

Newcastle Port Passage Plans

Purpose

This standard port passage planning route information is intended to assist Marine Pilots, ship's Master and bridge team, prepare and execute a safe and effective port passage plan, while providing information to assist other port stakeholders such as tugs and VTIC. Actual passages may vary from these standard routes and will be agreed upon during Master / Pilot Exchange or during the course of the passage where required.

Objective

These passage plans are intended to provide a safe operating zone for a ship's passage inbound and outbound through the port. They are designed to assist pilot, bridge and port teams in planning for the safest and most effective route. However, due to the many variables experienced during a pilotage including weather, traffic, and ship handling limitations, the Pilot may deviate from the planned track providing there is clear rationale and the deviation is communicated appropriately to all relevant parties.

These plans are not berth to berth. The Navigation Officer responsible for passage planning may add or amend waypoints to result in a berth to berth plan but may not alter the body of these plans. Please note, plans provided in this document either commence or terminate where the manoeuvring phase of the pilotage starts/finishes. These manoeuvring phases are not able to be accurately described on ECDIS or PPU.

Responsibilities

The Harbour Master is responsible for ensuring these passage plans are reviewed regularly and updated to reflect best port pilotage practices.

The PPU Group (under the MPPMS) are responsible for maintaining this document as well as ensuring the promulgated passage plans and PPU routes are consistent.

The pilotage team are responsible for using these routes as part of their passage plan and Master / Pilot Exchange. Whenever circumstances require a deviation from these routes, the pilot will advise the Master.

The pilotage team are responsible for monitoring the effectiveness of the routes and providing feedback to the PPU Group and Harbour Master.

Ship's Master is responsible for ensuring the appropriate plan for the intended passage is correctly loaded onto the ship's ECDIS. These plans can be accessed via the Port Authority of NSW website or provided by the ship's Agent.

The passage plans are controlled in this document under version control. Appendix 1 provides details of the description and waypoints that construct each of these standard routes. Appendix 1 will be made externally available on our passage planning website alongside our passage plan templates.

Owner:	Grade 3 Marine Pilot	Version no:	12	Approval Date:	15/07/2019	Page 1 of 12
Approver:	Harbour Master	Objective Id:	A699659	Review Date:	15/07/2022	

Amending Passage Plans

Where there is a requirement to formally amend the standard port passage plan routes, it will be done so under a formal review.

The formal review will usually be managed by the PPU group members, and provide a written proposal outlining why the amendment is necessary; and what it is the most appropriate alternative route / waypoint. This will then be assessed to ensure amended change does not increase risk, and adds additional value to our safe ship handling. This review will be presented to the Harbour Master for consideration and approval.

Any agreed changes, will be effectively communicated to the pilotage team and port stakeholders in advance of implementation.

Owner:	Grade 3 Marine Pilot	Version no:	12	Approval Date:	15/07/2019	Page 2 of 12
Approver:	Harbour Master	Objective Id:	A699659	Review Date:	15/07/2022	

APPENDIX 1 – Newcastle Port Passage Plans

Description and Waypoint Construction

Passage Description	Page
Inward via PBG 'Bravo and Alpha' to Buoy 15.....	4
Inward via PBG 'Bravo and Alpha' to The Basin.....	5
Inward via PBG 'Bravo and Alpha' to The Horseshoe	6
Inward via PBG 'Charlie' to The Horseshoe (Tanker Only).....	7
Inward via PBG 'Charlie' to M7 Berth (Tanker Only).....	8
Inward via PBG 'Charlie' to K3 and K2 Berth (Tanker Only).....	9
Outward from South Arm (NCIG) Channel via Southern Departure	10
Outward from Buoy 15 via Southern Departure	11
Outward from The Basin via Southern Departure	12

TROUBLESHOOTING

1. Please note that unlike oceanic passage planning, the Turn Radius in pilotage passage planning is an extremely important element and must be entered as per the following passage plans.
2. Although all ECDIS operate to a common performance standard, not all ECDIS behave the same when dealing with passage plans. Some Furuno systems in particular may bring up "impossible turn" errors in some of the outbound plans, particularly in the vicinity of the Horseshoe turn. If that happens, you may adjust the waypoint either side of the problematic waypoint by a minimal amount to effectively change the required radius of the turn. If this doesn't work, try adjusting the turn radius figure, again by a minimal amount. These adjustments must be as small as possible to not result in a radically changed plan. Also, ensure that you have entered the planned speed as per the passage plan.

