



Australian Notices to Mariners are the authority for correcting Australian Charts and Publications

# AUSTRALIAN NOTICES TO MARINERS

Notices 689 - 741 

Published fortnightly by the Australian Hydrographic Service

Commodore R. NAIRN RAN  
Hydrographer of Australia

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- SECTIONS.**
- I. **Australian Notices to Mariners, including blocks and notes.**
  - II. **Hydrographic Reports.**
  - III. **Navigational Warnings.**

For Notices affecting Admiralty List of Lights and Fog Signals; List of Radio Signals; and Sailing Directions see **British Notices to Mariners.**

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*The substance of these notices should be inserted on the charts affected.*

*Bearings are referred to the true compass and are reckoned clockwise from North; those relating to lights are given as seen by an observer from seaward. Positions quoted in permanent notices relate to the horizontal datum for the chart(s). When preliminary or temporary notices affect multiple charts, positions will be provided in relation to only one horizontal datum and that datum will be specified. When the multiple charts do not have a common horizontal datum, mariners will be required to adjust the position(s) for those charts not on the specified datum. The range quoted for a light is its nominal range. Depths are with reference to the chart datum of each chart. Heights are above mean high water springs or mean higher high water, as appropriate.*

*The capital letter (P) or (T) after the number of any notice denotes a preliminary or temporary notice respectively, which are contained separately at the end of the permanent notices. A star (\*) adjacent to the number of a notice indicates that the notice is based on original information.*

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**Mariners are particularly requested to notify the AUSTRALIAN HYDROGRAPHIC SERVICE, Locked Bag 8801 Wollongong, NSW 2500 (Fax 02-4223 6599, e-mail [Hydro.NTM@defence.gov.au](mailto:Hydro.NTM@defence.gov.au) or, alternatively by filling in and submitting the [Hydrographic Notes](#) forms located on the web site – [www.hydro.gov.au](http://www.hydro.gov.au)), immediately on the discovery of new dangers or suspected dangers to navigation. For changes or defects in aids to navigation notify AusSAR (Fax 02-6230 6868 or email [rccaus@amsa.gov.au](mailto:rccaus@amsa.gov.au)).**

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## IMPORTANT NOTICE

This edition of Notices to Mariners includes all significant information affecting AHS products which the AHS has become aware of since the last edition. All reasonable efforts have been made to ensure the accuracy and completeness of the information, including third party information, on which these updates are based. The AHS regards third parties from which it receives information as reliable, however the AHS cannot verify all such information and errors may therefore exist. The AHS does not accept liability for errors in third party information.

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**689 AUSTRALIA - Product**

Australian Hydrographic Service (AA401625, AA412521)

**New Chart**

Chart	Published	Title and description of amendments	Scale	Index Chart	Price
Aus 141	8/5/2009	Australia - South Coast - Victoria - Plans in South West Victoria Plans: Port Fairy to Warrnambool 38° 20' 00" S - 38° 34' 23" S 142° 11' 00" E - 142° 33' 22" E Apollo Bay 38° 43' 00" S - 38° 47' 48" S 143° 39' 05" E - 143° 44' 00" E Loutit Bay 38° 30' 55" S - 38° 34' 15" S 143° 57' 56" E - 144° 01' 53" E Port Fairy 38° 22' 36" S - 38° 23' 41" S 142° 14' 23" E - 142° 15' 46" E Warrnambool 38° 23' 21" S - 38° 24' 41" S 142° 28' 10" E - 142° 29' 33" E Apollo Bay Harbour 38° 45' 07" S - 38° 45' 44" S 143° 40' 15" E - 143° 41' 14" E Port Campbell 38° 37' 06" S - 38° 37' 55" S 142° 59' 31" E - 142° 59' 42" E <i>New chart with a plan providing improved coverage of the approaches to Port Fairy and Warrnambool.</i>	1:50 000 1:37 500 1:25 000 1:10 000 1:10 000 1:7 500 1:7 500	Aus 5001	\$35.00
Aus 822	8/5/2009	Australia - East Coast - Queensland - Port Clinton to Percy Isles 21° 37' 00" S - 22° 32' 24" S 149° 25' 00" E - 150° 59' 00" E <i>New chart referred to WGS84 and LAT; includes maritime boundaries.</i>	1:150 000	Aus 5000 and 5001	\$35.00

**New Miscellaneous Chart**

Chart	Published	Title	Scale	Remarks
AX 0249E	19/6/2009	Australia - East Coast - Queensland - Approaches to Hay Point and Mackay	1:75 000	Fleet use only.
AX 0260E	19/6/2009	Australia - East Coast - Queensland - Broad Sound Channel and Shoalwater Bay	1:75 000	Fleet use only.
AX 0367E	19/6/2009	Australia - East Coast - Queensland - North Reef to Pine Peak Island	1:300 000	Fleet use only.
AX 0820E	19/6/2009	Australia - East Coast - Queensland - North Reef to Port Clinton	1:150 000	Fleet use only.
AX 0822E	19/6/2009	Australia - East Coast - Queensland - Port Clinton to Percy Isles	1:150 000	Fleet use only.
AX 0823E	19/6/2009	Australia - East Coast - Queensland - Percy Isles to Mackay	1:150 000	Fleet use only.

**Chart permanently withdrawn**

Chart	On publication of new chart
Aus 141	Aus 141
Aus 822	Aus 822

For further details refer to the AHS website at [www.hydro.gov.au](http://www.hydro.gov.au) for new edition and new chart stock arrival information.

When placing orders with a chart agent, mariners should advise whether their order pertains to the current edition or the new edition.

**690 AUSTRALIA - Product - Amendment to Australian National Tide Tables 2009**  
Australian Hydrographic Service (AA410874)

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<i>Insert</i>	Port Alma To Chart Datum AUS 265 NC 27 MAR 2009 0.0
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<i>Amend</i>	Urangan To Chart Datum to AUS 241 NC 10 APR 2009 0.0
Page xxxviii	
<i>Insert</i>	Yamba To Chart Datum AUS 812 NC 10 APR 2009 0.0
<i>Insert</i>	Yamba To Chart Datum AUS 813 NC 24 APR 2009 0.0
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<i>Amend</i>	ELBOW POINT To Chart Datum to 0.0
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<i>Amend</i>	TWEED R. To Chart Datum to 0.0
<i>Amend</i>	KINGSCLIFF To Chart Datum to 0.0

**691\* AUSTRALIA - NEW SOUTH WALES - Twofold Bay to Cape Byron - Fish aggregating devices**  
Department of Primary Industries (AA402185, AA404303)

**Aus 197 [1065/2008]**

<i>Amend</i>	legend to ( <i>Sep - Jun</i> )	33° 30'.1 S	151° 38'.4 E
	legend to ( <i>Sep - Jun</i> )	33° 35'.6 S	151° 34'.8 E
	legend to ( <i>Sep - Jun</i> )	33° 47'.0 S	151° 23'.0 E
	legend to ( <i>Sep - Jun</i> )	33° 59'.6 S	151° 27'.0 E
	legend to ( <i>Sep - Jun</i> )	33° 59'.3 S	151° 20'.6 E

**Aus 221 [641/2009]**

<i>Amend</i>	legend to ( <i>Sep - Jun</i> )	29° 52'.7 S	153° 26'.3 E
	legend to ( <i>Sep - Jun</i> )	30° 14'.9 S	153° 21'.8 E

**Aus 806 [350/2009]**

<i>Amend</i>	legend to ( <i>Sep - Jun</i> )	36° 58'.7 S	150° 16'.9 E
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**Aus 807 [585/2009]**

<i>Delete</i>	light buoy	34° 58'.3 S	150° 57'.7 E
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**Aus 808 [133/2009]**

<i>Insert</i>	special conical light buoy, <i>Fl.Y.5s (Sep - Jun)</i> , with topmark	34° 56'.20 S	150° 58'.20 E
<i>Amend</i>	legend to ( <i>Sep - Jun</i> )	33° 59'.7 S	151° 27'.3 E
	legend to ( <i>Sep - Jun</i> )	33° 59'.4 S	151° 21'.5 E
	legend to ( <i>Sep - Jun</i> )	34° 07'.8 S	151° 23'.9 E
	legend to ( <i>Sep - Jun</i> )	34° 27'.5 S	151° 04'.9 E
	legend to ( <i>Sep - Jun</i> )	34° 41'.1 S	151° 00'.0 E
<i>Delete</i>	light buoy	34° 58'.3 S	150° 57'.7 E

**691\* AUSTRALIA - NEW SOUTH WALES - Twofold Bay to Cape Byron - Fish aggregating devices (continued)****Aus 810** [355/2009]

Amend	legend to (Sep - Jun)	32° 13'.3 S	152° 41'.0 E
	legend to (Sep - Jun)	32° 47'.1 S	152° 25'.0 E

**Aus 811** [638/2009]

Amend	legend to (Sep - Jun)	30° 50'.6 S	153° 12'.4 E
	legend to (Sep - Jun)	31° 24'.7 S	153° 05'.3 E
	legend to (Sep - Jun)	31° 39'.7 S	152° 56'.8 E

**Aus 812** [641/2009]

Amend	legend to (Sep - Jun)	29° 52'.8 S	153° 26'.6 E
	legend to (Sep - Jun)	30° 14'.9 S	153° 22'.1 E

**Aus 813** [NC 24/4/2009]

Insert	legend, (Nov - May)	28° 35'.07 S	153° 37'.87 E
Amend	legend to (Sep - Jun)	28° 54'.6 S	153° 41'.8 E
	legend to (Sep - Jun)	29° 06'.9 S	153° 37'.9 E

**AX 0808E** [133/2009]

Insert	special conical light buoy, Fl.Y.5s (Sep - Jun), with topmark	34° 56'.20 S	150° 58'.20 E
Amend	legend to (Sep - Jun)	33° 59'.7 S	151° 27'.3 E
	legend to (Sep - Jun)	33° 59'.4 S	151° 21'.5 E
	legend to (Sep - Jun)	34° 07'.8 S	151° 23'.9 E
	legend to (Sep - Jun)	34° 27'.5 S	151° 04'.9 E
	legend to (Sep - Jun)	34° 41'.1 S	151° 00'.0 E
Delete	light buoy	34° 58'.3 S	150° 57'.7 E

**692\* AUSTRALIA - NEW SOUTH WALES - Hastings River - Buoys established**  
NSW Maritime (AA408397, AA408398)**Aus 219 (plan, Hastings River)** [590/2009]

Insert	special spar buoy, without topmark	31° 25'.192 S	152° 52'.602 E
	special spar buoy, without topmark	31° 25'.099 S	152° 52'.315 E
	special spar buoy, without topmark	31° 24'.780 S	152° 52'.019 E

**693\* AUSTRALIA - QUEENSLAND - North Stradbroke Island - Point Lookout - Light**

Australian Hydrographic Service (AA408297)

**Aus 236** [642/2009]

Amend	light range to 16M	27° 25'.9 S	153° 32'.4 E
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**694\* AUSTRALIA - QUEENSLAND - Moreton Island - North Point - Light**

Australian Hydrographic Service (AA408296)

**Aus 364** [640/2009]*On certain copies only*

Amend	light to Q.WR.9/8M	27° 01'.4 S	153° 27'.3 E
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**695\* AUSTRALIA - QUEENSLAND - Double Head - Depth**

Maritime Safety Queensland (DHDB 1241966)

**Aus 366 [183/2009]**Substitute depth, 2<sub>1</sub>fm, for depth, 1<sub>5</sub>fm 23° 09'.2 S 150° 47'.6 E**Aus 367 [183/2009]**Substitute depth, 4<sub>2</sub>m, for depth, 3<sub>4</sub>m 23° 09'.1 S 150° 47'.8 E**Aus 819 [183/2009]**Substitute depth, 4<sub>1</sub>m, for depth 3<sub>3</sub>m 23° 09'.1 S 150° 47'.8 E**Aus 820 [183/2009]**Substitute depth, 4<sub>1</sub>fm, for depth 3<sub>3</sub>m 23° 09'.1 S 150° 47'.8 E**696\* AUSTRALIA - QUEENSLAND - Pier Head - Historic wreck; chart note**

Queensland Museum (AA402912, AA403371)

**Aus 260 [1269/2008]**

Insert accompanying Historic Wreck note 22° 22'.2 S 150° 08'.5 E

Substitute magenta legend, *Historic Wk (see Note)* for legend, Wk 22° 05'.0 S 150° 03'.8 E**Aus 367 [695/2009]**

