

Gorgon Pilotage Passage Plan - PBG to Gorgon Marine Terminal – Primary Route



1.0 Introduction

Vessels transiting within port limits from the Barrow Island Outer Pilot Boarding Ground (PBG) to the Gorgon Marine Terminal (GMT) via the primary route, require an approved passage plan which can be shared between Pilots and vessel Masters. This work instruction has been compiled in accordance with documents *GOR-COP-0187 - Pilot Passage Plan Guideline* and approved according to *GOR-COP-0186 - Passage Plan Approval Procedure*.

1.1 Purpose

This work instruction details the navigation route between the PBG and the GMT, providing Pilots, Masters and Bridge Navigation Teams sufficient information to conduct a vessel along the route in a safe and controlled manner whilst minimising risk to personnel, environment and property.

1.2 Scope

This work instruction begins when a vessel arrives at the outer PBG and concludes when it reaches an assigned berth at the GMT.

CAUTION:



Caution must be taken when using beacons for navigation, particularly post-severe storm/cyclone activity.

1.3 Target Audience

This work instruction is primarily intended for use by ABU Marine Pilots, vessel Masters and vessel Bridge Navigation Teams.

1.4 Acronyms and Abbreviations

The below table defines the acronyms and abbreviations used in this document

Acronym/Abbreviation	Meaning
AMSA	Australian Maritime Safety Authority
BITR	Barrow Island Terminal Regulations
BWI	Barrow Island
CBM	Conventional Buoy Mooring
CD	Clearing Distance
ECDIS	Electronic Chart Display and Information System
ETA	Estimated Time of Arrival
GMT	Gorgon Marine Terminal
JHA	Job Hazard Analysis
kts	knots

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Acronym/Abbreviation	Meaning
m	metres
MOF	Materials Offloading Facility
MPX	Master Pilot Exchange
nm	Nautical miles
Pilot	BWI Marine Pilot
OOW	Officer of the Watch
PBG	Pilot Boarding Ground
PEL	Sectored leading light
PI	Parallel index
PP	Passage Plan
PPU	Portable Pilotage Unit
SMS	Safety Management System
SOLAS	International Convention for Safety Of Life At Sea
RPM	Revolutions per minute
UKC	Under Keel Clearance
XTE	Cross Track Error

2.0 Waypoint Bank

Waypoint	Reference	Latitude	Longitude
WP001	Outer PBG	20° 47.60'S	115° 38.00'E
WP002	LNG 4	20° 50.52'S	115° 32.15'E
WP003	Turning Basin	20° 49.11'S	115° 29.81'E

3.0 Route Bank

Route	Waypoint Sequence
Passage Plan – PBG to Gorgon Marine Terminal – Primary Route	WP001, WP002, WP003

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4.0 Passage Plan – PBG to Gorgon Marine Terminal – Primary Route

Waypoint	WP001 (Outer PBG)	<ul style="list-style-type: none"> Pilot will board at the outer PBG (20° 47.60'S, 115° 38.00'E). Vessel and Pilot Boat are to discuss and agree on vessel speed and heading prior to transfer, ensuring a good lee is provided for boarding. The pilot ladder will be rigged as per SOLAS 2010 Chapter V Reg 23 as amended and secured to a height above the waterline as requested by the Pilot Boat. Pilot will setup and use PPU for the passage as an independent means of position fixing. Pilot to have completed UKC calculation for the passage. The Pilot will detail the manoeuvring of the vessel to the berth, including mooring arrangements and tug configurations as part of the MPX. Main engine to be tested ahead and astern prior to crossing port limits and recorded in the ship's log. Anchors are to be cleared away and ready for letting go prior to entering port limits. Parallel indexing to be setup and utilised through out passage. Environmental data, including tidal flow and wind conditions at the Jetty head will be available to the Pilots and communicated to vessel Master. Call the Port of Barrow on VHF 10 when crossing Port Limits. Make tugs fast prior passing LNG 2 beacon, test lines. Night operations may require additional or alternate position fixing due to back scatter and masking of lights due to shore lights. Extra caution to be taken in vicinity of the PBG due to the potential for converging traffic. At the PBG, the Flood tide sets to the South West. Ebb tide sets to the North East. In the event of any failure, the vessel will (if possible) return to port limits or anchor (being aware of any obstructions).
Latitude	20° 47.60'S	
Longitude	115° 38.00'E	
Course	242°T	
Speed	~8.0kt	
Leg Distance	6.2nm	
Minimum Depth at CD	13.6m	
Maximum Cross Track Error	200m	
Primary Fixing	Visual/PPU	
Secondary Fixing	GPS/RADAR	
Parallel Index	LNG 1 at 0.34nm	

