



PORT WARATAH
COAL SERVICES

**COAL TERMINALS INFORMATION
HANDBOOK**
(Email Version)

REVISION 6.1
EFFECTIVE MARCH 2020

EMERGENCY CONTACT PROCEDURE FOR VESSELS

1) USE AN OPERATING SATELLITE OR MOBILE PHONE TO **CALL**:

LOCATION OF VESSEL	COUNTRY CODE	AREA CODE	PHONE NUMBER
CARRINGTON (BERTHS D4, D5)	61	02	4907 3222
KOORAGANG (BERTHS K4, K5, K6, K7)	61	02	4907 2111

2) **STATE**:

- VESSEL NAME
- TERMINAL LOCATION & BERTH NUMBER
- TYPE OF EMERGENCY
- TYPE OF ASSISTANCE REQUIRED

3) ALSO **NOTIFY** 'NEWCASTLE HARBOUR' ON **VHF CHANNEL 9**

4) **ADVISE** PWCS TERMINAL REPRESENTATIVE AND CLEAR ALL PERSONNEL FROM AREAS OF DANGER

MARINE POLLUTION

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- TYPE OF EMERGENCY
- TYPE OF ASSISTANCE REQUIRED

3) **ADVISE** PWCS TERMINAL REPRESENTATIVE AND CLEAR ALL PERSONNEL FROM AREAS OF DANGER

4) ALTERNATIVELY, USE AN OPERATING SATELLITE OR MOBILE PHONE TO **CALL** PORT AUTHORITY OF NSW *:

COUNTRY CODE	AREA CODE	PHONE NUMBER
61	02	4929 3890

*PORT AUTHORITY OF NEW SOUTH WALES (NSW) IS RESPONSIBLE FOR OIL OR CHEMICAL SPILLS INSIDE NEWCASTLE HARBOUR AND IN STATE WATERS BETWEEN FINGAL HEAD NORTH OF NEWCASTLE TO CATHERINE HILL BAY SOUTH OF NEWCASTLE

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I. PURPOSE

The purpose of this Handbook is to advise all ship owners, operators and terminal operators of the Port Waratah (PWCS) requirements for the safe loading and unloading of solid bulk cargoes.

Additionally, this Handbook will communicate policies, procedures and information relevant to the ship-to-shore interface at PWCS Terminals.

This Handbook should be of use to:

- Vessels calling at PWCS Terminals to enable operations to be performed safely and efficiently;
- Vessel owners (or their agents) and coal exporters, to arrange and facilitate vessels calling at PWCS Terminals;
- Parties who perform a function related to vessels calling at PWCS Terminals, for general reference.

This Handbook shall be available to the Master of the Vessel upon berthing at a PWCS Terminal and is freely available via the PWCS website (www.pwcs.com.au).

The procedures set out in this Handbook must be complied with unless otherwise agreed by PWCS.

The Terminal Representative acts as the primary contact between berthing and completion of loading. The Terminal Representative is also referred to as the Vessel Bulk Loading Officer (VBLO).

Acknowledgement of compliance to this Handbook will be completed by the vessel during sign up.

PWCS reserves the right to refuse to allow a vessel to berth at the PWCS Terminals due to non-compliance with the procedures set out in this Handbook by the Master of the Vessel, owner or Vessel Agent.

2. INTRODUCTION

The information in this Handbook relates to both the Kooragang and Carrington Coal Terminals, except where otherwise specified. All bulk carriers that visit Australian Ports must comply with the IMSBC Code, relevant Australian Marine Orders and the BLU Code.

This Handbook is designed to assist the vessels loading at the PWCS Terminals to operate safely; achieve maximum operational efficiency; and ensure compliance with the relevant legislation.

This Handbook shall be used to enhance and clarify any requirements under the IMSBC Code, BLU Code and Marine Order Part 34. The requirements for the loading and unloading of bulk cargoes are mandated by Chapter VI of SOLAS. Mandatory application in Australia is implemented through delegated legislation adopted by the Australian Maritime Safety Authority (AMSA) under the Navigation Act (2012). Specifically, Marine Order 34 Solid Bulk Cargoes (MO34) - <https://www.amsa.gov.au/vessels/standards-regulations/marine-orders/> .

