PORT OF NEWCASTLE

SHIPHANDLING

SAFETY GUIDELINES

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Table of Amendments

Part	Rev	Page No.	Reason for Amendments	Approved By	Date
All	A	All	Reissued Document	S. Noble	16/12/2014
1	B	6	Define tidal movement, tide limited vessel	S. Noble	16/12/2014
3E	B	20	Requirement for 4th tug on 60000GRT+	S. Noble	16/12/2014
4B	B	23	Reference to Part 3E inserted.	S. Noble	16/12/2014
5B	B	28	Capture of Tide Limited Vessels	S. Noble	16/12/2014
5B	B	28	Clarification capes passing loaded capes	S. Noble	16/12/2014
5D	B	32	Clarification capes passing loaded capes	S. Noble	16/12/2014
6D	B	36	Clarification capes passing loaded capes	S. Noble	16/12/2014
8C	B	36	Guideline trials by night 230-270m	S. Noble	16/12/2014
3E	C	20	Capture adoption 230-240m to K10	M. Goodfellow	17/07/2015
4C	B	25	Capture adoption 230-240m to K10	M. Goodfellow	17/07/2015
8C	C	43	Removal of 230-240m to K10 from trials	M. Goodfellow	17/07/2015
1	C	5	Minor wording amendments	M. Goodfellow	28/10/2015
2	B	7	Minor wording amendments	M. Goodfellow	28/10/2015
4A	B	22	Add ‘small ebb’ criteria to text	M. Goodfellow	30/05/2016
4C	C	25	Add tug requirements as per 3E in text	M. Goodfellow	30/05/2016
5A	B	27	Add ‘small ebb’ criteria to text	M. Goodfellow	30/05/2016
5B	C	28	Add tug requirements as per 3E in text	M. Goodfellow	30/05/2016
5D	C	32	Add tug requirements as per 3E in text	M. Goodfellow	30/05/2016
All			Extensive editing and update	M. Goodfellow	30/05/2016
9	A	44	Add Specific Berthing Parameters	M. Goodfellow	30/05/2016
3C	C	16	Reinstate original tug requirements for vessels with thrusters	M. Goodfellow	18/01/2017

Development of Ship Handling Risk Profile		
Part	**Date**	**Rationale**
8C	16/12/2014	Guideline trials to K10 for ships 230-270m LOA incorporate night transits as determined by Navigation Meeting 23/7/14.
3E	17/07/2015	Adoption of 230-240m into K10 into SHSG with tug reduction with K9 vacant as determined by Navigation Meeting 17/07/2015
4C	17/07/2015	Adoption of 230-240m into K10 into SHSG with tug reduction with K9 vacant as determined by Navigation Meeting 17/07/2015
8C	17/07/2015	Adoption of 230-240m into K10 into SHSG with tug reduction with K9 vacant as determined by Navigation Meeting 17/07/2015

Part 1 Definitions

Basin area - all navigable water westward from the Dyke Point Light.

Basin berths - all berths within the Basin area.

Beam - the vessel's extreme breadth as stated on her Builder's Certificate or in Lloyd's Register.

Check Pilot- An unlimited pilot who has been appointed to the position as 'Check Pilot' at Newcastle

Day - the period from 15 minutes before sunrise to 15 minutes after sunset.

Dead ship - a vessel without main engine power or with severely reduced main engine power.

Deadweight - the vessel's loaded summer deadweight as stated on her Builder's Certificate or in Lloyd's Register.

Departure time - the time the vessel lets go her moorings.

Ebb tide - the interval between high water and low water.

Entry time - the time the vessel passes between the seaward extremities of the breakwaters

Flood tide - the interval between low water and high water.

High water - the predicted time and/or height of high water as published for Newcastle by the Australian Bureau of Meteorology.

Kooragang area - all navigable water northward from the northern end of No. 6 Dyke.

Kooragang berths - all berths within the Kooragang area.

Large tide - a tide of a range of 1.1m or more.

LOA or length - the vessel's length overall as stated on her Builder's Certificate or in Lloyd's Register.

Low water - the predicted time and/or height of low water as published for Newcastle by the Australian Bureau of Meteorology.

Maximum draught - the vessel's deepest draught.

Mooring Buoy – at Western Basin No3 all vessels with a LOA 170m and more run lines to the mooring buoy.

Night - the period from 15 minutes after sunset to 15 minutes before sunrise.

River berths - all berths northward from the Dyke Point Light to and including Dyke No 6.

SAUCS Vessel - A vessel with draught equal to or greater than 13.6m.

SAUCS- A dynamic underkeel clearance system used to determine acceptable tidal sailing windows and acceptable underkeel clearance for SAUCS vessels

Slack water - the predicted times of high and low water.

Small tide - a tide of range of less than 1.1m

Stand of the tide - the interval from high water minus 60 minutes to high water plus 30 minutes, and from low water minus 30 minutes to low water plus 60 minutes (i.e. the first and last hours of the flood tide and the first and last half-hours of the ebb tide).

Sunrise - the predicted time of sunrise as published for Newcastle by the Australian Bureau of Meteorology

Sunset - the predicted time of sunset as published for Newcastle by the Australian Bureau of Meteorology.

Tidal range – the difference between the height of low water and the next high water (on the flood tide), and the difference between the high water and the next low water (on the ebb tide)

Tidal Movement - a vessel of 250.1m LOA or above (or a vessel appropriately excluded in Part 7) which is required to sail within a defined tidal window.

Tide limited vessel - a vessel that is not required to sail within a defined tidal window but is constrained by draft and requires a minimum tide height to provide sufficient UKC.

UKC – Vessels berthed must remain afloat at all times with a minimum UKC of 0.3m, however in the case of tankers carrying petroleum cargoes, the minimum UKC shall be 0.5m. The maximum draught of any 'non-SAUCS' vessel moving within the navigational channels of the Port shall be such that the static under-keel clearance is not less than 10% of the vessel's deepest draught. Where the vessel is a SAUCS vessel, it will require a 'SAUCS clearance' in accordance with the SAUCS system.

Unlimited Pilot – a pilot who has completed the Port Authority of NSW (Newcastle) MPDP (Marine Pilot Development Program) training and is licenced to pilot any vessel (subject to these guidelines and any vessel restriction endorsed on the licence).

VTIC – Vessel Traffic Information Centre

Part 2 General Information

Assumption - The Guidelines are predicated on the assumption that the present tug fleet will be retained in Newcastle, with any tug withdrawn from service being replaced by another tug of similar size, power and type, AND the fleet being able to meet the requirements of Part 3.

Ballast Condition - All vessels in ballast and/or part-cargo condition requiring the services of a Pilot must be ballasted and trimmed as follows:

- Minimum draughts are Forward: 2% of the vessels LOA and Aft: 3% of the vessels LOA, and
- Vessels over 175m LOA must be of such a draught that the propeller is fully immersed and trim by the stern does not exceed 1% of the vessel's overall length.

Vessels up to 240m LOA are generally handled in winds up to 35 knots.
Vessels in excess of 240m LOA may not be handled in winds over 25 knots.
For vessels over 250m LOA, ballast condition is deemed not to exceed 11.0m deepest draught.

Dead ships - Dead ships may move only in daylight and during good weather conditions. Any defects shall be noted at the time of booking. Vessels moving wholly within the Basin area or wholly within the Kooragang area may do so without tidal restriction; all other dead ships may move only at slack water, and only after consultation with a Senior Pilot and the allocated Pilot.

Exceptional circumstances - Notwithstanding anything contained in these Guidelines, exceptional circumstances caused by adverse weather conditions or excessive freshwater flow in the river will occasionally preclude any vessel movement or impose restrictions on vessel movements.