External Publication

Disclaimer: The information and documentation supplied on or through this web page, including the passage plans and route information, is guidance material only. Port Authority of New South Wales is not in any way responsible for the accuracy, adequacy, suitability or completeness of such information or documentation and will not be responsible for, nor liable upon any claim arising out of or in connection with, any person's use or reliance on the information or documentation. Passage plans for a vessel must be verified by the vessel master and confirmed with the relevant Port Authority marine pilot prior to the commencement of the pilotage.

Owner:	Grade 3 Marine Pilot	Version no:	12	Approval Date:	15/07/2019	Page 3 of 12
Approver:	Harbour Master	Objective Id:	A699659	Review Date:	15/07/2022	

Inward via PBG 'Bravo and 'Alpha' to Buoy 15

(Internal Reference V0318)

This route is designed as a general purpose entry track for all vessels boarded at PBG A and B, bound for M4, B6, D5, D4 berths and all Kooragang berths including K2, K3, K4, K5, K6, K7, K8, K9, and K10. The route commences at PBG B and heads toward PBG A then onto a heading of 351° (T). From there a course of 320° (T) parallels the Traffic Separation line before a slow alteration to port into the harbour. The route then follows the river around the Horseshoe and up the Steelworks Channel to the Kooragang swing basin where the manoeuvring phase of the pilotage commences.

**Note. Waypoint 8 is NOT an error. Unlike oceanic passage planning, all waypoints must be used in conjunction with the Turn Radius to create a meaningful pilotage passage plan.*

WP	WP Name	Latitude	Longitude	Turn Radius	Cross Track	Speed
1	PBG Bravo	32°58.87800S	151°52.68900E	0.20nm		
					300m	10.0kt
2	PBG Alpha	32°57.85164S	151°51.38228E	0.60nm		
					250m	10.0kt
3	Eastern End Of TSS	32°56.01015S	151°51.04241E	0.60nm		
					210m	10.0kt
4	Western End of TSS	32°54.71955S	151°49.75321E	0.60nm		
					140m	9.5kt
5	Harbour Approach	32°54.49641S	151°48.64397E	1.30nm		
					60m	9.0kt
6	Buoy 1 & 2	32°54.93916S	151°47.85452E	0.30nm		
					45m	8.5kt
7	Buoy 3 & 4	32°55.21453S	151°47.33488E	0.30nm		
					75m	7.0kt
8	Mid Horseshoe (See Note*)	32°55.52290S	151°46.75107E	0.42nm		
					60m	6.0kt
9	Dyke 1	32°54.89055S	151°46.43794E	0.60nm		
					50m	5.0kt
10	Buoy 11	32°54.60338S	151°46.36123E	0.40nm		
					45m	4.5kt
11	Buoy 15	32°53.82070S	151°46.27687E	0.30nm		
					70m	3.5kt
12	Buoy 10	32°53.63452S	151°46.17442E	0.60nm		

Owner:	Grade 3 Marine Pilot	Version no:	12	Approval Date:	15/07/2019	Page 4 of 12
Approver:	Harbour Master	Objective Id:	A699659	Review Date:	15/07/2022	

Inward via PBG 'Bravo and 'Alpha' to The Basin

(Internal Reference V0318)

This route is designed for all vessels taking a pilot at PBG Bravo or Alpha and transiting to berths East Basin 1 & 2 or West Basin 3 & 4. The route commences at PBG B and heads toward PBG A then onto a heading of 351° (T). From there a course of 320° (T) parallels the Traffic Separation line before a slow alteration to port into the harbour. The route then follows the river through the Horseshoe and Basin Cut to the Basin swing basin where the manoeuvring phase of the pilotage commences.

WP	WP Name	Latitude	Longitude	Turn Radius	Cross Track	Speed
1	PBG Bravo	32°58.87800S	151°52.68900E	0.20nm		
					300m	10.0kt
2	PBG Alpha	32°57.85164S	151°51.38228E	0.60nm		
					250m	10.0kt
3	Eastern End of TSS	32°56.01015S	151°51.04241E	0.60nm		
					210m	10.0kt
4	Western End of TSS	32°54.71955S	151°49.75321E	0.60nm		
					140m	9.5kt
5	Harbour Approach	32°54.49641S	151°48.64397E	1.30nm		
					60m	9.0kt
6	Buoy 1 & 2	32°54.93916S	151°47.85452E	0.30nm		
					45m	7.0kt
7	Buoy 3 & 4	32°55.26865S	151°47.23583E	0.30nm		
					40m	4.0kt
8	Basin Cut	32°55.52248S	151°46.66648E	0.70nm		
					30m	3.0kt
9	Basin	32°55.39718S	151°46.26139E	0.30nm		