All vessels at PWCS Terminal shall comply with the requirements of Marpol 73/78 (annex's I-VI) and Marine Order's (Part 90 to 95) inclusive and shall not discharge any substances that may contravene this legislation.

Vessels must also comply with other relevant Marine Orders issued under:

- Navigation Act (2012)
- Protection of the Sea (Prevention of Pollution from Ships) Act (1983)
- Protection of the Sea (Harmful Anti-fouling Systems) Act (2006)
- Marine Safety (Domestic Commercial Vessel) National Law Act (2012)
- International Ship and Port Facility Security (ISPS) Code

Relevant local legislation and guidelines that vessels berthing at PWCS Terminals must adhere to:

- Work Health and Safety Act (2011) and the Work Health and Safety Regulation (2011 – as amended)
- Protection of the Environment Act (1997 – as amended)
- Ports and Marine Administration Act 1995 (NSW)
- Ship Handling Safety Guidelines

This Handbook has been produced with the assistance of the Port Authority of New South Wales (Port Authority), Vessel Agents, Coal Exporters, lines companies and Marine Surveyors. To the best of PWCS' knowledge the information contained in this Handbook is true and correct at the time of writing.

PWCS reserves the right to change the information contained in this Handbook at any time and any inquiries regarding this information should be referred to:

Service Assurance Manager

Port Waratah Coal Services

PO Box 57 Carrington NSW 2294 AUSTRALIA

Telephone: + 61 2 4907 2000 - Facsimile: + 61 2 4907 3000 - E-mail: _shipment.contracts@pwcs.com.au

The Port Authority, pursuant to the Ports Corporatisation and Waterways Management Act 1995 (NSW) and the Marine Pollution Act 2012 (NSW), administers the port. All matters relating to navigation, maximum Port vessel size, pilotage, towage, vessel handling, vessel safety, marine regulations and pollution should be referred to:

The Harbour Master

Port Authority of New South Wales

PO Box 663 NEWCASTLE NSW 2300 AUSTRALIA

Telephone: +61 2 4985 8222 - Facsimile: +61 2 4926 4596 - E-mail: enquiries@portauthoritiesnsw.com.au

VHF: 'Newcastle Harbour' on Channel 9

3. SAFETY REQUIREMENTS

PWCS has a strong commitment to health, safety, environment & community (HSEC). Personnel, including vessel crew, whilst on PWCS premises must adhere to the contents and implications of the New South Wales Work Health and Safety Act (2011), Work Cover NSW codes of practice, guidelines and standards applicable and the PWCS Health, Safety, Environment and Community management system.

All vessels loading at PWCS Terminals must ensure that a non-smoking (including vaping) area on the vessel is supplied to PWCS personnel to allow their duties to be performed in a smoke free environment as required by the Work Health and Safety Act 2011 (NSW).

4. ENVIRONMENTAL REGULATIONS

The environment is of high importance to PWCS and is managed through extensive improvement and monitoring programs, minimising impact to neighbouring communities and environments. All persons accessing the Terminals are to ensure their activities result in no adverse impacts to air quality, water quality or noise levels. Compliance is strictly enforced to ensure our neighbours are not adversely affected.

By accepting a berth at PWCS, the vessel warrants that it is familiar with the contents and implications of the NSW Environmental Planning and Assessment Act 1979, Environmental Planning and Assessment Regulation (2000) and the Protection of the Environment Operation Act (1997). All vessels visiting PWCS Terminals must comply with MARPOL 73/78 (Annexes I – VI) and Marine Orders Parts 91 – 98 inclusive (“Environmental Legislation”).

A vessel must not discharge any substance that is not permitted to be discharged under the Environmental Legislation. This includes containing any foreign material, such as cargo spillage or hydrocarbons, to the deck and not washing into the harbour. Waste disposal arrangements are available at the wharves through consultation with the Vessel Agent.