Fresh in River – After protracted periods of heavy rainfall the Hunter River currents are affected by the additional fresh water. Any vessel movement in these conditions may be subject to restrictions as determined by the Harbour Master

Guideline trials - From time to time, sections of the Guidelines may be modified on a trial basis to determine the feasibility of easing the requirements for specific movements. The trial amendments will apply (unless otherwise specified) ONLY:

- when the vessel has no condition which is likely to adversely affect its manoeuvring capabilities, such as engine or other deficiencies, excessive trim, etc,
- An unlimited pilot or a limited pilot whom the Harbour Master has authorised to conduct the trial movement is available, and
- All other criteria laid down by the Harbour Master with respect to the trial are met

Passenger Vessels – All Passenger Vessels are required to have at least one tug at all times.

Pilot boarding ground - Inward vessels requiring the services of a Pilot are boarded southeast of Nobbys light at one of two boarding positions identified on Chart AUS207. "Newcastle Harbour" will direct vessels to either PBG "Alpha" or PBG "Bravo" as appropriate. Attention is drawn to the precautionary area in the vicinity of the pilot boarding grounds and those vessels that have not been directed to approach a pilot boarding ground should not enter the precautionary area.

Pilot Boarding Arrangements – The Port of Newcastle provides a helicopter for pilot transfers. Whenever possible, this will be the means of pilot transfer. Vessels are required to complete a Safety Compliance checklist (available from the Agent, VTIC or Port Authority of NSW (Newcastle web site) to indicate suitability for **helicopter** 'land-on-hatch' operations.

Inbound vessels for which pilot transfer is to be conducted by **pilot cutter** operations will have the side of rigging of ladder nominated by "Newcastle Harbour" in consultation with pilots. In general, when approaching the boarding area from the south this nomination will be on the port side of the vessel, whilst vessels approaching from the north-east or east, the starboard side of the vessel shall generally be nominated.

The pilot ladder must be rigged with two manropes, in accordance with SOLAS requirements and I.M.P.A. recommendations, and be 2.0 - 2.5 metres above the waterline. The vessel will be contacted by the pilot cutter on VHF channel 6, whereby course and speed will be agreed between the ship Master and the cutter; in general, the vessel's speed should be approximately 8 to 10 knots and the swell should be placed on the vessel's quarter opposite to the pilot ladder in order to provide a good lee; the direction and force of the wind is secondary to the swell in the provision of this lee.

Detailed information on Pilot boarding can be found on the Port Authority of NSW (Newcastle) web site.

Pilot boarding time - The Pilot boarding time for inward vessels is approximately 30 minutes before the vessel's scheduled entry time, and for all other vessels is approximately 15 minutes before the vessel's scheduled departure time.

Provision of Services – Linesmen and Tugs are required to be in attendance at the vessel 15 minutes prior to booked departure times.

Tankers - All tankers are required to have at least one escort tug at all times.

Underkeel clearance - The maximum draught of any 'non-SAUCS' vessel moving within the navigational channels of the Port shall be such that the static under-keel clearance is not less than 10% of the vessel's deepest draught. (A table of channel maximum draughts for any tide follows this part). Where the vessel is a SAUCS vessel, the UKC may be less than 10% of the vessel's deepest draught providing it complies with a 'SAUCS clearance' in accordance with the SAUCS system

Vessel defects - The following defects, any of which may adversely affect the safe and efficient handling of the vessel, **must** be notified when the vessel is booked: -

- Deck machinery or equipment operating at less than normal capacity
- Lower than normal manning for the vessel
- Non-operational (or reduced power) thruster units
- Reduced main engine power
- Steering faults
- Non-functioning Bridge equipment (such as gyro compass or radar)

Vessel dimensions - For the purposes of these Guidelines (other than calculating underkeel clearance), a vessel's LOA, beam and maximum draught will be rounded to the nearest decimetre. When doing so, 1 to 4 centimetres will be rounded down, and 5 to 9 centimetres will be rounded up.

Vessel equipment - Vessels over 290m LOA must be fitted with the following equipment, all of which must be working and be easily visible by the Pilot, both by day and by night, from the Pilot's conning position:

- A rate-of-turn indicator, and
- A gyro compass repeater

Vessel size - The maximum acceptable size of vessel for entry to the Basin area is 265.0m LOA with 35.0m beam. The maximum acceptable size for entry to River or Kooragang berths is 300.0m LOA with 50.0m beam. Passenger vessels with LOA > 300m will be assessed on a case by case basis.

Table 1: Maximum draughts to or from River and Kooragang berths. Note that the current promulgated depth alongside must also be considered.

Maximum Draft To or From RIVER and KOORAGANG Berths

Tide prediction	Centimetre increment									
	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	13.82	13.83	13.84	13.85	13.85	13.86	13.87	13.88	13.89	13.90
0.1	13.91	13.92	13.93	13.94	13.95	13.95	13.96	13.97	13.98	13.99
0.2	14.00	14.01	14.02	14.03	14.04	14.05	14.05	14.06	14.07	14.08
0.3	14.09	14.10	14.11	14.12	14.13	14.14	14.15	14.15	14.16	14.17
0.4	14.18	14.19	14.20	14.21	14.22	14.23	14.24	14.25	14.25	14.26
0.5	14.27	14.28	14.29	14.30	14.31	14.32	14.33	14.34	14.35	14.35
0.6	14.36	14.37	14.38	14.39	14.40	14.41	14.42	14.43	14.44	14.45
0.7	14.45	14.46	14.47	14.48	14.49	14.50	14.51	14.52	14.53	14.54
0.8	14.55	14.55	14.56	14.57	14.58	14.59	14.60	14.61	14.62	14.63
0.9	14.64	14.65	14.65	14.66	14.67	14.68	14.69	14.70	14.71	14.72
1.0	14.73	14.74	14.75	14.75	14.76	14.77	14.78	14.79	14.80	14.81
1.1	14.82	14.83	14.84	14.85	14.85	14.86	14.87	14.88	14.89	14.90
1.2	14.91	14.92	14.93	14.94	14.95	14.95	14.96	14.97	14.98	14.99
1.3	15.00	15.01	15.02	15.03	15.04	15.05	15.05	15.06	15.07	15.08
1.4	15.09	15.10	15.11	15.12	15.13	15.14	15.15	15.15	15.16	15.17
1.5	15.18	15.19	15.20	15.21	15.22	15.23	15.24	15.25	15.25	15.26
1.6	15.27	15.28	15.29	15.30	15.31	15.32	15.33	15.34	15.35	15.35
1.7	15.36	15.37	15.38	15.39	15.40	15.41	15.42	15.43	15.44	15.45
1.8	15.45	15.46	15.47	15.48	15.49	15.50	15.51	15.52	15.53	15.54
1.9	15.55	15.55	15.56	15.57	15.58	15.59	15.60	15.61	15.62	15.63
2.0	15.64	15.65	15.65	15.66	15.67	15.68	15.69	15.70	15.71	15.72
2.1	15.73	15.74	15.75	15.75	15.76	15.77	15.78	15.79	15.80	15.81
2.2	15.82	15.83	15.84	15.85	15.85	15.86	15.87	15.88	15.89	15.90

Table 2: Maximum draughts to or from Basin berths. Note that the current promulgated depth alongside must also be considered.