Insert accompanying Historic Wreck note 23° 10'.5 S 150° 33'.0 E

Substitute magenta legend, *Historic Wk (see Note)* for legend, Wk 22° 05'.0 S 150° 04'.4 E**Aus 426 [1269/2008]**Substitute magenta legend, *Historic Wk (see Note)* for legend, Wk 22° 04'.2 S 150° 06'.0 E**AX 60260 [1269/2008]**

Insert accompanying Historic Wreck note 22° 22'.7 S 150° 08'.5 E

Substitute magenta legend, *Historic Wk (see Note)* for legend, Wk 22° 05'.0 S 150° 03'.8 E**697\* AUSTRALIA - QUEENSLAND - Townsville - Ross River - Lights discontinued**

Maritime Safety Queensland Notice 369/2009 (AA410912)

**Aus 256 [473/2009]**Delete light 19° 16'.7 S 146° 49'.7 E  
light 19° 17'.0 S 146° 49'.4 E  
dashed and continuous line with legend, emanating from light 19° 17'.0 S 146° 49'.4 E**Aus 257 [473/2009]**Delete light beacon 19° 16'.69 S 146° 49'.69 E  
light 19° 16'.99 S 146° 49'.43 E  
dashed and continuous line with legend, emanating from light 19° 16'.99 S 146° 49'.43 E

**698\* AUSTRALIA - QUEENSLAND - Townsville - Infrastructure; depths**  
Maritime Safety Queensland (DHDB 1262385)

**Aus 257** [697/2009]

Insert	accompanying block	19° 15'.3 S	146° 49'.5 E
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**699\* AUSTRALIA - QUEENSLAND - Cairns - Trinity Inlet - Light buoy established**  
Maritime Safety Queensland Notice 392/2009 (AA410642, AA412485)

**Aus 264** [43/2009]

Insert	lit mooring buoy, <i>Fl.3s</i>	16° 57'.756 S	145° 47'.637 E
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**700\* AUSTRALIA - QUEENSLAND - Lads Passage - Depths**  
LADS Flight (DHDB 1058486)

**Aus 833** [646/2009]

Insert	depth, <i>14m</i> , enclosed by contour	13° 37'.78 S	143° 55'.82 E
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Substitute	depth, <i>4m</i> for depth, <i>5m</i>	13° 53'.37 S	144° 08'.80 E
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**Aus 834** [408/2009]

Insert	accompanying block	13° 45'.0 S	144° 05'.0 E
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	unsurveyed boundary, between	13° 37'.15 S	143° 54'.85 E
		13° 38'.06 S	143° 55'.31 E

**701\* AUSTRALIA - TORRES STRAIT - Kokope Reef - Depths**  
HMAS *Mermaid* and *Paluma* (DHDB 707525)

**Aus 840** [476/2009]

Insert	accompanying block	9° 20'.0 S	143° 16'.0 E
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**702\* PAPUA NEW GUINEA - Massmass Island - Light beacon established**  
National Maritime Safety Authority PNG Notice 37/2009 (AA411248)

**Aus 386** [535/2009]

Insert	light beacon, <i>Q.R.4M</i> , without topmark	5° 58'.53 S	148° 07'.08 E
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Delete	light beacon	5° 58'.4 S	148° 07'.1 E
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**Aus 387** [535/2009]

Insert	light beacon, <i>Q.R.4M</i> , without topmark	5° 58'.53 S	148° 07'.08 E
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Delete	light beacon	5° 58'.4 S	148° 07'.1 E
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**Aus 673** [903/2008]

Insert	light beacon, <i>Q.R.7m 4M</i> , without topmark	5° 58'.53 S	148° 07'.08 E
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Delete	light beacon	5° 58'.4 S	148° 07'.1 E
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**703\* AUSTRALIA - TORRES STRAIT - Thursday Island Harbour - Depths; reef delineation; infrastructure***Former Notice - 671(T)/2009 is cancelled*Maritime Safety Queensland, HMAS *Leeuwin* (DHDB 1241905)**Aus 299 [NE 24/4/2009]**

Insert	accompanying block	10° 35'.5 S	142° 13'.5 E
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**704\* AUSTRALIA - NORTHERN TERRITORY - Port Essington - Pearl cultures**Australian Customs Vessel *Corio Bay* (AA407076), Department of Planning and Infrastructure NT (AA410990, AA410992, DHDB 1276754)**Aus 18 [300/2009]**

Insert	dashed magenta line, between	11° 14'.11 S	132° 06'.87 E
		11° 17'.90 S	132° 08'.28 E
	magenta legend, <i>Pearl Culture</i> (see Note)	11° 15'.6 S	132° 07'.0 E
	dashed magenta line, between	11° 12'.08 S	132° 10'.92 E
		11° 14'.54 S	132° 10'.90 E
	magenta legend, <i>Pearl Culture</i> (see Note)	11° 12'.6 S	132° 11'.4 E
Delete	dashed magenta line, between	11° 17'.2 S	132° 06'.9 E
		11° 17'.9 S	132° 08'.2 E

**Aus 308 [598/2009]**

Insert	dashed magenta line, between	11° 14'.2 S	132° 06'.8 E
		11° 18'.0 S	132° 08'.2 E
	magenta legend, <i>Pearl Culture</i>	11° 12'.8 S	132° 11'.0 E
Delete	dashed magenta line, between	11° 17'.2 S	132° 06'.8 E
		11° 17'.8 S	132° 08'.2 E

**Aus 721 [1013/2008]**

Insert	dashed magenta line, between	11° 14'.11 S	132° 06'.87 E
		11° 17'.90 S	132° 08'.28 E
	dashed magenta line, between	11° 12'.08 S	132° 10'.92 E
		11° 14'.54 S	132° 10'.90 E
Delete	dashed magenta line, between	11° 17'.2 S	132° 06'.9 E
		11° 17'.9 S	132° 08'.2 E

**705\* AUSTRALIA - NORTHERN TERRITORY - Darwin to Shepparton Shoal - Submarine cable**

Australian Hydrographic Service (AA408286)

**Aus 26 [599/2009]**

Insert	disused submarine cable, between	12° 22'.98 S	130° 50'.49 E
		12° 17'.53 S	130° 37'.38 E
		12° 16'.30 S	130° 34'.19 E

**Aus 29 [1124/2008]**

Insert	disused submarine cable, between	12° 18'.00 S	130° 38'.62 E
		12° 18'.53 S	130° 40'.00 E

**Aus 308 [704/2009]**

Insert	disused submarine cable, between	12° 23'.07 S	130° 50'.42 E
		12° 17'.16 S	130° 36'.00 E

**Aus 722 [484/2009]**

Insert	disused submarine cable, between	12° 22'.98 S	130° 50'.49 E
		12° 17'.53 S	130° 37'.38 E
		12° 13'.73 S	130° 27'.50 E
		12° 11'.96 S	130° 20'.30 E
		12° 07'.96 S	129° 59'.61 E
		12° 06'.80 S	129° 51'.00 E

**AX 72026 [599/2009]**

Insert	disused submarine cable, between	12° 22'.98 S	130° 50'.49 E
		12° 17'.53 S	130° 37'.38 E
		12° 16'.30 S	130° 34'.19 E

**AX 72722 [484/2009]**

Insert	disused submarine cable, between	12° 22'.98 S	130° 50'.49 E
		12° 17'.53 S	130° 37'.38 E
		12° 13'.73 S	130° 27'.50 E
		12° 11'.96 S	130° 20'.30 E
		12° 07'.96 S	129° 59'.61 E
		12° 06'.80 S	129° 51'.00 E

**706\* INDIAN OCEAN - Pulau Sawu to Ashmore Reef - ZOC area**

Australian Hydrographic Service (AA408279)

**Aus 317 [785/2008]**

Delete	ZOC area D, centred on	12° 16'.0 S	120° 28'.6 E
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**AX 0317F [NC 26/9/2008]**

Delete	ZOC area D, centred on	12° 16'.0 S	120° 28'.6 E
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**707 INDONESIA - Jawa Sea - Wreck**

BA Notice 24/3019/2009 (AA410767)

**Aus 4708 (INT 708) [417/2009]**

Insert	dangerous wreck	5° 50'.1 S	109° 00'.9 E
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Delete	depth, 48m	5° 50'.0 S	108° 58'.0 E
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**AX 4708F [417/2009]**

Insert	dangerous wreck	5° 50'.1 S	109° 00'.9 E
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Delete	depth, 48m	5° 50'.0 S	108° 58'.0 E
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**708\* AUSTRALIA - WESTERN AUSTRALIA - Broome - Anchorages**

Broome Port Authority (AA406391)

**Aus 50 [249/2009]**

Insert	accompanying block	18° 01'.0 S	122° 15'.0 E
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**Aus 50 (plan, Broome Harbour)**

Insert	accompanying block	18° 01'.2 S	122° 13'.5 E
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**709\* AUSTRALIA - WESTERN AUSTRALIA - Port Hedland - Light beacons repositioned**

Australian Maritime Safety Authority (AA409164, AA409165)

**Aus 53 [602/2009]**

Move	light beacon	19° 59'.7 S	118° 26'.4 E
	to	19° 59'.70 S	118° 26'.36 E
	light beacon	20° 06'.4 S	118° 28'.2 E
	to	20° 06'.44 S	118° 28'.21 E

**710\* AUSTRALIA - WESTERN AUSTRALIA - Dampier Archipelago - Well northwestwards**

Apache Energy Ltd (AA410103)

**Aus 327 [1282/2008]**

Insert	depth, 28fm, enclosed by danger circle with legend <i>Well</i>	20° 01'.53 S	116° 18'.50 E
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Delete	depth, 29fm	20° 01'.0 S	116° 18'.1 E
	danger circle with legend	20° 00'.9 S	116° 18'.5 E

**711\* AUSTRALIA - WESTERN AUSTRALIA - Muiron Islands - Production wells; production platform established northwestwards**

Apache Energy Ltd (AA395640, AA395641, AA395643, AA395645 - AA395647)

**Aus 329 [61/2009]**

Insert	accompanying block	21° 15'.0 S	114° 10'.0 E
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**712\* AUSTRALIA - VICTORIA - Portland - Light beacon established**

Victorian Notice 76/2009 (AA411117)

**Aus 140 (plan, Portland) [380/2008]**

Insert	light beacon, <i>F(2)5s</i> , without topmark	38° 20'.663 S	141° 36'.808 E
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Amend	light elevation to 22m	38° 20'.67 S	141° 37'.46 E
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**713\* AUSTRALIA - VICTORIA - Warrnambool - Lights altered**

Victorian Notice 72/2009 (AA409121)

**Aus 349 [612/2009]**

Amend	light to <i>Ldg Iso.Bu.6s &amp; Iso.Bu.2s 5M</i>	38° 23'.5 S	142° 29'.1 E
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**Aus 786 [380/2008]**

Amend	light to <i>Ldg Iso.Bu.6s &amp; Iso.Bu.2s 5M</i>	38° 23'.5 S	142° 29'.1 E
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**714\* AUSTRALIA - VICTORIA - Port Phillip - Geelong - Point Richards Channel - Nav aids**  
 Victorian Notice 127/2007 (AA292289)

**Aus 143 [612/2009]**

Insert	north cardinal light beacon, <i>Q.9M</i> , without topmark	38° 04'.95 S	144° 39'.94 E
	starboard lateral light beacon, <i>F Iso.G.4s No1</i> , without topmark	38° 05'.07 S	144° 38'.56 E
	port lateral light beacon, <i>Iso.R.4s No4</i> , without topmark	38° 05'.26 S	144° 37'.74 E
Delete	light	38° 05'.1 S	144° 38'.5 E
	light beacon	38° 04'.9 S	144° 39'.9 E
	light beacon	38° 05'.0 S	144° 38'.5 E
	depth, 7 <sub>9</sub> m	38° 05'.4 S	144° 37'.6 E

**715(T)/2009 AUSTRALIA - NEW SOUTH WALES - Botany Bay - Light buoys moved***Former Notice - 318(T)/2009 is cancelled*

Sydney Ports Corporation (AA391264, AA411070)

The following light buoys have been repositioned to:

<i>Buoy</i>	<i>New position</i>
No8 (33° 58'.89 S 151° 12'.22 E)	33° 59'.04 S 151° 12'.39 E
No10 (33° 58'.81 S 151° 12'.21 E)	33° 58'.86 S 151° 12'.27 E
No12 (33° 58'.53 S 151° 12'.12 E)	33° 58'.58 S 151° 12'.19 E
No14 (33° 58'.26 S 151° 12'.19 E)	33° 58'.35 S 151° 12'.16 E
No16 (33° 58'.22 S 151° 12'.34 E)	33° 58'.23 S 151° 11'.85 E.

