

5. Port Infrastructure

5.1 Berth channel and swing basin information

The port of Cairns includes the dredged entrance access channel which has a designed depth of 9.0m lowest astronomical tide (LAT) and an average width of 90m to 100m on tow line.

The Entrance Channel has a length of 5.3 nautical miles (nm) and Trinity Channel is 1.8 nm in length from beacon C20 to Cairns number 12 wharf. The wharves are located on the western (city) side of the inlet, with further facilities for smaller craft being located in Smiths Creek.

Mariners are advised that the channel beacons are 180 meters apart, whilst the channel width is 90 to 100 meters on tow line. Mariners are advised that the toe line in the entrance channel varies in the area between C20 and C18 from 40 meters to 37.5 metres in width.

Table 5 Berth information

Berth	Design depth (metres)	Berth face (metres)	Wharf height (above datum)	Comments
Entrance channel	9.0			
Inner harbour	9.0			
Crystal swing basin				Swing basin diameters and depths may be reduced prior to scheduled dredging.
at 380 m	8.5			Maximum length 300 m dependant on draft
Navy swing basin	9.1			Swing basin diameters and depths may be reduced prior to scheduled dredging and when navy vessels are double banked at the navy jetty.
at 310 m	9.1			Maximum length 300 m depending on draft.

Berth	Design depth (metres)	Berth face (metres)	Wharf height (above datum)	Comments
Smith's Creek swing basin				
at 310m	8.3			
Marlin Marina				Actual depth 4.2 mtrs
C1–C6* C6* berth from 500-550 metres	9.3	565 Plus 35	4.9	Berths C1 to C6 form a continuous quay line. Cruise ships, naval vessels, and trawler berths.
C6* berth from 550-600 metres	8.4	565 Plus 35	4.9	Berths C1 to C6 form a continuous quay line. Cruise ships, naval vessels, and trawler berths.
C7	9.3	250	5.0	Berths C7 and C8 form a continuous quay line. Containers, bulk fertilizer and break bulk cargo.
C8	10.0	250	5.0	
C10	9.3	20	4.8	Tanker berth for oil and LPG and bunkering facilities.
C11				Owned and operated by the Royal Australian Navy (HMAS Cairns).
C12	10.5	190	5.0	Bulk sugar and bulk molasses.
CFB 1&2				Commercial Fishing Base – numerous moorings.
Barge ramp				Two barge ramps. Max barge size 55m x 13.2m or 500 grt.

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Berth	Design depth (metres)	Berth face (metres)	Wharf height (above datum)	Comments
Smith's Creek Wharf # 1	8.5m	53.4	3.7	General cargo berth. Max vessel size 80 m.

Please note that the depths are subject to change; for the latest information, please consult the Notices to Mariners.

Cairns Seaport is owned and operated by [Ports North](#). For more information, visit their website.

5.1.1 Berth headings

All headings utilise the WGS '84 datum and reflect port side too, head out.

Berth: Berths 1 – 6

Heading: 10° 27.28'

Berth: Berths 7 – 8

Heading: 10° 15.52'

Berth: 10

Heading: 3° 58.53'

Berth: 12

Heading: 351° 35.25'

Berth: Sailfish Quay (Berths 5-7)

Heading: 12° 41.67'

5.2 Leading lights and beacons

5.2.1 Beacons – entrance channel

(SPB = Single pile beacon)

Table 6 Entrance Channel navigation aids

No.	Description	Type	Mark	Characteristic
C1	Fairway beacon	SPB	East cardinal	VQ (3) 5s
C2	Port hand beacon	Tripod	Lateral mark	Fl R 4s

No.	Description	Type	Mark	Characteristic
C3	Starboard hand beacon	SPB	Lateral mark	FI G 4s
C4	Port hand beacon	SPB	Lateral mark	FI R 4s
C5	Starboard hand beacon	SPB	Lateral mark	FI G 4s
C6	Port hand beacon	SPB	Lateral mark	FI R 4s
C7	Starboard hand beacon	SPB	Lateral mark	FI G 4s
C8	Port hand beacon	SPB	Lateral mark	FI R 4s
C9	Starboard hand beacon	SPB	Lateral mark	FI G 4s
C10	Port hand beacon	SPB	Lateral mark	FI R 4s
C11	Starboard hand beacon	SPB	Lateral mark	FI G 4s
C12	Port hand beacon	SPB	Lateral mark	FI R 4s
C13	Starboard hand beacon	SPB	Lateral mark	FI G 4s
C14	Port hand beacon	SPB	Lateral mark	FI R 4s
C15	Starboard hand beacon	SPB	Lateral mark	FI G 4s
C16	Port hand beacon	SPB	Lateral mark	FI R 4s
C17	Starboard hand beacon	SPB	Lateral mark	FI G 4s
C18	Port hand beacon	SPB	Lateral mark	FI R 4s
C20	Special mark beacon	SPB	Special mark	VQY

The beacons marking the entrance channel are in nine pairs with a tenth beacon on the eastern side of the channel.