Maximum Draft To or From Basin Berths

Tide prediction	Centimetre increment									
	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	11.64	11.65	11.65	11.66	11.67	11.68	11.69	11.70	11.71	11.72
0.1	11.73	11.74	11.75	11.75	11.76	11.77	11.78	11.79	11.80	11.81
0.2	11.82	11.83	11.84	11.85	11.85	11.86	11.87	11.88	11.89	11.90
0.3	11.91	11.92	11.93	11.94	11.95	11.95	11.96	11.97	11.98	11.99
0.4	12.00	12.01	12.02	12.03	12.04	12.05	12.05	12.06	12.07	12.08
0.5	12.09	12.10	12.11	12.12	12.13	12.14	12.15	12.15	12.16	12.17
0.6	12.18	12.19	12.20	12.21	12.22	12.23	12.24	12.25	12.25	12.26
0.7	12.27	12.28	12.29	12.30	12.31	12.32	12.33	12.34	12.35	12.35
0.8	12.36	12.37	12.38	12.39	12.40	12.41	12.42	12.43	12.44	12.45
0.9	12.45	12.46	12.47	12.48	12.49	12.50	12.51	12.52	12.53	12.54
1.0	12.55	12.55	12.56	12.57	12.58	12.59	12.60	12.61	12.62	12.63
1.1	12.64	12.65	12.65	12.66	12.67	12.68	12.69	12.70	12.71	12.72
1.2	12.73	12.74	12.75	12.75	12.76	12.77	12.78	12.79	12.80	12.81
1.3	12.82	12.83	12.84	12.85	12.85	12.86	12.87	12.88	12.89	12.90
1.4	12.91	12.92	12.93	12.94	12.95	12.95	12.96	12.97	12.98	12.99
1.5	13.00	13.01	13.02	13.03	13.04	13.05	13.05	13.06	13.07	13.08
1.6	13.09	13.10	13.11	13.12	13.13	13.14	13.15	13.15	13.16	13.17
1.7	13.18	13.19	13.20	13.21	13.22	13.23	13.24	13.25	13.25	13.26
1.8	13.27	13.28	13.29	13.30	13.31	13.32	13.33	13.34	13.35	13.35
1.9	13.36	13.37	13.38	13.39	13.40	13.41	13.42	13.43	13.44	13.45
2.0	13.45	13.46	13.47	13.48	13.49	13.50	13.51	13.52	13.53	13.54
2.1	13.55	13.55	13.56	13.57	13.58	13.59	13.60	13.61	13.62	13.63
2.2	13.64	13.65	13.65	13.66	13.67	13.68	13.69	13.70	13.71	13.72

Part 3 Tug Requirements

Part 3 is to be read in conjunction with parts 3A, 3B, 3C, 3D and 3E as appropriate. The base minimum standard for a tug in the port of Newcastle is one with:

- omni-directional thrust and with manoeuvring capability at least equivalent to Voith-Schneider or Azimuth Stern Drive; specifically excluded from this standard are "Kort Nozzles" and other ducting arrangements,
- a certified test demonstrating a minimum 47 tonnes static bollard pull,
- crewed with qualified, trained and competent crew to perform the intended towage operation.
- meeting the requirement that it provide a main tow line and reserve tow line commensurate with the loads imparted by the towage task.

The tug requirements specified in these Guidelines are the minimum requirements in good conditions. Any condition which could adversely affect the manoeuvring capabilities of a particular vessel (including trim, list, draught, engine or other deficiencies, weather, tide and fresh), may at the allocated Pilot's discretion, require the services of additional tugs for a particular manoeuvre.

The following requirements with respect to firefighting must be maintained;

- The towage provider is required to maintain a minimum fire-fighting capability within the port fleet.
- A minimum of 1 tug having firefighting equipment to F1 capability.
- Crews must be trained in the use of this firefighting equipment.
- In the event of a fire that requires the use of a fire fighting tug, the tug must be made available to take direction from the Harbour Master or a Command Officer duly nominated by the NSW Fire Brigade.

The above tug requirements do not apply to tug and barge movements which will be assessed on a case by case basis by the Harbour Master or his Representative.

Specific Tug Requirements.

In this sub-section:

- Headline Capable Tug (HLC) means a tug which meets the base minimum standard above and in addition is capable of use as a headline tug at speeds up to 7 knots, and which will be operated in that position at the requirement of the pilot,
- "Min. 65T BP" means a tug which has a minimum rated bollard pull of 65 tonnes,
- Numeric requirements are a minimum, thus 1 means "not less than 1", 2 means "not less than 2", etc.
- Tugs cannot fulfil two "HLC" and "Min.65T BP" obligations within this table, e.g. where requirements are 1 HLC and 2 Min.65T BP, if the allocated HLC has a BP above 65T, nevertheless two further Min.65T BP tugs will be required.
- "Approved Escort Tug" means a tug which has a class notation as an Escort Tug and is fitted with a suitable Escort Winch capable of performing Escort Function in combined sea and swell of 4.0m and minimum 65T BP

Shipping Manoeuvre	HLC	Min.65T BP	Other Specific Requirements
Ship requiring four tugs	1	2	
Loaded outbound ship requiring 3 tugs	1	1	
Ship requiring 3 tugs when berthing at K7, K8, K9, D1	1		
Passenger ship	1		All tugs fitted with non-marking skirts
Woodchip vessel	1		
Car carrier requiring 2 tugs			2 tugs and crew capable of securing to Gazinta recessed bitts
Car carrier requiring 3 tugs	1		2 tugs and crew capable of securing to Gazinta recessed bitts
Wilhelmsen type ro-ro requiring 2 tugs			2 tugs and crew capable of securing to Gazinta recessed bitts
Wilhelmsen type ro-ro requiring 3 tugs	1		2 tugs and crew capable of securing to Gazinta recessed bitts
Inbound loaded tanker with LOA above 200m requiring 3 tugs		2	1 ‘Approved Escort Tug’
Inbound loaded tanker with LOA above 200m requiring 4 tugs	1	2	1 ‘Approved Escort Tug’

Part 3A Dead Ships

Notes:

1. Thrusters are not to be taken into account when allocating tug requirements.
2. Dead ships may move only in daylight and during good weather conditions. Any defects shall be noted at the time of booking. Vessels moving wholly within the Basin area or wholly within the Kooragang area may do so without tidal restriction; all other dead ships may move only at slack water, and only after consultation with the Harbour Master or Check Pilot and the allocated Pilot.

LOA 90.0m or less

- 2 tugs, to be determined by a Check Pilot in consultation with the allocated Pilot

LOA 90.1m to 130.0m

- 2 tugs.

LOA 130.1m to 200.0m

- To or from Basin berths
  - (1) If maximum draught is 10.6m or less: 3 tugs.
  - (2) If maximum draught is 10.7m or more:
    - (a) If deadweight is 40,000 tonnes or less: 3 tugs.
    - (b) If deadweight is more than 40,000 tonnes: 4 tugs. In all other cases: 3 tugs.

LOA 200.1m or more

- 4 tugs.

Page Intentionally Blank; Section Omitted.

Part 3C Vessels with Thrusters

3C (1) Vessels with Thrusters (excluding Wilhelmsen RORO and Passenger Vessels)

For Wilhelmsen RORO vessels, see 3C (3) below.

For Passenger vessels, see 3C (4) below.

Tug requirements for vessels with thrusters vary with circumstances:

- Vessels with non-operational thrusters use the tugs in Part 3C plus 1 tug for each non-operational thruster.
- All other vessels use the tugs in Part 3C
- Tankers are required to have at least one escort tug, irrespective of thrusters.
- Any reduction in required tugs for vessels fitted with thrusters will be considered on request after appropriate assessment.