**Chart temporarily affected – Aus 198 – Aus 199 - AU5198X9****716(T)/2009 AUSTRALIA - NEW SOUTH WALES - Newcastle - Depth information***Former Notice - 498(T)/2009 is cancelled*

Newcastle Port Corporation (AA411749)

Available depths as at 12 June 2009:

<i>Berth</i>	<i>Metres</i>
Western Basin 3	11.6
Western Basin 4	11.6
* Eastern Basin 1	11.3
Eastern Basin 2 North of Ch 450	11.6
Eastern Basin 2 South of Ch 450	11.3
Dockyard 2 (Dredge)	3.9
* Channel Berth (formerly Dockyard 4)	8.0
* Dyke 1	12.8
Dyke 2	12.8
Dyke 4	16.5
Dyke 5	16.4
Dyke 6	6.5
* BHP Wharf 6 to Ch 1050	7.6
Kooragang 2	11.6
Kooragang 2 North Dolphin	11.0
* Kooragang 2 South Dolphin	11.0
Kooragang 3	13.0
* Kooragang 4	16.2
* Kooragang 5	16.4
* Kooragang 6	16.2
Kooragang Ship Receiving KSR	8.0
Throsby 1	9.5
Carrington wharf	To be sounded as and when required
Tug berth 4	6.5
Elgo wharf	To be sounded as and when required
<i>Channels</i>	
Entrance Approach	17.4
* Entrance Channel (18.0m)	16.6
Entrance Channel (17.4m)	17.1
* Entrance Channel (16.8m)	16.3
Entrance Channel (16.2m)	16.1
* Entrance Channel to Horseshoe	15.2
Horseshoe	15.0
Steelworks Channel to Swinging Basin	15.0
Swinging Basin	15.0
* Swinging Basin to Mayfield 4	9.7
Basin Cutting	12.8
Basin Area to Eastern & Western Basin Berths	12.4
Basin Area to 1 Throsby	10.0
Stockton Crossing	3.6
* Indicates revised entry.	

**Chart temporarily affected – Aus 207 – Aus 208 - AU5XX208**

19 June 2009

**717(T)/2009 AUSTRALIA - QUEENSLAND - Point Danger to Point Lookout - Scientific instruments***Former Notice* - 618(T)/2009 is cancelled

Maritime Safety Queensland Notice 383(T)/2009 (AA412011)

Special light buoys, *F(5)Y.20s*, exist in positions (WGS84 datum):

28° 10'.84 S 153° 34'.58 E

27° 57'.93 S 153° 26'.53 E

27° 28'.13 S 153° 37'.55 E.

Mariners are not to use these buoys as moorings.

**Chart temporarily affected – Aus 813 – Aus 814****718(T)/2009 AUSTRALIA - QUEENSLAND - Moreton Bay - Ship to ship transfer completed***Former Notice* - 83(T)/2009 is cancelled

Maritime Safety Queensland Notice 1/2009 (AA379317)

Cancel this notice on receipt.

**Chart formerly affected – Aus 236****719(T)/2009 AUSTRALIA - QUEENSLAND - Moreton Bay - North Stradbroke Island - Amity - Harbour works***Date* - Until 31 October 2009

Maritime Safety Queensland Notice 282(T)/2009, 315(T)/2009 (AA405402, AA411788)

Construction works on the boat ramp (27° 24'.02 S 153° 26'.23 E) are in progress.

The boat ramp is closed to all vessels during this period.

**Chart temporarily affected – Aus 236****720(T)/2009 AUSTRALIA - QUEENSLAND - Brisbane River - Town Reach - Kangaroo Point - Wreck**

Maritime Safety Queensland Notice 343(T)/2009 (AA409122)

A wreck exists in position 27° 27'.93 S 153° 02'.04 E.

Mariners are advised to navigate with caution in the area.

**Chart temporarily affected – Aus 238 - AU5237X8****721(T)/2009 AUSTRALIA - QUEENSLAND - Gladstone - Calliope River - Scientific instruments***Date* - Until 30 April 2010

Maritime Safety Queensland Notice 371(T)/2009 (AA411214)

Scientific instruments marked by special light buoys, *Q.Y.*, exist in positions:

23° 49'.46 S 151° 12'.97 E

23° 50'.00 S 151° 12'.25 E.

Mariners are advised to navigate with caution in the area.

**Chart temporarily affected – Aus 245 - AU5244X5**

**722(T)/2009 AUSTRALIA - QUEENSLAND - Shoalwater Bay - Live firing***Date - Until 27 July 2009*

Maritime Safety Queensland Notice 309(T)/2009 (AA406347)

Live firing activities will be conducted in the Shoalwater Bay training area during the period 5 to 26 July 2009.

A marine danger area extends to all waters south of the line defined by the following positions (WGS84 datum):

22° 21'.20 S	150° 10'.52 E
22° 20'.35 S	150° 12'.00 E
22° 16'.94 S	150° 12'.07 E
22° 14'.92 S	150° 20'.06 E
22° 14'.76 S	150° 20'.31 E
22° 12'.28 S	150° 25'.00 E
22° 09'.00 S	150° 25'.00 E
22° 09'.00 S	150° 37'.00 E
22° 14'.38 S	150° 37'.00 E
22° 19'.92 S	150° 45'.05 E
22° 29'.13 S	150° 49'.71 E
22° 40'.48 S	150° 55'.05 E
22° 46'.87 S	150° 53'.01 E
22° 46'.20 S	150° 48'.51 E

All waters, creeks, beaches and other areas within the declared marine danger area are not available for access.

Mariners are advised to keep clear of this area throughout the above times.

**Chart temporarily affected – Aus 248 – Aus 260 – Aus 261 – Aus 367 – Aus 820 – Aus 822 - AX 60260 - AX 67248 - AX 67261 - AU423150 - AU5261P1 - AU5261P2 - AU5XX248**

**723(T)/2009 AUSTRALIA - QUEENSLAND - Shoalwater Bay - Live firing completed***Former Notice - 664(T)/2009 is cancelled*

Maritime Safety Queensland Notice 308(T)/2009 (AA406348)

Cancel this notice on receipt.

**Chart formerly affected – Aus 260 – Aus 261 – Aus 367 – Aus 822 - AX 60260 - AX 67261 - AU423150 - AU5261P2**

**724(T)/2009 AUSTRALIA - QUEENSLAND - Mackay - Harbour works**

Maritime Safety Queensland Notice 378(T)/2009 (AA411761)

Demolition works in the vicinity of Loves Jetty (21° 06'.55 S 149° 13'.58 E) are in progress.

The barge *Sheerlegs* and support vessel *Louisianne* are onsite and will monitor VHF Ch 16.

Mariners are advised to navigate with caution in the vicinity.

**Chart temporarily affected – Aus 250 - AU5250P1**

**725(T)/2009 AUSTRALIA - QUEENSLAND - Cairns - Smiths Creek - Dredging operations***Former Notice - 629(T)/2009 is cancelled**Date - Until 20 July 2009*

Maritime Safety Queensland Notice 373(T)/2009 (AA411244)

Dredging operations are in progress at Commercial Fishermans Base No1 between jetty B (16° 56'.45 S 145° 46'.64 E) and C (16° 56'.45 S 145° 46'.60 E).

A special light buoy, Q, exists in the vicinity of position 16° 56'.50 S 145° 46'.60 E.

Mariners are advised that entry to this area is prohibited during this period.

**Chart temporarily affected – Aus 263 – Aus 264 - AU5262X4**

**726(T)/2009 AUSTRALIA - QUEENSLAND - Double Island - Scientific instrument***Former Notice* - 216(T)/2009 is cancelled

Maritime Safety Queensland Notice 383(T)/2009 (AA412011)

A special light buoy, *Fl(5)Y.20s*, exists in position 16° 43'.97 S 145° 42'.68 E.

Mariners are not to use this buoy as a mooring.

**Chart temporarily affected – Aus 830 - AU417145****727(T)/2009 AUSTRALIA - QUEENSLAND - Low Islets - Sector light trial completed***Former Notice* - 833(T)/2007 is cancelled

Australian Maritime Safety Authority (AA412072)

Cancel this notice on receipt.

**Chart formerly affected – Aus 830 – Aus 831****728(T)/2009 AUSTRALIA - QUEENSLAND - Port Musgrave - Scientific instruments***Date* - Until 31 July 2009

Maritime Safety Queensland Notice 355(T)/2009 (AA410650)

Subsurface scientific instruments exist in positions (WGS84 datum):

11° 55'.87 S 141° 46'.88 E

11° 55'.74 S 141° 53'.65 E

12° 00'.86 S 141° 58'.53 E

12° 02'.60 S 142° 02'.01 E.

Mariners are advised to navigate with caution in the area.

**Chart temporarily affected – Aus 701****729(T)/2009 AUSTRALIA - QUEENSLAND - Albatross Bay - Scientific instruments***Former Notice* - 218(T)/2009 is cancelled

Maritime Safety Queensland Notice 383(T)/2009 (AA412011)

A special light buoy, *Fl(5)Y.20s*, exists in position 12° 41'.27 S 141° 41'.10 E.

Mariners are not to use this buoy as a mooring.

**Chart temporarily affected – Aus 4 – Aus 701 - AU413141****730(P)/2009 AUSTRALIA - NORTHERN TERRITORY - North East Bromby Islet - Light buoy to be withdrawn***Date* - On or about 21 June 2009

Australian Maritime Safety Authority (AA412017)

The east cardinal light buoy (11° 48'.20 S 136° 43'.58 E) will be withdrawn.

**Chart which will be affected - Aus715****731(T)/2009 AUSTRALIA - WESTERN AUSTRALIA - Port Hedland - Drilling operations completed***Former Notice* - 410(T)/2008 is cancelled

Port Hedland Port Authority (AA412383)

Cancel this notice on receipt.

**Chart formerly affected – Aus 52 – Aus 53 – Aus 54 – Aus 326 – Aus 739 – Aus 740**

**732(T)/2009 AUSTRALIA - WESTERN AUSTRALIA - Port Hedland - Obstruction removed**

Former Notice - 506(T)/2008 is cancelled  
 Port Hedland Port Authority (AA412383)

Cancel this notice on receipt.

**Chart formerly affected – Aus 53 – Aus 739 – Aus 740**

**733(T)/2009 AUSTRALIA - WESTERN AUSTRALIA - Port Hedland - Scientific instruments recovered; diving operations completed**

Former Notice - 560(T)/2008 is cancelled  
 Port Hedland Port Authority (AA412383)

Cancel this notice on receipt.

**Chart formerly affected – Aus 52 – Aus 53 – Aus 326 – Aus 739 – Aus 740**

**734(P)/2009 AUSTRALIA - WESTERN AUSTRALIA - Rankin Bank to Dampier - Production wells; platform; pipeline to be established**

Former Notice - 515(T)/2009 is cancelled  
 Date - Until 31 October 2009

Dampier Port Authority (AA401074), Woodside Energy Ltd (AA384702, AA384703, AA384705 - AA384707, AA384803, AA384804, AA385860)

Pluto platform will be established in position 19° 59'.78 S 115° 22'.09 E (WGS84 datum).

A production well will be established in position 19° 54'.85 S 115° 07'.92 E.

A pipeline will be laid by PV *Audacia* and pipeline barge *Tog Mor* between:

19° 54'.85 S 115° 07'.92 E  
 19° 58'.14 S 115° 11'.16 E  
 19° 59'.78 S 115° 22'.09 E  
 19° 58'.90 S 115° 25'.77 E  
 20° 02'.13 S 115° 28'.32 E  
 20° 02'.99 S 115° 31'.90 E  
 20° 08'.18 S 115° 54'.94 E  
 20° 10'.27 S 115° 59'.67 E  
 20° 10'.35 S 116° 04'.83 E  
 20° 12'.58 S 116° 17'.86 E  
 20° 17'.31 S 116° 32'.33 E  
 20° 19'.01 S 116° 39'.89 E  
 20° 24'.52 S 116° 45'.86 E  
 20° 26'.77 S 116° 46'.55 E  
 20° 30'.84 S 116° 46'.19 E  
 20° 33'.08 S 116° 45'.64 E  
 20° 35'.35 S 116° 44'.55 E  
 20° 36'.42 S 116° 45'.38 E

A 0.5M exclusion zone exists on each side of the pipeline from the shore crossing to position 20° 24'.52 S 116° 45'.86 E.