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Waypoint	WP002 (LNG 4)	<ul style="list-style-type: none"> When approaching LNG 6 and 7 beacons, the vessels speed will be adjusted ensuring good steerage way for the channel transit and a controlled deceleration for the manoeuvre into the turning basin. Pilot to contact terminal staff to confirm the terminal is ready in all respects to receive the vessel. Where appropriate, Pilot to contact PLM of vessel alongside adjacent berth and ascertain agreement for manoeuvring in the Turning Basin. Be aware of potential back scatter on this leg due to shore lights. The main leads maybe obscured on this leg due to vessels at the berth. Always positively identify and monitor the PEL light as backup for the main leading lights on the passage inbound. Flood tide sets to the South. Ebb tide sets to the North. Establish communications with mooring teams. Discuss with Master the mooring procedure at the berth. Test communications with tugs and ensure they are all aligned with the planned manoeuvre. Abort Point 0.7nm prior to passing LNG 6 and 7. When the vessel passes LNG 6 and 7 beacons it is committed to the channel and will ground if it departs the channel boundaries. Adjust vessel's speed for final leg of passage in preparation for manoeuvring.
Latitude	20° 50.52'S	
Longitude	115° 32.15'E	
Course	303°T	
Speed	~5.0kt	
Leg Distance	2.6nm	
Minimum Depth at CD	13.4m	
Maximum Cross Track Error	50m	
Primary Fixing	Visual/PPU	
Secondary Fixing	GPS/RADAR	
Parallel Index	LNG 12 at 0.38nm.	

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Waypoint	WP003 (Turning Basin)	<ul style="list-style-type: none"> Flood tide sets to the South. Ebb tide sets to the North. Vessels will swing to port in the Turning Basin and berth "Head Out". Any exceptions to this will be discussed during the MPX. The Turning Basin is approximately 850m long x 650m wide. Care to be taken during manoeuvring to ensure tugs are not placed into danger with nav aids etc. Pilot will monitor the wharf berthing aids to ensure safe closure rate with the fenders. The vessel is to be landed close to the final position and parallel to the line of the wharf. No lines to be run without permission from the Pilot.
Latitude	20° 49.11'S	
Longitude	115° 29.81'E	
Course	Various	
Speed	Various	
Leg Distance	N/A	
Minimum Depth at CD	13.4m	
Berth Alignment	000°T/180°T	
Maximum Cross Track Error	N/A	
Primary Fixing	Visual/PPU	
Secondary Fixing	GPS/RADAR	
Parallel Index	N/A	