LOA 90.0m or less (unless excepted)

- Use the tugs as in Part 3E

LOA 90.1m to 140.0m (unless excepted)

- Vessels with an acceptable bow thruster and a stern thruster require tugs as specified under Category A in the table on page 17 (less one tug).
- Vessels with an acceptable bow thruster only require tugs as specified under Category A in the table on page 17.

LOA 140.1m to 215.0m (unless excepted)

- Vessels with an acceptable bow thruster and a stern thruster require tugs as specified under Category A in the table on page 17 (less one tug).
- Vessels fitted with an acceptable bow thruster only require tugs as specified under Category B in the table on page 17.

NB: All 'Challenger Class' vessels require 2 tugs at all times as per Part 3E.
All 5th Generation Gearbulk vessels require 2 tugs at all times as per Part 7 unless additional tugs are specified in other Parts of these guidelines.

EXCEPTED VESSELS (See individual computer 'Remarks')					
Vessel	**IMO No**	**Tugs**	**Vessel**	**IMO No**	**Tugs**
Thor Blue	8913875	0	Spaarnegracht	9202558	1
Clipper Mariner	9103362	0	Spiegelgracht	9197911	1
BBC Ecuador	9222352	0	Singelgracht	9197375	1
Rachel	8520434	0	Schippersgracht	9197363	1
CEC Fantasy	9076349	0	Slotergracht	9197947	1
Pacific Harmony	8809191	1	Snoekgracht	9202546	1
Star Bird	9041423	0			
Tradenes	8321890	0			
Goliath	9036430	0			
Hakula	8508929	0			
Han Hong	8919867	0			
Kiunga Chief	9195119	0			

Note: See 'Remarks' contained in computer database

TUG REQUIREMENTS FOR VESSELS WITH THRUSTERS					
BERTH	**CATEGORY A**		**CATEGORY B**		**COMMENTS**
	Loaded	**Ballast**	**Loaded**	**Ballast**	
BHP 6 (TANKERS)					GENERAL KEY
PST BERTHING	1	1	N/A	N/A	
PST OUT	1	1	N/A	N/A	0 [A] = min. 400 kW thruster, Else 1 tug.
CHANNEL HOLDING					
PST BERTHING	1[C]	1[C]	2	2	1 [B] = min. 1000 kW thruster, Else 2 tugs
PST OUT	1	1	2	2	
SST BERTHING	1[C]	1[C]	2	2	1 [C] = 2 tugs for “A” and “E” Class Gracht ships.
SST OUT	0[A]	0[A]	1 [B]	1 [B]	
DYKE 1					
PST BERTHING	1[C]	1[C]	2	2	
PST OUT	1	1	2	2	
SST BERTHING	1[C]	1[C]	2	2	
SST OUT	0[A]	0[A]	1 [B]	1 [B]	**NOTES**
DYKE 2					
PST BERTHING	1[C]	1[C]	2	2	“A” class Gracht ships have a 200 kW bow thruster and a left hand CPP, and are 130m L LOA.
PST OUT	1	1	2	2	
SST BERTHING	1[C]	1[C]	2	2	
SST OUT	0[A]	0[A]	1 [B]	1 [B]	
EASTERN BASIN 1					
PST BERTHING	1	1	2	2	“E” class Gracht ships have a 400 kW bow thruster and a left hand CPP, and are 136m L LOA.
PST OUT	0[A]	0[A]	1 [B]	1 [B]	
SST BERTHING	1	1	2	2	
SST OUT	1	1	2	2	
EASTERN BASIN 2					
PST BERTHING	1	1	2	2	
PST OUT	0[A]	0[A]	1 [B]	1 [B]	
SST BERTHING	1	1	2	2	
SST OUT	1	1	2	2	
KOORAGANG 2					
PST BERTHING	1	1	2	2	
PST OUT	0[A]	0[A]	1 [B]	1 [B]	
SST BERTHING	1	1	2	2	
SST OUT	1	0[A]	2	2	
KOORAGANG 3					
PST BERTHING	1	1	2	2	
PST OUT	0[A]	0[A]	1 [B]	1 [B]	
SST BERTHING	1	1	2	2	
SST OUT	1	1	2	2	
MAYFIELD 4					
PST BERTHING	1	1	2	2	
PST OUT	1	1	2	2	
SST BERTHING	1	1	2	2	
SST OUT	0[A]	0[A]	1 [B]	1 [B]	
WESTERN BASIN 3					
PST BERTHING	1	1	2	2	
PST OUT	1	1	2	2	
SST BERTHING	1	1	2	2	
SST OUT	0[A]	0[A]	1 [B]	1 [B]	
WESTERN BASIN 4					
PST BERTHING	1	1	2	2	
PST OUT	1	1	2	2	
SST BERTHING	1	1	2	2	
SST OUT	0[A]	0[A]	1 [B]	1 [B]	
LEE 5 / THROSBY 1					
PST BERTHING	1	1	2	2	
PST OUT	1	1	2	2	
SST BERTHING	1	1	2	2	
SST OUT	0[A]	0[A]	1 [B]	1 [B]	

3C (2) Section intentionally blank.

3C (3) Vessels with Thrusters: Wilhelmsen RORO vessels.

No tidal restrictions. Vessels above 240.1m when proceeding inbound to the Basin, daylight only; all others, no daylight restriction.

Where sustained wind speed does not exceed 20 knots, 2 tugs.

Where sustained wind speed exceeds 20 knots but does not exceed 25 knots, 3 tugs.

Where sustained wind speed exceeds 25 knots, not permitted.

3C (4) Vessels with Thrusters: Passenger Vessels.

All passenger ships are required to have at least one tug made fast throughout pilotages, irrespective of thruster and/or propulsion system.

Each passenger ship visiting the port will be assessed prior to initial arrival by the Harbour Master as to tug requirements, daylight limitations, tidal restrictions and berth restrictions. This assessment may be re-assessed on the basis of experience with the vessel. Where tugs are assessed in respect of a passenger vessel, the tugs shall be made fast during the pilotage.

Part 3D Vessels with a High-Efficiency Rudder system and/or Twin Propellers/Twin Rudders

- Tankers are required to have at least one tug irrespective of rudder or propeller systems.
- Pilots will assess the manoeuvrability of a vessel with a high-efficiency rudder system and/or twin propellers/rudders on its first visit to the Port. Tug requirements for these vessels vary with circumstances:-
    - On the vessel's first visit to the Port use the tugs in Part 3E.
    - On subsequent visits:
        - Approved vessels use the tugs in Part 3D
        - All other vessels use the tugs in Part 3E

LOA 175.0m or less

- Any reduction in the number of tugs required under Part 3C or Part 3E will be considered on request and after appropriate assessment.

LOA 175.1m or more

- Use the tugs in Part 3E.

Part 3E Normal Tug Requirements

- Note that Tankers and Passenger Vessels are required to have at least one tug irrespective of size or thrusters.
- Vessels having bow and/or stern thrusters are dealt with at Part 3C

LOA 90.0m or less

- 1 tug - if required by the allocated Pilot.

LOA 90.1m to 130.0m

- 1 tug.

LOA 130.1m to 200.0m

- To or from Basin berths:
  (1) If maximum draught is 10.6m or less: 2 tugs.
  (2) If maximum draught is 10.7m or more
    (a) If deadweight is 40,000 tonnes or less: 2 tugs.
    (b) If deadweight is more than 40,000 tonnes: 3 tugs.
- In all other cases: 2 tugs.

LOA 200.1m to 215.0m

- 3 tugs.

LOA 215.1m to 230.0m

- To Basin berths:
  (1) If maximum draught is 11.0m or less: 3 tugs.
  (2) If maximum draught is 11.1m or more: 4 tugs.
- From Basin berths: 4 tugs.
- In all other cases: 3 tugs.