**Chart which will be affected – Aus 57 – Aus 58 – Aus 59 – Aus 327 – Aus 328 – Aus 415 – Aus 416 – Aus 741 – Aus 742 - AX 0415F - AU320115 - AU421115 - AU421116**

**735(T)/2009 AUSTRALIA - WESTERN AUSTRALIA - Thevenard Island to Ashburton Road - Scientific instruments***Former Notice* - 516(T)/2009 is cancelled

Date - Until 31 May 2010

MetOcean Engineers (AA411742)

Scientific instruments exist as follows:

<i>Position</i>	<i>Remarks</i>
21° 21'.86 S 114° 51'.20 E	5 poly floats
21° 22'.08 S 114° 50'.91 E	lit buoy, <i>Fl(5)Y.20s</i>
21° 22'.08 S 114° 51'.00 E	5 poly floats
21° 30'.12 S 115° 02'.92 E	lit buoy, <i>Fl(5)Y.20s</i>
21° 31'.40 S 114° 54'.90 E	lit buoy, <i>Fl(5)Y.20s</i>
21° 31'.67 S 115° 07'.07 E	5 poly floats
21° 33'.41 S 115° 00'.92 E	5 poly floats
21° 39'.29 S 115° 00'.68 E	5 poly floats
21° 39'.34 S 115° 00'.80 E	5 poly floats

**Chart temporarily affected – Aus 64 – Aus 743 – Aus 744 - AU417145****736(T)/2009 AUSTRALIA - VICTORIA - Port Phillip - Queenscliff - Light altered***Former Notice* - 342(P)/2009 is cancelled

Australian Hydrographic Service Notice 10/612/2009 (AA407227)

Cancel this notice on receipt.

**Chart formerly affected – Aus 143 – Aus 144 – Aus 158 - AU439144****737(P)/2009 AUSTRALIA - VICTORIA - Port Phillip - Queenscliff - Light established**

Date - On or about 18 June 2009

Victorian Notice 83/2009 (AA412497)

A directional light (*F.WG*) has been established in position 38° 15'.90 S 144° 40'.23 E as follows:

<i>Green</i>	040.7° - 042.5° (1.8°)
<i>White</i>	042.5° - 044.2° (1.7°)

Note: charts will be updated in Edition 13/2009

**Chart which will be affected – Aus 143 – Aus 144 – Aus 158 - AU5143P4****738(T)/2009 AUSTRALIA - VICTORIA - Port Phillip - Rosebud - Harbour works**

Date - Until 31 October 2009

Victorian Notice 79(T)/2009 (AA412175)

Works associated with the refurbishment of the jetty (38° 21'.10 S 144° 54'.46 E) are in progress.

The light (38° 20'.99 S 144° 54'.44 E) has been repositioned to 38° 21'.19 S 144° 54'.42 E.

**Chart temporarily affected – Aus 143 – Aus 158 - AU439144**

**739(T)/2009 AUSTRALIA - VICTORIA - Port Phillip - Werribee River - Dredging operations**

Date - Until 7 July 2009

Victorian Notice 77(T)/2009 (AA411747)

The dredge *Darwin* is conducting dredging operations in the Werribee River (37° 58'.38 S 144° 41'.17 E).

All hazards to navigation will display appropriate lights and signals.

The dredge can be contacted on VHF Ch 14 and Ch 16 or mobile phone 0418 657 400.

Mariners are advised to navigate with caution in the area.

**Chart temporarily affected – Aus 143 – Aus 155 - AU438144**

**740(T)/2009 AUSTRALIA - VICTORIA - Lakes Entrance - Dredging operations**

Date - Until 31 July 2009

Victorian Notice 78(T)/2009 (AA411745)

The dredge *Pelican* is conducting dredging operations on The Bar and in the channels.

The dredge will display appropriate lights and signals and will monitor VHF Ch 16.

**Chart temporarily affected – Aus 182**

**741(T)/2009 AUSTRALIA - VICTORIA - Lakes Entrance - Cunninghame Arm - Harbour works**

Date - Until 6 September 2009

Victorian Notice 74/2009 (AA412225)

Harbour works are in progress at the jetty (37° 52'.95 S 147° 58'.90 E).

A barge and associated vessels will be onsite.

During the works berths will be restricted or unavailable.

Mariners are advised to navigate with caution in the area.

**Chart temporarily affected - Aus182**

## HYDROGRAPHIC REPORTS

<i>Locality</i>	<i>Report</i>	<i>Ship/Authority</i>	<i>Observer</i>
WA-Dampier	Pipeline		P Dunn

**NAVIGATION WARNINGS**

The following radio messages have been received during the period to 19 June 2009. Signal copies of these messages may be destroyed. It is recommended that the reprint of Navigational Warnings should be kept in a file or a book divided into areas. Cancellation should be made on receipt of signals and reprints.

Rigs on location other than those listed in the latest Section III summary are the subject of Radio Navigational Warnings. Rigs in transit will not be the subject of Warnings.

**AUSCOAST WARNING**

- 136 Cancelled.  
 137 Drill rig *Songa Venus* in position 13° 00'·33 S 124° 24'·22 E. 2.5M clearance requested.  
 138 Special purpose vessel *Geo Atlantic* conducting seismic survey towing 4M cable in area 20° 28'·00 S to 21° 37'·00 S and 111° 57'·00 E to 114° 51'·00 E. 5M clearance requested.  
 139 Drill rig *Ocean Epoch* in position 21° 34'·03 S 114° 10'·00 E. 2.5M clearance requested.  
 140 Cancelled.  
 141 Cancelled.  
 142 Cancelled.  
 143 Cancelled.  
 144 Drill rig *West Atlas* in position 12° 30'·26 S 124° 27'·45 E. 2.5M clearance requested.  
 145 Drill rig *Songa Mercur* in position 14° 12'·47 S 122° 53'·38 E. 2.5M clearance requested.  
 146 Special purpose vessel *Tyco Durable* conducting cable laying operations between 33° 26'·10 S 152° 56'·40 E and 28° 17'·60 S 155° 03'·20 E. 2.5M clearance requested.  
 147 Sugar Ran Reef light K1890 (9° 53'·80 S 143° 13'·06 E) unlit.

**NAVAREA X WARNINGS**

- 009 When participating in AUSREP, mariners are reminded that polling is the required method of position reporting in accordance with the amended navigation act 1912 and marine orders (Part 63).

A master of a ship in the AUSREP area is to make the ship available to be polled by RCC Australia using INMARSAT-C. Masters are asked not to send manual position reports unless polling is unavailable or they are directed by RCC Australia to do so.

Masters of ships being polled will still be required to send sailing plans, deviation reports and final reports.

Masters are reminded that when sending sail plans that the word 'Poll' be entered in the field 'N' (eg: N/ Poll). This enables the AUSREP system to automatically assign polling to the vessel.

Masters are required to set up their INMARSAT-C terminals address book with the special access code (SAC) 1243 via Perth LES 212 (Pacific Ocean) or 312 (Indian Ocean). When setting up the address book entry for sending to SAC 1243, ASCII, 7-bit or IA5 needs to be selected for data presentation or character code.

**Navigational warnings in force as at 190001UTC JUN 09.****Auscoast**

086 089 096 102 127 128 133 134 137 138 139 144 145 146 147

**Navarea X**

009

**Summary of mobile drilling rigs as at 190001UTC JUN 09.**

<i>Name</i>	<i>Position</i>
Ocean Shield	13° 53'·70 S 128° 29'·00 E
West Atlas	12° 30'·26 S 124° 27'·45 E
Songa Venus	13° 00'·33 S 124° 24'·22 E
Songa Mercur	14° 12'·47 S 122° 53'·38 E
Atwood Eagle	19° 54'·48 S 115° 07'·55 E
Stena Clyde	20° 04'·18 S 115° 10'·45 E
Ensco 7500	19° 52'·00 S 114° 31'·00 E
Ocean Epoch	21° 34'·03 S 114° 10'·00 E

**NAVAREA XIV WARNINGS**

029 Cancelled.  
030 Cancelled.  
031 Cancelled.

**Navarea XIV warnings in force as at 190001UTC JUN 09.**

**2009** Nil.

*To accompany Australian Notice to Mariners 696/2009*

HISTORIC WRECK

The site of an historic wreck is protected from unauthorised interference. For details see Australian Seafarers Handbook AHP 20.

*Note for chart Aus 260*

*To accompany Australian Notice to Mariners 696/2009*

HISTORIC WRECK

The site of an historic wreck is protected from unauthorised interference. For details see Australian Seafarers Handbook AHP 20.

*Note for chart Aus 367*

*To accompany Australian Notice to Mariners 696/2009*

HISTORIC WRECK

The site of an historic wreck is protected from unauthorised interference. For details see Australian Seafarers Handbook AHP 20.

*Note for chart AX 60260*

To Accompany Australian Notice to Mariners 698/2009

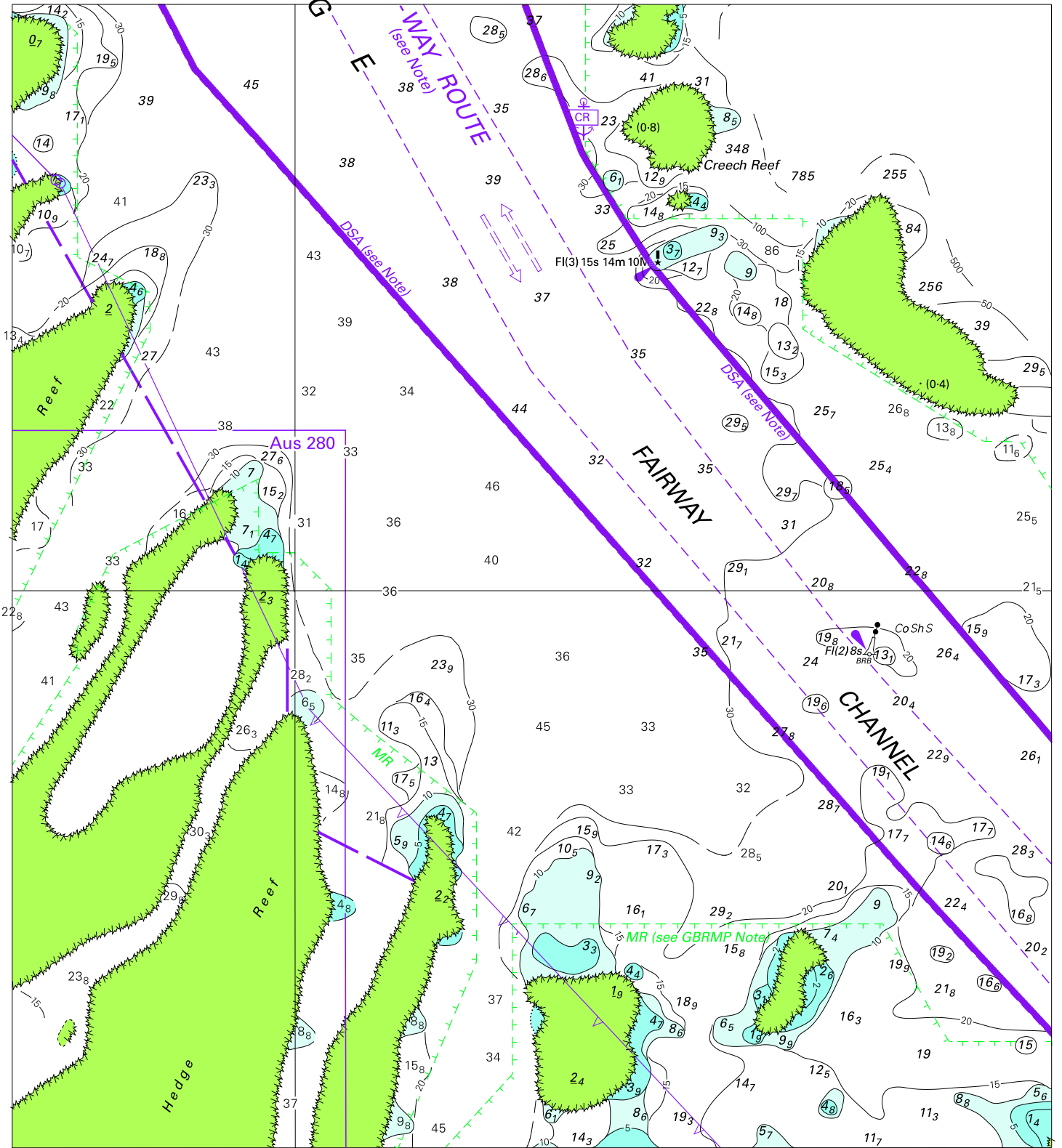


Block for chart Aus 257

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(178-0 x 167-8mm)

