impair visibility.

The bay is exposed to the SE swell and rough conditions may occur with the wind from any quarter. Sudden changes in sea and weather conditions may occur at any time of the year and it may become necessary to leave harbour at short notice.

Arrival information

Port operations
12.76

1 See 12.130.

Anchorage
12.77

1 See 12.112.

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Submarine pipelines
12.78

1 A submarine pipeline is laid from the middle of Kurnell Pier (34°00′·1S, 151°12′·6E), NW for 4 cables, and thence to the N end of Yarra Bay, 1¾ miles NE. Two submarine pipelines and a submarine telephone cable are laid from the head of Kurnell Pier to Kurnell No 3 Berth.

Other submarine pipelines are also laid in Botany Bay as follows (with positions from Yarra Point (33°58′·9S, 151°13′·7E):

2 Oil pipeline (2 cables NW) extending 4 cables WSW from the NE side of Yarra Bay.

Oil pipeline extending 4 cables SW from Yarra Point. Anchoring is prohibited in the vicinity of this pipeline, as shown on the chart.

Oil pipeline (1 cable SE) extending 2 cables SSW from the N side of Frenchmans Bay.

For further information on submarine cables and pipelines see 1.33.

Pilotage
12.79

1 Pilotage is compulsory, except for interstate and intrastate vessels, where the Master holds a current pilotage exemption certificate. The pilot boards in position 34°01′·1S, 151°18′·8E, 4 miles E of Cape Solander. At Kurnell No 3 Berth the pilot remains onboard throughout the vessel's stay.

For pilot ladder and the embarkation of pilot requirements see 12.135 along with further details in *Admiralty List of Radio Signals Volume 6 (4).*

Tugs
12.80

1 Tugs are available.

Traffic regulations
12.81

1 **Limits.** There are special regulations in force within an area, shown on the chart, bounded by a line drawn 090° from Cape Banks (34°00′S, 151°15′E), a line drawn 180° from Cape Solander, 1¼ miles SW of Cape Banks, and the arc of a circle of radius 4 miles centred on Endeavour Light (33°59′·9S, 151°14′·3E).

Area C is defined as that part of the above area N of the 312° leading line (12.88); area D is that part S of the leading line.

2 **Traffic regulations:**

1. Vessels waiting to enter the port are not permitted to anchor inside port limits.
2. Vessels entering the port should not proceed W of the pilot boarding ground without permission of the Duty Communications Superintendent (Harbour Control) or the attendant pilot vessel.
3. Inward-bound vessels must not enter Area D; outward-bound vessels must not enter Area C.

3 **Movement restriction.** At Kurnell Oil Terminal there are regulations in force for the movement of vessels. For example berthing at the alongside berths is to be made in daylight only. Copies of these regulations should be obtained from the Port Authority.

Restricted areas
12.82

1 The following restricted areas, the limits of which are shown on the chart, exist in Botany Bay:

An area encompassing Brotherson Dock and the Bulk Liquids Berth and their approaches.

Waters N of a line drawn from the S extremity of the W runway extension of Kingsford Smith International Airport to the S extremity of the E runway extension.

Unauthorised vessels and boats are not permitted to enter these areas.

Quarantine
12.83

1 Botany Bay is a first port of entry. For further details on quarantine see 1.47.

Harbour

General layout
12.84

1 The port of Botany Bay consists of Port Botany and Kurnell Oil Terminal. Port Botany, on the NE side of the bay, has a large container terminal in Brotherson Dock and a bulk liquids berth on the S side of the entrance to the dock.

Kurnell Oil Terminal, situated on the SE side of the bay, contains alongside berths and an offshore multi-buoy mooring berth, servicing an oil refinery on Kurnell Peninsula.

Kingsford Smith International Airport
12.85

1 From the head of Botany Bay two separate runway extensions of Kingsford Smith International Airport project into the bay. The E extension, the longest and newest, extends 1½ miles SSE, to a point 8 cables WSW of Port Botany; the E side of this extension and its head are marked by light-beacons (cardinal).

Tidal streams
12.86

1 Tidal streams, both in-going and out-going, set through the entrance to Botany Bay at a rate of 1½ kn. During heavy rains the out-going stream is much accelerated.

Principal marks
12.87

1 **Landmarks:**

Two chimneys (34°01′·2S, 151°12′·9E) (12.54), one 73 m high and the other 58 m high.

Water tank (conspicuous) (34°00′·9S, 151°13′·5E), 3 cables WNW of Cape Solander.

Water tank (conspicuous) (33°59′·1S, 151°14′·4E), 1 mile NNW of Cape Banks.

2 Radar tower (white and orange, 30 m high, with red light) (33°57′·0S, 151°10′·9E).

Control tower (33°56′·7S, 151°10′·8E).

Major light:

Kingsford Smith International Airport Aero Light (occasional) (33°56′·9S, 151°10′·1E).

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Directions
(continued from 12.56)

Entry
12.88

1 From a position ESE of Cape Banks (34°00′S, 151°15′E), in the vicinity of the pilot boarding station, the track leads initially E to the entrance leading line.

Thence the track leads NW along the line of bearing, 312°, in the white sector (311¼–312½) of the direction light (33°58′·0S, 151°11′·1E) displayed from the S end of the W airport runway extension, passing (with positions from Endeavour Light (33°59′·9S, 151°14′·3E)):

2 NE of Cape Solander (1 mile SSW) (12.56); on the N side of the cape lies Yena Gap, a small break in the line of cliffs which extend from the cape 1 mile NNW to Sutherland Point. And:

SW of a 4·9 m patch (5 cables SE), lying on the SW part of a bank, with depths of less than 10 m over it, extending 2 cables S from Cape Banks. A red sector (285°–320°) of Endeavour Light covers this bank. Thence:

NE of a patch (8 cables S), with a depth of 4·8 m over it, thence:

3 SW of Henry Head from where Endeavour Light (white round tower, 4 m in height) is displayed, and:

NE of Inscription Point Light (mast, 8 m in height) (6 cables SW) displayed from a position 2 cables SE of Inscription Point, thence:

NE of Sutherland Point (7½cables WSW). A light-beacon is situated 1½ cables W and Captain Cook Memorial stands 3 cables SW of the point; midway between the point and the Captain Cook Memorial there are two flagstaffs and another memorial.

12.89

1 The track then continues NW, passing:

SW of Bombora (4 cables WNW), a dangerous underwater rock, over which the sea breaks, lying on the SW side of a bank which extends 2½cables S of Bare Island. There is a patch, with a depth of 2·1 m over it, at the S end of the bank. A light-buoy (starboard hand) is moored ½cable SW of Bombora, which is also covered by a red sector (103°–140°) of Endeavour Light. Thence:

2 SW of Bare Island (5 cables NW), from where a light is displayed. The island is connected by a causeway to the mainland and forms the W side of Congwong Bay, entered between Henry Head and Bare Island. Thence:

3 NE of Captain Cook Light-buoy (port hand) (9 cables W). This light-buoy is moored in about the position in which HMS *Endeavour*, Captain Cook's vessel, anchored in 1770. A rocky patch, with a depth of 2·7 m over it and on which the sea breaks occasionally, lies 2 cables SW of the buoy. A light-beacon (N cardinal) marks the edge of the 10 m contour N of the rocky patch. And:

SW of La Perouse Point (7 cables NW), on which stands a monument (12.66) and a tower. The suburb of La Perouse stands behind the point. Thence:

4 NE of Kurnell Oil Terminal (1¼ miles W) (12.94), and:

SW of Yarra Point (1 mile NNW), which separates Yarra Bay from Frenchmans Bay, thence:

Through a channel, lying close SW of Molineux Point (1½ miles NW); the sides of the channel are marked by light-beacons (lateral). Thence:

Into the swinging basin off Brotherson Dock (2 miles NW).

12.90

1 **Useful marks:**

The N side of the entrance channel is indicated by a pair of lights, standing 2 cables NW of Molineux Point (33°59′·1S, 151°12′·7E), in line bearing 312°.

Directions for Brotherson Dock
12.91

1 From the S part of the swinging basin, S of Brotherson Dock, the W limit of which is marked by light-buoys (port hand), the track leads for a short distance N, in the white sector (001½–006½) of a direction light, displayed from the W end of the North Quay of Brotherson Dock, to Brotherson Dock, passing 2 cables W of the Bulk Liquids Berth.

2 To assist berthing in Brotherson Dock, the N and S sides of the middle of the dock are indicated by two pairs of light-beacons (red square topmarks), standing at the head of the dock, in line bearing 073¼ and 068¾, respectively.

When leaving Brotherson Dock, the green sector (173¾–176¾) of the directional light standing 2½cables NW of Molineux Point can be used to lead clear of the Bulk Liquids Berth and thence into the white sector described above.

Directions for Kurnell Oil Terminal
12.92

1 To assist in berthing at Kurnell No 3 Berth the alignments (271½ and 274°) of the following set of light-beacons indicate the N and S sides of the approach:

Two front light-beacons (33°59′·7S, 151°12′·2E).

Common rear light-beacon (1½ cables W of front light-beacons).

For berthing at the Oil Terminal Wharf the alignment (073¼), astern, and the alignment (253¼), ahead, of the following pairs of leading lights and light-beacons leads from the entrance channel close to the head of the wharf:

2 Front light (33°59′·5S, 151°13′·8E), standing on Bare Island.

Rear light (5 cables ENE of front light), standing behind Congwong Bay.

Front light-beacon (33°59′·9S, 151°12′·4E).

Rear light-beacon (220 m WSW of front light-beacon).

Berths

Port Botany
12.93

1 **Brotherson Dock** (33°58′S, 151°13′E) contains two container terminals, one on each side of the dock as follows:

North Quay: total wharf length 1006 m; five berths; Ro-Ro ramp at the E end; depths of 12·6 to 14·8 m alongside.

South Quay: total wharf length 936 m; four berths; depths of 13·9 to 14·8 m alongside.

2 **Bulk Liquids Berth**, close S of the entrance to Brotherson Dock, for the handling of bulk liquid chemicals and LPG:

T-shaped jetty with berthing dolphins; depth alongside 18·3 m; maximum draught allowed 14·0 m; can accommodate vessels up to 230 m in length and up to 47 000 dwt (90 000 dwt on application).

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Port Botany from NW (12.93)
(Original dated 1998)

Kurnell Oil Terminal
12.94

1 Kurnell Oil Terminal, primarily for crude oil imports as well as other petro-chemical products, consists of two alongside berths, at the head of Kurnell Pier, and a multi-buoy mooring berth as follows:

Kurnell No 1 Berth: total wharf length 200 m; minimum depth alongside 11·3 m; maximum draught allowed 10·3 m; can accommodate vessels up to 185 m in length.

Kurnell No 2 Berth: total wharf length 200 m; minimum depth alongside 11·5 m; maximum draught allowed 10·6 m; can accommodate vessels up to 200 m in length.

2 Kurnell No 3 Berth: maximum draught allowed 11·6 m; maximum allowable length 274 m. Vessels tie up to five buoys aft, with two anchors forward, using own ropes to buoys. Preventer lines, permanently attached to the buoys, are then picked up, along with lines from two swamp moorings forward; spare ships lines should be kept handy in case of adverse weather or to replace any line that may part.

For regulations concerning Kurnell Oil Terminal see 12.99.

Port services

Repairs
12.95

1 There are facilities for most types of repairs.

Other facilities
12.96

1 Reception facilities for the discharge of oily waste at Brotherson Dock using road tankers; there are facilities for the discharge of waste at Kurnell Oil Terminal but only for petroleum or in an emergency; garbage disposal; deratting and deratting exemption certificates issued; hospitals in Sydney.

Supplies
12.97

1 Fuel; fresh water; provisions.

Communications
12.98

1 Kingsford Smith International Airport at the N end of Botany Bay.

Harbour regulations
12.99

1 **Minimum draught requirements.** Vessels moored at Kurnell Oil Terminal are required to remain at a draught necessary for safe departure in the event of an emergency. The minimum draughts are as follows:

For vessels under 100 000 grt: forward draught 2% of the overall length; aft draught 3% of the overall length.

For vessels over 100 000 grt: forward draught 3% of overall length; aft draught 4% of overall length.

2 **Under-keel clearance.** A minimum under-keel clearance of 1 m is required at all the Kurnell Oil Terminal berths.

Main engines. At the Kurnell Oil Terminal vessels must keep their main engine ready at all times, in case the vessel has to leave the berth at short notice. Container vessel engines may be immobilised in Brotherson with prior permission from the Harbour Master.

Rivers and bay

Chart Aus 198

Georges River
12.100

1 **Description.** Georges River, which extends for about 12 miles, W and then NW, from the W side of Botany Bay to the W suburbs of Sydney, is entered between Towra Point (34°00′·1S, 151°09′·8E) and Doll's Point, 8 cables WNW. The river is indented by several bays, the most significant being Kogarah Bay (33°59′·7S, 151°07′·3E), and is joined by several tributaries, including those of the Woronora River and Salt Pan Creek.

2 **Submarine pipeline and cables.** A submarine gas pipeline is laid across the river close E of Captain Cook

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Bridge (34°00′·5S, 151°07′·6E), and several cables cross the river, as shown on the chart.

For further information on submarine pipelines and cables see 1.33.

Vertical clearance. Several bridges span the river as follows:

3 Captain Cook Bridge (34°00′·5S, 151°07′·6E). This road bridge, made up of seven fixed spans, crosses the river between Taren Point and Rocky Point. The centre span has a vertical clearance of 16 m and a width of 71 m; a light is displayed from the centre span.

4 Tom Uglys Bridge (34°00′·3S, 151°06′·7E). This road bridge, spanning the river between Horse Rock Point and Tom Uglys Point, consists of two carriageways. The E carriageway has nine spans of which the N and the two S spans are unsuitable for navigation. The remaining spans have a horizontal clearance of 70 m and a maximum vertical clearance of 6·75 m. The W carriageway also has nine spans of which the N and the two S spans have horizontal clearances of 26 m and the remaining spans 66 m. All spans of the W carriageway have a maximum vertical clearance of 5 m, reduced to 4 m by a travelling gantry, marked by red lights at night, when in use.

5 Como Railway Bridges (33°59′·8S, 151°04′·2E). These two bridges, with a vertical clearance of 10 m, span the river close E of its junction with Woronora River.

Alfords Point Bridge (33°58′·7S, 151°01′·8E). This road bridge, with a vertical clearance of 12 m, spans the river close W of its junction with Salt Pan Creek.

Salt Pan Creek Bridge (33°57′·9S, 151°02′·4E), a road bridge with a vertical clearance of 3 m and a maximum horizontal clearance of 12 m.

6 **Overhead cable.** Georges River is spanned by an overhead power cable close S of the river's junction with Salt Pan Creek.