LOA 230.1m to 240.0m

- To or from Basin berths: 4 tugs.
- To K10: 4 tugs if K9 occupied
  (Only 3 tugs required for transit to buoy 15 and fourth tug for movement through South Arm Channel).
- To K10: 3 tugs if K9 vacant.
- From K10: 3 tugs
- In all other cases:
  (1) Where gross tonnage is less than 60,000, 3 tugs.
  (2) Where gross tonnage is greater than or equal to 60,000, 4 tugs.

LOA 240.1m or more

- 4 tugs.

Tug Requirement - Harbour Removal.

- Where a vessel is to be shifted along a straight and unimpeded berth (i.e. K4,K5,K6,K7 or K8,K9,K10 or D4,D5 or E1,E2 or W3,W4) and all moorings need to be repositioned, provided main engine is available - 2 tugs.
- Where the vessel is normally handled with 1 tug and the thruster is operational - 1 tug.
- Where the vessel is normally handled without tugs, this will be at the discretion of the allocated pilot.

Barge Movements.

- Tug requirements and tug suitability for Barge Movements will be assessed on a case by case basis by the Harbour Master or his nominated Representative giving regards to the intended movement and the prevailing conditions.

Part 4A From Sea to Basin Berths

Wilhelmsen ROROs with operational thrusters are excluded from this section and are covered at Part 3C (3).

Passenger vessels with operational thrusters are excluded from this section and are covered at Part 3C (4).

LOA 90.0m or less

- 1 tug, if required by the allocated Pilot - no tidal restrictions.

LOA 90.1m to 130.0m (for vessels with thruster/s refer to Part 3C)

- 1 tug - no tidal restrictions.

NOTE:
Vessels greater than 170.0m berthing at Western Basin 3 are required to run lines to the mooring buoy.

LOA 130.1m to 200.0m

- If maximum draught is 10.6m or less: 2 tugs - no tidal restrictions.
- If maximum draught is 10.7m or more
  (1) If deadweight is 40,000 tonnes or less: 2 tugs - no tidal restrictions.
  (2) If deadweight is more than 40,000 tonnes: 3 tugs - no tidal restrictions.

LOA 200.1m to 215.0m

- If maximum draught is 11.0m or less: 3 tugs - on the stand of the tide, on the flood tide or on a small ebb tide (<1.1m range).
- If maximum draught is 11.1m or more: 3 tugs - on the stand of the tide or on the flood tide.

LOA 215.0m to 230.0m

- If maximum draught is 11.0m or less: 3 tugs - on the stand of the tide, on the flood tide or on a small ebb tide (<1.1m range).
- If maximum draught is 11.1m or more: 4 tugs - on the stand of the tide or on the flood tide.

LOA 230.1m to 265.0m

- If maximum draught is 11.0m or less
  (1) At night: not permitted.
  (2) By day: 4 tugs - on the stand of the tide or on the flood tide.

- If maximum draught is 11.1m or more
  (1) At night: not permitted.
  (2) By day: 4 tugs - on the stand of the tide or on a small flood tide (<1.1m range).

Part 4B From Sea to River and Kooragang Berths (K7 and eastward)

As per Part 9, no part loaded vessel is permitted to proceed to K7.

Wilhelmsen ROROs with operational thrusters are excluded from this section and are covered at Part 3C (3).

Passenger vessels with operational thrusters are excluded from this section and are covered at Part 3C (4).

LOA 90.0m or less

- 1 tug, if required by the allocated Pilot - no tidal restrictions.

LOA 90.1m to 130.0m (for vessels with thruster/s refer to Part 3C)

- 1 tug - no tidal restrictions.

LOA 130.1m to 200.0m

- 2 tugs - no tidal restrictions.
- 3 tugs – Tankers of maximum draught 10.7m or more berthing 1 Dyke Starboard side alongside – no tidal restrictions..

LOA 200.1m to 240.0m

- Tugs as per Part 3E, no tidal restrictions.

  For "Sage Sagittarius", "Energia Centaurus" and "Sincere Pisces", the following conditions apply:
  - 4 tugs,
  - By night, a maximum swell of 3.0m Hmax;
  - By night, any vessel secured at No.1 Dyke does not exceed 230m LOA or 32.26m beam;

LOA 240.1m to 250.0m

- 4 tugs - no tidal restrictions.

LOA 250.1m to 275.0m

- At night: 4 tugs – no tidal restrictions.

  The following conditions apply:
  - A maximum swell of 3.0m Hmax;
  - Any vessel secured at No.1 Dyke does not exceed 230m LOA or 32.26m beam;
  - In Ballast Condition only (not exceeding 11.0m maximum draught).

- By day: 4 tugs - no tidal restrictions

LOA 275.1m to 290.0m

- At night: 4 tugs – no tidal restrictions subject to the following conditions:
  - A maximum swell of 3.0m Hmax;
  - A maximum wind speed of **15** knots;
  - Any vessel secured at No.1 or No. 2 Dyke does not exceed 230m LOA or 32.26m beam;
  - In Ballast Condition only (not exceeding 11.0m maximum draught).

- By day: 4 tugs - no tidal restrictions

LOA 290.1m to 300.0m.

- If maximum draught is 11.0m or less:
  (1) At night: not permitted.
  (2) By day: 4 tugs - no tidal restrictions.

- If maximum draught is 11.1m or more:
  (1) At night: not permitted.
  (2) By day: 4 tugs - on the stand of the tide.

Part 4C Ships Transiting South Arm Channel Inward

This part must be read in conjunction with Part 4B, and in particular conditions relating to ships transiting by night. Wherever there is conflict between the requirements of the two parts, the more stringent restriction/s shall be applied to ships subject to this part. As per Part 9, no part loaded vessels are permitted to proceed to K8, K9, K10.

LOA 160.1m to 200.0m

- 3 tugs, only 2 tugs required for transit to buoy 15, third tug required for movement through South Arm channel, and
- Wind less than 35 knots by day, wind less than 25 knots by night,

LOA 200.1m to 230.0m

- Tugs as per part 3E, and
- Wind less than 25 knots,

LOA 230.1m to 240.0m

Vessels proceeding to Kooragang 8, 9 or 10

- 3 Tugs required to K8 and K9 if gross tonnage < 60,000T, and
- 4 Tugs required to K8 and K9 if gross tonnage > 60,000T and
- 3 Tugs required to K10 if K9 is unoccupied and if gross tonnage <60,000T, and
- 4 tugs required to K10 if K9 is unoccupied and if gross tonnage >60,000T, and
- 4 Tugs required to K10 if K9 is occupied irrespective of vessel tonnage, and
- Wind less than 25 knots,

LOA 240.1m to 270.0m

Vessels proceeding to Kooragang 8 or 9

- 4 tugs required to K8 and K9, and
- Wind less than 25 knots,

Vessels proceeding to Kooragang 10

- Not permitted, HOWEVER a trial is being undertaken as laid down at Part 8C.
- 4 tugs required for any trial vessel to K10

LOA 270.1m to 290.0m

- 4 tugs required, and
- Wind less than 25 knots by day, wind less than 15 knots by night,
- ***Kooragang 8 or 9 only, not permitted to Kooragang 10***

LOA 290.1m to 292.0m

- 4 tugs required, and
- By daylight only, port entry may be booked from sunrise minus 15 minutes to sunset minus 60 minutes, and
- Wind less than 25 knots,
- ***Kooragang 8 or 9 only, not permitted to Kooragang 10***

LOA above 292.0m

- A trial exists in respect of vessels between 292.1m and 300.0m LOA, see Part 8A
- ***Kooragang 8 or 9 only, not permitted to Kooragang 10***
- 4 tugs required

LOA less than 160.0m

- Assessed by the Harbour Master on a case by case basis.

