

The aneroid barometer

A barometer is an instrument used to measure atmospheric pressure — which is the weight of a column of air above it.

Most weather systems indicate their intensity and their probable future movement by the level and rate of change of the atmospheric pressure. Therefore, a barometer is extremely important in weather forecasting and is a necessity for vessels at sea. In general, a rising pressure indicates improving conditions. A gentle fall in pressure is nothing to be concerned about, however, a sharp drop in pressure may be a sign of worsening weather conditions.

Note: the average atmospheric pressure at sea level in Queensland is about 1013 hPa (hectopascals — a unit of measuring barometric pressure). It is higher in winter than in summer and increases away from the equator.



Tides and currents

Tide is the periodic rise and fall of the surface of the oceans, bays and so on, due principally to the gravitational interactions between the Earth and the Moon and, to a lesser extent, between the Earth and the Sun.

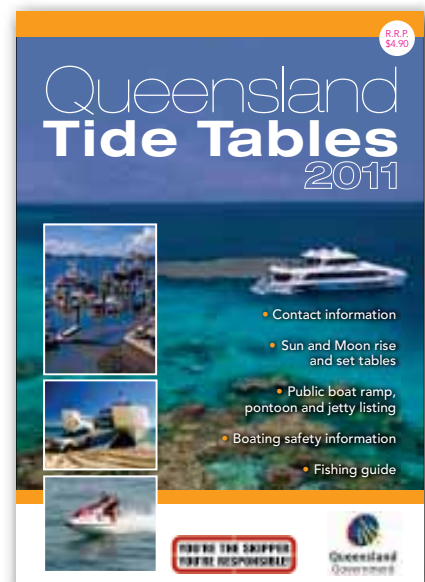
The periodic rise and fall of the tide follow a reasonably regular pattern over a 19-year cycle and therefore the height of the tide at a particular place can be predicted well into the future and with a reasonable degree of accuracy.

Tidal planes

The form of the tide changes as you progress north along the Queensland coast. There are two tidal planes: semidiurnal and diurnal. The term semidiurnal refers to a tide which has a period or cycle of approximately half of one tidal day (about 12.5 hours). Semidiurnal tides usually have two high and two low tides each day. The term diurnal refers to a tide which has a period or cycle of approximately one tidal day (about 25 hours). Diurnal tides usually have one high and one low tide each day.

Tide tables

Tide tables provide detailed predictions of the times and heights of high and low waters at standard ports for every day of the year. The precise position for which the predictions are made is usually given in latitude and longitude. The time zone used for the predictions is the standard time for the area and is given at the head of each page.



AUSTRALIA, EAST COAST – MACKAY OUTER HARBOUR								2010			
LAT 21° 06' S				LONG 149° 14' E				Time Zone –1000			
Times and Heights of High and Low Waters											
JANUARY		FEBRUARY		MARCH		APRIL					
Time	m	Time	m	Time	m	Time	m	Time	m		
1	0452 0.31	16	0513 0.99	1	0002 5.32	16	0546 1.10	1	0620 0.84	16	0545 1.28
	1109 6.36		1129 5.52		0615 0.23		1150 5.32		1209 5.15		1127 4.64
FR	1748 0.60	SA	1802 1.27	MO	1220 6.38	TU	1815 1.18	MO	1745 0.17	TU	1718 0.97
○	2331 4.81	○	2344 4.42		1854 0.36			○	2339 5.73	●	2317 5.16
2	0540 0.29	17	0539 1.05	2	0047 5.29	17	0011 4.79	2	0557 0.30	17	0528 1.14
	1155 6.39		1154 5.43		0659 0.52		0615 1.28		1155 6.14		1121 5.13
SA	1835 0.55	SU	1827 1.32	TU	1303 5.99	WE	1215 5.10	TU	1821 0.28	WE	1742 1.02
					1934 0.56		1839 1.29		2345 5.16		2345 5.16
3	0021 4.83	18	0011 4.41	3	0133 5.16	18	0040 4.71	3	0021 5.69	18	0558 1.29
	0628 0.40		0606 1.16		0745 0.97		0645 1.53		0639 0.62		1146 4.90
SU	1242 6.26	MO	1219 5.30	WE	1347 5.44	TH	1239 4.81	WE	1235 5.66	TH	1806 1.13
○	1921 0.59	○	1851 1.39		2015 0.86		1903 1.44		1857 0.56		

© Copyright Commonwealth of Australia 2008
 Datum of Predictions is Lowest Astronomical Tide
 Moon Symbols ● New Moon ◐ First Quarter ○ Full Moon ◑ Last Quarter

Bureau of Meteorology National Tidal Centre

Semidiurnal tidal plane — Mackay Outer Harbour

Secondary places are those for which detailed predictions are not available. The times and heights of high and low water at secondary places are obtained by applying corrections to the predictions of a nearby standard port.