Directions. From its entrance, off Towra Point (34°00′·1S, 151°09′·8E), Georges River is navigable for vessels with a draught of 1·8 m for about 8 miles. The channel is marked by lights, light-buoys (lateral) and light-beacons (lateral).

Woolooware Bay

12.101

1 Woolooware Bay, a shallow inlet on the SW side of Botany Bay, is entered from Georges River between Taren Point (34°00′·7S, 151°07′·6E) and Pelican Point, 8 cables ESE. Numerous fishing stakes line the edge of the bay and a pile stands in the middle of the N part of the bay.

Leading lights are displayed from the head of a small cove, 6 cables S of Taren Point. The alignment (226°) of these lights leads into Woolooware Bay, passing NW of a light-beacon (W cardinal), marking the edge of the mud flat off Pelican Point.

Chart Aus 199

Cook's River

12.102

1 Cook's River flows into Botany Bay, between two short breakwaters, close W of the root of Kingsford Smith International Airport W runway extension; a light (post) is displayed from the head of the S breakwater. There are depths of 3 m in the entrance channel which is navigable by recreational craft.

2 A road bridge, with a navigable width of 15·5 m under the fixed span and a vertical clearance of 4·4 m, crosses the river near its mouth. An overhead sewer, with a navigable width under it of 21·2 m and a vertical clearance of 2·7 m in the centre, spans the river about 4 cables above the road bridge.

CAPE BANKS TO NORTH HEAD

General information

Charts Aus 197, Aus 198, Aus 200

Route

12.103

1 From a position ESE of Cape Banks (34°00′S, 151°15′E) the coastal route leads NNE, for a distance of about 11½miles, to a position ESE of North Head (33°49′·5S, 151°18′·0E), in the vicinity of the Sydney pilot boarding station.

For S-bound vessels passing Botany Bay, see caution at 12.56.

Topography

12.104

1 Between Cape Banks and Ben Buckler, 6¾miles NNE, the coast is cliffy but indented with bays in several places; most of these bays have sandy beaches.

Between Ben Buckler and Dunbar Head, 2½miles N, coarse sandstone cliffs front the coast except in Diamond Bay, 1¾ miles N of the former headland.

Measured distance

12.105

1 Between Diamond Bay and Ben Buckler, 1¾miles S, there is a measured distance, as shown on the chart:

N limit marks. The alignment (277°) of a beacon (orange, orange triangular topmark, 15 m in height) (33°51′·8S, 151°16′·9E), close inshore of Diamond Bay, with a black round mark on a water tower 4 cables W; a light is displayed from the water tower.

2 S limit marks. The alignment (277°) of a conspicuous vent shaft (33°53′·3S, 151°17′·0E) with a black round mark on a water tower 1½ miles W.

Distance; 2573 m.

Running track; 007°/187°.

Prohibited anchorage

12.106

1 Several submarine cables from New Zealand land at Bondi Bay (33°53′·6S, 151°16′·6E) (12.109). A prohibited anchorage area, enclosing the cables, extends 6 miles offshore from between Ben Buckler, the E entrance point of Bondi Bay, and Shark Point, 1½miles SSW; the limits are shown on the chart.

Spoil ground

12.107

1 A spoil ground, the limits of which are shown on the chart, lies 7 miles E of Dunbar Head (33°51′S, 151°17′E).

Principal marks

12.108

1 **Landmarks:**

Water tank (33°59′·2S, 151°14′·3E), 1 mile NNW of Cape Banks.

Radar tower (33°57′·0S, 151°10′·9E) (12.87).

Tower (elevation 184 m) (33°53′·9S, 151°15′·2E) with a water tower close NE and another 7½cables N

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of it; red lights are displayed from the N tower at an elevation of 123 m.

Vent (33°53′·3S, 151°17′·0E) standing on the summit of Ben Buckler; it is the top of a vent shaft for a sewer outfall.

2 Water tower (elevation 128 m) (33°51′·8S, 151°16′·5E).

Major lights:

Macquarie Light (white masonry tower and lantern with annex, 26 m in height) (33°51′·3S, 151°17′·0E).

Hornby Light, South Head (white tower, red stripes, 9 m in height) (33°50′·1S, 151°16′·8E), standing near the edge of a cliff.

Directions

(continued from 12.56)

12.109

1 From a position ESE of Cape Banks (34°00′S, 151°15′E) the track leads NNE, passing (with positions from Ben Buckler (33°53′·7S, 151°17′·0E)):

ESE of Tupia Head (5¼ miles S); Little Bay lies close SW of Tupia Head. Thence:

ESE of Boora Point (4¾ miles S), the NE entrance point of Long Bay. An area of obstruction, the limits of which are shown on the chart, lies 1¾miles ESE of Boora Point. Thence:

2 ESE of Magic Point (4 miles S), the N side of a broad headland separating Long Bay from Maroubra Bay; a flagstaff stands 3 cables SW of the point. Thence:

ESE of Mistral Point (3 miles S), a broad headland. Lurline Bay, rock fringed and faced with cliffs, lies close NW of the point. Thence:

ESE of Coogee Bay (2¼ miles SSW). The bay is about 1 mile wide between its entrance points, off the S of which are two islets; some below-water rocks lie off the SW islet. Thence:

3 ESE of Shark Point (1½ miles SSW). Gordons Bay lies close SW of Shark Point. Nelson Bay and Tamarama Bay, two small indentations, lie 7 cables N of the point; some rocks lie close offshore at the S end of Nelson Bay. Thence:

ESE of Ben Buckler, fringed with rocks, which forms the E entrance point of Bondi Bay; a dangerous rock lies close off the S entrance point of Bondi Bay. Thence:

ESE of Dunbar Head (2½miles N) (12.154), thence:

4 To a position ESE of North Head (12.154) (4¼miles N), off the entrance to Port Jackson.

Caution. Vessels passing the entrance to Port Jackson should keep outside the port limits (12.113), as shown on the chart, to avoid inconveniencing vessels leaving or entering Port Jackson.

Useful marks:

Long Bay Gaol Chimney (33°58′·2S, 151°14′·7E).

Vent (approximately 72 m in height) (33°57′·6S, 151°14′·5E).

Vent (33°57′·4S, 151°13′·8E).

(Directions for Sydney Harbour are given at 12.151 and for the coastal route N of Port Jackson in Australia Pilot Volume III)

PORT JACKSON AND SYDNEY HARBOUR

GENERAL INFORMATION

Chart Aus 200

Area covered

12.110

1 The area covered by this section comprises:

Sydney Harbour and approaches (12.117).

North Harbour and Middle Harbour (12.196).

Description

12.111

1 Port Jackson encompasses the port of Sydney and is the most spacious and secure harbour on the E coast of Australia. The shores of the port consist of steep, moderately high points, separated by bays and coves which are harbours in themselves.

The entrance to Port Jackson lies between Dunbar Head (33°51′·1S, 151°17′·2E) and South Head, 1 mile NNW, on the S side, and North Head (33°49′·5S, 151°18′·0E), 1¾miles NNE of Dunbar Head, and Quarantine Head, 6½cables WNW, on the N side. Sydney Heads is the collective name by which these four headlands are known.

Anchoring

12.112

1 Mariners are advised that anchoring off Port Jackson and Botany Bay should only be undertaken in calm weather conditions, well off the coast and for brief periods only, using short lengths of cable.

If bad weather sets in, vessels should proceed out to sea and not drift off the coast, so as to avoid fouling or disrupting local coastal fishing. For long durations it is recommended that vessels anchor either off Port Kembla (34°28′S, 150°54′E) (12.19) or Newcastle (32°56′S, 151°47′E) *(Australia Pilot Volume III)*.

Caution. Reports of fouled anchors have been received.

Port Jackson limits

12.113

1 Port Jackson comprises all waters within the seaward arc of a circle, radius 4 miles, centred on Hornby Light (33°50′·1S, 151°16′·8E), displayed from South Head.

Port Authority

12.114

1 Port Jackson is under the jurisdiction of Sydney Ports Corporation, PO Box 25, Millers Point, NSW 2000, Australia.

Website: www.sydneyports.com.au

Email: enquiries@sydports.com.au

Information service

12.115

1 See 12.7.

Cautions

12.116

1 A good lookout for fishing craft should be kept when approaching Sydney Heads. For information regarding naval exercises see 12.3.

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SYDNEY HARBOUR AND APPROACHES

General information

Charts Aus 197, Aus 200, Aus 201, Aus 202

Position

12.117

1 Sydney Harbour (33°51′S, 151°14′E), situated within Port Jackson, is a fine natural harbour on the shores of which stands the city of Sydney, the capital and seat of government of New South Wales.

Most of the many bays within this large harbour contain wharves, jetties or moorings, some capable of accommodating large vessels. In 2004 the city, with its suburbs, had an estimated population of 4 305 500.

Function

12.118

1 Sydney Harbour is the main port of Australia and the leading destination for cruise shipping in the South Pacific region, with more than 100 000 passengers each year arriving and departing.

The port's specialised facilities handle a wide range of vessels and cargoes, including petroleum products, dry bulk, general cargo and containers.

Port limits

12.119

1 Sydney Harbour comprises all the waters of Port Jackson, including The Sound close within the entrance, except North Harbour and Middle Harbour in the N and NW parts of Port Jackson.

Approach and entry

12.120

1 Sydney Harbour is approached through Sydney Heads (12.111), which form the entrance to Port Jackson, and entered between Middle Head (33°49′·7S, 151°16′·1E) and South Head, through either Western Channel or Eastern Channel.

Traffic

12.121

1 In 2003 the port was used by 1158 vessels totalling 21 711 685 dwt.

Port Authority

12.122

1 See 12.114.

Limiting conditions

Controlling depths

12.123

1 There is a least depth of 24·4 m in the approach to Sydney Harbour between Sydney Heads (12.111), decreasing to less than 20·0 m at the inner end. Depths in the inner channels are as follows:

Main — Western Channel; 13·7 m.

Alternative — Eastern Channel; 12·1 m on the leading line through the channel.

Minimum draught requirements

12.124

1 **Draught.** The minimum permissible draughts for a ship manoeuvring within the port are as follows:

For vessels under 100 000 dwt: forward draught 2% of the overall length; aft draught 3% of the overall length.

For vessels over 100 000 dwt: forward draught 3% of overall length; aft draught 4% of overall length.

2 **Under-keel clearance.** Ships underway outward-bound, within Port Jackson and Sydney Harbour, are to maintain an under-keel clearance equivalent to 10% of ship's draught; for inward-bound ships this requirement is increased by 0·2 m. Vessels alongside must maintain a minimum under-keel clearance of 0·6 m.

Caution. At times a heavy swell sets into Sydney Harbour making it necessary for vessels of deep draught to have an under-keel clearance of 2 m to allow for the scend in the entrance.

Vertical clearance

12.125

1 **Sydney Harbour Bridge** (33°51′·2S, 151°12′·6E). This single span, arch type bridge spans the harbour between Milsons Point and Dawes Point, 2½ cables SW. Vertical clearances under the bridge are as follows.

At the centre: 51·3 m.

For 46 m each side of the centre: not less than 51 m.

From 46 to 80 m either side of centre: not less than 50 m.

2 A travelling gantry under the bridge, when in use, reduces the vertical clearances by 2·5 m; a light (yellow) is displayed from each end of the gantry when in use.

A light (red obstruction, elevation 138 m) is displayed from above the centre of the bridge and on either side of the centre it is marked as follows:

By day; by a diamond shape.

By night; by a diamond shape, outlined in red neon lights, with a yellow stripe.

3 **Pyrmont Bridge** (33°52′·3S, 151°12′·0E). Situated in the S part of Darling Harbour this bridge, which carries a monorail and is for the use of pedestrians only, spans Cockle Bay, Inner Darling Harbour. Access to Cockle Bay is made through the E channel under the swing span. The bridge has the following vertical clearances:

Swing span closed; 6·05 m at the inner end and 8·61 m at the outer end.

Swing span open; 14·97 m to the level of the monorail.

The bridge is only open to traffic on special occasions with prior arrangement. Lights are displayed from the bridge.

4 **Anzac Bridge** (33°52′·2S, 151°11′·1E). This bridge, with a vertical clearance of 27 m, spans the entrance to Rozelle Bay and Blackwattle Bay, connecting Pyrmont with Glebe Island. Close NE of the bridge is Old Glebe Island swing bridge which is fixed open; there is a navigable passage, 18 m wide, on its E side only.

Lights are displayed from Anzac Bridge and from Old Glebe Island swing bridge.

Deepest and longest berth

12.126

1 Passenger vessels: Sydney Cove Passenger Terminal (12.170).

Tankers: Gore Cove Terminal (12.175).

Dry bulk and container vessels: Glebe Island (12.172).

Tidal levels

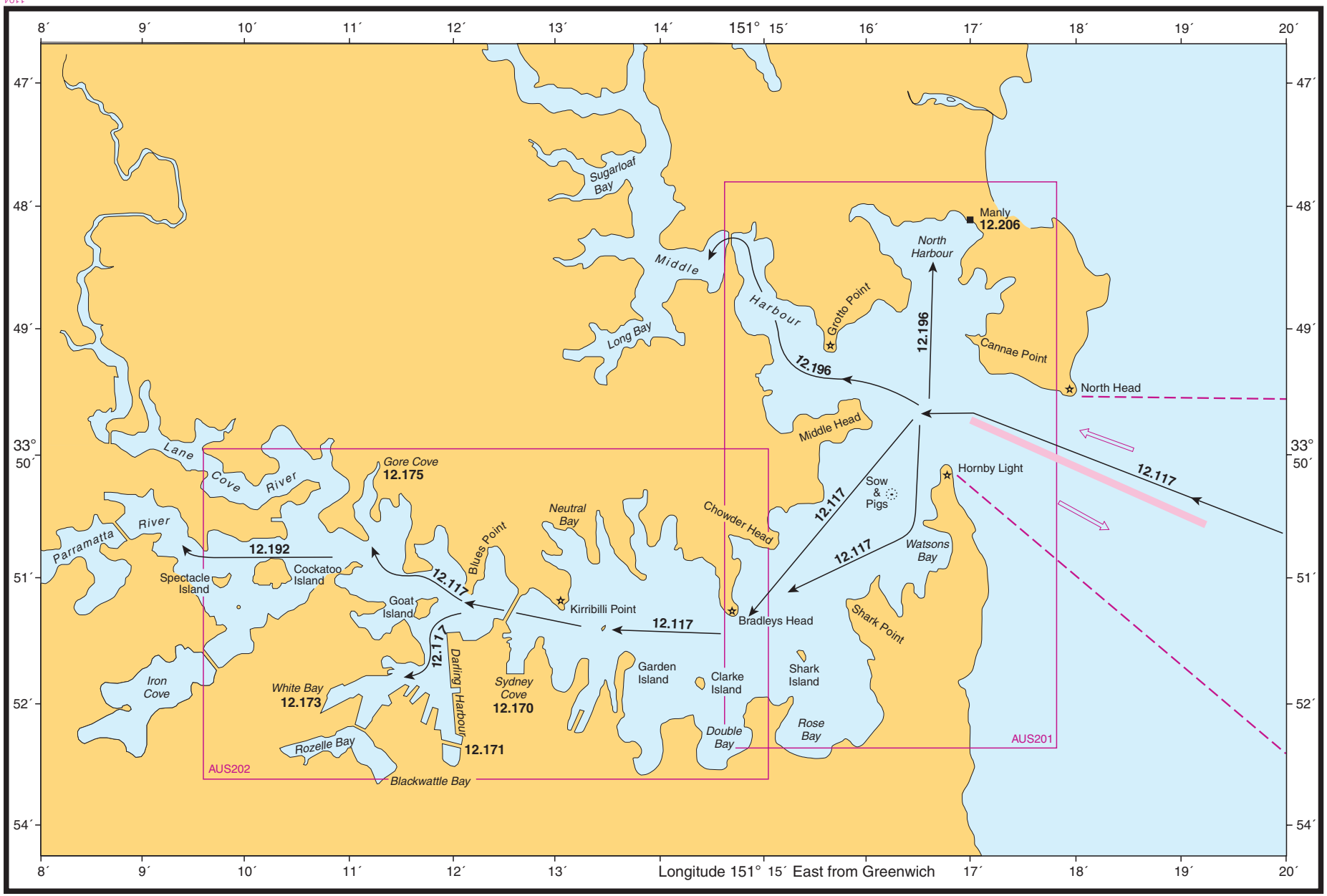
12.127

1 At Fort Denison (33°51′·4S, 151°13′·5E), Sydney Harbour, mean maximum range about 1·3 m, mean minimum range about 0·7 m. For further information see *Admiralty Tide Tables*.