- All beacons are single pile beacons (SPB), with the exception of beacon C2 which is of a tripod configuration.
- Entrance beacon C1 is marked as an east cardinal with VQ (3) 5s and matching top mark.
- Entrance beacon C2 is marked as a port lateral with FI R 4s and matching top mark.
- The remaining entrance beacon pairs are numbered and lit in accordance with the IALA system (odd numbers and green lights characteristic being to starboard when entering the channel from seaward).

- The first six pairs are spaced five cables apart, with the remaining three pairs spaced at seven cables apart.
- The beacons are approximately 45 m from the channel edge with the exception of C20 which is approximately 15 m from the toe line and 105 m from the line of the outer channel leads.
- With the exception of beacons C1, and C20, the beacons are synchronized to flash every four seconds.
- C20 beacon has a yellow light (VQY) and this beacon marks the intersection of the entrance channel and Trinity Inlet Channel.

5.2.2 Leading lights – entrance channel

The leading lights (in line bear 209·4°) and are spaced 900 m apart.

The rear lead has a nominal range of 6 nautical miles and is positioned on the roof of the Shangri-La Hotel adjacent to the Marlin Marina complex. It is a PEL light fixed with oscillating boundaries, WRG showing a fixed sectored white light on the centre line of the channel with ISO 4s Q 1s FI green to starboard and ISO 4s Q1s FI red to port when entering from seawards.

Front lead – continual quick flash white (directional) and an all-round yellow light flashing every 4s. On demand day and night light lead, fixed white. These lights are located on a single pile beacon numbered T1.

5.2.3 Trinity Inlet – harbour beacons

Table 7 Aids to navigation, Trinity Inlet

No.	Description	Type	Characteristic
T2	Port hand beacon	SPB	FI R2·5s
T4	Port hand beacon	SPB	FI R4s
T6	Port hand beacon	SPB	FI R1·5s
T8	Yellow spherical buoy	Buoy – Y	FI Y2·5s
T10	Port hand buoy	Buoy – R	FI R2·5s
T7	Yellow spherical buoy	Buoy – Y	FI Y2·5s

5.2.4 Trinity Inlet – harbour leads

Both front and rear leading lights are located on single pile beacons. The distance between these beacons is 635m.

- Rear lead – fixed blue and FI G 3s (arc of visibility 011½°–014½°(T).
- Front lead – fixed blue and FI G 3s (arc of visibility 011½° – 014½° (T).

5.2.5 Trinity Inlet – Eastern arm

Navigation lateral buoys have been established in the East Trinity arm of Cairns Harbour in accordance with the IALA system (green being to starboard when entering the from seaward).

Port hand buoys (FI R 2.5s) / Starboard hand buoys (FI G 2.5s)

5.2.6 Smiths Creek – beacons

Table 8 Aids to navigation, Smiths Creek

Number	Description	Type	Characteristic
	Senrab Point Buoys	3 x By	2 x FI G 2·5s 1 x FI G 5s
S2	Port hand beacon	Pipe – W	FI R 2·5s
S4	Port hand beacon	Pile	FI R 3s

5.3 Anchorage conditions

Vessels are only to anchor in the position and area designated by the VTS centre. Upon anchoring, vessels are to advise Cairns VTS of their anchoring time and position and are to maintain a continuous listening watch on VHF channel 16 and any other channel as instructed.

Vessels are to report to the VTS centre if dragging their anchor and are not permitted to immobilise engines without the written approval of the Regional Harbour Master (See [10.2.1 – Immobilisation Main Engines](#)).