Part 5A From Basin Berths to Sea

Wilhelmsen ROROs with operational thrusters are excluded from this section and are covered at Part 3C (3).

Passenger vessels with operational thrusters are excluded from this section and are covered at Part 3C (4).

LOA 90.0m or less

- 1 tug, if required by the allocated Pilot - no tidal restrictions.

LOA 90.1m to 130.0m

- 1 tug (for vessels with thruster/s refer to Part 3C) - no tidal restrictions.

LOA 130.1m to 200.0m

- If maximum draught is 10.6m or less: 2 tugs - no tidal restrictions.
- If maximum draught is 10.7m or more:
  (a) If deadweight is 40,000 tonnes or less: 2 tugs - no tidal restrictions.
  (b) If deadweight is more than 40,000 tonnes: 3 tugs - no tidal restrictions.

LOA 200.1m to 215.0m

- 3 tugs - no tidal restrictions.

LOA 215.1m to 230.0m

- If maximum draught is 11.0m or less: 3 tugs – No tidal restrictions.
- All other Vessels: 4 tugs – on the flood tide or on a small ebb tide (<1.1m range) or at slack water with 10% UKC.

LOA 230.1m to 250.0m

- Container and ro-ro vessels: 4 tugs - on the flood tide or on a small ebb tide (<1.1m range).
- All other vessels: 4 tugs - on the flood tide.

LOA 250.1m to 265.0m

- If maximum draught is 11.0m or less
  (a) Container and ro-ro vessels: 4 tugs - on the flood tide or on a small ebb tide (<1.1m range) or at slack water.
  (b) All other vessels: 4 tugs - on the flood tide.
- If maximum draught is 11.1m or greater
  (a) Container and ro-ro vessels: 4 tugs - on the flood tide or on a small ebb tide (<1.1m range).
  (b) All other vessels: 4 tugs - from high water minus 90 minutes to high water minus 30 minutes, or at slack water, with 10% UKC.

See Section 2 for UKC of Vessels over 250m LOA intending to Swing in the Basin Area

Part 5B From River and Kooragang Berths to Sea (Excluding NCIG berths)

Wilhelmsen ROROs with operational thrusters are excluded from this section and are covered at Part 3C (3).

Passenger vessels with operational thrusters are excluded from this section and are covered at Part 3C (4).

Vessels shall not load beyond the drafts laid down in Part 2, Table 1 for the predicted High Water that is immediately subsequent to anticipated departure. This will require close monitoring in the event of change to anticipated departure time. Pilotage of a vessel that exceeds the tabular criteria may have pilotage declined.

LOA 90.0m or less

- 1 tug, if required by the allocated Pilot - no tidal restrictions.

LOA 90.1m to 130.0m (for vessels with thruster/s refer to Part 3C)

- 1 tug - no tidal restrictions.

LOA 130.1m to 200.0m

- 5th generation "Gear bulk" vessels
  (1) If "head in" : 2 tugs - no tidal restrictions.
  (2) If "head out" : Deepest draft 11.00m or more - 2 tugs
  : Deepest draft 10.99m or less 1 tug
  All other vessels: 2 tugs - no tidal restrictions.

LOA 200.1m to 240.0m

- 3 Tugs and:
  (1) If maximum draft is 13.6m or less, no tidal restrictions.
  (2) Tide limited vessels - If maximum draft is 13.61m or more, no vessel shall load beyond the drafts laid down in Part 2, Table 1 for the predicted High Water that is immediately subsequent to anticipated departure. Such vessels may depart at any time whereby a static underkeel clearance calculation would maintain 10% UKC throughout the passage. Where a static underkeel clearance calculation that would maintain 10% UKC throughout the passage cannot be achieved, the vessel shall conform to the tidal window constraints laid down for a vessel of LOA 250.1m to 300m with a maximum draft of 13.61m or more below.

LOA 240.1m to 250.0

- 4 Tugs and:
  (1) If maximum draft is 13.6m or less, no tidal restrictions.
  (2) Tide limited vessels - If maximum draft is 13.61m or more, no vessel shall load beyond the drafts laid down in Part 2, Table 1 for the predicted High Water that is immediately subsequent to anticipated departure. Such vessels may depart at any time whereby a static underkeel clearance calculation would maintain 10% UKC throughout the passage. Where a static underkeel clearance calculation that would not maintain 10% UKC throughout the passage cannot be achieved, the vessel shall conform to the tidal window constraints laid down for a vessel of LOA 250.1m to 300m with a maximum draft of 13.61m or more below.

LOA 250.1m to 300.0m

- **If maximum draught is 13.6m or less**

  (1) From River berths: 4 tugs no tidal restrictions
  (2) From Kooragang berths: 4 tugs no tidal restrictions

- **If maximum draught is 13.61m or more**

  (1) If another vessel or vessels over 250.0m LOA is/are departing on the same tide: Part 5C also applies.

  (2) If a vessel over 250.0 m LOA and with maximum draft exceeding 13.61m has completed loading at a river berth or Kooragang 7, 8 or 9, it shall depart prior to "tidal movement/s" from upstream berths transiting past its berth. Exceptions shall not be made without the explicit approval of the Harbour Master.

  (3) Where the predicted range of tide is less than 1.5m:

  (a) From River berths:

  i. If vessel(s) at Channel berth or Dyke berths 1 or 2 do not have a beam exceeding 32m; 4 tugs - from high water minus 75 minutes to high water plus 30minutes, or at low water. In the event of three or more tidal movements on one tide, the first ship may be booked for sailing 90 minutes prior to high water.

  ii. If vessel(s) at Channel berth or Dyke berths 1 or 2 have a beam exceeding 32m; 4 tugs - from high water minus 75 minutes to high water, or at low water. In the event of three or more tidal movements on one tide, the first ship may be booked for sailing 90 minutes prior to high water.

  (b) From Kooragang berths (KCT terminal):

  i. If vessel(s) at Channel berth or Dyke berths 1 or 2 do not have a beam exceeding 32m and vessels at Carrington terminal do not have an LOA exceeding 270m; 4 tugs - from high water minus 90 minutes to high water plus 30 minutes, or at low water. In the event of three or more tidal movements on one tide, the first ship may be booked for sailing 105 minutes prior to high water.

  ii. If vessel(s) at Channel berth or Dyke berths 1 or 2 have a beam exceeding 32m or vessels at Carrington terminal have an LOA exceeding 270m; 4 tugs - from high water minus 90 minutes to high water, or at low water. In the event of three or more tidal movements on one tide, the first ship may be booked for sailing 105 minutes prior to high water.

  (c) From Kooragang berths (NCIG terminal):

  i. If vessel(s) at Channel berth or Dyke berths 1 or 2 do not have a beam exceeding 32m and vessels at Carrington terminal do not have an LOA exceeding 270m; 4 tugs - from high water minus 90 minutes to high water plus 15 minutes, or at low water. In the event of three or more tidal movements on one tide, the first ship may be booked for sailing 105 minutes prior to high water.

ii. If vessel(s) at Channel berth or Dyke berths 1 or 2 have a beam exceeding 32m or vessels at Carrington terminal have an LOA exceeding 270m; 4 tugs - from high water minus 90 minutes to high water minus 15minutes, or at low water. In the event of three or more tidal movements on one tide, the first ship may be booked for sailing 105 minutes prior to high water.