Owner:	Grade 3 Marine Pilot	Version no:	12	Approval Date:	15/07/2019	Page 5 of 12
Approver:	Harbour Master	Objective Id:	A699659	Review Date:	15/07/2022	

Inward via PBG 'Bravo' and 'Alpha' to The Horseshoe

(Internal Reference V0318)

This route is designed for cruise ships arriving starboard side to the Channel Berth and other vessels backing into Dyke1 and Dyke2 berths, starboard side to. **This is not the route for actively escorted tankers bound for Dyke1.** The route commences at PBG B and heads toward PBG A then onto a heading of 351° (T). From there a course of 320° (T) parallels the Traffic Separation line before commencing a slow alteration to port into the harbour. The route then follows the river to the Horseshoe swing basin and terminates 1 cable NE of Birubi Buoy where the manoeuvring phase of the pilotage commences.

WP	WP Name	Latitude	Longitude	Turn Radius	Cross Track	Speed
1	PBG Bravo	32°58.87800S	151°52.68900E	0.20nm		
					300m	10.0kt
2	PBG Alpha	32°57.85164S	151°51.38228E	0.60nm		
					250m	10.0kt
3	Eastern End of TSS	32°56.01015S	151°51.04241E	0.60nm		
					210m	10.0kt
4	Western End of TSS	32°54.71955S	151°49.75321E	0.60nm		
					140m	9.5kt
5	Harbour Approach	32°54.49641S	151°48.64397E	1.30nm		
					60m	9.0kt
6	Buoy 1 & 2	32°54.93916S	151°47.85452E	0.30nm		
					45m	6.5kt
7	Buoy 3 & 4	32°55.27347S	151°47.22705E	0.60nm		
					55m	3.5kt
8	Horseshoe	32°55.32559S	151°46.82430E	0.30nm		

Owner:	Grade 3 Marine Pilot	Version no:	12	Approval Date:	15/07/2019	Page 6 of 12
Approver:	Harbour Master	Objective Id:	A699659	Review Date:	15/07/2022	

Inward via PBG 'Charlie' to The Horseshoe (Tanker Only)

(Internal Reference V0719)

This route is designed for actively escorted tankers boarded at PBG C and bound for Dyke1 starboard side to. The route commences at PBG B then heads North toward PBG C. At boarding ground Charlie the route heads 301° (T). As the 265° Leads come into transit, a 1nm radius turn to port commences, ending in the wedge between the 236° and 245° Leads. From there the route follows the river to the Horseshoe swing basin where the manoeuvring phase of the pilotage commences.

WP	WP Name	Latitude	Longitude	Turn Radius	Cross Track	Speed
1	PBG Bravo	32°58.87800S	151°52.68900E	0.30nm		
					450m	10.0kt
2	PBG Charlie	32°56.00000S	151°52.70000E	1.00nm		
					300m	8.0kt
3	Harbour Approach	32°54.28655S	151°49.25836E	1.00nm		
					50m	7.0kt
4	Buoy 1 & 2	32°54.93916S	151°47.85452E	0.30nm		
					25m	5.0kt
5	Buoy 3 & 4	32°55.27347S	151°47.22705E	0.60nm		
					55m	3.0kt
6	Horseshoe	32°55.52290S	151°46.82430E	0.40nm		

Owner:	Grade 3 Marine Pilot	Version no:	12	Approval Date:	15/07/2019	Page 7 of 12
Approver:	Harbour Master	Objective Id:	A699659	Review Date:	15/07/2022	

Inward via PBG 'Charlie' to M7 Berth (Tanker Only)

(Internal Reference V0719)

This route is designed for actively escorted tankers boarded at PBG C bound for Mayfield 7 berth port side to. The route commences at PBG B then heads North toward PBG C. At boarding ground Charlie the route heads 301° (T). As the 265° Leads come into transit, a 1nm radius turn to port commences, ending in the wedge between the 236° and 245° Leads. From there the route follows the river around the Horseshoe and up the Steelworks Channel to Buoy 15 where a gentle alteration to port takes the track onto the South Arm (NCIG) Leads to Buoy 14 where the manoeuvring phase of the pilotage commences.