Calculating tide times for secondary ports

Find the required locality in the tide table and note its standard port.

Extract from the table semidiurnal tidal planes

place	latitude south	longitude east	height above lowest astronomical tide		time difference	MHWS	MHWN	MLWN	MLWS	AHD	MSL	Ratio	Cons	HAT
			HW	LW										
standard	27 05	152 07	standard port		2.16	1.76	0.75	0.35	1.243	1.27	1.00	0.00	2.71	
secondary	27 12	152 15	-0 25	-0 20	1.75	1.25	0.55	0.15		0.84	0.81	+0.04	2.35	

Time of high water

- Note the time difference in column 1.
- Add or subtract (as indicated by + or -) this time difference to the predicted time of high water at the standard port.

Time of low water

- Note the time difference in column 2.
- Add or subtract (as indicated by + or -) this time difference to the predicted time of low water at the standard port.

The result is the approximate time of the tide at the required locality.

Height of high water

- Find the height of the predicted high water at the standard port.

2. Multiply the height by the figure in column 9.
3. Add or subtract (as indicated by the + or -) the figure in column 10.

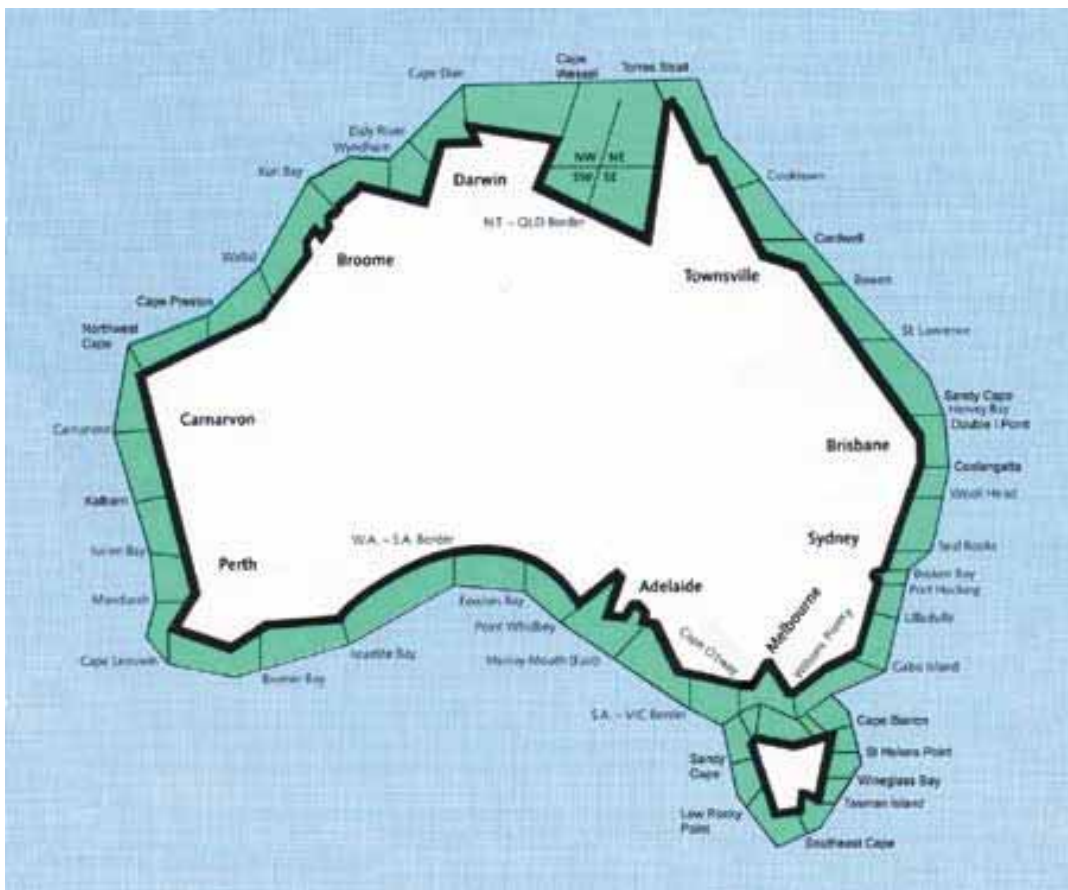
Height of low water

1. Find the height of the predicted low water at the standard port.
2. Multiply the height by the figure in column 9.
3. Add or subtract (as indicated by the + or -) the figure in column 10.