To accompany Australian Notice to Mariners 700/2009

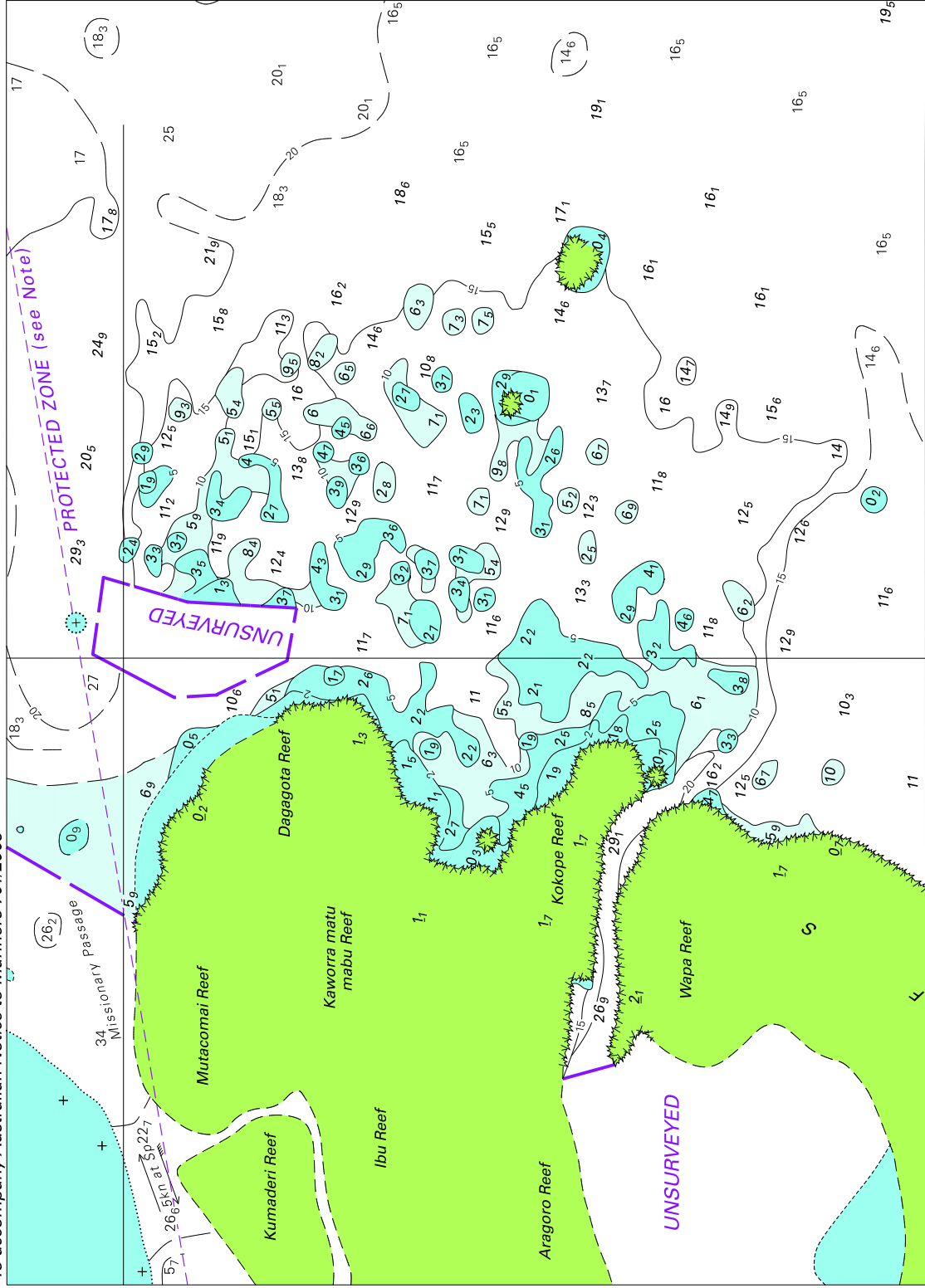


Block for chart Aus 834

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(189.1 x 208.1mm)

To accompany Australian Notice to Mariners 701/2009

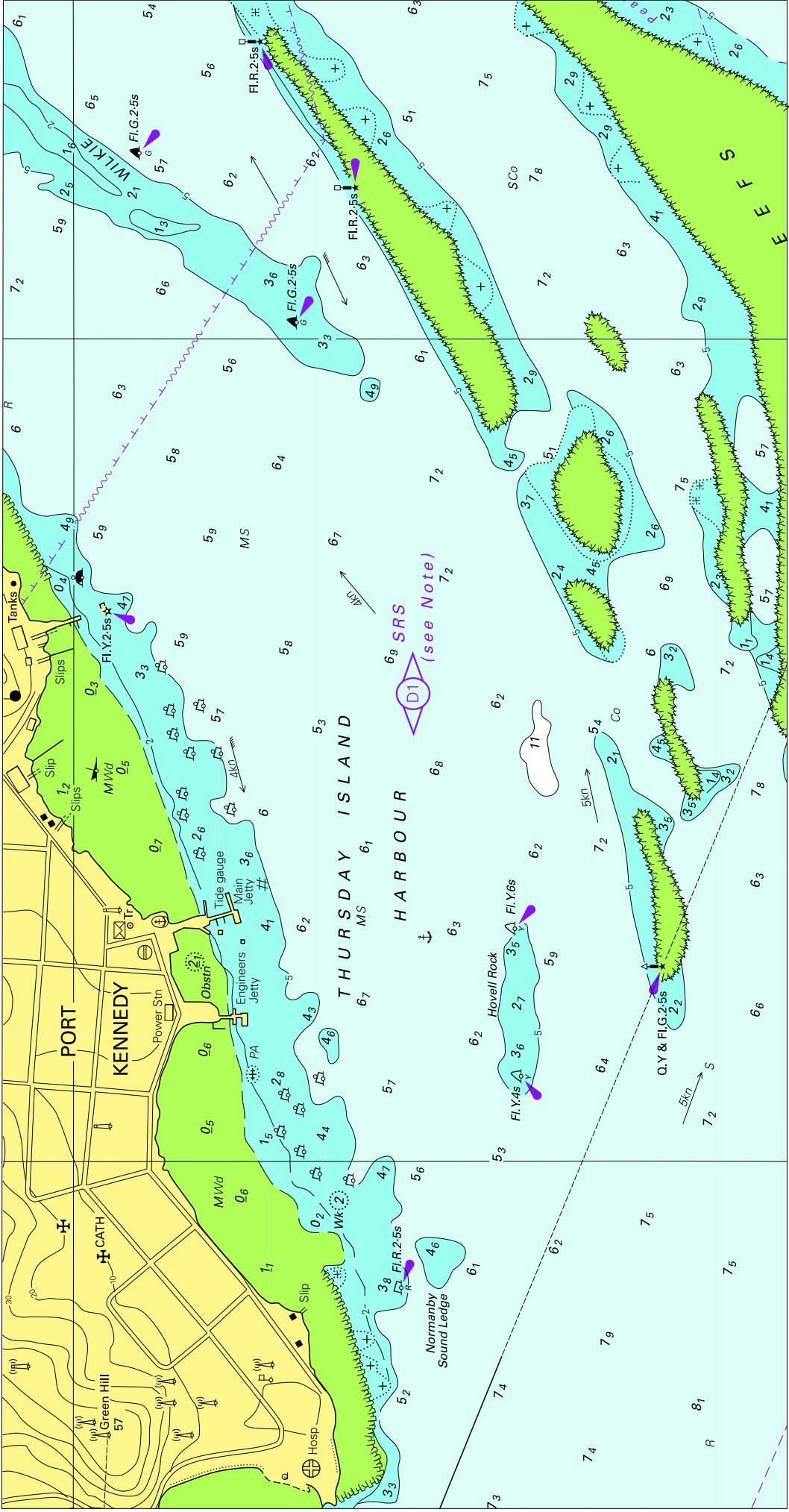


Block for chart Aus 840

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(204.7 x 146.3mm)

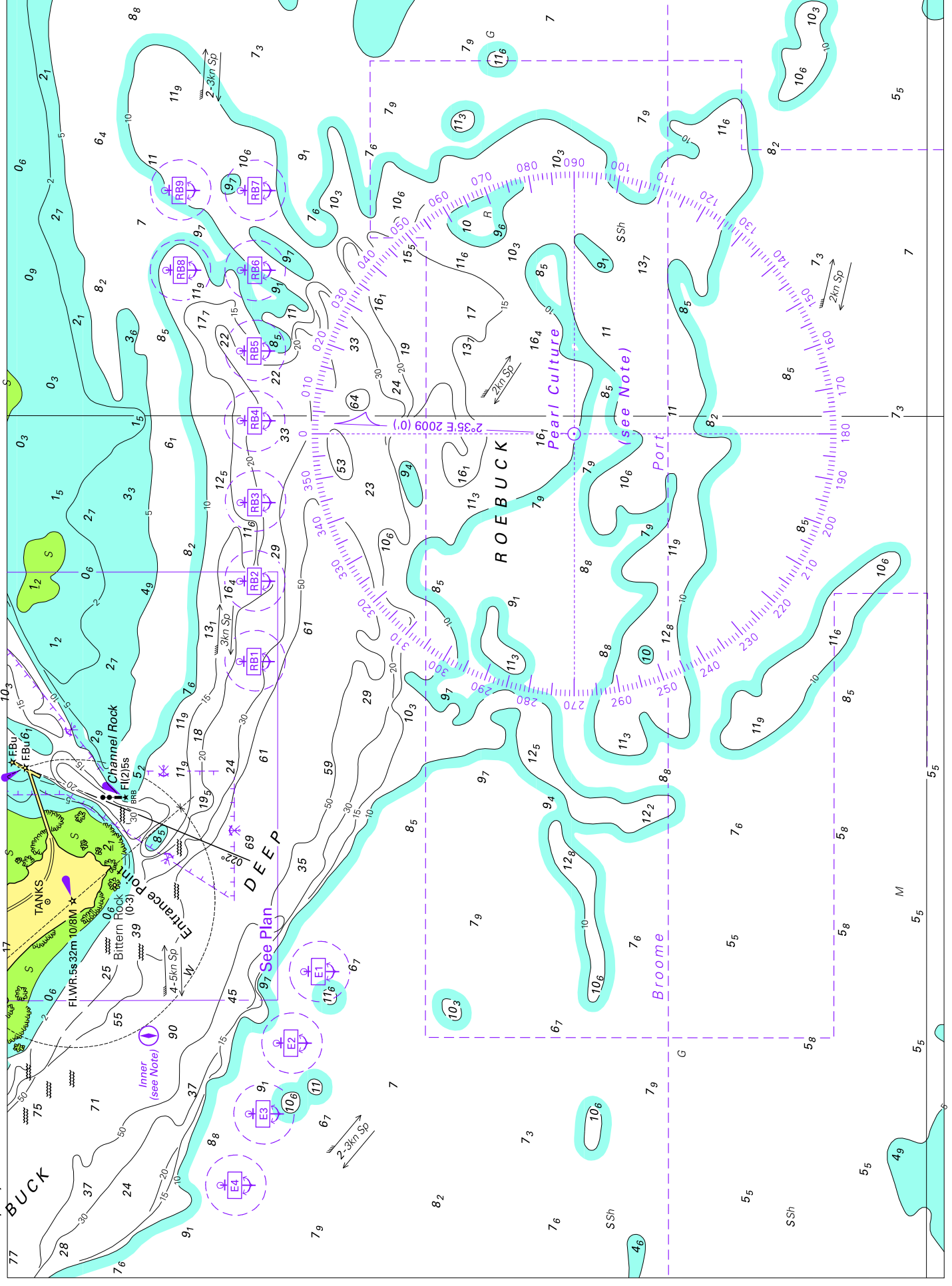
To accompany Australian Notice to Mariners 703/2009



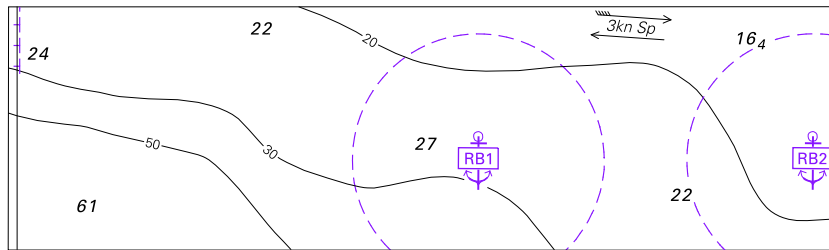
(267-4 X 139-0mm)

