

# 7. Port navigation and movement restrictions

## 7.1 General

Draft figures are related to a draft in salt water of density 1025 kg/m<sup>3</sup>.

## 7.2 Speed

The Transport Operations (Marine Safety) Regulation 2016 Sections 81, 83, 84 and 85 apply and refer to ships not being operated at a speed of more than 6 knots when within 30 metres of any wharf, boat-ramp or pontoon, a vessel at anchor or moored or made fast to a jetty.

Departing vessels are restricted to a maximum speed of:

- 8.5 knots in the channel
- 8 knots in the paddock

Ship Masters should be fully aware of the effects of interaction (particularly when passing ships moored at berths adjacent to the channels, ships flying international code signals "A" or "R over Y" and any directive given by Hay Point VTS.

## 7.3 Channel depths

A deep water (Departure Channel) has been established with a design depth of 14.7m at LAT (Refer to NTM for latest depth information) which extends approximately 6.2 miles from the berths. From this point two departure tracks have been established commencing from the centre line at the eastern end of the Departure Channel which are defined on chart AUS 249.

Berth	Inward Movement		Outward Movement		Outward Movement	
	PST	SST	PST	SST	PST	SST
			Non Channel Departure		Channel Departure	
	PST	SST	PST	SST	PST	SST
Hay Point #1	11.5	13.1	13.1	13.1	14.7	14.7
Hay Point #2	11.5	13.1	13.1	13.1	14.7	14.7
Hay Point #3	11.5	13.1	13.1	13.1	14.7	14.7
DBCT #1	12.9	12.9	13.1	13.1	14.7	14.7
DBCT #2	12.9	12.9	13.1	13.1	14.7	14.7
DBCT #3	12.7	12.7	13.1	13.1	14.7	14.7
DBCT #4	12.7	12.7	13.1	13.1	14.7	14.7

Table 16 - Channel depths (design only)

**\*Refer to latest NTM for actual depth**

## 7.4 Berthing of deep draft vessels

Pilot on board (POB) time will be as follows:

- Rising tide: POB time will be when the UKC reaches 1.5m
- Falling tide: no later than two hours before predicted UKC of 1.5m is to be reached.

These UKC values are only used during calm weather and may be increased during periods of adverse swell conditions.

## 7.5 Berth Monitoring

The berths at Port of Hay Point are located up to 4 km offshore and are exposed to the SE trade winds that blow for most of the year. Weather of force 6 and above impact on ship operations both with berthing and the movement of vessels alongside. On occasions, particularly during the wet season, operations are suspended and in extreme cases, vessels are taken off the berths.

A [Berth Alert System](#) (BAS) that predicts and monitors sea swell and meteorological data has been installed at Hay Point to assist the Regional Harbour Master in measuring and predicting marginal sea conditions.

The Regional Harbour Master utilises the information gained from the BAS to alert vessels alongside that the weather conditions are deteriorating, and they may be required to place themselves on short notice for an emergency departure. Harbour services will also be alerted.

Should conditions deteriorate the Regional Harbour Master may order vessels off the berths. Whilst small vessels may be ordered off the berths, it is possible that larger vessels may remain alongside, and berths vacated by small vessels may have larger vessels replace them.

### 7.5.1 Berth Alert System (BAS)

The Hay Point Berth Alert System is designed to forecast berthed vessel safety based on forecast weather conditions.

BAS Online forecasts berth safety up to 72 hours ahead using swell forecasts produced by the Bureau of Meteorology's WAM model. WAM is a mathematical model that forecasts wave conditions at grid points surrounding Australia. It is driven from outputs of wind modelling and is adjusted with satellite altimeter data.

Swell forecasts are produced every 12 hours and include a now-cast and 12, 14 and 36 hour swell forecast.

Load planning can be undertaken utilising the information derived from the 23 hour DUKC advice, provided that the ship's 100% loaded BAS prediction forecast remains in the normal zone for the period that the vessel is scheduled to remain alongside the wharf.

## 7.6 UKC restrictions in the port

Weather, tidal conditions or special circumstances, may require a departure from these guidelines

- A minimum arrival UKC of 1.5m is to be maintained for two hours from the commencement of the manoeuvre

### 7.6.1 Dynamic Under Keel Clearance (DUKC®)

DUKC® methodology determines the UKC required for a given transit using the most accurate modelling techniques available and is the primary tool for determining sailing drafts and transit times. For each section of the transit, each UKC factor is individually determined based on the forecast environmental conditions, channel configuration, vessel dimensions, load state and speed.