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Port Jackson and Sydney Harbour



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Maximum size of vessel handled
12.128

1 In general the maximum permitted size of vessels is governed directly by berth length, depth alongside, and the depth (12.123) in the entrance to Sydney Harbour.

Local weather and sea state
12.129

1 Gales from the E raise a heavy sea upon this coast, breaking with great violence not only upon Sydney Heads but also, occasionally, right across the entrance and within the entrance onto Middle Head. These gales are frequently attended by banks of haze which might prevent the lights of Sydney Heads (12.111) being seen at night.

Arrival information

Port operations
12.130

1 The ports of Botany Bay and Sydney Harbour are serviced by one Harbour Control. Vessels should indicate their destination by either calling Sydney Harbour Control or Botany Bay Control.

There is a vessel surveillance system in operation, combining radar, VHF, and television cameras. Positions of reporting points are shown on the chart.

For further information see *Admiralty List of Radio Signals Volume 6 (4)*.

Port radio
12.131

1 A port radio station is operated by Harbour Control from the Port Operations Centre (12.150) at Miller's Point (33°51′·4S, 151°11′·9E). For further information see *Admiralty List of Radio Signals Volume 6 (4)*.

Anchorages
12.132

1 For anchoring outside Sydney Harbour see 12.112. The following anchorages are available for vessels within Sydney Harbour:

Merchant vessels can anchor N of a line joining Bradleys Head (33°51′·3S, 151°14′·7E) to Kirribilli Point, 1½miles W, and in Double Bay, 8 cables S of Bradleys Head, clear of the naval anchorage.

2 Naval vessels. Anchoring is reserved for naval vessels between Garden Island and Point Piper, 1 mile ESE; the limits of the anchorage are shown on the chart. Within the anchorage there are several mooring buoys; the buoys are lit but the lights can easily be confused with background shore lights. Mariners should proceed with caution when passing through the anchorage at night.

3 Explosives. Vessels with explosives onboard must not anchor W of a line joining Darling Point (33°52′·1S, 151°14′·3E) with Bradleys Head, 8½cables NNE. This restriction does not apply to naval vessels, or merchant vessels with small quantities of signal pyrotechnics.

Quarantine. This anchorage is not defined.

Prohibited anchorage areas
12.133

1 **General information.** Anchorage is prohibited within 1 cable of any wharf or jetty or in such a position as shall obstruct the approach thereto.

Sydney Harbour entrance. Owing to submarine cables, as shown on the chart, anchoring is prohibited within the area bounded by lines drawn between:

Hornby Light (33°50′·1S, 151°16′·8E) and Cannae Point, about 1 mile N, on the E side;

The obelisk on Laing's Point, 5 cables SSW of Hornby Light, and the E point of Middle Head, 9 cables NNW, on the SW side, and;

2 The head of Balmoral Naval Jetty (33°49′·7S, 151°15′·5E) and a position 2½cables NE of Cannae Point, on the NW side.

Shark Point. Anchoring is prohibited within the naval waters area off Shark Point (33°51′·2S, 151°15′·8E), the limits of which are shown on the chart. Underwater obstructions have been laid within the prohibited anchorage; several dolphins, from which lights are displayed, stand in the area.

3 **Shark Island.** Anchorage is prohibited within the naval waters area, the limits of which are shown on the chart, S of Shark Island (33°51′·6S, 151°15′·4E). Submarine cables and a pipeline are laid within this area.

Sydney Harbour Bridge. Anchorage is prohibited in a cable area, shown on the chart, extending 3½cables ESE and 3½ cables WNW of the bridge.

Submarine cables and pipelines
12.134

1 Numerous submarine cables and several pipelines are laid in Sydney Harbour. These are shown on the charts and anchoring is prohibited within their vicinity. For further detail on submarine cables and pipelines see 1.33.

Pilotage
12.135

1 **General information.** Pilotage is compulsory, except for interstate and intrastate vessels where the Master holds a current pilotage exemption certificate. The pilot boards in position 33°50′·1S, 151°21′·6E, 4 miles E of Hornby Light, South Head. Sea-going pilot cutters operate from the pilot station near the S end of Watsons Bay (33°50′·8S, 151°16′·7E).

2 **Pilot ladder requirements:**

1. Pilot ladders are to be rigged in strict accordance with the *International Convention for the Safety of Life at Sea* and *International Maritime Pilots Association* recommendations.
2. The pilot ladder should be set with the bottom rung about 3 m above the water and two proper manropes must be provided.

3 3. Where the freeboard of the vessel exceeds 9 m and the use of a combined accommodation ladder and pilot ladder is necessary, the lower platform of the accommodation ladder should be about 7 m above the waterline and, together with the pilot ladder and manropes, be secured to the ship's side.

4. Pilot hoists are not acceptable as an alternative to a combination ladder and may only be used on agreement of the pilot service provider.

4 5. When the ladder is rigged over a bulwark, stanchions should be fitted to the top of the bulwark and steps provided to the deck.

6. A heaving line should be available and, by night the ladder should be suitably illuminated.

For further information on pilot ladders see *The Mariner's Handbook.*

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Embarkation of pilot:

5 1. A vessel manoeuvring to pick up a pilot for Sydney Harbour or Botany Bay should maintain a speed of about 7 to 8 kn and steer a course which puts the prevailing swell on the opposite quarter to the side on which the pilot ladder is rigged.
2. The Master of an arriving vessel should ensure sufficient sea-room is maintained to allow manoeuvres to provide a lee for the pilot cutter.
6 3. Because of the frequent presence of swell, and its changing pattern close to Sydney Harbour and Botany Bay entrances, no arriving vessel should proceed inshore of the pilot boarding ground without the approval of the pilot.
4. If the pilot cannot board at the pilot boarding point the pilot cutter will lead a vessel into smoother water between Sydney Heads.

For further details see *Admiralty List of Radio Signals Volume 6 (4)*.

Tugs

12.136

1 Tugs are available.

Traffic regulations

12.137

1 **General information.** On first arrival Masters should obtain from the pilot, or Port Authority, a copy of the Port Regulations from which the information following is derived.

Traffic separation. There are special regulations in force, to separate inward from outward-bound traffic in the approach to Sydney Harbour, within the area indicated on the chart, bounded by a line drawn 090° from North Head (33°49′·5S, 151°18′·0E), a line drawn 130° from Hornby Light, 1¼ miles SW of North Head, and the arc of a circle of radius 4 miles centred on Hornby Light, South Head.

2 Area A is defined as that part of the above area N of the 294° leading line (12.154); area B is that part S of the leading line.

Traffic regulations:

1. Vessels waiting to enter the port are not permitted to anchor inside port limits.
2. Vessels entering the port should not proceed W of the pilot boarding ground without permission of the Duty Communications Superintendent (Harbour Control) or the attendant pilot vessel.
3. Inward-bound vessels must not enter Area B; outward-bound vessels must not enter Area A.

12.138

1 **Speed regulations.** Vessels exceeding 30 m in length, other than ferries, tugs and self-propelled dredgers, must:

Between a line joining South Head (33°50′·1S, 151°16′·8E) and North Head, 1¼miles ENE, and a line joining Bradleys Head (33°51′·3S, 151°14′·7E) and Shark Point, 9 cables E, including Middle Harbour and North Harbour, not exceed a speed of 12 kn;

2 Between a line joining Bradleys Head and Shark Point, and Sydney Harbour Bridge (12.125), not exceed a speed of 10 kn, and;

Being that area bound by Sydney Harbour Bridge and a line drawn between Balls Head (33°50′·9S, 151°11′·5E) and Ballast Point, 3 cables SSW, not exceed a speed of 8 kn, and;

In all waters, including rivers and creeks, W of a line joining Balls Head and Ballast Point, not exceed a speed of 6 kn.

3 The speed of any power vessel must be reduced to dead slow when within a radius of ½cable from the wharves at Miller's Point (33°51′·4S, 151°11′·9E) or any works of the Port Authority in progress, or any dredger or other vessel in execution of such works, and, if necessary to prevent damage or interruption to such wharves, or prior to passing over or along mooring chains of any such dredger or other plant, the engines of such vessel must be stopped until the vessel has passed beyond such wharves or mooring chains.

12.139

1 **Sound signals.** A whistle, siren, bell, or fog horn must not be sounded on any vessel within Sydney Harbour except for the purpose of navigation, or in the case of fire on board.

2 When any power vessel within Sydney Harbour is turning round, or for any reason not under command, and cannot keep out of the way of an approaching vessel, or when it is unsafe or impracticable for such vessel to keep out of the way of any other vessel, she must signify the same by four blasts on the siren or whistle in rapid succession, each blast to be about 1 second's duration, when all other vessels must be kept out of the way of such vessel; this signal is only to be made in a case of extreme necessity.

12.140

1 **Restricted area.** The waters within Sydney Cove (33°51′·5S, 151°12′·7E) lie within a restricted area, the N boundary of which is shown on the chart. Unauthorised vessels and boats are not permitted in this area.

12.141

1 **Naval waters.** In Sydney Harbour there are several naval water areas as follows:

In Chowder Bay (33°50′·5S, 151°15′·2E) (12.178).
Off Shark Point (33°51′·2S, 151°15′·8E) (12.157).
South of Shark Island (33°51′·6S, 151°15′·4E) (12.186).
Between Bradleys Head (33°51′·3S, 151°14′·7E) (12.157) and Athol Bay (12.179), 4 cables NNW.

2 Between Garden Island (33°51′·7S, 151°13′·7E) (12.167), which includes the E side of Woolloomooloo Bay, and Point Piper, 1 mile ESE.

In Rushcutters Bay (33°52′·3S, 151°13′·9E) (12.190).
In Neutral Bay (33°50′·7S, 151°13′·1E) (12.182).
Off Berth 18, Darling Island (33°52′·0S, 151°11′·6E).
In Balls Head Bay (33°50′·5S, 151°11′·5E) (12.183).
Surrounding Spectacle Island (33°51′·0S, 151°09′·8E) (12.194).

For details of regulations applying to these areas see Appendix I.

Quarantine

12.142

1 Sydney Harbour is a first port of entry. For further details on quarantine see 1.47.

Harbour

General layout

12.143

1 Sydney Harbour is an extensive inlet, indented with many bays and coves, leading about 7 miles SW and W, from Sydney Heads to Parramatta River. The main berthing areas and port facilities line the S shores of the harbour in the vicinity of Sydney Harbour Bridge, except for an oil terminal situated in Gore Cove on the N shore.

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Clarke Island *Bradleys Head*

Outer part of Sydney Harbour from E (12.143)
(Original dated 1998)

The principal naval berths are situated at:
Chowder Bay (12.166).
Garden Island (12.167) and within Woolloomooloo Bay.
Neutral Bay (12.182).
Balls Head Bay (12.183).

2 The principal commercial berths are situated at:
Sydney Cove (33°51′·5S, 151°12′·7E) (12.170).
Darling Harbour (33°51′·8S, 151°11′·9E) (12.171).
Glebe Island (33°52′·0S, 151°11′·0E) (12.172).
White Bay (33°51′·8S, 151°11′·1E) (12.173).
Gore Cove (33°50′·5S, 151°11′·1E) (12.175).

There are extensive berthing areas for small craft in the bays and coves within Sydney Harbour and, at Sydney Water Airport (12.144), in Rose Bay, there are facilities for seaplanes.

Sydney Water Airport
12.144

1 This facility in Rose Bay (12.187), for the use of seaplanes, comprises the area S of a line joining Shark Point (33°51′·2S, 151°15′·8E) to the S end of Shark Island, 6 cables SW, and thence to Woollahra Point, 3 cables farther S.

Sydney Water Airport terminal buildings and flagstaff stand at the head of the bay with aircraft moorings close N.

Dredging
12.145

1 Dredgers are usually working somewhere in Sydney Harbour and a good lookout must be kept for them. Vessels must reduce speed to the minimum for safe navigation when passing dredging plant and give it as wide a berth as possible.

Tidal streams
12.146

1 **Approaches.** In the approaches to Port Jackson, within the line of current, the tidal streams set N and S.

Entrance. Outside of the shoal ground extending N of Sow and Pigs (33°50′·3S, 151°16′·2E) the out-going stream sets across the entrance to The Sound, towards Quarantine Head, then ESE close along the N side of the entrance to Port Jackson, in the direction of North Head, leaving slack water in a triangular area enclosed by a line joining South Head, North Head and Dunbar Head.

2 **Sydney Harbour.** The out-going and in-going streams set NE and SW, respectively, over the rocks of Sow and Pigs and the shoal ground extending from them, and within the harbour as far as Shark Island.

To the W of Bradleys Head (33°51′·3S, 151°14′·7E) the out-going stream sets E with a maximum rate of 2 kn; the in-going stream sets W with a maximum rate of 1½kn.

The tidal stream, especially at spring tides, is interrupted by the numerous headlands and bays, causing eddies to shoot off the points, partly into the adjoining bays and partly into the fairway.

Caution
12.147

1 Yachting buoys (yellow drums, letters YA in black) may be found moored in Sydney Harbour. These have no navigational significance.