**Note. Waypoint 6 is NOT an error. Unlike oceanic passage planning, all waypoints must be used in conjunction with the Turn Radius to create a meaningful pilotage passage plan.*

WP	WP Name	Latitude	Longitude	Turn Radius	Cross Track	Speed
1	PBG Bravo	32°58.87800S	151°52.68900E	0.30nm		
					450m	10.0kt
2	PBG Charlie	32° 56.00000S	151° 52.70000E	1.00nm		
					300m	8.0kt
3	Harbour Approach	32° 54.28655S	151°49.25836E	1.00nm		
					50m	7.0kt
4	Buoy 1 & 2	32°54.93916S	151°47.85452E	0.30nm		
					50m	6.0kt
5	Buoy 3 & 4	32°55.23011S	151°47.30604E	0.30nm		
					75m	5.0kt
6	Mid Horseshoe (See Note*)	32°55.52290S	151°46.75107E	0.42nm		
					60m	4.5kt
7	Dyke 1	32°54.89055S	151°46.43794E	0.60nm		
					50m	4.0kt
8	Buoy 11	32°54.60338S	151°46.36123E	0.40nm		
					45m	4.0kt
9	Buoy 10	32°53.63068S	151°46.26029E	0.60nm		
					45m	3.5kt
10	Buoy 12	32°53.40669S	151°45.90978E	0.60nm		
					30m	3.0kt
11	Buoy 14	32°53.24999S	151°45.63274E	0.30nm		

Owner:	Grade 3 Marine Pilot	Version no:	12	Approval Date:	15/07/2019	Page 8 of 12
Approver:	Harbour Master	Objective Id:	A699659	Review Date:	15/07/2022	

Inward via PBG 'Charlie' to K3 and K2 (Tanker Only)

(Internal Reference V0719)

This route is designed for actively escorted tankers boarded at PBG C bound for Kooragang 3 berth starboard side to or Kooragang 2 berth port side to. The route commences at PBG B then heads North toward PBG C. At boarding ground Charlie the route heads 301° (T). As the 265° Leads come into transit, a 1nm radius turn to port commences, ending in the wedge between the 236° and 245° Leads. From there the route follows the river around the Horseshoe and up the Steelworks Channel to Buoy 15 where a gentle alteration to starboard takes the vessel into the Kooragang swing basin where the manoeuvring phase of the pilotage commences.

**Note. Waypoint 6 is NOT an error. Unlike oceanic passage planning, all waypoints must be used in conjunction with the Turn Radius to create a meaningful pilotage passage plan.*

WP	WP Name	Latitude	Longitude	Turn Radius	Cross Track	Speed
1	PBG Bravo	32°58.87800S	151°52.68900E	0.30nm		
					450m	10.0kt
2	PBG Charlie	32° 56.00000S	151° 52.70000E	1.00nm		
					300m	8.0kt
3	Harbour Approach	32° 54.28655S	151°49.25836E	1.00nm		
					50m	7.0kt
4	Buoy 1 & 2	32°54.93916S	151°47.85452E	0.30nm		
					50m	6.0kt
5	Buoy 3 & 4	32°55.23011S	151°47.30604E	0.30nm		
					75m	5.0kt
6	Mid Horseshoe (See Note*)	32°55.52290S	151°46.75107E	0.42nm		
					60m	4.5kt
7	Dyke 1	32°54.89055S	151°46.43794E	0.60nm		
					50m	4.0kt
8	Buoy 11	32°54.60338S	151°46.36123E	0.40nm		
					45m	4.0kt
9	Buoy 15	32°53.77579S	151°46.26911E	0.60nm		
					45m	3.5kt
10	K2	32°53.56766S	151°46.31191E	0.30nm		

Owner:	Grade 3 Marine Pilot	Version no:	12	Approval Date:	15/07/2019	Page 9 of 12
Approver:	Harbour Master	Objective Id:	A699659	Review Date:	15/07/2022	

Outward from South Arm (NCIG) Channel via Southern Departure

(Internal Reference V0118)

This route is designed for all vessels departing from berths K10, K9, K8, K7 and K6. After manoeuvring off the berth the route commences on the South Arm (NCIG) Leads off K9/K10. Staying on the leads until K8/K7 it takes a slight port turn onto 119° (T) toward the silo at K2. At Buoy 12 the starboard alteration commences into the Steelworks Channel. From there the route then follows the river down the Steelworks Channel, around the Horseshoe and out the main channel to the harbour entrance where a large alteration to starboard is made to take the vessel south into the helicopter operating zone.