DUKC® methodology removes the requirement for UKC allowances to be unnecessarily conservative in favourable conditions. Extreme conditions are accounted for as required, with UKC allowances increased accordingly to provide additional safety.

The DUKC® programme is used to determine the tidal window for vessels to depart or to determine the maximum draft that a vessel may sail at for a particular tide. The predictions are provided at 23 hours before the appropriate high water and updated 11 hours before the departure tide and indicate the sailing time and maximum draft.

The agent is required to complete the [VTS Pre-arrival form](#) with expected stability data for the vessels departure.

### 7.6.2 Current restrictions for sailing

The slack water sailing rule applies to all vessels with a sailing displacement of 110,000 tonnes and above when berthed Port Side To at any berth and from HP1 when berthed Starboard Side To. Refer to the table in [section 3.14.3](#).

### 7.6.3 Stage II Static Draft

The Stage II Static Draft" (1m +5% of draft) is to be used only when the DUKC® is unavailable.

Tidal window calculation (without DUKC®)

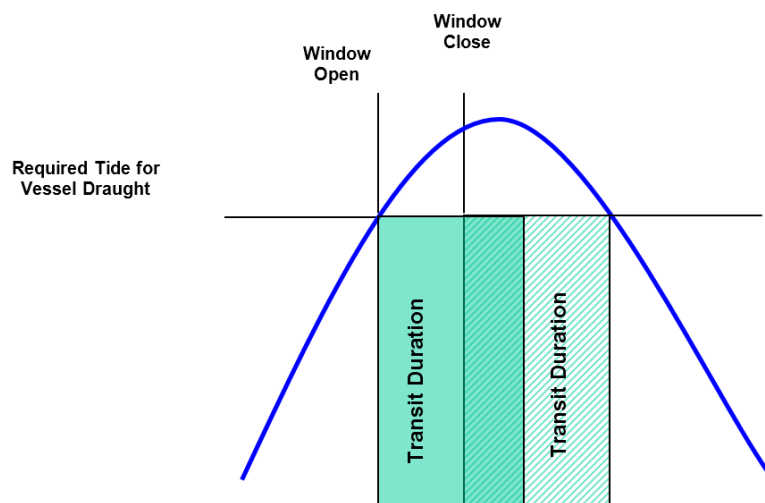
Static maximum draft check		
Vessel _____	Date _____	
Berth _____	Operator _____	
Vessel draft		
$(1.05 \times \text{draft}) + 1 - \text{Depth}$		Required Tide Height
Time of first tide height for draft		WINDOW OPEN
Time of last tide height for draft		
Time of last height for draft – Transit duration		WINDOW CLOSE

Table 17 - Static draft calculation table

**Note:** The tidal window will need to take into account the current restrictions covered in [3.14.1 Table 7](#) and [3.14.3 Table 9](#).

	SST transit duration	PST manoeuvre duration	SST depth	PST depth
BMA1	65	85	Refer NtM	Refer NtM
BMA2	70	90	Refer NtM	Refer NtM
BMA3	65	85	Refer NtM	Refer NtM
DBCT2	75	95	Refer NtM	Refer NtM
DBCT1	75	95	Refer NtM	Refer NtM
DBCT3	80	100	Refer NtM	Refer NtM
DBCT4	85	105	Refer NtM	Refer NtM

Table 18 - Transit durations



### 7.6.4 Low water deepest draft

If the DUKC® is not available the calculation for deepest draft at low water

$$= \text{Berth pocket depth} + \text{height of tide} - \underline{1.5\text{m}}$$

### 7.7 Approaches to pilot boarding place

The recommended tracks for Arrivals/Departures to Hay Point are shown on chart AUS 249; please note the Zone of Confidence shown on this chart in relation to soundings.

#### 7.7.1 Dangers

Two spoil ground areas have been established to the north of the port within lines joining the following positions:

21° .09.83'S	149° 20.11"E	<b>LEAST DEPTH 10·1M</b>
21° 11.99'S	149° 20.18'E	
21° 13.07'S	149° 18.17'E	
21° 11.55'S	149° 16.92'E	

Table 19 - Spoil Ground Area 1

21° 12.70'S	149° 17.24'E	<b>LEAST DEPTH 8·2 METRES</b>
21° 13.45'S	149° 17.66'E	
21° 13.64'S	149° 17.28'E	
21° 12.91'S	149° 16.86'E	