Climatic table
12.148

1 See 1.133 and 1.146.

Principal marks
12.149

1 **Landmarks in the approaches to Sydney Harbour:**
Tower (elevation 184 m) (33°53′·9S, 151°15′·2E) (12.108).
Vent (33°53′·3S, 151°17′·0E) standing on the summit of Ben Buckler.
Water tower (elevation 128 m) (33°51′·8S, 151°16′·5E) from which a light is displayed, 6½cables SW of Macquarie Light.
Tower (33°49′·0S, 151°17′·8E), 5 cables NNW of North Head.

2 Tower (33°48′·7S, 151°18′·2E), 9 cables NNE of North Head.

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Sydney Harbour Bridge



South Head

Entrance to Port Jackson from ENE (12.151)

(Original dated 1998)

Television tower (red obstruction lights) (33°48′·5S, 151°18′·0E), 9½ cables N of North Head.
Flagstaff on the tower of Saint Patrick's College (33°48′·3S, 151°17′·6E).
Buildings on Manly Point (33°48′·6S, 151°16′·9E).
Water tower (33°47′·9S, 151°16′·3E) at the head of North Harbour.
Tower (elevation 132 m) (33°46′·8S, 151°14′·3E) and two tanks.
Chimney on Beacon Hill (33°45′·3S, 151°14′·7E).

12.150

1 **Landmarks within Sydney Harbour:**
Centrepoint Tower (33°52′·3S, 151°12′·5E).
Quantas Centre (33°51′·9S, 151°12′·3E).
Harbour Control Centre (33°51′·5S, 151°12′·0E), a slender tower, 87 m high.
Tall building on Blues Point (33°51′·1S, 151°12′·1E).
Northpoint Building (33°50′·3S, 151°12′·4E).
Optus Building (33°50′·4S, 151°12′·4E).
2 Tower (red lights, elevation 245 m) (33°49′·3S, 151°11′·0E).
Tower (red lights, elevation 305 m) (33°48′·8S, 151°11′·7E).
Tower (red lights, elevation 305 m) (33°48′·4S, 151°10′·8E).

Major lights:
Macquarie Light (33°51′·3S, 151°17′·0E) (12.108).
Hornby Light (33°50′·1S, 151°16′·8E) (12.108).

Directions for outer approaches

Charts Aus 197, Aus 200

General information

12.151

1 The entrance to Port Jackson can be identified, on the N side, by the summit of North Head (33°49′·5S, 151°18′·0E) (12.154) and North Head itself. On the S side Macquarie Lighthouse (33°51′·3S, 151°17′·0E) (12.108), together with the signal station at Dunbar Head, 2½ cables NNE of the lighthouse, provide good identification features.

2 North Head and its immediate vicinity appear high, flat-topped and precipitous but the high, undulating and thickly wooded hills which rise from the coast farther N contrast strikingly with the bare table-topped cliffs extending S of the port. Thus these hills or cliffs, when sighted, will indicate whether the land seen is N or S of the port even if Macquarie Light does not present a distinctive feature.

3 In the near approach to Port Jackson depths are a valuable guide in thick weather. About 18 miles E of the entrance there are depths of 200 m, light green sand, whereupon depths decrease regularly to 30 m, both close offshore and in the entrance. To the N of the port the 200 m line is farther offshore and the contrary is the case S of it.

From south

12.152

1 At night or in thick weather, keep well offshore until Sydney Heads (12.111) or Macquarie Light are identified in order to clear the projection of the coast around Botany Bay where it is fairly low and where the current sometimes sets SW towards the coast.

The first features sighted approaching from S will probably be:

The entrance to Botany Bay (33°59′S, 151°11′E) and the oil refinery on Kurnell Peninsula, on the S side of the bay.
2 Buildings on the N side of the entrance to Botany Bay.
The suburbs of Coogee (33°55′S, 151°15′E) and Bondi, 2 miles NNE, which show numerous lights at night.

The approach track should keep at least 4 miles off the coast to conform with the traffic regulations (12.137) which apply to the entrance to Port Jackson.

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From north

12.153

1 As from S, keep well offshore until Sydney Heads or Macquarie Light are identified, conforming with the traffic regulations which apply to the entrance to Port Jackson.

Clearing bearing. The line of bearing, 204°, of Macquarie Light, just open E of North Head clears ESE of Long Reef, 5 miles N of North Head.

For further information on directions N of North Head see *Australia Pilot Volume III*.

Directions for approach to Sydney Harbour

Sydney Heads

12.154

1 The entrance to Port Jackson is for the most part steep-to on each side. It is clear of dangers but although there are depths of 20 m within 1 cable of the N shore the sea generally breaks heavily on the cliffs.

From a position about 3½miles ESE of North Head (33°49′·5S, 151°18′·0E), in the vicinity of the pilot boarding station, the track leads initially E for 2½miles to the in-bound entrance traffic lane.

2 **Entrance lights in line.** The alignment (294°) of the following lights leads through the centre of the Traffic Separation Line in the entrance.

Grotto Point Light (white tower) (33°49′·2S, 151°15′·6E).

Rosherville Light (white tower) (8½cables WNW of front light).

The track then leads WNW for 1¾ miles, within the white sector (288°–306°) of Grotto Point Light, keeping to the NE side of the Traffic Separation Line, passing (with positions from Hornby Light (33°50′·1S, 151°16′·8E)):

3 NNE of Dunbar Head (1 mile SSE), 82 m high. A signal station stands on the headland. Between Dunbar Head and South Head, 1 mile NNW, the coast is sheer. Jacob's Ladder, a small indentation, lies 2 cables N of Dunbar Head. Thence:

SSW of North Head (1 mile NE), 73 m high; a light (mast) is displayed from the top of the cliff. The coast between North Head and Quarantine Head, 6½cables WNW, consists of cliffs. And:

4 NNE of The Gap (6 cables SSE), a remarkable indentation in the coast where the cliffs fall steeply to a deep hollow; Gap Bluff, 52 m high, stands close N of The Gap. Between Gap Bluff and South Head, 5½cables NNW, the cliffs gradually decrease in elevation. Thence:

SSW of Quarantine Head (8½cables NNE). The Old Man's Hat, a narrow break in the cliffs, lies 1¾cables E of Quarantine Head; an obelisk stands 1¾cables farther ENE. And:

5 NNE of South Head (½cable N) from where South Reef extends 1 cable NE. The sea breaks continuously over the reef which has depths of less than 5 m over it. South Reef is covered by the red sector (306°–312°) of Grotto Point Light. Hornby Light (12.108) is displayed from the SE side of South Head.

6 The track then leads about 3½cables W to a position 5 cables ENE of Middle Head (7 cables NW), off the entrances to Western Channel and Eastern Channel. Middle Head is a lofty, precipitous, bold bluff of whitish freestone. It is exposed to the ocean swell and the sea breaks heavily on it in E gales.

Useful marks

12.155

1 Three radio masts (red obstruction lights), two with elevations of 59 m and one with an elevation of 67 m, standing on Middle Head (33°49′·7S, 151°16′·0E) (12.154).

(Directions for Eastern Channel continue at 12.158)
(Directions for North Harbour and Middle Harbour are given at 12.203 and 12.204)

Directions for entering Sydney Harbour

Chart Aus 201

Middle Head to Bradleys Head through Western Channel

12.156

1 Western Channel, a dredged channel, 210 m wide and about 8 cables in length, the sides of which are marked by light-buoys (lateral) and light-beacons, is the main entrance channel for Sydney Harbour. For the limiting depth see 12.123.

From a position about 5 cables ENE of Middle Head (33°49′·7S, 151°16′·1E) the track leads SW for 2¼miles, initially through Western Channel, passing (with positions from Middle Head):

Between Middle Head Light-buoy (starboard hand) (1½cables SE) and Junction Light-buoy (N cardinal) (3 cables SE), thence:

2 Between Obelisk Bay Light-buoy (starboard hand) (4 cables SSW), SE of Obelisk Bay, and Western Channel Light-buoy (port hand) (5 cables S), and:

NW of Sow and Pigs (6 cables S), a group of rocks lying on an area of foul ground which separates Western Channel from Eastern Channel. A light-beacon (isolated danger) marks the drying rock in the middle of this group and the N, E, S and W sides of the rocks are marked by four beacons (cardinal). Thence:

3 SE of Georges Head (7 cables SSW), 64 m high. Georges Head Light-beacon (lateral), standing 1 cable ESE of Georges Head, marks the SW end of the W side of Western Channel. And:

NW of West Channel Light-beacon (white tower on piles) (8 cables SSW) marking the E side of the SW end of Western Channel at the SW end of the bank extending from Sow and Pigs, thence:

NW of a light-buoy (1¼ miles S) (12.159).

12.157

1 The track then continues SW, passing:

SE of Chowder Head (1¼ miles SW); Taylor's Bay lies on the S side of Chowder Head. And:

NW of Steele Point (Shark Point on chart Aus 200) (1½miles S). A light-beacon (dolphin) stands 1 cable W of the point in an area of naval waters; for further information on this area see 12.141. Thence:

2 SE of a light-beacon (E cardinal) (1¾ miles SW) standing 1¾ cables NNE of Bradleys Head Light; it marks the E edge of the shoal water off Bradleys Head. And:

NW of Shark Island (2 miles SSW) (12.186); shoal water surrounds the island and extends up to 2 cables N of it. The 5 m depth contour to the N of the island is marked by a light-beacon (white tower) and to the W by another light-beacon (W cardinal). A light-beacon also stands 1 cable NE of the island. Thence:

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3 SE of Bradleys Head (2 miles SW). When approaching Bradleys Head wait until Fort Denison (33°51′·3S, 151°13′·5E) (12.160) opens clear of Bradleys Head before rounding the headland at a distance of not less than 1½ cables in order to clear shoal ground off it. Inward-bound vessels must pass NW of the light-buoy (safe water) moored 2 cables SE of Bradleys Head. Thence:

4 To a position S of Bradleys Head, the S-most point on the N shore of the harbour. The tripod mast of HMAS *Sydney*, with an elevation of 24·4 m at the truck, stands on Bradleys Head. A light (white tower) is displayed from the head of a pier extending from the shore close E of the mast. A beacon (pillar) stands on the coastal reef, close W of the S point of Bradleys Head, and a short pier extends SW from the W side of Bradleys Head.

(Directions continue at 12.160)

Eastern Channel

(continued from 12.155)

12.158

1 Eastern Channel, an alternative entrance channel for Sydney Harbour, passes to the E of Sow and Pigs (12.156). For the limiting depth see 12.123.

Eastern Channel Leading Lights:

Front light (white tower) (33°51′·0S, 151°16′·4E), standing on the E entrance point of Vaucluse Bay.

Rear light (similar structure) (5 cables S of front light).

2 From the position about 4 cables ENE of Middle Head (33°49′·7S, 151°16′·1E) the track leads S, for about 1 mile, on the alignment (185½) of these lights, passing (with positions from Eastern Channel Light (33°50′·5S, 151°16′·3E)):

E of Junction Light-buoy (N cardinal) (7 cables N), moored at the N end of Eastern Channel, thence:

W of South Head (6½cables NNW) (12.154); Lady Bay Light-buoy (port hand) marks the E side of the channel off South Head. Lady Bay, with an official nudist beach at its head, lies close S of South Head. Thence:

3 E of Eastern Channel Light-buoy (starboard hand) (3 cables N), thence:

W of Camp Cove (3 cables NE), which is the site of the first landing made by Europeans in Sydney Harbour; a tide gauge stands on the NE side of the cove. Thence:

W of Laing's Point (2½cables ENE), the N entrance point of Watsons Bay (12.184); an obelisk (red and white checks) stands on the point. And:

E of Eastern Channel Light (white beacon on piles) which stands near the middle of a detached bank, with a least depth of 6 m over it.

12.159

1 Alternatively, vessels may pass NW of Eastern Channel Light, depending on draught, through Deviation Cut which leads between the detached bank and the foul ground S of Sow and Pigs.

For vessels passing E of Eastern Channel Light the track then leads WSW, for about 6 cables, passing:

SSE of the S end (1 cable SW) of the detached bank on which Eastern Channel Light stands, thence:

2 NNW of Bottle and Glass Point (3½cables S). Bottle and Glass Rocks, which dry, extend ¾cable NE from the E side of the point; a light-beacon (port hand) marks the seaward end of this danger. Thence:

To a position NNW of a light-buoy (special) (5 cables SW), moored ½cable WNW of a 9 m shoal patch.

Thence follow the directions given at 12.157 to a position S of Bradleys Head (33°51′·2S, 151°14′·8E).

Chart Aus 202

Bradleys Head to Blues Point

(continued from 12.157)

12.160

1 **Caution.** In this part of Sydney Harbour a sharp lookout must be kept out for vessels leaving anchorages, and for ferries leaving the bays on the N shore and from Sydney Cove.

From a position S of Bradleys Head (33°51′·2S, 151°14′·8E) the track leads generally W, passing (with positions from Fort Denison Light (33°51′·3S, 151°13′·5E)):

2 N of Clarke Island (9 cables SE) (12.188), thence:

S of Robertson's Point (5 cables NE); a light (white round tower, 8 m in height) is displayed from the edge of a drying reef close off the point. Athol No 4 Buoy, a lit mooring buoy, lies 3 cables ESE of Robertson's Point. Thence:

3 N of Garden Island (2½cables SE) (12.167) which is a base for the Royal Australian Navy. Originally an island, the construction of the Captain Cook Graving Dock between 1940 and 1944 resulted in it being joined to Potts Point on the mainland. A light-beacon (port hand) marks the edge of the 10 m depth contour off the N side of Garden Island. Thence:

4 N of Fort Denison, a mass of bare rock and masonry; a martello tower stands at its NE end. There is a jetty and a tide gauge on the NW side and a flagstaff stands near the SW end. Fort Denison should not be approached within ½cable because of spits extending from it. A light (concrete tower) is displayed from the NE end and another light (white tapered structure) is displayed from the edge of the reef off the SW end of the fort. Thence:

5 N of Mrs Macquaries Point (3 cables SSW), the W entrance point of Woolloomooloo Bay (12.167); Farm Cove lies close W of Mrs Macquaries Point.

12.161

1 The track then continues W, passing:

S of Kirribilli Point (4 cables WNW), the most prominent projection from the N shore of the harbour W of Bradleys Head. Admiralty House, the Sydney residence of the Governor General of Australia, and a flagstaff stand close within the point. A light is displayed from a beacon (white tapered structure) on the edge of a drying reef extending close off the point. Thence:

N of Bennelong Point (5 cables W) on which stands Sydney Opera House. A light-beacon (white tower, port hand) stands close N of the point. Thence:

2 N of Sydney Cove (7 cables WSW) (12.170), entered between Dawes Point and Bennelong Point. The head of Sydney Cove was the site on which Governor Phillip set up the first European settlement in 1788. Dawes Point Light (tower) is displayed from a position close SE of the S end of Sydney Harbour Bridge and a light-beacon (port hand) stands ½cable farther SE. For details of the berths in Sydney Cove see 12.170. Thence:

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S of Milsons Point (7 cables WNW); a ferry wharf lies ¾ cable NE of the point. Thence:

Under Sydney Harbour Bridge (8 cables W) (12.125).