A copy of the Queensland Tide Tables should be kept on commercial vessels operating in Queensland to be used as a reference by crew members — the movement of the tide must always be considered when planning a journey.

Obtaining weather information

The Bureau of Meteorology website (www.bom.gov.au) is a very useful resource for obtaining not only weather predictions, but also weather warnings and a host of explanatory and education material.



Coastal waters forecast areas

Additionally, up-to-date weather reports can be obtained from the following sources:

- limited coast stations such as the Australian Volunteer Coast Guard and Volunteer Marine Rescue
- VHF marine radio services

- ABC and commercial AM/FM radio and television stations
- HF radio service VMC — 8176kHz
- recorded telephone maritime weather service (TWS)

Queensland

Full state service 1900 955 360
 Qld coastal waters service 1900 969 923
 Qld coastal marine warnings 1300 360 427

- newspapers
- maritime safety information via Satcom C.

Remember: regardless of the predicted weather conditions, mariners must always observe the weather as conditions can change quickly and with little warning.

SEAPOW MARINE

Diesel , Petrol & Stern Drive Marine Specialists

Volvo Penta- Caterpillar - Cummins -
 MAN -Yanmar - Mercruiser -
 VW Marine

Marine Generator Service & Repairs

Onan - Kohler - Westerbeke

Marine Boat Surveys & Mechanical Reports

Unit 5, Runaway Bay Marina,
 247 Bayview Street, Runaway Bay 4216
 sales@seapowermarine.com.au
 Tel. 07 55773008 Fax. 07 55773800

The Port of Cairns is home to one of Australia's largest fishing fleet.

The Port offers

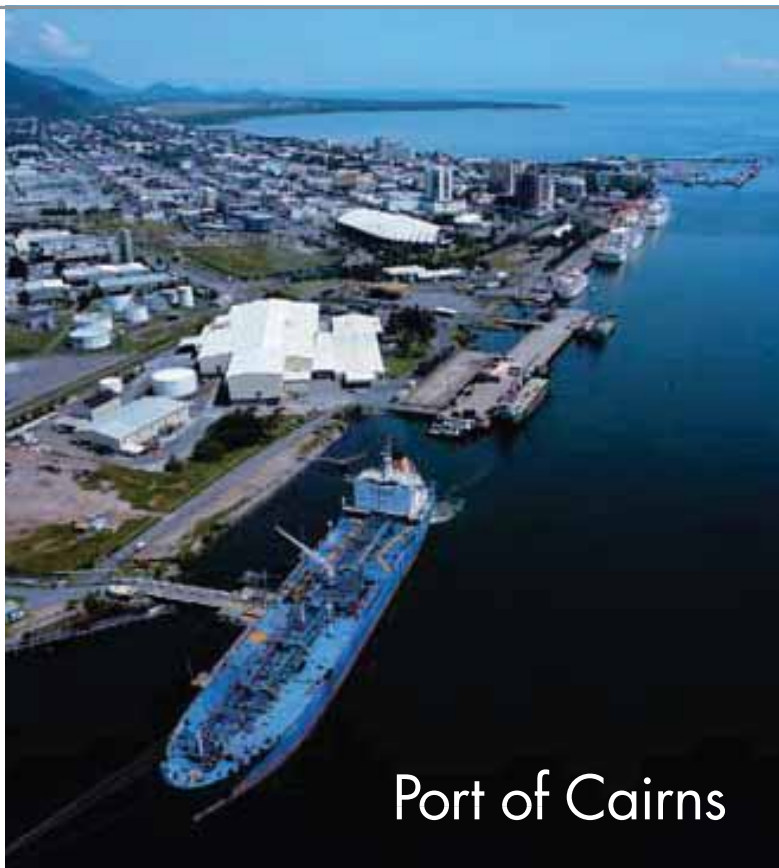
- extensive and experienced ship building and repair services
- slipways and dry docks up to 3,000 tonne capacity
- mooring facilities at the commercial fishing base for up to 104 vessels