Table 20 - Spoil Ground Area 2

#### 7.7.2 Restricted Areas

A Restricted areas adjacent to the shipping channel and the port facilities have been gazetted under section 197 (2) of the [Transport Operations \(Marine Safety\) Regulation 2016](#) which declares that unauthorised vessels including small ships are prohibited from mooring, anchoring or manoeuvring within waters bounded by imaginary lines in the following areas:

a) **Restricted Area A**

- Latitude: 21°16.5841'S Longitude 149°19.0013'E to
- Latitude: 21°14.2058'S Longitude 149°17.7708'E to
- Latitude: 21°13.5524'S Longitude 149°18.9577'E to
- Latitude: 21°14.7615'S Longitude 149°19.7670'E to
- Latitude: 21°16.2235'S Longitude 149°20.3557'E then to
- Latitude: 21°16.5841'S Longitude 149°19.0013'E

b) **Restricted Area B**

Latitude: 21°14.7615'S Longitude 149°19.7670'E to

Latitude: 21°13.1673'S Longitude 149°25.2013'E to

Latitude: 21°14.8168'S Longitude 149°25.6319'E to

Latitude: 21°16.2235'S Longitude 149°20.3557'E then to

Latitude: 21°14.7615'S Longitude 149°19.7670'E

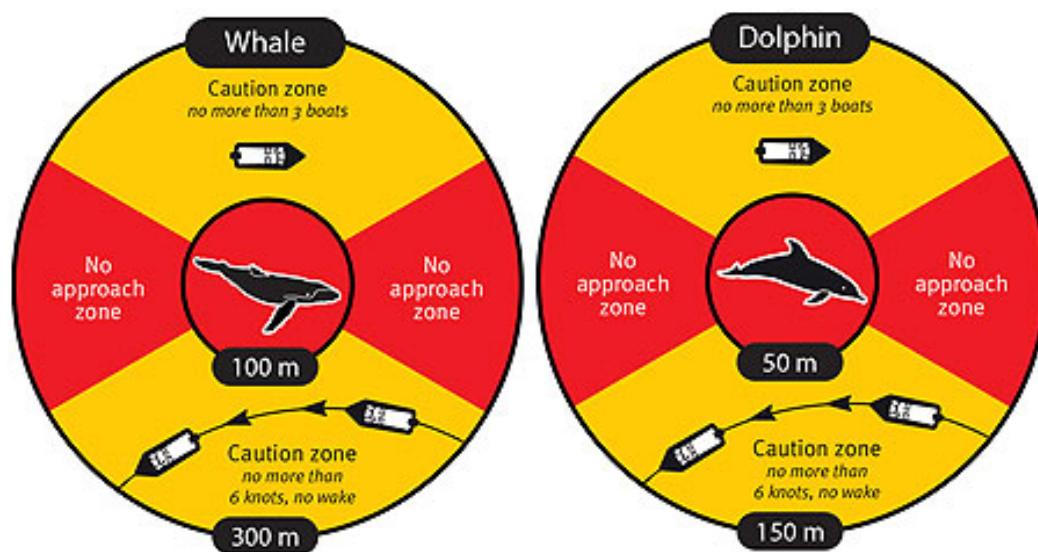
Small ships may transit Restricted Area when no large ship is manoeuvring in the area. Any vessel that would otherwise require a pilot in the compulsory pilotage area is not to cross Restricted Area B without a pilot on board. Transiting vessels and small ships should maintain a listening watch on VHF Channel 16 and should transit at 90° to the channel at best speed. (Refer Appendix [16.4 Security - Restricted Areas](#)).

## 7.8 Advisory Note – Interaction with Marine Mammals

The presence of whales or marine mammals indicates that our ports are seen as environmentally attractive places.

The safety of life and the security of the environment from ship based incidents is paramount.

All vessel masters are required to fully comply with relevant marine mammal legislation, such as the provisions of the [Nature Conservation \(Animals\) Regulation 2020 Chapter 6 Part 1](#) which prescribes minimum approach distances and maximum speeds within proximity to whales as illustrated in the diagram below:



When whales or marine mammals are reported in the vicinity of port areas and a risk to marine mammals is perceived, then every possible endeavour will be undertaken to manage shipping movements around the marine mammals to keep them safe, provided the safety of life, the ship and other environmental protection objectives are not threatened. Such action may include not commencing transits until the mammals are deemed clear.

In situations where a vessel is underway and restricted in its ability to manoeuvre or constrained to a channel and marine mammals are reported in the vicinity of the transit and a risk to marine mammals is perceived, the master must take all reasonable action necessary to keep them safe, without endangering the vessel, crew and the environment. Such action may include the reduction of speed to the minimum safe speed to safely navigate the channels.

Masters are required to report collisions with marine mammals to VTS and the Department of Environment and Science to 1300 130 372. Refer to [Marine wildlife strandings](#).