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Block for chart Aus 299



To accompany Australian Notice to Mariners 708/2009

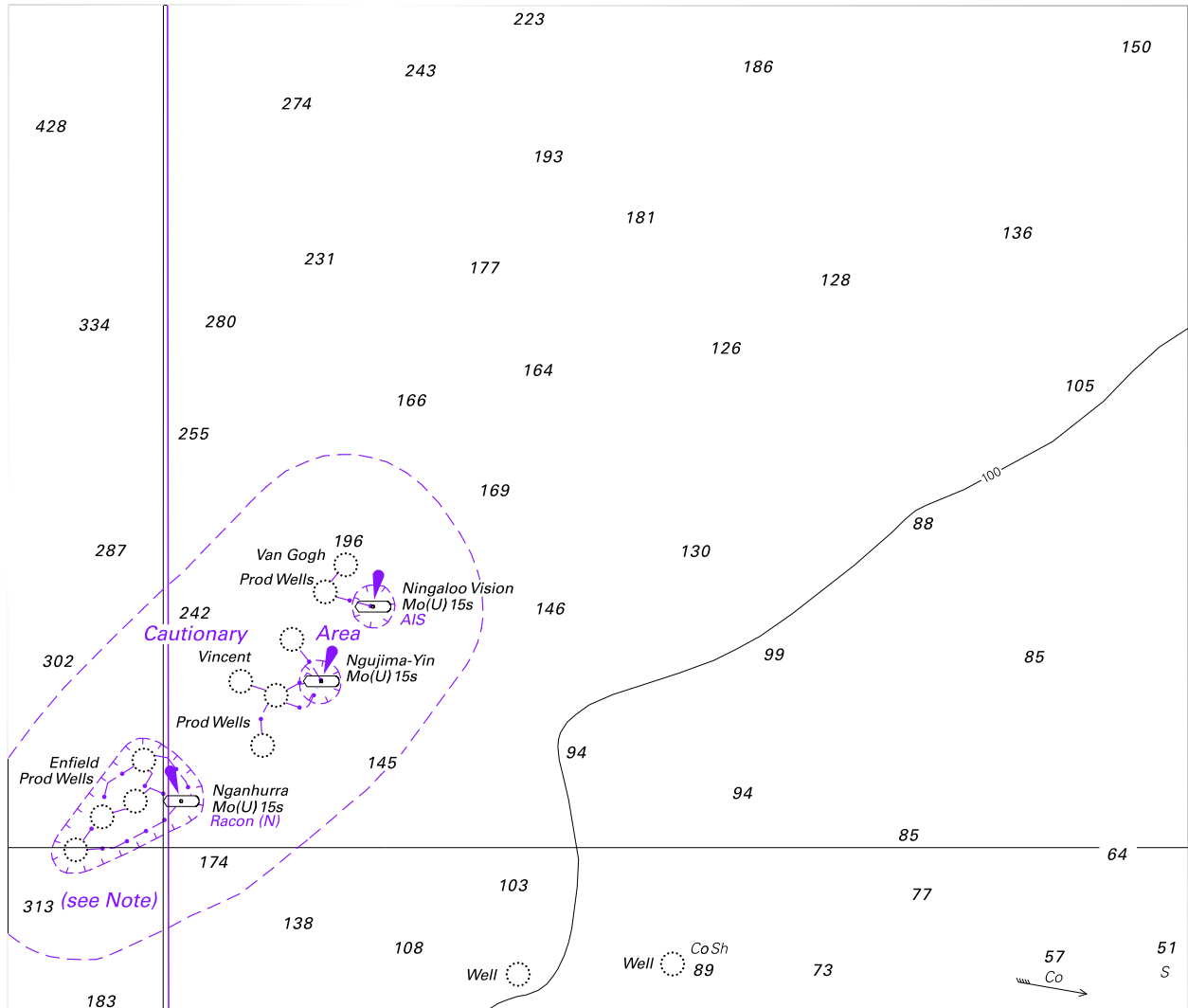


Block for chart Aus 50

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(109.5 x 3.22mm)

To accompany Australian Notice to Mariners 711/2009



Block for chart Aus 329

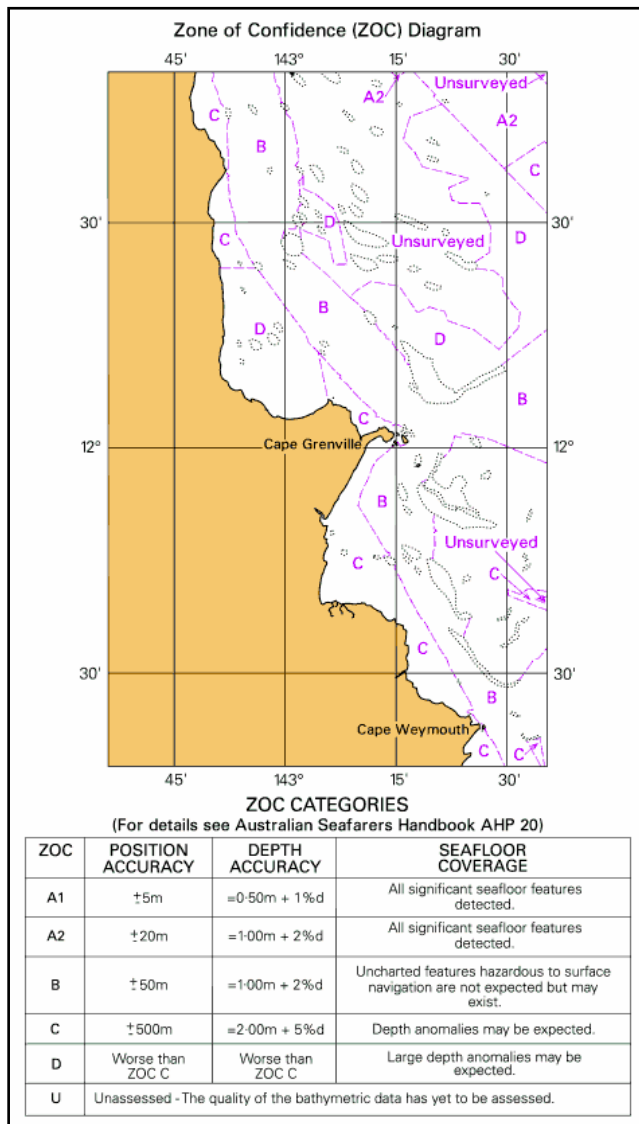
© Commonwealth of Australia 2009

(164.8 x 140.2mm)



By then, use of electronic positioning systems had improved horizontal accuracies to 50 metres or better, while the use of echo sounders and sonar provided a significantly greater level of confidence that features between the individual lines of sounding were detected and did not remain unexamined.

Unfortunately, the information presented in a Reliability Diagram requires knowledge of past and present hydrographic surveying practices – something most mariners neither have nor should need. To address this, the Australian Hydrographic Service developed a system known as Zones of Confidence that has since been adopted internationally.



On each nautical chart, such as the 2006 edition of Aus 835, the accuracy and reliability of the information used to compile the chart is shown on a Zones of Confidence (ZOC) Diagram. Within official Electronic Navigational Charts (ENCs), the same information is shown as a layer which can be switched on and off by the mariner.

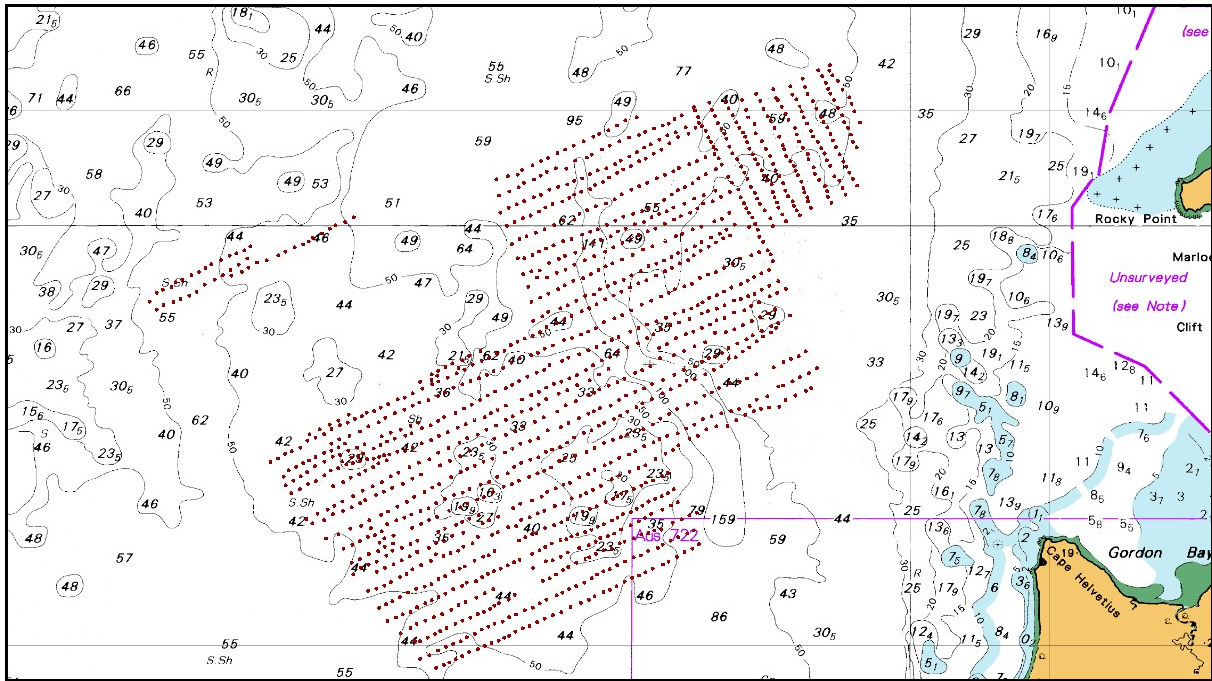
ZOC categories warn mariners which parts of the chart are based on good or poor information and which areas should be navigated with caution. The ZOC system consists of five quality categories for assessed data, with a sixth category for data which has not been assessed. The table accompanying the ZOC diagram on each chart summarises the meaning of the ZOC categories.

Position Accuracy refers to the horizontal accuracy of a depth or feature. Depth Accuracy refers to the vertical accuracy of individual recorded depths, of which those shown on the chart are a subset designed to best represent the sea floor as it is known or best estimated.

However, the most important factor is Seafloor Coverage. This is the level of confidence that the hydrographic surveyor and hydrographic office has that the soundings that were collected as the

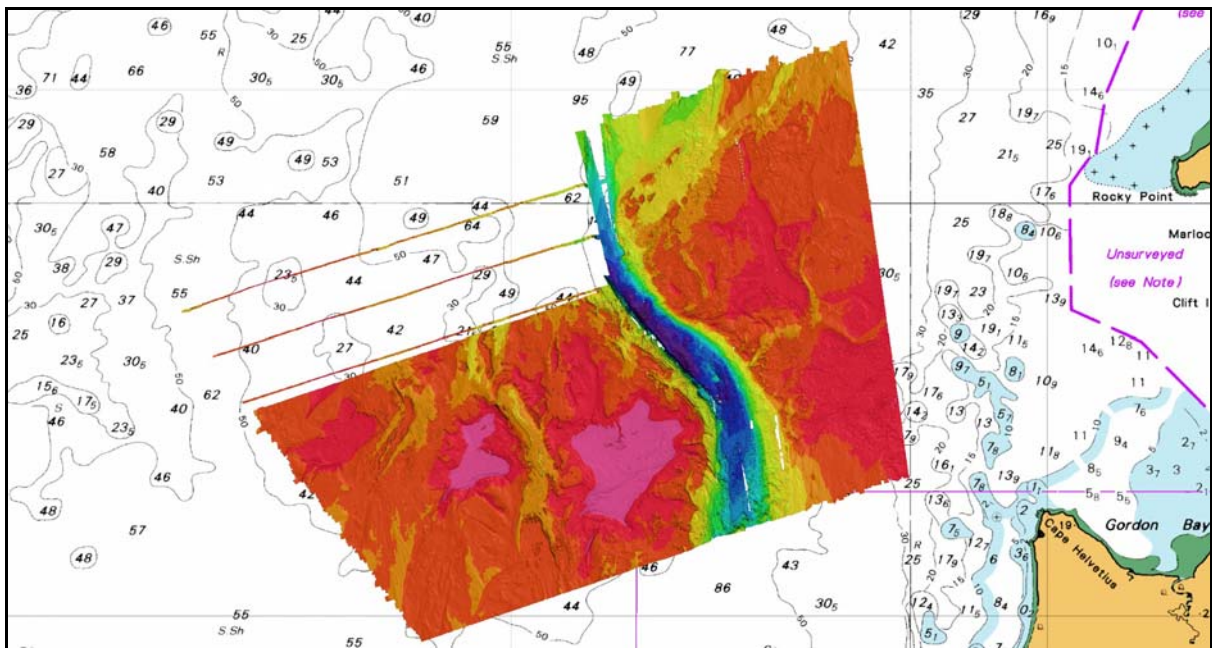
survey ship steamed back and forth actually represent the remainder of the sea floor between the adjacent lines of sounding. Typically, these adjacent lines may be between 60 and 250 metres apart based upon the depth of water and nature of the area, occasionally extending to as close as 10 metres or as wide as one kilometre.