3 When proceeding under the bridge keep the red lights, indicating its centre and point of greatest clearance, fine to port. Alternatively, the alignment (281°) of the following leading lights, occasionally displayed by day from the NE end of Goat Island (12.164), leads under the bridge in deeper water:

Front light (white 8-sided wooden tower) (33°51′·1S, 151°11′·9E).

Rear light (120 m from front light).

The track then continues W, passing:

4 N of the NW part of Dawes Point (9 cables W) from where a light is displayed from the corner of a shed, thence:

S of McMahon's Point (1 mile WNW), the W entrance point of Lavender Bay. There is a ferry landing at McMahon's Point and several other small jetties around the bay; there are also moorings for recreational craft. And:

N of Walsh Bay (1 mile W), containing four large piers, no longer in commercial use, extending from its shoreline, thence:

5 To a position S of Blues Point (1¼ miles WNW) from where a light (white framework tower) is displayed.

Useful mark:

Tower (red obstruction light, 62 m in height) (33°52′·0S, 151°13′·7E) standing ½ cable SSE of the head of Captain Cook Graving Dock.

(Directions for berths at Darling Harbour, Glebe Island, White Bay and Blackwattle Bay continue at 12.163 and for Gore Cove at 12.164)

Directions for berths

Chowder Bay, Garden Island, Woolloomooloo Bay, and Sydney Cove

12.162

1 The berths at Chowder Bay (12.166), Garden Island (12.167), Woolloomooloo Bay (12.167), and Sydney Cove (12.170) are directly accessible from the fairway leading through Sydney Harbour.

Darling Harbour, Glebe Island, White Bay and Blackwattle Bay

(continued from 12.161)

12.163

1 From a position S of Blues Point (33°51′·0S, 151°12′·2E) the track leads SW for a short distance, passing (with positions from Blues Point):

SE of Goat Island (2½cables WSW) (12.164), thence:

NW of Miller's Point (3½cables SSW), from where a light is displayed, and:

SE of Simmon's Point (5½cables SW); a light-beacon (port hand) stands close off the point.

2 The track then leads S into Darling Harbour (12.171) through a fairway, the sides of which are indicated by two sets of lights in line standing on Goat Island, ½cable apart, bearing 354½° and 354¾°.

From the entrance to Darling Harbour the track leads W, passing between Peacock Point (6½ cables SSW), from where a light (pile structure) is displayed, and the N end (8 cables SSW) of Pyrmont and thence through Johnston's Bay to Glebe Island (33°51′·9S, 151°11′·1E) (12.172) and White Bay (33°51′·8S, 151°11′·1E) (12.173). Lights are displayed from the E end of the berths in White Bay and from the NE end of Glebe Island.

3 Blackwattle Bay (12.174) is accessed from the S end of Johnston's Bay passing E of Glebe Island and thence under Anzac Bridge (12.125).

Caution. There are submarine cables and pipelines laid between Goat Island and Simmon's Point and in the vicinity of Anzac Bridge; see 12.134.

Gore Cove

(continued from 12.161)

12.164

1 From a position S of Blues Point (33°51′·0S, 151°12′·2E) the track leads generally WNW, passing (with positions from Blues Point):

NNE of Goat Island (2½cables WSW), which at one time was a shiprepair facility for the Maritime Services Board. A light (12.161) is displayed from the NE point of Goat Island and a light-buoy (port hand) marks the 10 m depth contour off the point. And:

2 SSW of the entrance to Berry's Bay (4 cables NW); see also 12.176. Thence:

NNE of Ballast Point (6½cables W), the W entrance point of Mort Bay (12.191); see also 12.176. And:

SSW of Balls Head (5½cables WNW), the edge of Balls Head is marked by a light-beacon (starboard hand). Thence:

NNE of the two rows of dolphins in Snails Bay (7½cables W); lights are displayed from the dolphins. Thence:

3 To a position NE of Longnose Point (9 cables WNW) off the entrance to Gore Cove; a light is displayed from the ferry wharf at the point. From this position the berths (12.175) in Gore Cove may be directly accessed by passing close E of Manns Point (9 cables NW) and SW of Berry Island (1 mile NW). A light (post) is displayed from a dolphin close off Manns Point and there is a light-beacon standing close off the W extremity of Berry Island.

(Directions for Parramatta River continue at 12.194)

Directions for leaving harbour

12.165

1 From Blues Point (33°51′·0S, 151°12′·2E) keep on the S side of the fairway and maintain a sharp lookout for ferry traffic, especially when passing Sydney Cove. Pass ½cable S of Fort Denison (12.160) then steer for the S end of Shark Island (12.186). When West Channel Light-beacon (12.156) opens SE of Bradleys Head (12.157) alter course to round that headland, passing S of the light-buoy (safe water) 2 cables SE of it.

2 Thence pass through Western Channel and when South Head (12.154) is abeam alter course to pass out through the entrance to Port Jackson, keeping S of the Traffic Separation Line. When Macquarie Light (33°51′·3S, 151°17′·0E) (12.108) is seen clear of Gap Bluff (33°50′·6S,

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Garden Island from N (12.167)
(Original dated 1998)

151°17′·0E) the vessel will be clear of the E end of South Reef (12.154).

Naval berths

Chart Aus 201

Chowder Bay

12.166

1 Chowder Bay (33°50′·4S, 151°15′·3E) (12.178) contains a fuel wharf, on its NE side, for the use of the Royal Australian Navy; there is a charted depth of 13·8 m off its W end.

Chart Aus 202

Garden Island and Woolloomooloo Bay

12.167

1 Garden Island (33°51′·6S, 151°13′·7E) (12.160) and Woolloomooloo Bay, 3 cables SSE, forms Australia's largest naval base.

Garden Island contains Oil Wharf and Cruiser Wharf on its W side; total length 427 m with depths of 8·0 to 8·7 m alongside. There are also berths on the East Wall and West Wall at the entrance to Captain Cook Graving Dock (12.177).

Woolloomooloo Bay has several berths alongside a wharf on the SE side of the bay; the largest berth is at Fitting Out Wharf with a depth of 12·3 m alongside.

Neutral Bay

12.168

1 HMAS *Platypus*, a submarine base on the W side of Neutral Bay (33°50′·6S, 151°13′·2E) (12.182), has one wharf with a charted depth alongside of 7·8 m at its S end.

Balls Head Bay

12.169

1 HMAS *Waterhen,* situated on the E shore of Balls Head Bay (33°50′·4S, 151°11′·5E) (12.183), contains two finger wharfs and is enclosed within a naval waters area (12.141).

Commercial basins and berths

Sydney Cove

12.170

1 Sydney Cove (33°51′·5S, 151°12′·7E) is the centre of Sydney Harbour ferry traffic and, together with an overseas passenger terminal, contains the following berths:

Circular Quay East; one small pontoon wharf with a charted depth of 7·1 m alongside.

Circular Quay; five ferry wharves projecting from the head of the cove.

Sydney Cove Passenger Terminal situated about the middle of Circular Quay West; length 300 m, depth alongside 10·4 m.

Campbells Cove, close N of the passenger terminal; one small jetty on its S side.

Darling Harbour

12.171

1 Darling Harbour (33°51′·7S, 151°11′·9E) contains four berths for the handling of container, general and dry bulk cargoes, with a total length of more than 1300 m, and a fifth berth for passenger vessels.

Deepest cargo berth: No 3 Berth; length 229 m, depth alongside 11·2 m.

Longest cargo berth: No 5 Berth; length 320 m, depth alongside 10·6 m.

Darling Harbour Passenger Terminal: No 8 Berth; length 340 m, depth 9·8 m.

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Sydney Cove from N (12.170)
(Original dated 1998)



Sydney Harbour Bridge and inner part of Sydney Harbour from E (12.170)
(Original dated 1998)

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Glebe Island



Miller's Point

Darling Harbour and White Bay from N (12.173)
(Original dated 1998)

Glebe Island

12.172

1 Glebe Island (33°51′·9S, 151°11′·1E) contains four berths; Berths 1 and 2 are dedicated to the discharge of motor vehicles whilst Berths 7 and 8 have been redeveloped as the main area for dry bulk discharge operations in Sydney Ports.

Largest berths: Nos 1 and 2; total length 461 m, with depths of 11·7 to 12·0 m alongside.

White Bay

12.173

1 White Bay contains six berths used for handling containers, general cargo, Ro-Ro cargoes and dry bulk; Berths 1 and 2 may also be used for lay-up.

Longest berth: No 3 Berth; length 279 m, depth alongside 10·5 m.

Deepest berths: No's 5 and 6; both with a length of 203 m, depth alongside 11·0 m.

Blackwattle Bay

12.174

1 Blackwattle Bay, SE of Glebe Island, contains one commercial berth used for the discharge of bulk cement: Length 120 m; depth alongside 5 m.

Gore Cove

12.175

1 Shell's Gore Bay Terminal, for the receipt and storage of oil cargoes, is situated in this cove. From here cargoes are transferred to Shell's Clyde Refinery, standing on the W bank of Duck River at Parramatta, by pipeline. The terminal has two berths:

Wharf No 1. A T-shaped jetty; length 320 m, depth alongside 13·8 m; can accommodate vessels up to 265 m LOA.

Wharf No 2. Length 220 m, depth alongside 9·7 m; can accommodate vessels up to 190 m LOA.

Disused berths

12.176

1 With the bulk of the containerised and liquid cargoes being handled in Botany Bay (12.64) there are now several berthing areas in Sydney Harbour which are no longer used commercially. They are located at the following places:

Walsh Bay (33°51′·3S, 151°12′·3E) (12.161).

Pyrmont (33°52′·0S, 151°11′·6E).

Rozelle Bay (33°52′·3S, 151°10′·7E).

2 Ro-Ro berths in Mort Bay (33°51′·2S, 151°11′·3E) (12.191).

Oil berths at Ballast Point (33°51′·1S, 151°11′·4E) (12.164).

Oil berths in Berry's Bay (33°50′·7S, 151°11′·9E) (12.164).

Coal jetty in Balls Head Bay (33°50′·5S, 151°11′·5E) (12.183).

Port services

12.177

1 **Repairs.** Major repairs of all kinds can be carried out at Sydney. The following dry docks are operated by Australian Defence Industries (ADI):

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White Bay from NE (12.173)
(Original dated 1998)

Captain Cook Graving Dock at Garden Island; length 347 m, capable of handling vessels up to 110 000 dwt.

One floating dock with a lifting capacity of 1000 tonnes.

There are also several slipways in Sydney Harbour; the largest with a capacity of 710 tonnes.

2 **Other facilities.** Hospitals; compass adjustment; salvage vessels, firefighting tenders; reception facilities for oily waste using road tankers; garbage removal; deratting and deratting exemption certificates issued.

Supplies. Fuel; fresh water; provisions.

Communications. Kingsford Smith International Airport, about 8 km S of Sydney Harbour, at the head of Botany Bay.

Pollution. No ballast, ashes, oil or other material, nor any dead animal or putrefying matter is to be thrown or discharged into the waters of the port.

Minor bays — north shore

Chart Aus 201

Chowder Bay
12.178

1 Chowder Bay (33°50′·4S, 151°15′·3E) is entered between Georges Head and Chowder Head, 5 cables SW. There is a naval wharf (12.166) on the NE side of the bay surrounded by an area of naval waters (12.141). The head of the bay is formed by a sandy beach with a park behind it. Clifton Gardens Wharf extends from the middle of the beach and forms the NE side of an enclosed area for bathing.

Chart Aus 202

Athol Bay
12.179

1 Athol Bay (33°50′·8S, 151°14′·5E), situated on the NW side of Bradleys Head, has a ferry wharf extending off its NW entrance point and an area of naval waters (12.141) off its E shore. The bay is backed by Taronga Zoological Gardens.

Caution. A foul area exists within the naval waters.

Little Sirius Cove
12.180

1 Little Sirius Cove (33°50′·6S, 151°14′·2E) is a small cove in which there are moorings for recreational craft. The cove, backed at its head by Sirius Park, is entered between Little Sirius Point and Curraghbeena Point, 2 cables WNW.

Mosmans Bay
12.181

1 Mosmans Bay (33°50′·4S, 151°13′·8E), entered between Curraghbeena Point and Robertson's Point (12.160), 2½cables S, has several ferry wharfs along its shores. There are facilities for recreational craft in Mosmans Marina at the head of the bay.

Shell Cove, Neutral Bay and Careening Cove
12.182

1 Between Robertson's Point (33°50′·9S, 151°14′·0E) (12.160) and Kirribilli Point (12.161), 7½cables SW, the N shore is indented by Shell Cove, Neutral Bay and Careening Cove. Shell Cove is entered between Robertson's Point and Kurraba Point, 4 cables WNW, and Neutral Bay and Careening Cove between Kurraba Point and Wudyong Point, 2½ cables WSW.

2 There are two ferry wharfs on the NE side of Neutral Bay and a larger wharf at HMAS *Platypus* (12.168) on the

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W side. On the SE side of Careening Cove a jetty, from which lights are displayed, extends N from Wudyong Point. The jetty forms a breakwater behind which lies a berthing area for Royal Sydney Yacht Squadron.

Balls Head Bay
12.183

1 Balls Head Bay (33°50′·4S, 151°11′·4E), entered between Balls Head (12.164) and Berry Island, 4½cables NNW, contains HMAS *Waterhen* (12.169) on its E shore.

On the NW side of the bay there is a small craft anchorage available for visiting recreational craft who have come from places more than 50 miles from Sydney.

Minor bays — south shore

Chart Aus 201

Watsons Bay
12.184

1 Watsons Bay (33°50′·7S, 151°16′·7E), entered between Laing's Point (12.158) and Village Point, 3½ cables S, contains a ferry pier, 213 m long, and a jetty from which pilot vessels operate. Sheltered anchorage, in depths of about 12 m, may be obtained in the bay.

Parsley Bay and Vaucluse Bay
12.185

1 Parsley Bay (33°50′·9S, 151°16′·6E) and Vaucluse Bay (33°51′·0S, 151°16′·3E) lie between Village Point and Bottle and Glass Point, 4 cables W. There are moorings in both bays for the use of recreational craft. An obelisk (red and white) stands on a wooded slope on the E side of Parsley Bay and another obelisk (white, about 8 m in height) stands on its SW shore.

Shark Island
12.186

1 Shark Island (33°51′·5S, 151°15′·5E), 9 m high with trees on it, is a public reserve and part of Sydney National Park. In the centre of the island there is a pavilion dating from 1911.

The seaward edge of the bank surrounding the island is marked on its N, NW, S and SE sides by lights and light-beacons.