Ballast water of all vessels (international and domestic) is regulated by the Australian Government. All vessels are required to satisfy the Australian Department of Agriculture and Water Resources requirements regarding the discharge of ballast water (<http://www.agriculture.gov.au/biosecurity/avm/vessels/ballast/australian-ballast-water-management-requirements>).

5. APPROVAL OF VESSELS

All vessels loading at PWCS Terminals will be vetted at nomination. PWCS utilises previous loading performance, Rightship and PSC data among other sources to perform the vet.

PWCS requires the vessel details, including dimensions to be supplied at nomination. PWCS require a vessel acceptance questionnaire to be completed along with indicative coal load plan, general arrangement drawings and copies of relevant procedures.

PWCS reserves the right to refuse to accept a vessel nomination (refer [Section 9.7 Vessel Acceptance Criteria](#)).

6. WORK PRACTICES AT THIS TERMINAL

PWCS is a safe workplace where unsafe or offensive behaviour will not be tolerated.

The failure of a vessel crew member to adhere to PWCS safety requirements may lead to the suspension of loading of the vessel with the delay attributed to the vessel until the matter is resolved. PWCS may also suspend the vessel from returning for future trips.

7. SAFETY AND SECURITY REQUIREMENTS

7.1 INDUCTION SAFETY TRAINING

Any Vessel Agent, Coal Exporter, contractor, visitor or other person who requires entry into the PWCS Terminal, in connection with a vessel, must:

- Prior to entry, undertake and agree in writing to comply with all PWCS safety and security requirements
- Comply with the Contract Management System
- If required by PWCS, attend PWCS Safety Induction Training
- Comply with and obey all lawful instructions which may be issued or given by PWCS.

Any Vessel Agent, Coal Exporter, contractor, visitor or other person refusing to give such an undertaking or attend induction training will be refused access to the PWCS Terminal.

7.2 GENERAL ACCESS, SECURITY AND CREW IDENTIFICATION

All vessel crew and other visitors to the vessel must present themselves to the wharf security gatehouse to obtain authority to enter the site. Vessel crew entering or exiting PWCS controlled areas will be required to provide satisfactory personal identification on request. This will include a passport, photocopy of that passport or equivalent documents provided by the shipping company.

Access to PWCS premises is only permitted to accredited organisations and their inducted employees. Identification cards will be issued upon completion of the relevant PWCS Induction. Any visitor that requires access to the vessel for work related activities must be escorted by a nominated accountable PWCS inducted person. The accountable PWCS inducted person must complete the “Approval to Escort Visitors onto Port Waratah Wharves” form.

To facilitate visitor access to the vessel, the Master must arrange for a PWCS inducted person (e.g. the Vessel Agent) to meet the visitor at security gatehouse and escort the visitor to the vessel.

Whilst transiting PWCS sites in vehicles follow the designated directions as outlined in the below wharf access maps:



Image 1: Carrington Wharf Access



Image 2: Kooragang Wharf Access

Only accredited transport providers have access to PWCS wharves. The Vessel Agent will provide advice on accredited providers.

No pedestrian access is allowed through PWCS facilities.

Security cameras monitor movements on and near the wharf areas. Random vehicle, personnel and stores inspections may be carried out in accordance with PWCS Policies and Procedures.

7.3 GANGWAY ACCESS REQUIREMENTS

Due to the configuration of PWCS facilities, gangways will not rest on the wharf whilst alongside. Gangways will be suspended at the vessel's side and connected to a brow supplied by the terminal. PWCS personnel will not board the vessel until safe access is provided.

Vessels that do not comply with the instruction below will delay loading and may be subject to suspension from loading at PWCS Terminals (refer [Section 11 Vessel Review](#)) and potentially be issued with a defect notice by AMSA Port State Control inspectors.

The Vessel Master must at all times, provide a proper and safe means of access to and from the vessel.