In older surveys such as the 1945 survey below, the ship measured a series of individual depths as it steamed along each line of soundings. Confidence that these separate soundings did not miss anything between the lines was typically achieved using a sonar, though the technology of the day was not always perfect. These surveys are typically assessed as ZOC C which states that '*depth anomalies may be expected*'.



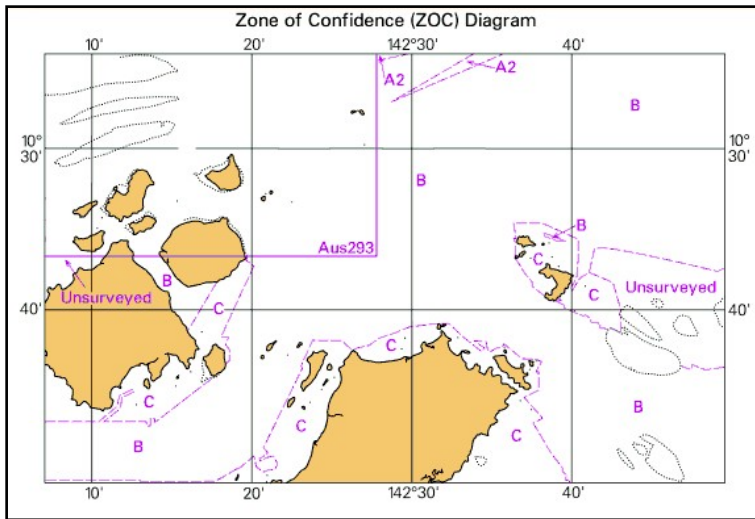
1945 single beam survey, approaches to Darwin

However, modern surveys are quite different. Equipment performance has improved allowing most surveys from the 1970s and later to be assessed as ZOC B 'Uncharted features hazardous to surface navigation are not expected...', while current systems can achieve 100% coverage using multi-beam echo-sounders. The beams from these echo-sounders spread like a fan beneath the ship and completely sweep the seabed both directly below the ship and to either side. Aircraft using lasers can achieve similar results. Multi-beam systems lay down thousands of soundings every minute as close as 30 centimetres apart. This level of detail is necessary for an assessment of ZOC A1 or A2 'All significant seafloor features detected'. In these areas an object the size of a 200 litre oil drum is considered significant.



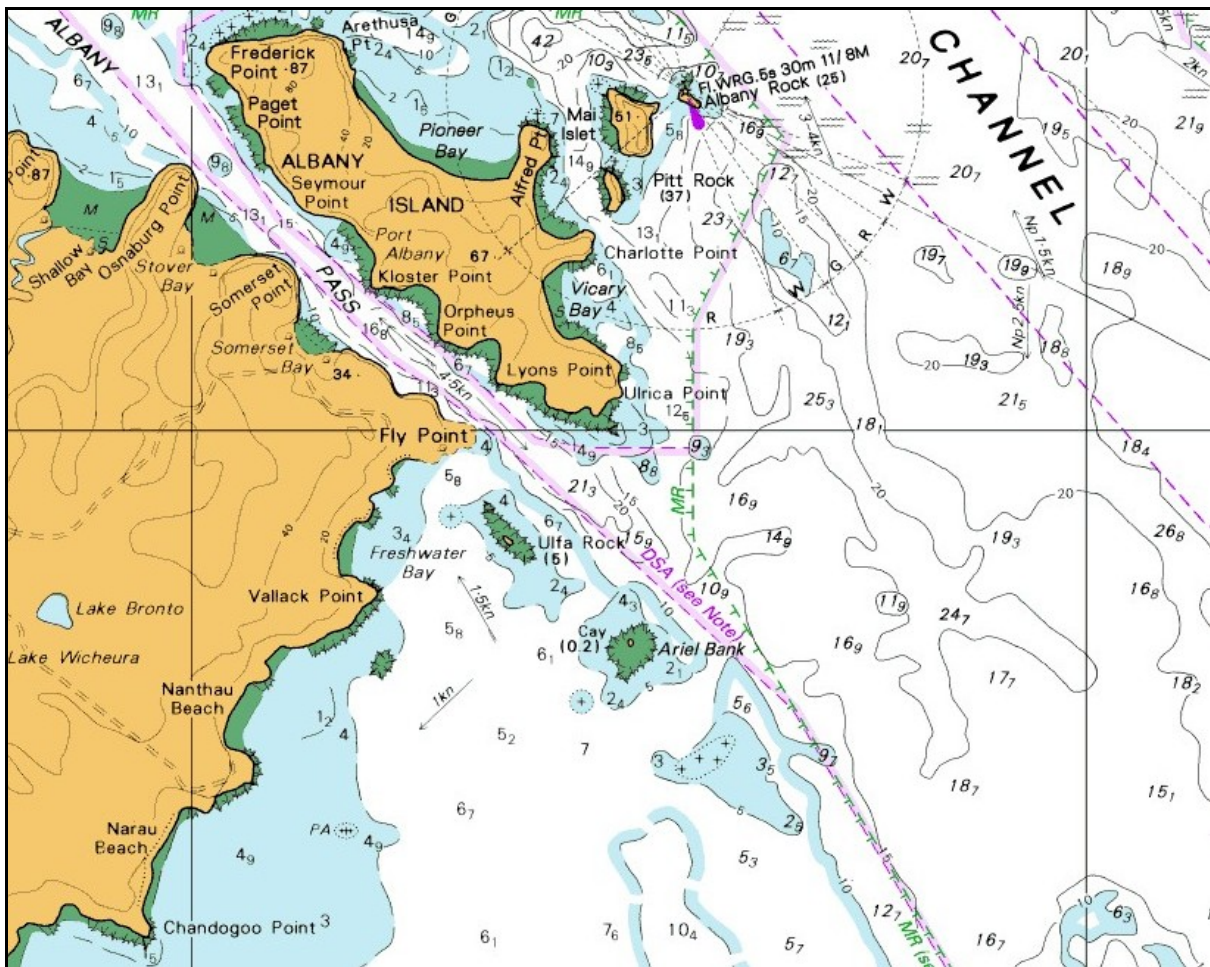
Modern multi-beam survey, approaches to Darwin





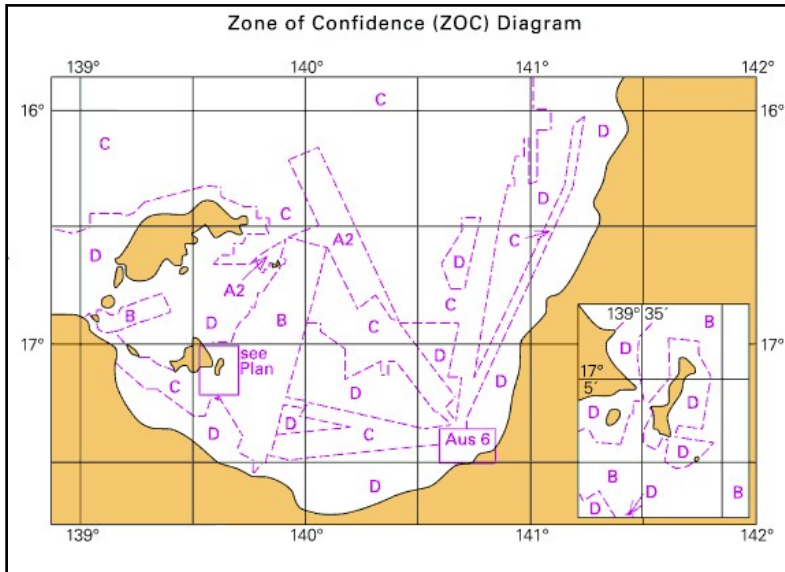
ZOC C is a broad category encompassing generally older surveys ranging from those that do not quite meet modern standards, through to colonial surveys and those not specifically conducted for navigational safety (such as a geophysical survey). Where reasonable confidence remains, the ZOC diagram will be the primary source of information to show where this lower area of confidence exists, as the face of the chart will show little difference between the ZOC B and C areas.

However, as confidence decreases, additional indicators are shown on the charts. These include the soundings changing from bold italics to a faint (hairline) and upright style to indicate they are 'approximate', while contours change from continuous to broken or dashed lines. In ZOC C areas, 'depth anomalies may be expected'.

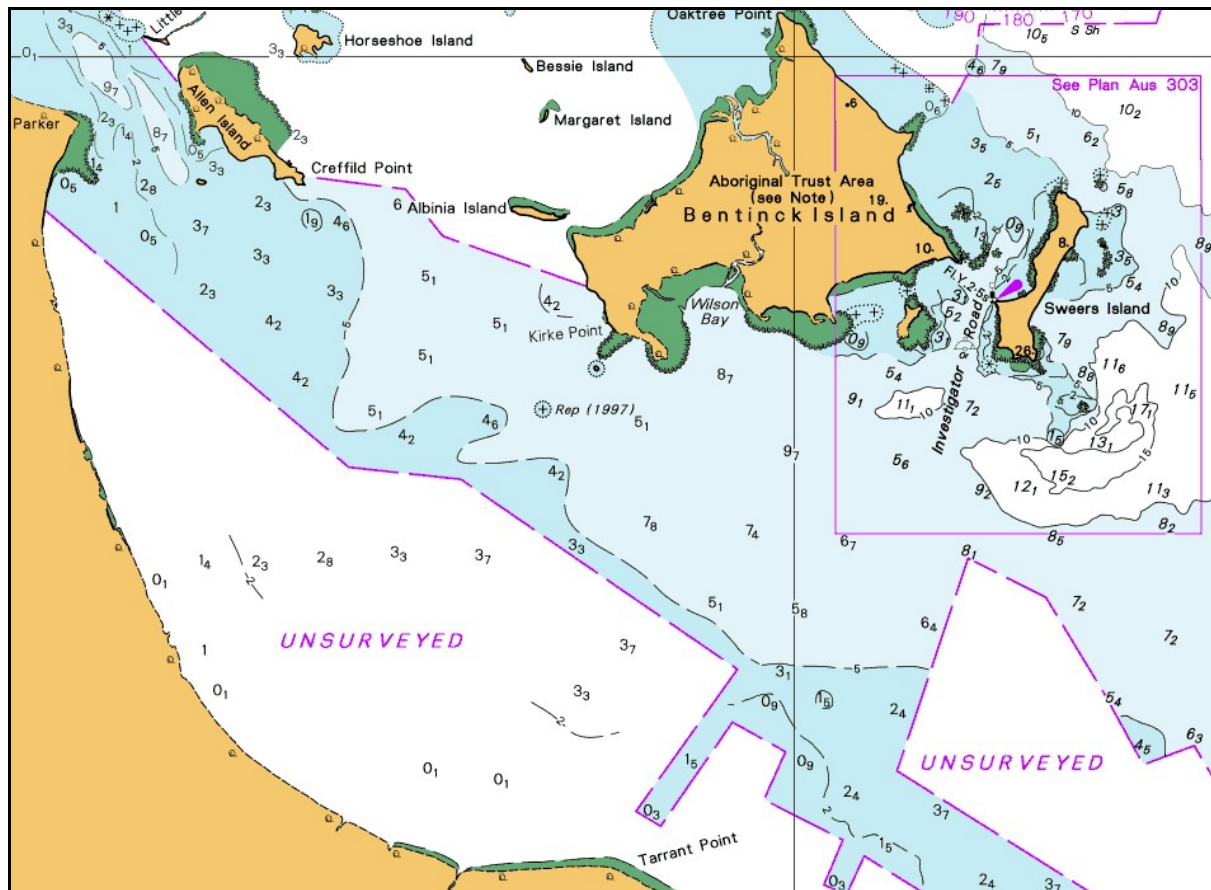


Extract – Aus 292, Albany Island, Cape York (ZOC B to north-east, ZOC C to south-west)





Finally, ZOC D represents a very low level of confidence. Areas such as these typically consist of sparse lines of sounding, where the track of each individual ship is still apparent. They have not been systematically surveyed. Soundings are very widely dispersed with contours only present in the very near vicinity of soundings. Unsurveyed areas are also classed as ZOC D. In ZOC D areas 'large depth anomalies may be expected'.