(4) Where the predicted range of tide is 1.5m or greater:

(a) From River berths: 4 tugs - from HW – 75 mins to high water, or at low water.
(b) From Kooragang berths (KCT terminal): 4 tugs - from HW – 90 mins to high water, or at low water,
(c) From Kooragang berths (NCIG terminal): 4 tugs - from HW – 90 mins to high water minus 15minutes, or at low water.

Part 5C Multiple tidal movements on one high water

a. In this part, “tidal movement” means an outbound vessel of LOA greater than 250.0m and with a maximum draft exceeding 13.61m.

b. The handling of vessels in this part remains constrained by the obligations of Parts 5B & 5D and other parts as appropriate.

> Agents and terminal operators are reminded that if a vessel is not ready to depart at her booked time, her departure will be cancelled and her tugs and linesmen directed to the next vessel booked for that tide.

c. If a vessel over 250.0 m LOA and with maximum draft exceeding 13.61m has completed loading at a river berth or Kooragang 7, 8 or 9, it shall depart prior to “tidal movement/s” from upstream berths transiting past its berth. Exceptions shall not be made without the explicit approval of the Harbour Master.

d. Movements to which this part applies are to be booked to the minute.

e. In order to optimise channel utilisation, tidal movements to which this part applies are to be booked such that two movements occur simultaneously.

f. With the exception of g. below, the first movement is to be booked at the earliest time permitted by part 5B or 5D as appropriate, and will generally be downstream of the second movement which is to be booked one minute after the first – the scheduling is to all intents and purposes the same time, timing differential is merely to indicate planned sequencing of vessels.

g. Where a tidal movement is to depart from a river berth, earliest departure in accordance with 5B is fifteen minutes after a vessel departing a Kooragang berth. In this event, the Kooragang departure shall be booked first at earliest permissible time, and the river berth departure second, fifteen minutes later.

h. Subsequent tidal movements shall be booked according to established ship/tug transit timings.

Part 5D Ships transiting South Arm Channel Eastbound (NCIG berths)

Ships departing under this part are confined by the requirements of Parts 5B and 5C; should there be any conflict of meaning, the more stringent requirement is to apply.

LOA up to 230.0m

- 2 tugs for vessels up to 200m
- 3 tugs for vessels 200.1m to 230.0m,
- Winds less than 35 knots, and
- Static underkeel clearance minimum of 10% of draft may result in draft restrictions.

LOA 230.1m to 270.0m

- 3 tugs for vessels 230.1m to 240m
- 4 tugs for vessels 240.1m to 270m
- Winds less than 35 knots,
- Ships of LOA 250.1m or greater and draught 13.61m or greater shall be subject to maximum draft laid down in table one of Part 2 and to departure times laid down in Part 5B.
- A ship of LOA 250.1m or greater and draught 13.61m or greater shall not transit past a vessel over 250.1 m LOA and with maximum draft exceeding 13.61m that has completed loading at a river berth or Kooragang 7, 8 or 9. Exceptions shall not be made without the explicit approval of the Harbour Master.

LOA 270.1m to 300.0m

- 4 tugs
- Winds less than 35 knots,
- Ships of draught 13.61m or greater shall be subject to maximum draft laid down in table one of Part 2 and to departure times laid down in Part 5B.

Part 6A From Basin Berths to Basin Berths

LOA 90.0m or less

- 1 tug, if required by the allocated Pilot - no tidal restrictions.

LOA 90.1m to 130.0m (for vessels with thruster/s refer to Part 3C)

- 1 tug - no tidal restrictions.

NOTE: Vessels greater than 170.0m LOA berthing at West Basin 3 are required to run lines to the mooring buoy.

LOA 130.1m to 200.0m

- If maximum draught is 10.6m or less: 2 tugs - no tidal restrictions.
- If maximum draught is 10.7m or more:
  - (1) If deadweight is 40,000 tonnes or less: 2 tugs - no tidal restrictions.
  - (2) If deadweight is more than 40,000 tonnes: 3 tugs - no tidal restrictions.

LOA 200.1m to 215.0m

- 3 tugs - no tidal restrictions.

LOA 215.1m to 230.0m

- If maximum draught is 11.0m or less: 3 tugs - no tidal restrictions.
- If maximum draught is 11.1m or more: 4 tugs - no tidal restrictions.

LOA 230.1m to 265.0m

- 4 tugs - no tidal restrictions.

Part 6B From Basin Berths to River and Kooragang Berths

LOA 90.0m or less

- 1 tug, if required by the allocated Pilot - no tidal restrictions.

LOA 90.1m to 130.0m (for vessels with thruster/s refer to Part 3C)

- 1 tug - no tidal restrictions.

LOA 130.1m to 200.0m

- If maximum draught is 10.6m or less: 2 tugs - no tidal restrictions.
- If maximum draught is 10.7m or more:
  (1) If deadweight is 40,000 tonnes or less: 2 tugs - no tidal restrictions.
  (2) If deadweight is 40,000 tonnes or more: 3 tugs - no tidal restrictions.

LOA 200.1m to 215.0m

- 3 tugs - no tidal restrictions.

LOA 215.1m to 230.0m

- If maximum draught is 11.0m or less: 3 tugs – no tidal restrictions.
- All other Vessels: 4 tugs – on the flood tide or on a small ebb tide (<1.1m range) or at slack water with 10% UKC.

LOA 230.1m to 265.0m

- If maximum draught is 11.0m or less: 4 tugs - at slack water or on a small flood tide (<1.1m range).
- If maximum draught is 11.1m or more: 4 tugs: at slack water.

Part 6C From River and Kooragang Berths to Basin Berths

LOA 90.0m or less

- 1 tug, if required by the allocated Pilot - no tidal restrictions.

LOA 90.1m to 130.0m (for vessels with thruster/s refer to Part 3C)

- 1 tug - no tidal restrictions.

NOTE: Vessels greater than 170.0m berthing at West Basin 3 are required to run lines to the mooring buoy.

LOA 130.1m to 200.0m

- If maximum draught is 10.0m or less: 2 tugs - no tidal restrictions.
- If maximum draught is 10.1m or more but less than 10.7m: 2 tugs - on the flood tide.
- If maximum draught is 10.7m or more:
  (1) If deadweight is 40,000 tonnes or less: 2 tugs - on the flood tide.
  (2) If deadweight is more than 40,000 tonnes: 3 tugs - on the flood tide.

LOA 200.1m to 215.0m

- If maximum draught is 11.0m or less: 3 tugs - at slack water or on a small flood tide (<1.1m range).
- If maximum draught is 11.1m or more:
  (1) At night: not permitted.
  (2) By day: 3 tugs - at slack water.

LOA 215.1m to 230.0m

- If maximum draught is 11.0m or less: 3 tugs - at slack water or on a small flood tide (<1.1m range).
- If maximum draught is 11.1m or more:
  (1) 4 tugs - at slack water.
  (2) At night: not permitted.

LOA 230.1m to 250.0m

- If maximum draught is 11.0m or less:
  (1) At night: not permitted.
  (2) By day: 4 tugs - at slack water or on a small flood tide (<1.1m range).
- If maximum draught is 11.1m or more:
  (1) At night: not permitted.
  (2) By day: 4 tugs - at slack water.

LOA 250.1m to 265.0m

- If maximum draught is 11.0m or less:
  (1) At night: not permitted.
  (2) By day: 4 tugs - at slack water or on a small flood tide (<1.1m range).
- If maximum draught is 11.1m or more:
  (1) At night: not permitted.
  (2) By day: 4 tugs - at slack water.

Part 6D From River and Kooragang Berths to River Berths

LOA 90.0m or less

- 1 tug, if required by the allocated Pilot - no tidal restrictions.