Port of Cairns Operations Office

1 Spence Street
 Cairns, Qld 4870

Telephone +61 7 40512558

Email: enquiries@portsnorth.com.au



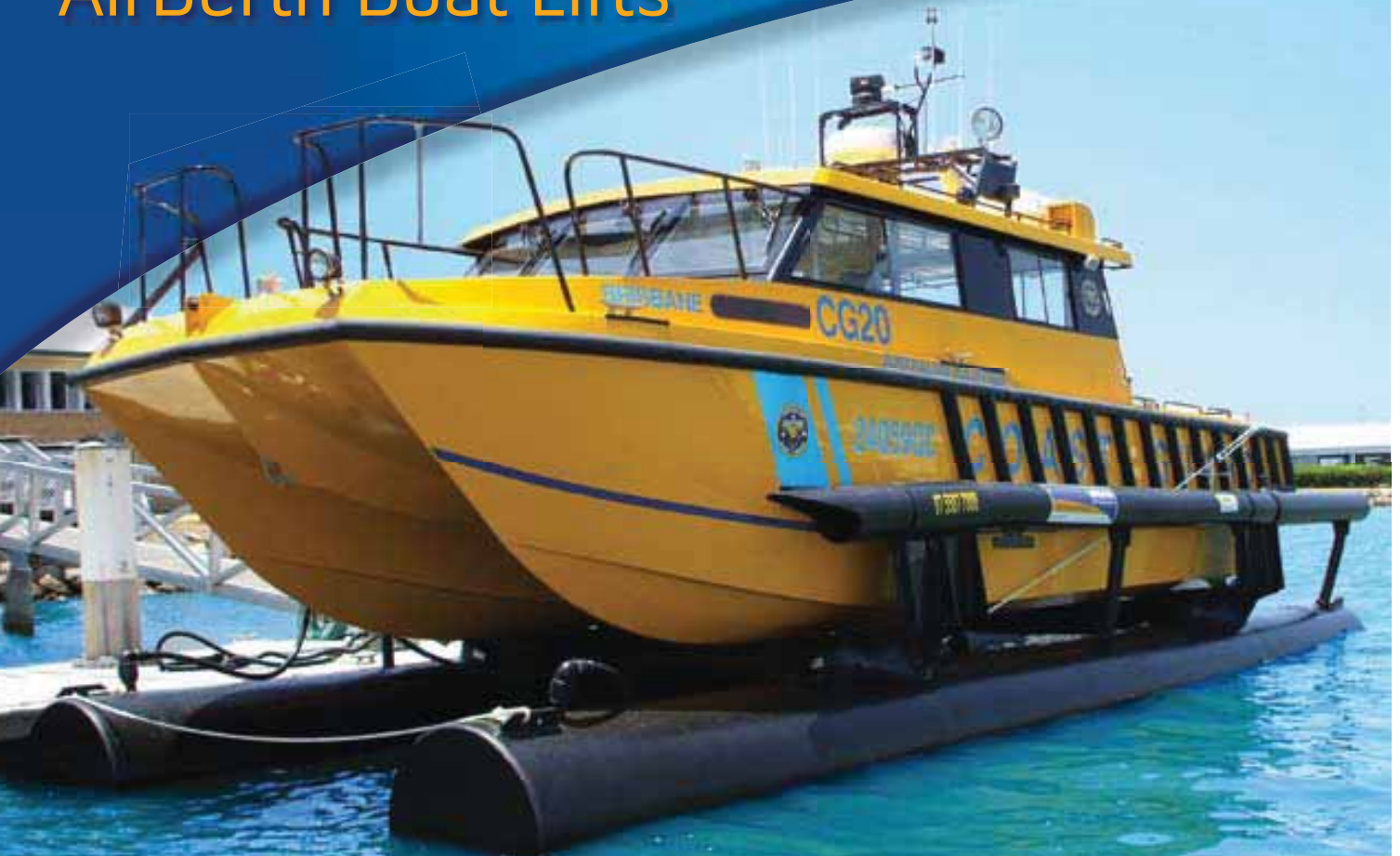
Port of Cairns

www.portsnorth.com.au

 Ports North

The number one choice for Government and Professional applications around the world...

AirBerth Boat Lifts



The revolutionary way to keep your boat out of the water, so that you can enjoy a trouble free boating lifestyle.

- ▶ Does not require anti-fouling
- ▶ Corrosion free and easy cleaning spray jets
- ▶ Fits into most dock configurations
- ▶ Flexible cradle shapes to mono planing hulls
- ▶ Suits boat models from 2,300kgs up to 15,000kgs
- ▶ High density polyethylene construction
- ▶ Quick, safe and so easy to launch
- ▶ Proven performance
- ▶ Saves time and money
- ▶ The leader in environmental best practices

AirBerth[®]
BOAT LIFT STORAGE SYSTEMS

Optimise the performance of your vessel today!

Phone: (07) 5587 7888

Email: info@airberth.com www.airberth.com