Access to the island is made from a jetty extending from the S end of the island.

Rose Bay
12.187

1 Rose Bay (33°52′·0S, 151°15′·7E), entered between Hermit Point and Woollahra Point, 6½cables WSW, is the site of Sydney Water Airport (12.144). The main danger within the bay is an obstruction, with a depth of 3·2 m over it, lying 2½cables SSW of Hermit Point; the obstruction is marked by a buoy (port hand).

Chart Aus 202

Clarke Island
12.188

1 Clarke Island (33°51′·8S, 151°14′·5E), lying 2 cables N of Darling Point on the outer part of the coastal bank, is a small islet partially covered with trees. The island has a fresh water supply, toilets, a picnic area, and a small jetty on its SW side. A light-beacon (starboard hand) marks the end of a reef extending a short distance off the S end of the island.

Double Bay
12.189

1 Double Bay (33°52′·2S, 151°14′·7E), entered between Point Piper and the NE end of Darling Point, contains the twin beaches of Double Bay and Seven Shillings Beach. Redleaf, one of Sydney's most picturesque harbourside pools, lies at the SW end of Seven Shillings Beach.

Rushcutters Bay
12.190

1 Rushcutters Bay (33°52′·2S, 151°13′·9E) is entered W of Darling Point. Its W side is formed by the E wall of Captain Cook Graving Dock (12.177) which connects the suburb of Potts Point (12.160) with the S end of Garden Island. A light-beacon (port hand) marks the NW edge of the flat, with depths of less than 5 m over it, which extends NW from the NW extremity of Darling Point.

Mort Bay
12.191

1 Mort Bay (33°51′·2S, 151°11′·3E) is entered between Ballast Point (12.164) and Goat Island (12.164), 2½cables E. On its SW shore there is a ferry repair and service depot along with a base for the harbour tugs. See also 12.176.

Paramatta River

Charts Aus 202, Aus 203 (see 1.12)

General information
12.192

1 **Description.** Parramatta River, into which Lane Cove River and Duck River flow, forms the head of Sydney Harbour. From Longnose Point (33°50′·8S, 151°11′·2E) to Pulpit Point, 1¼ miles W, the river is deeply indented by several coves and bays. Above Pulpit Point the river narrows to about 2 cables and extends WNW for about 8 miles to Parramatta where it is barely ¼cable wide. Both banks are much built over and there are many industries, mainly on the S bank.

2 **Submarine cables and pipelines.** Numerous submarine cables and several pipelines are laid in Parramatta River. These are shown on the charts and anchoring is prohibited within their vicinity. For further details on submarine cables and pipelines see 1.33.

Limiting conditions
12.193

1 **Depths.** From Longnose Point (33°50′·8S, 151°11′·2E) (12.164) to the entrance to Lane Cove River (12.195), 5 cables W, there are depths of 10 to 13 m and thence to Pulpit Point, about ¾mile farther W, depths vary from 7 to 9 m. From Pulpit Point vessels drawing 6 m can reach Kissing Point on the N bank, 3 miles WNW of Pulpit Point. Above Kissing Point depths are too shallow for any but small craft.

2 **Vertical clearances.** Several bridges cross Parramatta River with vertical clearances varying from 40 m, for Gladesville Bridge (33°50′·6S, 151°08′·8E), to 5·7 m for the bridges in the upper reaches of the river. The vertical clearances for the bridges are shown on the chart.

Directions
(continued from 12.164)
12.194

1 From a position NE of Longnose Point (33°50′·8S, 151°11′·2E) the track leads W for 1¼ miles, passing (with positions from Clarkes Point (33°50′·6S, 151°10′·4E)):

Between Manns Point (6½ cables E) (12.164) and Longnose Point (6½ cables ESE), thence:

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S of Greenwich Point (3½ cables E), the E entrance point of Lane Cove River; there is a ferry wharf at the point. And:

2 N of Robinsons Point (4 cables SE), thence:
S of Clarkes Point, the W entrance point of Lane Cove River, and:
N of Cockatoo Island (1½ cables S), lying 1¾ cables N of White Horse Point. The shipyards and workshops on the island were once the biggest industrial establishment in Australia; many of the workshops have now been demolished since the shipyards closed in the 1980's. Thence:

3 N of Spectacle Island (6 cables SW), used as a storage site for naval munitions. The island is surrounded by a naval area (12.141) in which there are numerous mooring buoys and piles. A buoy (port hand) marks the NE side of a patch, with a depth of 1·5 m over it, lying on a bank extending ¾ cable N of the NE end of the island. Two light-beacons (special) mark the limits of the naval area to the N of the island. There is a flagstaff on the NE side of the island. Thence:

4 To a position S of Pulpit Point (6 cables W).

The track then leads in mid-channel, for a farther distance of about 7½ miles, to Parramatta. The sides of the channel are marked by light-beacons (lateral) and lights, and in addition, above Wentworth Point (33°49′·4S, 151°05′·0E), the centre of the channel is marked by leading lights.

Side channel and inlet

12.195

1 **Lane Cove River** is entered between Clarkes Point (33°50′·6S, 151°10′·4E) and Greenwich Point, 3½ cables E. Woolwich Dock lies 1½ cables N of Clarkes Point.

Above Onions Point, 5 cables NE of Clarkes Point, the channel in the river has depths of less than 5 m. It is marked by a light-beacon (starboard hand) and by beacons and buoys (lateral), and spanned by Fig Tree Bridge (33°49′·9S, 151°08′·7E) with a vertical clearance of 9·1 m.

2 **Iron Cove**. This inlet on the S side of Parramatta River is entered between Sommerville Point (33°51′·3S, 151°10′·1E) and Birkenhead Point, 2 cables W. The entrance to the cove is fronted by Snapper Island, on which there are some buildings and two flagstaffs; the island is used as a training depot for Sea Cadets.

The cove is spanned by Iron Cove Bridge, 3½ cables within the entrance. The bridge has seven fixed spans with a minimum horizontal clearance of 47·8 m and a maximum vertical clearance of 12·3 m, reduced to 10·4 m when travelling gantries are in use.

THE SOUND, NORTH HARBOUR AND MIDDLE HARBOUR

General information

Charts Aus 200, Aus 201

Description

12.196

1 **The Sound**, that part of Port Jackson inside Sydney Heads (12.111), is entered between Quarantine Head (33°49′·3S, 151°17′·3E) and Middle Head, 1 mile WSW. It branches N into North Harbour and W into Middle Harbour.

Although extensive and with regular depths, The Sound is too exposed to the ocean swell to afford other than temporary anchorage in its N part when the wind is offshore.

2 **North Harbour** is entered between Dobroyd Head (33°48′·8S, 151°16′·4E) and Cannae Point, 5½ cables ESE, and is indented on its E and N shores by Spring Cove, Little Manly Cove and Manly Cove. Although not apparently open to SE gales it is a treacherous anchorage.

Middle Harbour extends NNW from Hunter's Bay (33°49′·4S, 151°15′·4E), in the W part of The Sound. It has depths of over 20 m in the middle. For the most part it has a width of about 1½ cables, but narrows to 1 cable N of The Spit (33°48′·2S, 151°14′·8E). Above The Spit the harbour extends 3 miles W and N branching into Long Bay, Sailors Bay, Sugarloaf Bay and Bantry Bay, the shores of which are all built over.

Depths

12.197

1 **North Harbour.** There are depths of 10 to 15 m in North Harbour.

Middle Harbour. Entry to Middle Harbour is restricted by The Bar which lies between Grotto Point (33°49′·1S, 151°15′·7E) and Wy-ar-gine Point, 4½ cables WNW; in the fairway it has a least depth of 3·0 m over it.

A second bar, with depths of less than 10 m over it, lies across Middle Harbour, N of The Spit (33°48′·2S, 151°14′·8E).

Vertical clearance

12.198

1 **Spit Bridge** (33°48′·2S, 151°14′·8E) spans the narrows N of The Spit and has a bascule span with a vertical clearance of 5·0 m when closed; the span N of the bascule span has a vertical clearance of 6·4 m.

The bridge is open only at certain specified times which are promulgated locally. In 1995 the opening times were reported to be as follows:

Weekdays; 1015, 1130, 1300, 1400, 1445, 1930, 2030, and 2130 (daylight saving time only).

Weekends and public holidays; 0800, 0900, 1000, 1100, 1200, 1300, 1430, 1530, 1630, 1800, 1900, 2000 and 2130.

2 Additional bridge openings may be requested if arrangements are made with the bridge operator before 1800. A vessel requiring the bridge to be opened should sound her whistle or siren which will be answered by the following signals:

Signal	*Meaning*
(Flashing)	Whistle has been heard.
	Bridge about to open.
	Bridge is open.

Bridge opening signals (12.198)

Speed limit

12.199

1 Between a line drawn between Wy-ar-gine Point (33°48′·9S, 151°15′·2E) and Clontarf Point, 3 cables N, to Spit Bridge speed is restricted to a maximum of 8 kn.

Submarine cables and pipelines

12.200

1 Several submarine cables and pipelines are laid across The Sound and in Middle Harbour. These are shown on the

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charts and anchoring is prohibited within their vicinity. For further details on submarine cables and pipelines see 1.33.

Prohibited anchorage

12.201

1 Anchorage is prohibited within 1 cable of Spit Bridge in Middle Harbour.

Landmarks

12.202

1 Tower (33°49′·0S, 151°17′·8E), 5 cables NNW of North Head.

Tower (33°48′·7S, 151°18′·2E), 9 cables NNE of North Head.

Television tower (red obstruction lights) (33°48′·5S, 151°18′·0E), 9½ cables N of North Head.

2 Flagstaff on the tower of Saint Patrick's College (33°48′·3S, 151°17′·6E).

Buildings on Manly Point (33°48′·5S, 151°17′·0E).

Water tower (33°47′·9S, 151°16′·3E) at the head of North Harbour.

Tower (elevation 132 m) (33°46′·8S, 151°14′·3E) and two tanks close NNW.

Directions

North Harbour

12.203

1 From a position about 5 cables ENE of Middle Head (33°49′·7S, 151°16′·1E) (12.154) the track leads N, passing (with positions from Dobroyd Head (33°48′·8S, 151°16′·3E)):

E of Cannae Point (5½ cables ESE), and:

W of Gowlland Bombora (1½ cables S) (12.204), thence:

W of Dobroyd Head, thence:

E of Manly Point (5 cables ENE) into Manly Cove (12.206).

Middle Harbour

12.204

1 From a position about 5 cables ENE of Middle Head (33°49′·7S, 151°16′·1E) the track leads initially WNW, passing (with positions from Grotto Point Light (33°49′·1S, 151°15′·7E)):

NNE of Middle Head (6½ cables SSE), and:

2 SSW of Gowlland Bombora (6 cables NE) a spit, with depths of less than 10 m over it, extending 1½cables S from Dobroyd Head; a light-buoy (S cardinal) is moored 2¾ cables S of Dobroyd Head and buoys (cardinal) mark the E and W sides of the spit. The vicinity of the spit is very dangerous for at times large rollers known as *Bomboras* break heavily on the spit, even in smooth seas, and have caused fatal accidents to small craft. Thence:

3 To a position SW of Grotto Point, from where a light (12.154) is displayed.

The track then leads NNW over The Bar, passing:

ENE of Wy-ar-gine Point (4½ cables WNW), thence:

ENE of Chinamans, or Rosherville Beach (6 cables WNW) fronting the S end of a slight indentation close NW of Wy-ar-gine Point. The rear light of the Port Jackson entrance lights in line (12.154) is displayed from close NW of the beach. And:

4 WSW of Clontarf Point (6 cables NW), thence:

ENE of Parriwi Point (9 cables NW).

The track then swings to the W and passes under Spit Bridge (1¼ miles NW). Above the bridge the track leads in mid-channel to Echo Point, about 3 miles NW. The channel is marked by light-beacons (lateral).

Useful marks:

Three radio masts (red obstruction lights), two with elevations of 59 m and one with an elevation of 67 m, standing on Middle Head (33°49′·7S, 151°16′·1E) (12.154).

Minor bays

Spring Cove and Little Manly Cove

12.205

1 Spring Cove (33°48′·5S, 151°17′·4E) and Little Manly Cove (2 cables farther W), afford shelter in moderate weather where several vessels can obtain safe anchorage.

Manly Cove

12.206

1 Manly Cove (33°48′·1S, 151°17′·0E) at the head of North Harbour is the location for a busy ferry terminal; there are two wharfs in the cove.

Anchorage may be obtained, in a depth of 11 m, about 4 cables NW of Manly Point, the S entrance point of the cove; it gives some shelter from seas raised by SE gales in the middle and W parts of the harbour.

Hunter's Bay

12.207

1 Hunter's Bay (33°49′·4S, 151°15′·4E) is entered between the NW side of Middle Head and Grotto Point, 4 cables NNW. With a strong E wind this bay is a sheet of broken water and, although there are depths of 5·0 to 8·5 m in it, in these conditions it is dangerous for any vessel to enter the bay unless able to cross The Bar (12.197).

2 A naval depot lies on the S shore 4 cables WSW of Middle Head. Balmoral Naval Jetty, a slipway and mooring buoys front the depot. The naval waters off the depot are described in Appendix I.

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APPENDIX I

COMMONWEALTH OF AUSTRALIA

Control of Naval Waters Regulations.

Citation

1. These Regulations may be cited as the Control of Naval Waters Regulations. [1]

Regulations do not apply to exempt vessels

3. These Regulations shall not, unless the contrary intention appears, apply to exempt vessels.

Entry into, or onto the foreshore of, naval waters

4. (1) Where the superintendent of naval waters is satisfied that it is in the interests of:
(a) public safety; or
(b) the safety of property; or
(c) the defence of the Commonwealth:
the superintendent may, by notice, prohibit or restrict the entry of:
(d) vessels or persons into the naval waters or any specified part of the naval waters; or
(e) vehicles or persons onto the foreshore of the naval waters or any specified part of that foreshore.

(2) A prohibition or restriction under sub–regulation (1) may be:
(a) absolute; or
(b) subject to any approval given by the superintendent by notice; or
(c) subject to any conditions imposed by the superintendent by notice.

(3) The superintendent of naval waters must cause a notice under sub–regulation (1) or paragraph (2)(b) or (c) to be given to such person or persons, in such manner, at such time and in such place as is reasonably required for the protection of the public, or any person who may be affected by the use by the Commonwealth of the naval waters, as the case may be, having regard to:
(a) the purpose for which those waters are used by the Commonwealth; and
(b) the time when those waters are so used; and
(c) the risk of injury to persons; and
(d) the risk of damage to, or interference with, Commonwealth or other property; and
(e) the forms of communication and the time available for giving the notice.

(4) A person must not, knowingly or recklessly, contravene the requirements of a notice given under this regulation.
Penalty: $500.