LOA 90.1m to 130.0m (for vessels with thruster/s refer to Part 3C)

- 1 tug - no tidal restrictions.

LOA 130.1m to 200.0m

- 2 tugs - no tidal restrictions.

LOA 200.1m to 240.0m

- 3 tugs - no tidal restrictions.

LOA 240.1m to 250.0m

- 4 tugs - no tidal restrictions

LOA 250.1m to 275.0m

- If maximum draught is 11.0m or less: 4 tugs - no tidal restrictions.
- If maximum draught is 11.1m or more: 4 tugs - on the stand of the tide.

A ship of LOA 250.1m or greater and draught 13.61m or greater shall not transit past a vessel over 250.1 m LOA and with maximum draft exceeding 13.61m that has completed loading at a river berth or Kooragang 7, 8 or 9. Exceptions shall not be made without the explicit approval of the Harbour Master.

LOA 275.1m to 300.0m

- If maximum draught is 11.0m or less: 4 tugs - no tidal restrictions, except: where a night time manoeuvre involves moving past a vessel moored at Dyke 1 or Dyke 2 whose beam exceeds 32.3m, at slack water only.
- If maximum draught is 11.1m or more: 4 tugs - on the stand of the tide.

A ship of LOA 250.1m or greater and draught 13.61m or greater shall not transit past a vessel over 250.1 m LOA and with maximum draft exceeding 13.61m that has completed loading at a river berth or Kooragang 7, 8 or 9. Exceptions shall not be made without the explicit approval of the Harbour Master.

Part 6E From River Berths to Kooragang Berths

LOA 90.0m or less

- 1 tug, if required by the allocated Pilot - no tidal restrictions.

LOA 90.1m to 130.0m (for vessels with thruster/s refer to Part 3C)

- 1 tug - no tidal restrictions.

LOA 130.1m to 200.0m

- 2 tugs - no tidal restrictions.

LOA 200.1m to 240.0m

- 3 tugs - no tidal restrictions.

LOA 240.1m to 250.0m

- 4 tugs - no tidal restrictions

LOA 250.1m to 275.0m

- If maximum draught is 11.0m or less: 4 tugs - no tidal restrictions.
- If maximum draught is 11.1m or more: 4 tugs - on the stand of the tide.

LOA 275.1m to 300.0m

- If maximum draught is 11.0m or less: 4 tugs - no tidal restrictions where a night time manoeuvre involves moving past a vessel moored at Dyke 1 or Dyke 2 whose beam exceeds 32.3m, at slack water only.

- If maximum draught is 11.1m or more: 4 tugs - on the stand of the tide.

Part 6F From Kooragang Berths to Kooragang Berths

LOA 90.0m or less

- 1 tug, if required by the allocated Pilot - no tidal restrictions.

LOA 90.1m to 130.0m (for vessels with thruster/s refer to Part 3C)

- 1 tug - no tidal restrictions.

LOA 130.1m to 200.0m

- 2 tugs - no tidal restrictions.

LOA 200.1m to 240.0m

- 3 tugs - no tidal restrictions.

LOA 240.1m to 300.0m

- 4 tugs - no tidal restrictions.

Part 7 Exceptions

ENERGIA CENTAURUS (IMO No. 9233557)

- Require 4 tugs at all times, departure times at 5(B) and 5(C) as for vessels above 250m LOA (Navigation meeting 24.7.2001). Night arrivals in accordance with 4(B).

GENERATION 5 GEARBULKERS:

EMU ARROW, IMO No. 9144392,
GREBE ARROW, IMO No. 9077070,
KITE ARROW, IMO No. 9077082,
MANDARIN ARROW, IMO No. 9105035,
MERLIN ARROW, IMO No. 9155303,
PENGUIN ARROW, IMO No. 9151814,
PLOVER ARROW, IMO No. 9144407,
TOUCAN ARROW, IMO No. 9105023,
WEAVER ARROW, IMO No. 9151826)

- May use only 2 tugs (Pilots' meeting 14.1.99).

SAGE SAGITTARIUS (IMO No. 9233545)

- Require 4 tugs at all times, departure times at 5(B) and 5(C) as for vessels above 250m LOA (Navigation meeting 24.7.2001). Night arrivals in accordance with 4(B).

SINCERE PISCES (IMO No. 9233569)

- Require 4 tugs at all times, departure times at 5(B) and 5(C) as for vessels above 250m LOA (Navigation meeting 24.7.2001). Night arrivals in accordance with 4(B).

Part 8 Shiphandling Trials

Trials are being conducted for the handling of ships between 292.1m and 300.0m length overall in the South Arm channel, proceeding to or from Kooragang 8 or 9. Terms of the trial are shown at 8A and 8B.

Trials are being conducted for the handling of ships exceeding the size criteria laid down by Parts 2, 4C and 5D in respect of Kooragang 10. Terms of the trial are shown at 8C.

Part 8A Trial Ships Transiting South Arm Channel Inward *To Kooragang 8 or 9*

LOA between 292.1m and 300.0m

- By daylight only, port entry may be booked from sunrise minus 15 minutes to sunset minus 60 minutes,
- 4 tugs required
- Maximum wind 25 knots, and
- River not in fresh.

Part 8B Intentionally Blank

Part 8C Trial Ships Transiting South Arm Channel Inward To Kooragang 10

LOA 240.1m to 270.0m

- 4 tugs required
- Wind less than 15 knots,
- Where trial conditions not met, part 4C applies.

Part 9 Specific Berthing Parameters

All Coal Terminals

- All vessels must have a minimum separation of 30m.
- Part loaded vessels **are not** permitted to proceed to K7, K8, K9 and K10. Part loaded vessels to D4, D5, K4, K5 and K6 require Harbour Master's approval.

Kooragang 4

Port Side too:

- ≤ 300m permitted. Overhang of bow ≤ 30m.

Starboard side too:

- ≤ 270m permitted any time.
- > 270m to ≤ 292m permitted daylight berthing, with Harbour Master's approval required.
- > 292m not permitted at any time.

Kooragang 7

Permitted stern overhang of wharf end:

- ≤ 45m beam: can overhang up to 25m
- > 45m beam and ≤ 47m beam: can overhang up to 20m
- > 47m beam: No overhang permitted.

East Basin

When berthing at East Basin 1 (Port Side too) with the stern in proximity to the 40m mark and there is a vessel at East Basin 2, there must be a minimum separation of 30m between the vessels.

When berthing at East Basin 1 (Starboard side too) with another vessel at East Basin 2, there must be a minimum separation of 15m between vessels.

NB: It may be necessary for the vessel at East Basin 2 to be shifted prior to the vessel berthing at East Basin 1 to achieve these minimum separations.

West Basin

All vessels to have a minimum separation of 30m. The minimum separation may be varied after consideration by the Harbour Master on a case by case basis.

Channel Berth, Dyke 1 and Dyke 2

All vessels to have a minimum separation of 30m. A vessel shall only be berthed at Dyke 2 such that it does not encroach further north than the 500m mark without the express permission of the Harbour Master.

Kooragang 2 / Kooragang 3

When berthing multiple vessels across the Kooragang 2 / Kooragang 3 berths including the use of the Kooragang 2 Northern Dolphin a minimum separation of 20m between vessels is required.

When berthing at the Kooragang 2 Northern Dolphin and vessels are already berthed at Kooragang 2 and Kooragang 3 such that separation distances will be less than 30m between vessels then 2 tugs are required.

Kooragang 3

A vessel berthed at Kooragang 3 shall not overhang the berth to the north such the bow or stern exceeds the 215m mark (maximum 25m overhang from berth end).