5.0 Execution of Passage Plan – Expectations

5.1 Notes for Master and Bridge Team

- Prior to arriving at the PBG the Master is to review the passage plan and plot the plan onto the appropriate charts or ECDIS system, briefing his/her Bridge teams accordingly. Any concerns or questions are to be raised with the Port or Pilots prior to the vessel arriving at the PBG.
- In accordance with AMSA regulations, all charts (paper and electronic) and navigational publications must be corrected to the latest edition of the Australian and Western Australian Notice to Mariners, including any applicable Temporary Notices to Mariners that may be in force. Additionally, the vessel is to have available and understand the BWI Marine Notices that are in force. BWI Marine Notices and other relevant port information are located on the Port of Barrow Island website.
<https://www.chevronaustralia.com/our-businesses/barrow-island/barrow-island-port>
- Charts required for the passage are the latest editions of Australian Hydrographic charts AUS 65 and AUS 66.
- In accordance with the *GOR-COP-0174 - Gorgon - Barrow Island Terminal Regulations* any deficiencies that may affect the vessel's operating performance are to be reported in the appropriate ETA notice. Any deficiencies that occur after the 24 hour ETA is sent are to be reported to Pilots at the first available opportunity.
- All bridge navigational equipment must be switched on and functioning correctly prior to the Pilot boarding. All navigation systems, including paper charts, are to be arranged and displayed so that the Pilot can quickly determine the vessel position, course and speed when first arriving on the bridge and at any stage during the passage.
- Anchors are to be cleared away and ready for letting go prior to the Pilot boarding.
- An MPX involving the Pilot, Master and bridge team, will be conducted after the Pilot has arrived on the bridge and verified the ship's position. The Pilot will take conduct of the vessel at the conclusion of the MPX.
- To ensure an appropriate level of BRM Pilots utilise a "Closed Loop" system of communications for the relay of orders. The Master/OOW is to ensure the bridge is managed such that all orders can be clearly heard, understood and responded to. The Master/OOW is to monitor course, helm orders and engine settings to ensure compliance with the Pilot's directions.
- Pilotage is compulsory for the Port of BWI and the Pilot will have the conduct of the vessel at all times whilst manoeuvring within port limits. It is acknowledged however, that the Master always remains in overall command of his vessel. Adhering to good BRM principles, Pilots actively encourage a "Challenge and Response" environment. If at any time the Master/OOW is unsure of the actions being taken, they are to challenge the Pilot and vice versa.
- Ship's position, proximity to dangers and UKC should be continuously monitored by the Master/OOW and cross referenced with the passage plan. If the Master leaves the bridge, the OOW must always seek clarification from the Pilot when in any doubt as to the Pilot's actions or intentions.
- It is important to keep formal records of all navigational activities and any incidents in the appropriate Bridge Movement logbook. Information recorded should be of an

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appropriate standard so that the vessel's progress into the Port can be reconstructed at a later date.

5.2 Notes for the Pilot

- Conduct of the vessel will be assumed by the Pilot in an unambiguous manner.
- The Pilot will assist the bridge team to ensure radar conspicuous points, parallel indexing and any clearing bearings/ranges are properly understood.
- For each leg of the passage the Pilot is to brief the Master on the required fixing interval and methods used to determine ship's position. In determining the most appropriate fixing method and interval, the following will be taken into consideration:
 - a. The state of wind, sea and weather
 - b. Proximity to navigational dangers
 - c. Traffic density
 - d. Manoeuvring characteristics of the vessel
 - e. Navigational equipment available, and
 - f. How position data is displayed, i.e. ECDIS or paper charts
- Pilot will ensure tug numbering and communication protocols are explained fully.
- Pilot is to ensure all navigation hazards (e.g. no go zones) are clearly marked on the chartlet.
- In order to adhere to Port of Barrow Island UKC requirements the Pilots will complete either:
 - a. *GOR-COP-0254 - Gorgon - UKC Calculation Sheet - LNG Carriers,*
 - b. *GOR-COP-0253 - Gorgon - UKC Calculation Sheet - Condensate Carriers*

This calculation may result in the transit being tidally restricted.

- If for any reason prior to commencing the transit, there is a need to deviate from the standard passage plan, a revised passage plan will be formulated and agreed between the Pilot and Master; any additional hazards will be identified and any mitigations/controls shall be detailed in an appropriate JHA.
- The PPU is a mandatory piece of equipment for the conduct of pilotage operations at the Gorgon Marine Terminal. If the PPU does not function as is normally expected, the Pilot is to inform the BWI Port Superintendent at the first available opportunity.

If there is a need to deviate from the passage plan for any reason, the bridge team must be fully briefed as to the Pilot's intentions and the Pilot should make every opportunity to return to the passage plan as soon as possible.

6.0 References

Ref. No.	Description	Document ID
1	Gorgon - Barrow Island Terminal Regulations (BITR)	GOR-COP-0174
2	Gorgon - Pilotage - Pilot Passage Plan Guideline	GOR-COP-0187
3	Gorgon - Pilotage - Passage Plan approval Procedure	GOR-COP-0186

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4	Gorgon – UKC Calculation Sheet – Condensate Carriers	GOR-COP-0253
5	Gorgon – UKC Calculation Sheet – LNG Carriers	GOR-COP-0254

7.0 Document Control

7.1 Ownership

Document Author	Cameron Crampton	Owner	John Meade
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7.2 Revision History

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2.0	Approved for Use - updated	21 April 2015	Mike Deer	Dave Acomb
3.0	Approved for Use - updated	28 June 2016	Cameron Crampton	John Meade