(5) Nothing in regulation 6, 7, 9, 10, 11, 12, 15, 16, 28, 30 or 31 affects the operation of this regulation.

Removal from naval waters or the foreshore of naval waters

5. The superintendent of naval waters may cause to be removed from, or from the foreshore of, those waters:
(a) persons who, in those waters or on that foreshore, have contravened these Regulations; or
(b) persons who, by entering into those waters or onto that foreshore, have contravened these Regulations.

Vessels not to impede approaches

6. The master of a vessel shall not, without reasonable excuse, permit the vessel to lie, or be moored or anchored, in naval waters in such a position that it impedes the approach to any installation.
Penalty: $1,000.

Making vessels fast to forts etc.

7. (1) The master of a vessel shall not, without permission from the superintendent of naval waters, without reasonable excuse, make the vessel fast to any fort, Commonwealth moorings, buoys, breakwaters, jetties, piles, vessels, or exempt vessels in those waters.
Penalty: $500.

(2) The superintendent may in his discretion grant or withhold permission under this regulation or may grant permission subject to such terms and conditions as he thinks fit.

(3) The terms and conditions upon which permission may be granted may, subject to the approval of the Minister, include the imposition of a charge for making a vessel fast to any fort, Commonwealth moorings, buoys, breakwater, jetties, piles, vessels, or exempt vessels in naval waters.

(4) A master of a vessel must not without reasonable excuse contravene a term or condition of a permission granted under this regulation.
Penalty: $500.

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Superintendent of naval waters to place moorings in naval waters

8. The superintendent of naval waters shall place in those waters moorings for naval ships, mark buoys, and other aids to navigation, and such other buoys as are required for any purposes in connection with naval or military operations from time to time.

Vessels not to anchor near Commonwealth moorings

9. The master of a vessel shall not, without reasonable excuse anchor or permit the vessel to be anchored or moored within 180 metres, or such distance as the superintendent specifies, from the centre of any Commonwealth moorings, nor in such a position as to be liable to foul any exempt vessels at these moorings.
Penalty: $1,000.

Vessels not to anchor near navigable channels in naval waters

10. The master of a vessel which is of greater length than 10 metres over all shall not, without reasonable excuse cause or permit the vessel to be anchored in or near any of the navigable channels of any naval waters, or permit the vessel to be left at any time without a ship–keeper.
Penalty: $1,000.

Vessels or persons not to be near installations etc.

11. (1) The master of a vessel shall not, without reasonable excuse cause or permit the vessel to dredge, loiter, or anchor within 100 metres of an installation, exempt vessel or any other vessel in any naval waters without permission in writing from the superintendent of those waters.
Penalty: $1,000.

(2) The master of a vessel must not, without reasonable excuse, cause or permit the vessel or a person under his or her control to interfere with an installation in naval waters without the permission in writing of the superintendent of those waters.
Penalty: $1,000.

(3) A person must not, without reasonable excuse:
(a) enter, or remain in, any naval waters within 100 metres of any installation, exempt vessel or any other vessel in the naval waters or on the foreshore of the naval waters; or
(b) enter onto, or remain on, the foreshore of any naval waters within 100 metres of any installation, exempt vessel or any other vessel in the naval waters or on that foreshore, without the permission in writing of the superintendent of those waters.
Penalty: $500.

(4) A person must not, without reasonable excuse, interfere with an installation in naval waters or on the foreshore of naval waters without the permission in writing of the superintendent of those waters.
Penalty: $1,000.

Vessel not to approach installations

12. The master of a vessel must not, without permission in writing of the superintendent, without reasonable excuse cause or permit the vessel to approach within 30 metres of an installation, exempt vessel or any other vessel, in naval waters, unless proceeding on Commonwealth business to or from the installation or vessel.
Penalty: $500.

Moorings not to be laid in naval waters without permission

13. (1) A person must not, without reasonable excuse lay moorings in any naval waters except with the permission in writing of the superintendent of those waters, and in such positions as he directs.
Penalty: $500.

(2) Any moorings laid in pursuance of sub–regulation (1) shall, on notice in writing from the superintendent, be removed by the person who is for the time being the owner of the moorings.

Vessels or moorings may be moved in naval waters by superintendent

14. Where, in pursuance of these Regulations, a vessel or mooring is required by the superintendent of naval waters to be removed from any position in those waters to some other position, and the vessel or mooring is not moved accordingly, the superintendent may remove the vessel or mooring, and the master or owner of the vessel or mooring shall pay to the superintendent the cost of the removal.

Vessels not to anchor near electric cables in naval waters

15. The master of a vessel shall not anchor within 180 metres of the line of any electric cable laid down in naval waters, and indicated by discernable marks erected onshore.
Penalty: $500.

Objects hooking moorings etc. to be cleared under directions of superintendent

16. Should at any time the anchor of, or any other object that is part of or attached to any vessel hook any moorings, electric cables, or moorings of buoys in naval waters, the master of the vessel shall not unhook the anchor, but shall forthwith give notice of the occurrence to the superintendent of those waters, and shall comply with the directions of the superintendent as to the method of clearing the moorings or cables.

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Crew numbers

22. (1) The master of every vessel at anchor in naval waters must, if required by the superintendent of those waters by notice in writing at all times have a sufficient number of men available to perform any services required for the safety of his vessel.

(2) The master of every vessel lying in naval waters must, if required by the superintendent of those waters by notice in writing have at least one man on watch on deck by day and by night.

Refuse etc. not to be deposited in or near naval waters

25. The master of any vessel in naval waters or any other person shall not, without reasonable excuse, cause or permit any ballast, stones, sand, earth, clay, refuse, ashes, timber, carcasses, rubbish, dust, fuel, oil or pollutant of any description, or refuse from any quarry, mine or pit, or any other material, to be unladen, cast, or allowed to fall into, or placed in such a position as to be washed into, any naval waters, except in such places as are directed by the superintendent of those waters.

Vessels not to be cleaned without permission

26. The master of a vessel shall not, without reasonable excuse cause or permit the vessel to be breamed, careened, or cleaned, in naval waters, except with the permission of and in the place and manner directed by, the superintendent of those waters.
Penalty: $1,000

Speed of vessels in naval waters

28. (1) Where the superintendent of naval waters is satisfied that it is in the interests of:
(a) public safety; or
(b) the safety of property; or
(c) the defence of the Commonwealth;
the superintendent may, by notice, give directions concerning the speed of vessels in naval waters or any specified part of naval waters.

(2) A direction under sub–regulation (1) may be:
(a) absolute; or
(b) subject to any approval given by the superintendent by notice; or
(c) subject to any conditions imposed by the superintendent by notice.

(3) The superintendent of naval waters must cause a notice under sub–regulation (1) or paragraph (2)(b) or (c) to be given to such person or persons, in such manner, at such time and in such place as it is reasonably required for the protection of the public, or any person who may be affected by the use by the Commonwealth of the naval waters, as the case may be, having regard to:
(a) the purpose for which those waters are used by the Commonwealth; and
(b) the time when those waters are so used; and
(c) the risk of injury to persons; and
(d) the risk of damage to, or interference with, Commonwealth or other property; and
(e) the forms of communication and the time available for giving the notice.

(4) A person must not, knowingly or recklessly, contravene the requirements of a notice given under this regulation.
Penalty: $500.

Guns not to be discharged

29. (1) A person must not, knowingly or recklessly, discharge a gun, firearm or air–gun over naval waters from a boat or vessel or from the shore.
Penalty: $500.

(2) Sub–regulation (1) shall not apply to a member of the Defence Force, a Commonwealth Police Officer or a member of the Police Force of a State or Territory engaged within the limits of naval waters.

Vessels with dangerous cargoes not to enter naval waters without permission

30. (1) The master of any vessel carrying explosives, oil or vitriol, petroleum, or any other goods of a dangerous nature, must not, without reasonable excuse, bring the vessel into naval waters without first obtaining permission in writing from the superintendent of those waters.
Penalty: $1,000.

(2) Any permission granted under this regulation may be granted for such period, and be accompanied by such conditions as to berthing, and the discharge of cargo or otherwise, as the superintendent thinks fit, and the failure of the master to comply with any such conditions shall be deemed to be a breach of this regulation.

(3) The superintendent may at any time cancel any permission granted under this regulation.

Vessels carrying dangerous cargoes to display signals

31. The master of any vessel carrying, loading, or unloading any explosives or other goods of a dangerous nature shall not, without reasonable excuse while in naval waters, fail to prominently display a large red flag or burgee between sunrise and sunset, and a red light, visible in clear weather for at least 3 kilometres, between sunset and sunrise.
Penalty: $500.

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Construction in, or on the foreshore of, naval waters

34. (1) The Minister may, by notice in writing, prohibit the erection of any jetty, wharf, building, or structure, in, or on the foreshore of, any naval waters.

(2) Any person to whom notice has been given under the foregoing sub–regulation who erects in, or on the foreshore of, any naval waters any structure prohibited by the notice shall remove any such structure, or should he fail to do so, it may be removed by the superintendent of those waters and the person who constructed it, or cause it to be constructed, shall pay to the superintendent the cost of such removal.

Examination of vessels in naval waters

35. The master of any vessel in naval waters shall do the utmost in his power to facilitate the search or examination of the vessel by the superintendent of those waters or by a person or persons acting on his behalf.

Delegation

35A. The superintendent of naval waters may, by instrument in writing, delegate to an officer of the Defence Force holding a rank not below that of Lieutenant–Commander, Major or Squadron–Leader all or any of his or her powers and functions under these Regulations in relation to those waters.

NOTE

1. The Control of Naval Waters Regulations, in force under the *Control of Naval Waters Act 1918*, comprise Statutory Rules 1922 No. 74 as amended by the other Statutory Rules specified in the following list:

Statutory Rules number 1922 No.74; 1927 No.147; 1931 No.7; 1935 No.92; 1937 No.12; 1938 No.43; 1941 No.145; 1943 Nos.71, 216 and 310; 1947 Nos.45 and 117; 1948 No.148; 1953 No.60; 1955 No.22; 1959 No.32; 1969 No.171; 1975 No.178; 1976 No.25; 1990 No.206.

SCHEDULE

The waters more particularly described in the following Schedule are naval waters within the meaning of the *Control of Naval Waters Act, 1918*, by the reason of the existence thereat of a Naval Establishment or other naval property.

VICTORIA

Port Phillip
Chart Aus 158
Naval Establishment
Naval Depot, Swan Island.

Limits of Naval Port — from reference position 38°15′·70S, 144°42′·31E, as follows:

(a) In a direction 276° 1·87 miles, thence 310° about 0·16 miles to S shore of Swan Island.

(b) In a direction of 013° 1·22 miles, thence 313° about 1·48 miles to NE extremity of Duck Island, thence southward along the E shore line to S extremity of Duck Island, thence in a direction 200° about 0·65 miles to Point Norgate (38°14′·35S, 144°40’·70E), thence southward along the W shore line of Swan Island to the S extremity to join W extension of (a).

Naval waters also enclose the E and W limits of the bridge between S shore of Rabbit Island (38°15′·7S, 144°39′·8E), and the N shore of Queenscliff (38°15′·9S, 144°39′·8E).

Western Port
Chart Aus 151
Naval Establishment
Flinders Naval Depot.

Limits of Naval Port:

On the north; by a line drawn 090° from Stony Point.

On the south; by a line joining Sandy Point to Tortoise Head.

On the east; the meridian of 145°16′E.

On the west; by the high water line of Western Port, in the State of Victoria.

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NEW SOUTH WALES

Jervis Bay
Charts Aus 360, Aus 193 (see 1.11)
Limits of Naval Port:
HMAS *Creswell*. From a position on the high water mark on the most southerly point of Longnose Point bearing 300½ 2845 metres from Point Perpendicular Lighthouse (35°05′·7S, 150°48′·2E), thence generally westward of that point along the high water mark on the shore of Jervis Bay to the high water mark on the point of Governor Head bearing 090° 670 metres from position 35°07′·55S, 150°45′·35E, thence proceeding in a line 026° to the point of intersection of that line and the high water mark on the most southwesterly point of Bowen Island, thence following the high water mark on the western side of Bowen Island to a point bearing 193° from the point of commencement; and thence on a bearing of 013° to the point of commencement.

Port Jackson
Chart Aus 200
Naval Establishments:
Naval Reserve, Rose Bay.
Naval Reserve Depot, Rushcutter's Bay.
Garden Island.
Royal Edward Victualling Yard (Darling Harbour) and the Naval Storehouse Wharf adjoining.
Bradleys Head — Athol Bay.
HMAS Platypus, Neutral Bay.
HMAS Waterhen, Ball's Head Bay.
Spectacle Island, ammunition facility.
Newington Arsenal Depot, Parramatta River.
Ryde naval support craft repair facility, Parramatta River.
HMAS Penguin, Hunter's Bay.
Naval fuel installation, Chowder Bay.

Hunter's Bay
Chart Aus 201
Naval mooring areas:
Limits of Naval Waters:
HMAS *Penguin*. From a position on the high water mark on the southern shore of Hunters Bay bearing 136° 510 metres from Rocky Point, Balmoral (33°49′·5S, 151°15′·1E) and bounded thence by lines bearing 000° for 100 metres; 043° for 150 metres; 066° for 185 metres; 157° for 140 metres and 079° to the high water mark on the eastern shore of Hunter's Bay, thence generally southerly and westerly along the high water mark to the point of commencement.

Shark Point
Chart Aus 201
Limits of Naval Waters:
Shark Point degaussing range. From a position on the high water mark on the northern side of Shark Point, Vaucluse (33°51′·15S, 151°15′·8E) and bounded thence by lines bearing 000° for 110 metres; 270° for 600 metres; 183° for 815 metres; 090° for 570 metres; 000° for 300 metres and 090° to the high water mark on the western shore of Shark Point, thence northerly and easterly along the high water mark to the point of commencement.
Shark Island E–W degaussing range. From a position at a point 258° 270 metres from the root of Shark Island jetty (33°51′·65S, 151°15′·4E) and bounded thence by lines bearing 180° for 270 metres; 090° for 500 metres; 000° for 270 metres, thence 270° to the point of commencement.

Rushcutter's Bay
Chart Aus 202
Limits of Naval Waters:
Moorings and wharves. From a position on the high water mark on the eastern shore of Rushcutters Bay bearing 127° 330 metres from Macleay Point (33°52′·4S, 151°13′·8E), and bounded thence by lines bearing 308½ for 180 metres; 038½ for 14 metres; 314° for 237 metres; 044° for 122 metres and 134° to the high water mark on the eastern shore of Rushcutters Bay, thence southerly along the high water mark to the point of commencement.

Chowder Bay
Chart Aus 201
Limits of Naval Waters:
Naval fuel installation. From a position on the high water mark on the northern shore of Chowder Bay bearing 261° 390 metres from Georges Head (33°50′·4S, 151°15′·6E), and bounded thence by lines bearing 145° for 175 metres; 235° for 340 metres; 325° for 180 metres, and 055° to the high water mark on the northern side of Chowder Bay, thence northeasterly along the high water mark to the point of commencement.