At PWCS Terminals this includes:

- Maintain the gangway in a good and serviceable condition with gangway wires checked and replaced regularly.
- The gangway supported at the top and not resting on the wharf.
- The gangway is securely connected to the brow (brow is supplied by terminal).
- The gangway must be monitored, and the height regularly adjusted whilst at berth.
- All persons (including vessel crews) using the gangways must wear a lifejacket and utilise 3 points of contact (i.e. hold onto handrails).
- Rig gangways with safety nets at handrail height and on the gangway underside to reduce the risk of a person falling. Rigging work is not permitted while under pilotage. The decision to rig a gangway prior to port entry is solely the responsibility of the Master of the Vessel.

- Utilise a 'secondary support' that can hold the weight of the gangway should the main gangway support fail. The secondary support may utilise the stores crane, a strong wire\rope tied on a secure fixture, a purpose-built device or other solution as determined by the vessel.
 - The main gangway support should take the weight of the gangway, not the secondary support.
 - The secondary support may be temporarily removed upon the approval of the Terminal Representative (e.g. if the stores crane is required to load provisions). Access between the vessel and shore shall be suspended until the secondary support is reinstalled.
 - The vessel is not to place a secondary gangway support where it may collide with the shiploader.
- Gangways and/or accommodation ladders and their supports are not to obstruct loading operations.
- The gangway must be adequately illuminated throughout its length during hours of darkness.

The Master of the Vessel is responsible for the safety of all personnel using and adjusting the vessel's gangway to prevent damage to it and/or the berth structure.

The Master of the Vessel shall be held responsible for any damage or loss to the berth structure or supplied brows.

7.4 SAFETY CLOTHING REQUIREMENTS

Persons accessing the wharf (or any terminal area) must wear appropriate personal protective equipment (PPE).

This requirement applies to vessel crew accessing the wharf for any purpose, including when transiting from the gangway to a vehicle.

Minimum PPE to be worn whilst accessing wharf areas is:

- Safety helmet
- Eye protection
- Steel Cap Enclosed footwear
- Long sleeve shirt and long trousers
- High-visibility safety vest or clothing
- Personal floatation devices (lifejackets) - to be worn when accessing the gangway and wharf apron area
- Any other safety equipment that may be required in the area being visited or as directed by a PWCS employee.

Vessel crew must use their own PPE – PWCS will not provide PPE.

Where a crew member is joining a vessel for the first time, the Vessel Agent shall provide PPE.

When leaving PWCS premises on shore leave, vessel crew may store their PPE at the security gate. The Security Officer will register the equipment for pick-up upon re-entry.

All PWCS employees are required to wear appropriate PPE whilst on board a vessel. PWCS recommends that vessel crew also adhere to this policy, including wearing hearing protection equipment when near an operation shiploader.

7.5 WORKING AT HEIGHTS

Crew members must not work on top of a hatch cover or above an open cargo hold without fall protection in place.

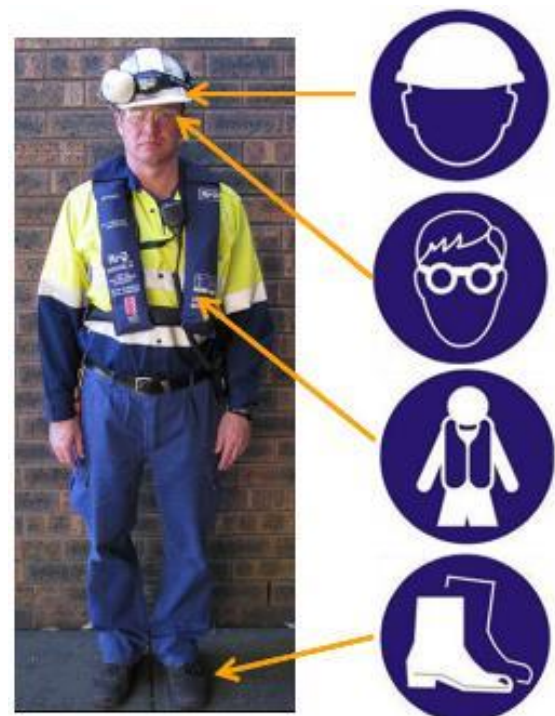


Image 3: Minimum Wharf PPE

7.6 WORKING IN CARGO HOLDS

PWCS recognises that vessel crew may be required to enter a cargo hold while a vessel is being loaded. The following procedures must be complied with to ensure the safety of such crew.