**Note. Waypoint 7 is NOT an error. Unlike oceanic passage planning, all waypoints must be used in conjunction with the Turn Radius to create a meaningful pilotage passage plan.*

WP	WP Name	Latitude	Longitude	Turn Radius	Cross Track	Speed
1	K9	32°52.96316S	151°45.12745E	0.30nm		
					50m	3.0kt
2	M7	32°53.17771S	151°45.50536E	0.60nm		
					50m	3.5kt
3	Kooragang Basin	32°53.51498S	151°46.21460E	0.40nm		
					50m	3.5kt
4	Buoy 15	32° 53.84587S	151° 46.27634E	0.40nm		
					40m	4.0kt
5	Dyke 2	32° 54.73967S	151° 46.37621E	0.27nm		
					40m	4.0kt
6	Channel Berth	32° 55.08972S	151 46.52210E	0.30nm		
					55m	4.0kt
7	Mid Horseshoe (See Note*)	32° 55.45307S	151° 46.92437E	0.40nm		
					50m	4.0kt
8	Wave Traps	32 55.11394S	151° 47.52234E	0.30nm		
					45m	5.0kt
9	Buoy 1 & 2	32° 54.92708S	151° 47.87039E	0.30nm		
					65m	6.0kt
10	Special Mark	32° 54.49488S	151° 48.78050E	0.50nm		
					150m	7.5kt
11	Delta	32° 55.59855S	151° 49.39875E	0.30nm		

Owner:	Grade 3 Marine Pilot	Version no:	12	Approval Date:	15/07/2019	Page 10 of 12
Approver:	Harbour Master	Objective Id:	A699659	Review Date:	15/07/2022	

Outward from Buoy 15 via Southern Departure

(Internal Reference V0218)

This route is designed for all vessels departing from the south and east of K6. This includes K5, K4, K3, K2, M7, M4, B6, D5, D4, D2, D1 and the Channel berth. After manoeuvring off the berth the route commences just north of Buoy 15. From there the route then follows the river down the Steelworks Channel, around the Horseshoe and out the main channel to the harbour entrance where a large alteration to starboard is made to take the vessel south into the helicopter operating zone.

**Note. Waypoint 4 is NOT an error. Unlike oceanic passage planning, all waypoints must be used in conjunction with the Turn Radius to create a meaningful pilotage passage plan.*

WP	WP Name	Latitude	Longitude	Turn Radius	Cross Track	Speed
1	Kooragang Swing Basin	32°53.59870 S	151°46.25050 E	0.30nm		
					40m	4.0kt
2	Dyke 2	32°54.73967 S	151°46.37621 E	0.27nm		
					40m	4.0kt
3	Channel Berth	32° 55.08972S	151 46.52210E	0.30nm		
					55m	4.0kt
4	Mid Horseshoe (See Note*)	32° 55.45307S	151° 46.92437E	0.40nm		
					50m	4.0kt
5	Wave Traps	32 55.11394S	151° 47.52234E	0.30nm		
					45m	5.0kt
6	Buoy 1 & 2	32°54.92708 S	151°47.87039 E	0.30nm		
					65m	6.0kt
7	Special Mark	32°54.49488 S	151°48.78050 E	0.50nm		
					150m	7.5kt
8	Delta	32°55.59855 S	151°49.39875 E	0.30nm		

Owner:	Grade 3 Marine Pilot	Version no:	12	Approval Date:	15/07/2019	Page 11 of 12
Approver:	Harbour Master	Objective Id:	A699659	Review Date:	15/07/2022	

Outward from The Basin via Southern Departure

(Internal Reference V0817)

This route is designed for all vessel departing East basin 1 & 2 and West Basin 3 & 4 berths. After manoeuvring off the berth the route commences at the beginning of the Basin Cut, through to the Horseshoe and out the main channel to the harbour entrance where a large alteration to starboard is made to take the vessel south into the helicopter operating zone.

WP	WP Name	Latitude	Longitude	Turn Radius	Cross Track	Speed
1	Basin Cut West	32°55.42351S	151°46.38314E	0.30nm		
					30m	3.0kt
2	Basin Cut	32°55.47618S	151°46.62647E	0.40nm		
					45m	5.0kt
3	Horseshoe	32°55.32796S	151°47.14608E	0.60nm		
					45m	5.0kt
4	Buoy 1 & 2	32°54.92708S	151°47.87039E	0.30nm		
					65m	6.0kt
5	Special Mark	32°54.49488S	151°48.78050E	0.50nm		
					150m	7.5kt
6	Delta	32°55.59855S	151°49.39875E	0.30nm		

Owner:	Grade 3 Marine Pilot	Version no:	12	Approval Date:	15/07/2019	Page 12 of 12
Approver:	Harbour Master	Objective Id:	A699659	Review Date:	15/07/2022	