Extract – Aus 303, Bentinck Island, Gulf of Carpentaria, QLD (ZOC B to north-east, ZOC C to north-west, ZOC D to north and south)

### Interpreting an Electronic Navigational Chart

There are two basic types of electronic charts – raster and vector. Raster Nautical Charts (RNCs) are facsimile copies of the paper chart. They look identical to the paper charts, have the same content, but are essentially 'dumb' images. For example an RNC chart,

connected to GPS, will happily plot and display your position both at sea and as the boat goes up the ramp at the end of the day, or as you inadvertently run aground. Information in the chart can't be interrogated or changed. In contrast, a vector chart contains 'smart' data – use it correctly and it will provide an audible warning before you enter an area considered too shallow. Official vector charts are published by national hydrographic offices and are known as Electronic Navigational Charts (ENCs).

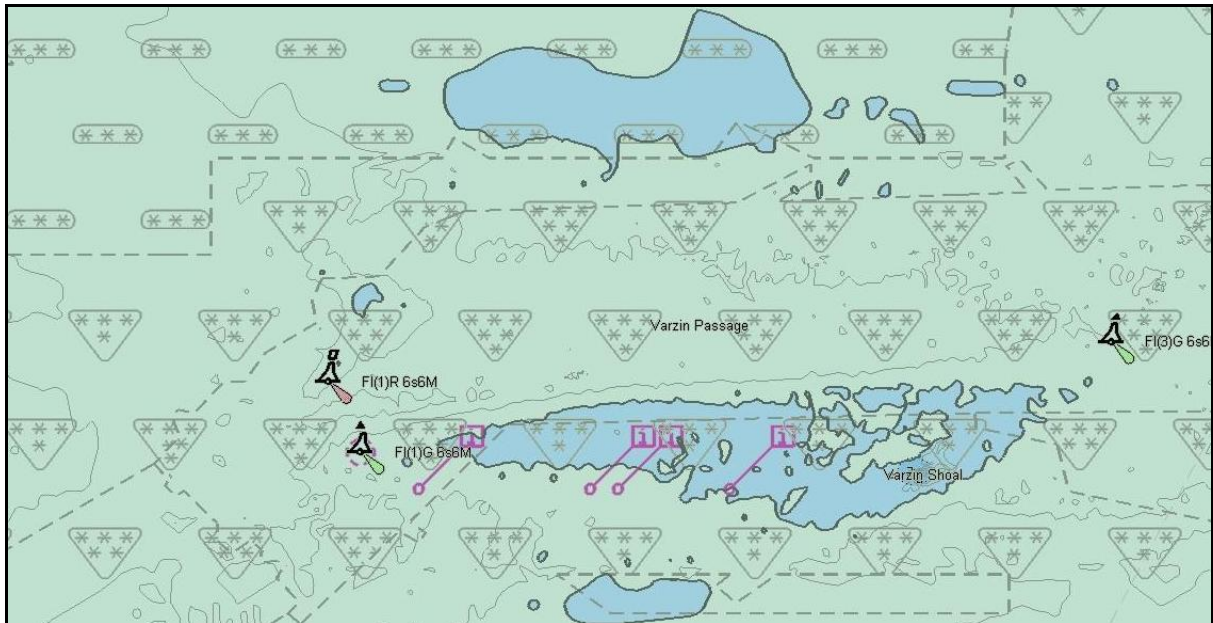
The Australian Hydrographic Service publishes a raster chart series known as *Seafarer RNC*. These display ZOC information, including the ZOC diagram, in exactly the same manner as the paper chart.

In contrast, the official ENCs published by the Australian Hydrographic Service have the same or greater content as the paper charts, including ZOCs, but look a little different. They adhere to a series of international standards frequently (but inaccurately) referred to as S-57. While there is a base level of information always displayed, many of the other features exist on separate layers that can be switched on and off. Why, for example, does a mariner need to know how often a light buoy flashes during the day? They don't, so the option exists to turn this information off until needed.



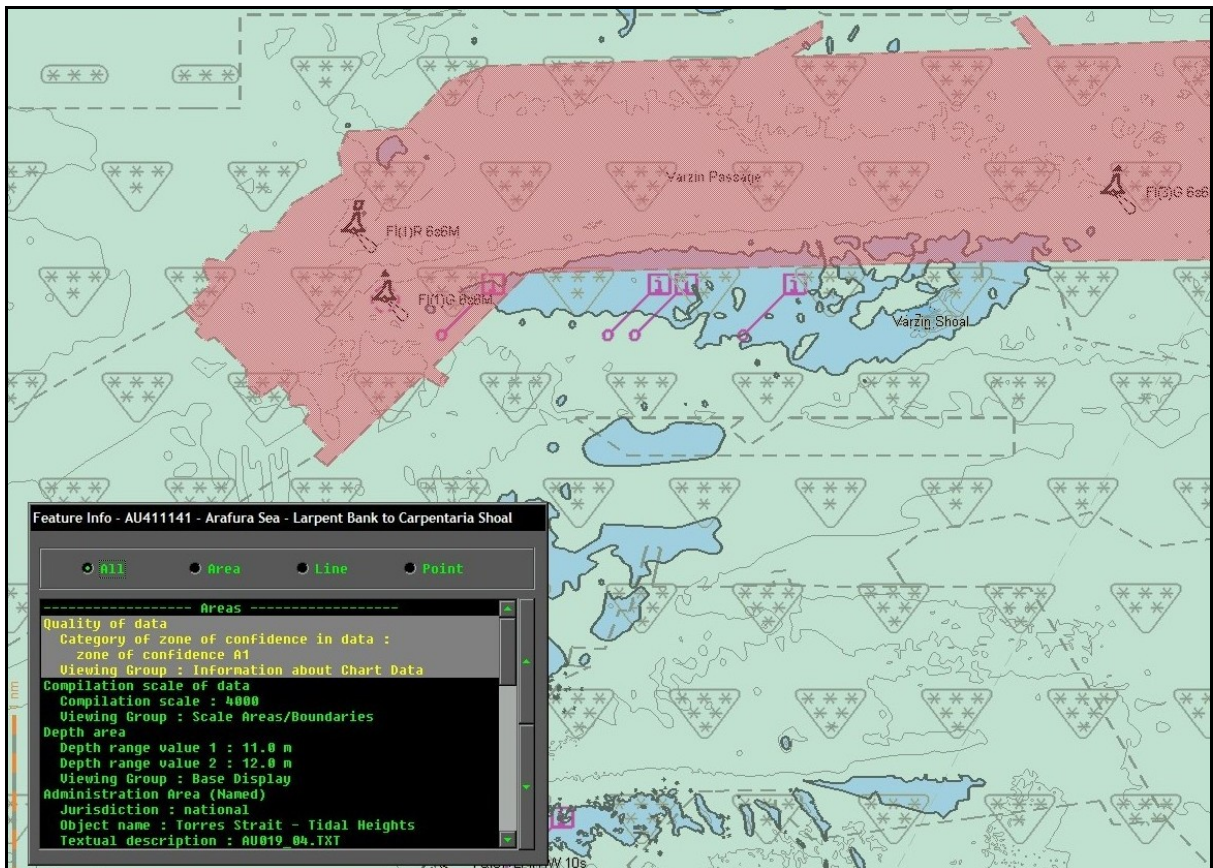
*Extract – ENC AU4 11141, Varzin Passage, western Torres Strait*

Similarly, zones of confidence exist as a separate layer that can be viewed when planning a route then switched off until needed again. Mariners don't need to search the face of the chart to find the ZOC diagram as, when switched on, the information is visible throughout the entire ENC. The various ratings are shown using a system of stars – the higher the ZOC rating, the greater the number of stars. Unlike paper charts which use both bold italic and upright hairline soundings as further confidence indicators, ENCs only use upright characters. Instead, those 'approximate' soundings shown as upright hairline characters on the paper chart are shown circled on the ENC. This is the international method for showing 'approximate' soundings in ENCs. However, the use of continuous or broken contours has been carried over from the traditional paper charts.

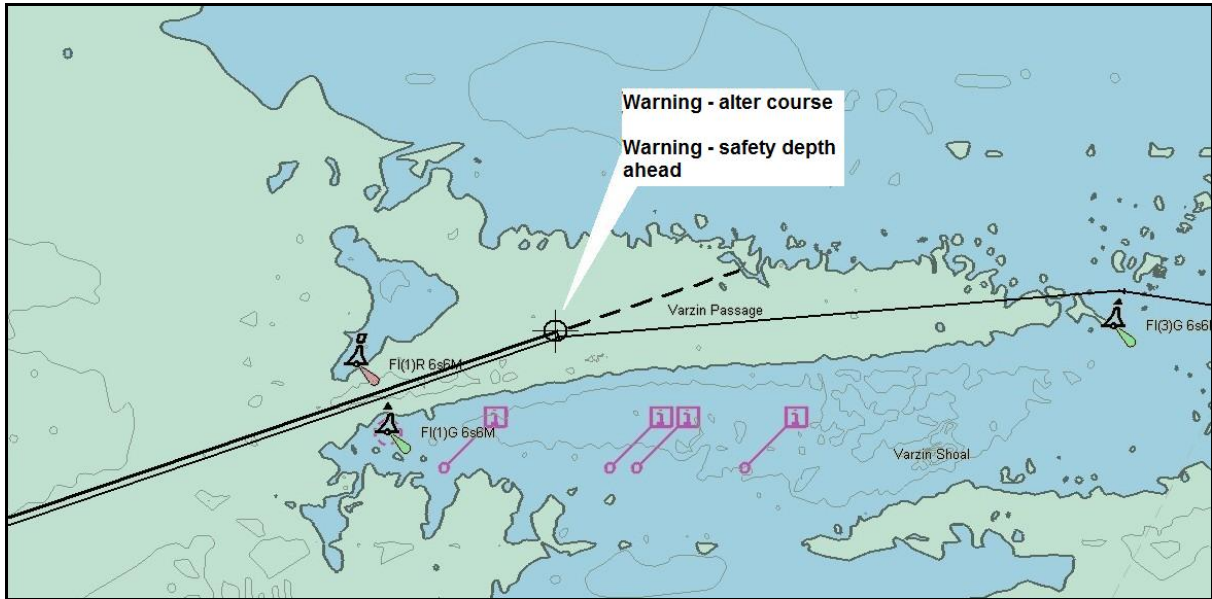


Extract – ENC AU4 11141, Varzin Passage, western Torres Strait (with ZOC layer switched on, soundings layer switched off)

Additionally, every single feature and area in an ENC can also be interrogated to obtain additional information.



Extract – ENC AU4 11141, Varzin Passage, western Torres Strait (with ZOC A1 area being interrogated)



*Extract – ENC AU4 11141, Varzin Passage, western Torres Strait (safety depth increased to 11 metres)*

## Summary

All charts consist of a jigsaw of separate surveys which are combined to form the final chart. These surveys vary in age and quality, particularly due to changes in technology. However, one fundamental truth remains – a hydrographic surveyor can typically only physically see a very small percentage of their survey area – the parts which rise above the sea surface; for the remainder they must have confidence in their systems and long-standing practices to accurately and confidently chart the seabed. Because priority for surveying is given to the major shipping routes, an essential skill for mariners venturing into unfamiliar waters away from these routes is the ability to interpret the various quality indicators that are, or should be, on every chart. These are the best guides available to mariners, whether on commercial vessels or cruising yachts, to help them decide how much confidence should be had in past and current surveyors and the technology available to them when surveying the different areas of each and every chart. Indeed, a prudent mariner should be wary of any chart that does not show these indicators, irrespective of whether it is a traditional paper chart, a Raster Nautical Chart or one of the new Electronic Navigational Charts. Finally, if in doubt, post a lookout, make your approach in daylight and good conditions, or go somewhere else – there is no such thing as a good grounding.

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