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Garden Island
Chart Aus 202
Limits of Naval Waters:
Dockyard and Fleet Base. From a position on the high water mark on the southern shore of Woolloomooloo Bay bearing 040° 34 metres from Woolloomooloo (33°52′·25S, 151°13′·15E), and bounded thence by lines bearing 026° for 950 metres; 032° for 350 metres; 042° for 140 metres; 090° for 2000 metres; 180° for 640 metres; 220° for 420 metres; 274° for 1580 metres; 180° for 120 metres, and 226° to the high water mark on the western shore of Elizabeth Bay, thence generally northeasterly, northwesterly, southwesterly, and westerly along the high water mark to the point of commencement.

Royal Edward Victualling Yard
Chart Aus 202
Limits of Naval Waters:
From a position on the high water mark at an angle with the seawall at the southwestern end of number 18 berth Pyrmont, bearing 077° 80 metres from Mill Street Pyrmont (33°52′·0S, 151°11′·55E), and bounded thence by lines bearing 311° for 30 metres; 041° for 137 metres, and 131° to the high water mark on the northwestern side of number 17 berth Pyrmont, thence generally southwesterly along the high water mark to the point of commencement.

Spectacle Island
Charts Aus 202, Aus 203
Limits of Naval Waters:
Ammunition facility. From a position on the high water mark on the northwestern shore of Snapper Island, bearing 159½ 4201 metres from Spectacle Island flagstaff, and bounded thence by lines bearing 015° for 125 metres; 339° for 495 metres; 252° for 480 metres; 155° for 330 metres, and 115° to the high water mark on the western shore of Snapper Island, thence generally northeasterly along the high water mark to the point of commencement.

Bradleys Head
Chart Aus 202
Limits of Naval Waters:
From a position on the high water mark bearing 270° 110 metres from Bradleys Head (33°51′·35S, 151°14′·7E) and bounded thence by lines bearing 254° for 195 metres; 344° for 305 metres; 012° for 230 metres; 355° for 120 metres, and 085° to the high water mark on the eastern shore of Athol Bay, thence southerly along the high water mark to the point of commencement.

Neutral Bay
Chart Aus 202
Limits of Naval Waters:
HMAS *Platypus*. From a position on the high water mark on the western shore of Neutral Bay bearing 205° 15 metres from the light at the southeastern end of HMAS Platypus wharf (33°50′·7S, 151°13′·0E), and bounded thence by lines bearing 052° for 57 metres; 322° for 243 metres, and 232° to the high water mark on the western shore of Neutral Bay, thence generally southeasterly along the high water mark to the point of commencement.

Parramatta River
Chart Aus 203 (see 1.11)
Limits of Naval Waters:
From a position on the high water mark on the northeastern side of Parramatta River bearing 343° 600 metres from Kissing Point (33°49′·95S, 151° 06′·0E) and bounded thence by lines bearing 243° for 75 metres; 220° for 90 metres; 130° for 150 metres, and 042° to the high water mark on the northeastern side of Parramatta River, thence generally northwesterly and northeasterly along the high water mark to the point of commencement.
Newington Arsenal depot. From a position on the high water mark on the southern side of Parramatta River bearing 278° 20 metres from (33°49′·6S, 151°03′·75E) and bounded thence by lines bearing 350° for 30 metres; 080° for 183 metres, and 170° to the high water mark on the S side of Parramatta River, thence W along the high water mark to the point of commencement.

Ball's Head Bay
Chart Aus 202
Limits of Naval Waters:
HMAS *Waterhen*. From a position at the high water mark on the eastern shore of Balls Head Bay bearing 061° 498 metres from Berrys Island (33°50′·55S, 151°11′·3E) and bounded by lines bearing 280° for 61 metres; 235° for 50 metres; 217° for 200 metres; 166° for 219 metres and 073° to the high water mark on the eastern shore of Balls Head Bay, thence generally northward along the high water mark to the point of commencement.

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APPENDIX II

PORT PHILLIP HEADS AND APPROACHES, SOUTH CHANNEL AND WEST CHANNEL TRAFFIC REGULATIONS

The following are extracts of the *Harbour Master's Directions* from the *Port Waters of Geelong and Melbourne Operating Handbook*, the latest edition of which should be obtained on arrival:

3.5.1 General traffic rules.

1 (1) If the Master of an inward or outward bound vessel, other than a tanker or hampered vessel determines that, due to its draught, the vessel is constrained to navigating within the Great Ship Channel, the Master shall immediately advise Point Lonsdale Signal Station. The Master of any other vessel shall not cause or permit that vessel to enter the Great Ship Channel whilst it is being navigated by the vessel constrained by draught.

2 (3) The Masters of all inward and outward vessels with similar ETA's for Hovell Pile or Port Phillip Heads shall, when within 5 miles of Hovell Pile, or 3 miles from Port Phillip Heads, communicate with each other and agree on a sequence of rounding the Hovell Pile, or passing through the Heads.

(4) If a tanker is passing through Port Phillip Heads, the Master of another vessel shall not attempt to navigate the Heads.

3 (5) If a hampered vessel is passing through Port Phillip Heads, the Master of another vessel shall not permit that vessel to overtake the hampered vessel.

(6) The Master of an inward-bound vessel approaching Port Phillip Heads shall:

a) advise Port Lonsdale Signal Station of the vessels ETA at Port Phillip Heads, or if taking a pilot, at the Pilot Boarding Ground, at least one hour before the estimated time of arrival;

b) seek clearance from Point Lonsdale Signal Station to enter Port Phillip Heads;

4 c) advise Point Lonsdale Signal Station of vessel type and maximum draught;

d) on arrival of the vessel at Port Phillip Heads shall advise Point Lonsdale Signal Station of the ETA at:

(i) Hovell Pile, or if navigating via the West Channel of the ETA at the West Channel Pile, and;

(ii) Fawkner Beacon or Point Richards Channel Entrance Beacon as appropriate, and;

e) during the course of the passage, advise of any change to any of these estimated times.

5 (7) The Master of an outward-bound vessel shall advise Harbour Control Centre or Geelong Port Marine Control as appropriate:

a) on passing Fawkner Beacon or the Point Richards Channel Entrance Beacon, the vessel's ETA at:

(i) Hovell Pile, or if navigating via the West Channel, the West Channel Pile;

(ii) Port Phillip Heads, and;

b) during the course of the passage, advise of any change to any of these estimated times.

6 (8) The Master of an outward-bound vessel shall advise Point Lonsdale Signal Station on passing No 6 Beacon in the South Channel, or if navigating in the West Channel, on passing No 2 Beacon.

(9) A vessel navigating to/from West Channel shall give way to other vessels navigating in the South Channel and its western approaches.

3.5.3 Vessels over prescribed limits.

(1) The Master of a vessel with a draught which exceeds the prescribed limits may not operate in port waters except with the permission of, and subject to any direction of the Harbour Master.

7 **3.5.4 Tankers.**

(1) The Master of an inward-bound tanker approaching Port Phillip Heads, before shaping a course for the fairway through the Heads:

a) shall advise Point Lonsdale Signal Station that the vessel is ready to proceed;

b) shall cause to be displayed the signal for a vessel carrying dangerous goods being;

(i) by day the *International Code of Signals* flag "B", and;

8 (ii) by night a fixed or flashing red light where it can best be seen and visible all round the horizon at a distance of at least 3 miles, the red light being displayed not less than 6 m above the deck, and;

c) shall not permit the vessel to proceed until the officer on duty at the Point Lonsdale Signal Station;

(i) broadcasts on VHF Channel 12 a message, and;

(ii) at night, causes to be displayed a flashing red light to signify that the entrance to Port Phillip is closed to outward traffic.

9 (2) The Master of a tanker outward-bound through Port Phillip Heads:

a) shall, while the vessel is in the port waters, ensure that the appropriate signal referred to in sub-paragraph 1(b) is displayed, and;

b) shall, on arrival of the vessel at South Channel No 6 Beacon, advise Point Lonsdale Signal Station that the vessel is ready to proceed, and;

10 c) shall not permit the vessel W of a line joining Popes Eye Beacon and South Channel Entrance Beacon (2½cables S of Popes Eye Beacon) until the officer on duty at the Point Lonsdale Signal Station;

(i) broadcasts on VHF Channel 12 a message, and;

(ii) at night, causes to be displayed a flashing green light to signify that Port Phillip Heads is closed to all other inward and outward traffic from either the South Channel or the West Channel.

11 (3) The officer on duty at Point Lonsdale Signal Station shall, as soon as the tanker clears Port Phillip Heads, cease to display the signal referred to in sub-paragraph 1(c)(ii) or 2(c)(ii) and broadcast a message on VHF Channel 12 to signify that the entrance to Port Phillip Heads is open to all traffic.

12 **3.5.5 Hampered vessels.**

(1) If, by reason of any special condition or circumstance, the Master of a vessel considers it necessary, for the purpose of ensuring a safe passage of the vessel through Port Phillip Heads or any section of South Channel, to restrict the

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movements of another vessel in the vicinity, the Master shall advise Point Lonsdale Signal Station accordingly. The vessel shall be considered a hampered vessel. The vessel and the other vessel will be subject to the provisions of this section.

13 (2) The Master of a hampered vessel shall, without delay, advise Point Lonsdale Signal Station of the vessel's ETA at Port Phillip Heads and shall, during the course of the passage, advise of any change to the ETA.

(3) The Master of a hampered vessel shall ensure that the signals required by *The International Regulations for Preventing Collisions at Sea (1972)* are displayed

(4) The Master of a hampered vessel shall not cause or permit the vessel to be navigated through the West Channel.

14 (5) The Master of a hampered vessel inward-bound approaching Port Phillip Heads shall, before shaping a course for the fairway through the Heads:

a) advise Point Lonsdale Signal Station that the vessel is ready to proceed, and;

b) not cause or permit the vessel to proceed until the officer on duty at the signal station;

(i) broadcasts on VHF Ch 12 a message and;

(ii) at night causes to be displayed a flashing red light to signify that the entrance to the port of Port Phillip is closed to outward traffic.

15 (6) The Master of a hampered vessel outward-bound through Port Phillip Heads shall:

a) upon arrival at No 6 Beacon South Channel, advise Point Lonsdale Signal Station that the vessel is ready to proceed, and;

b) not cause or permit the vessel to proceed W of a line joining Popes Eye Beacon and South Channel Entrance Beacon until the officer on duty at the Point Lonsdale Signal Station;

(i) broadcasts on VHF Ch 12 a message and;

(ii) at night causes to be displayed a flashing green light to signify that Port Phillip Heads is closed to inward traffic and to outward traffic from West Channel.

16 (7) The officer on duty at Point Lonsdale Signal Station shall, as soon as the hampered vessel clears Port Phillip Heads, cease to display the signal referred to in sub-paragraphs 5(b)(ii) and 6(b)(ii), and broadcast a message on VHF Channel 12 to indicate that Port Phillip Heads is open to all traffic.

(8) The Master of another vessel shall not:

a) if the vessel is outward-bound, cause or permit the vessel to shape a course for the South Channel Dredged Cut (ie that section of South Channel between beacons No 12 and No 14) while an inward-bound hampered vessel is navigating between No 8 Beacon and No 16 Beacon, or;

b) if the vessel is inward-bound, cause or permit the vessel to shape a course for the South Channel Dredged Cut whilst an outward-bound hampered vessel is navigating between Hovell Pile and No 10 Beacon.

17 **3.5.6 Port signals — right of way**

(1) The following signals shall be displayed at night at Point Lonsdale Signal Station to signify a port closure circumstance:

a) a flashing green light, to signify that;

(i) Port Phillip Heads is closed to all inward traffic;

(ii) in order to permit clear outward passage of a tanker from the South Channel, Port Phillip Heads is closed to outward traffic from the West Channel;

b) a flashing red light, to signify that Port Phillip Heads is closed to outward traffic in port waters, and;

c) fixed red, green, red lights in a vertical line, to signify that Port Phillip Heads is closed to all traffic.

18 (2) If a signal is displayed which signifies that the entrance is closed to inward traffic or outward traffic from either the South Channel or the West Channel, the Master of a vessel shall not:

a) when inward-bound, cause or permit the vessel to enter port waters;

b) when outward-bound from the West Channel, cause or permit the vessel to proceed S of a line joining Queenscliff Low Light and Popes Eye Beacon;

c) when outward-bound from the South Channel, cause or permit the vessel to proceed W of a line joining Popes Eye Beacon and South Channel Entrance Beacon.

19 **3.5.7 Speed of Vessels in Port Waters (South Channel)**

The master of a vessel, unless due to exceptional circumstances, shall not cause or permit the vessel to be navigated at a speed greater than 18 knots whilst transiting South Channel between Beacon No 1 and within an arc with a radius of two nautical miles north from Hovell Pile. Notwithstanding this speed limit the master shall make an assessment and adjust the vessels speed to ensure that the waves induced by the vessels will not unduly interfere with the safe operation of small craft including recreational boats, work boats and barges or the safety of the general public.

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Distance table - South East Coast of Australia and Tasmania

Note: For further information and notes on distances, see *Admiralty Distance Tables Pacific Ocean* Table 12 and *Admiralty Distance Tables Indian Ocean Table 1b and Index Charts 1*.

Adelaide	Auckland	Banks Strait	Brisbane	Cape Leeuwin (20´WSW of)	Eddystone (8´S of)	Hobart	Portland	Port Dalrymple	Port Phillip	Rodondo Island (6´W of)	Sydney
2025											
627	1430										
1462	1339	948									
1184	3041	1627	2478								
707	1524	238	1148	1596							
762	1508	217	1126	1652	68						
315	1727	330	1164	1334	425	481					
584	1497	67	1049	1577	305	284	287				
454	1600	214	1037	1470	387	442	157	191			
522	1503	119	940	1538	377	432	224	109	97		
963	1272	449	506	1979	651	630	665	491	538	441	

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CD–ROM Instructions

See Status, Disclaimer and Copyright at Explanatory Notes at Page vii.

The CD–ROM below contains the following:

Text of this volume in Portable Document Format (PDF).

Software to install Adobe Acrobat Reader.

A link to the UHKO website: www.ukho.gov.uk.

Photographs in PDF, if they are available for the area covered by this volume.

Avoid touching or scratching the silver side of the CD–ROM. To protect it from damage or loss, return it to the envelope after use.

Place the CD–ROM in a compact disc drive.

The opening screen should appear within a few seconds.

If the opening screen does not appear after 15 seconds, try the following:

Double–left click: “My Computer”.

Double–left click CD–ROM icon: NPxx (D:).

Double–left click html file: “index”.

The CD–ROM is designed to work with the following software:

Windows 98

Windows 2000

Windows ME

Windows NT4.0 SP5

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