5.4 Anchorage areas

Anchorage areas outside of the pilotage area vessels waiting to enter the port may wish to proceed to anchor. Permission must be obtained from Cairns VTS prior to coming to anchor. Vessels may anchor in the following positions:

Area: CA1

Location: 16° 46.6' S; 145° 50.4' E

Area: CA2

Location: 16° 48.6' S; 145° 52.7' E

Area: CA3

Location: 16° 48.9' S; 145° 54.2' E

Area: CA6

Location: 16° 57.7' S; 145° 58.0'E

Area: CPS1

Location: 16° 46.4'S 145° 44.7' E

Area: CPS2

Location: 16° 49.8' S 145° 51.1' E

These positions afford anchorage in 10 to 15 m of water with good holding. Prevailing winds are up to 20 knots south–easterly with up to 1.5 knots of current.

Ships proceeding to anchor off the port shall ensure that they do not obstruct the entrance channel or anchor on the line of the leads into the port.

5.4.1 Anchorages inside the pilotage area

Vessels waiting to enter the port may wish to proceed to anchor. Permission must be obtained from Cairns VTS prior to coming to anchor. A pilot will be required for transit to the following anchorage positions, unless permission is granted by the Regional Harbour Master:

Area: CA4

Location: 16° 49.6"S; 145° 48.0'E

Area: CA5

Location: 16° 51.0S; 145° 50.0"E

Both of these positions are inside the quarantine line; vessels should have radio pratique.

Harbour anchorages

All tug and barges in Trinity Inlet proceeding to/from the Admiralty Island moorings/anchorage are required to have a workboat in attendance.

Four anchorage areas are available within Cairns Harbour for smaller vessels. The holding ground at all harbour anchorages is mud of varying depths over a hard base. Masters of vessels at these anchorages are responsible to ensure that sufficient depth of water is present to maintain an under keel clearance of no less than 0.3m at all times.

5.4.2 Area foxtrot Outer anchorage

Southern (upriver) boundary

Recommended for transient vessels and vessels awaiting Australian Border Force

From a point on the eastern shore co-incident with the 0·8 m sounding immediately to seaward of the outermost small craft mooring pile the boundary runs perpendicular to and terminates at a line drawn between beacons T2 and T4.

Western boundary

From the point where the southern boundary intersects a line drawn between beacons T2 and T4 follow this line NNE to beacon T2 and thence along a line drawn between beacon T2 and beacon C20, terminating at beacon C20.

Northern(seaward) boundary

From beacon C20 the boundary runs perpendicular to the centreline of the entrance channel (118°1/4T) to a point where it crosses the 0·0 metre isobath.

Eastern boundary

The 0·0 metre isobath on the eastern shore between the northern and southern boundaries.

5.4.3 Area golf Magazine Creek anchorage

Southern (upriver) boundary

A line drawn in an easterly direction from 16° 56'·69S; 145° 46'·878E to 16° 56'·69S; 145° 46'·961E.

Western boundary

A line drawn from 16° 56'·69S; 145° 47'·961E to buoy T10, and thence to buoy T8 and thence to beacon T6, terminating at beacon T6.

Northern boundary

From beacon T6 a line perpendicular to the centreline of the harbour channel (103°T) to the point where it contacts the 0·0 metre isobath.

Eastern boundary

The 0·0 metre isobath on the eastern shore between the northern and southern boundaries.

5.4.4 Area hotel Admiralty Island anchorage

Southern boundary

A line drawn in a westerly direction from 16° 56'·69S; 145° 47'·247E to 16° 56'·69S; 145° 47'·115E.

Eastern boundary

A line drawn from 16° 56'·69S; 145° 46'·115E to buoy T7, terminating at buoy T7.

Northern boundary

A line drawn from buoy T7 to 16° 56'·562S; 145° 46·8'E terminating at the 0·0 metre isobath.

Western boundary

A line drawn from 16° 56'·69S; 145° 47'·961E to buoy T10, and thence to buoy T8 and thence to beacon T6, terminating at beacon T6.

Admiralty Arm/Smiths Creek anchorage: Vessels may anchor in shelter to the east and south of Admiralty Island south of Latitude 16° 56'·75S and in Smiths Creek south of the Tingira Street boat ramp. Anchored vessels are required not to obstruct navigation in these areas. Depths vary from 12·0 to 0·0m.

5.4.5 Prohibited anchorages

Other than as indicated above, anchoring is prohibited within the entrance channel, Trinity Inlet, swing basins Smiths Creek to the north of the Tingira Street boat ramp, and the area between T1 and marlin marina, without the approval of the Regional Harbour Master (Cairns).