Prior to a vessel berthing, PWCS will require the Master of the Vessel to submit the following:

- Copy of a procedure identifying action to be taken by vessel crew when entering a hold during cargo operations
- Evidence of training within the last 12 months in the above procedure.

Any procedure submitted must be prepared with a view to preventing dangers that are likely to arise in the cargo hold and must include the following items:

- A notice must be displayed at all cargo hold entrances prohibiting entry without permission
- The procedure for preparing and securing the space for entry
- The method of monitoring the atmosphere within the cargo hold

Entry into cargo holds during cargo operations must:

- Comply with the agreed procedure
- Be agreed with the PWCS Terminal representative prior to entry
- Be authorised by the Master of the Vessel
- Be supervised by an officer of the ship
- Identified by Hatch covers partially closed and chocked (refer [Terminal Safety Poster](#)).

7.7 MOORING ROPE REQUIREMENTS

Refer [Section 10.7 Mooring Operations](#)

7.8 COMMUNICATION REQUIREMENTS

The Terminal Representative acts as the primary terminal contact whilst the vessel is at berth.

The means of communication between the vessel and shore shall be advised by the Terminal Representative to the Master of the Vessel immediately after berthing and shall be documented and agreed by both parties on the Ship/Shore Safety Checklist.

Communications will be in English, in person, by phone and/or radio. If a PWCS radio is issued to the vessel, the Terminal Representative shall advise and document acceptance of a procedure for correct usage.

A mobile device will be made available to the vessel to enable the monitoring of loading and other relevant information.

The following table lists useful contact details and phone numbers, however please refer to the Ship/Shore Safety Checklist for specific advice. Add +61 as a country code if dialling from a satellite phone.

Terminal	Terminal Representative	PWCS Operations Supervisor	Emergency
Carrington	Radio & phone advised on berthing	02 4907 3287	02 4907 3222
Kooragang	Radio & phone advised on berthing	02 4907 2361	02 4907 2111

Table 1: PWCS Contact Details for Terminal Representatives

7.9 INCIDENT MANAGEMENT

7.9.1 SAFETY INCIDENTS

Incidents that occur at the PWCS wharf facilities, including those on board the vessel, are to be reported immediately to PWCS and the relevant statutory authorities.

Depending on the nature of the incident, these agencies may include Australian Maritime Safety Authority (AMSA), the Port Authority, Workcover New South Wales or the NSW Office of Environment and Heritage (OEH).

PWCS recommends the use of the Vessel Agent in coordinating any further communications with respect to incidents.

Where an incident occurred that resulted in PWCS causing damage to a vessel PWCS reserves the right to organise for a third party to inspect, photograph and estimate the cost to repair damages caused by PWCS.

7.9.2 SECURITY INCIDENTS

All security incidents must be reported to the Terminal representative immediately. It is a breach under Australian Law to withhold any information relating to security incidents that affect maritime transport.

7.9.3 MOORING INCIDENTS

Snapped mooring lines must be reported immediately to the Port Authority ('Newcastle Harbour' on VHF Channel 9) and PWCS Terminal Representative.

The Master of the Vessel must also arrange (via the Vessel Agent) for a lines crew to re-set the snapped line.

In the event of an incident (and until notified by the Terminal Representative that the hazard has passed) vessel crew must:

- Not access the gangway and berth apron. Other mooring line failures may occur, and vessel movement may dislodge the gangway and brow from the berth
- Not re-set a line or otherwise operate terminal mooring equipment. Accredited lines company personnel must be called for this purpose
- Take appropriate precautions to avoid accessing snap-back zones surrounding shipboard mooring equipment.

7.9.4 BIOSECURITY INCIDENTS

A biosecurity incident is an unintentional, unforeseen or uncontrolled exposure to exotic pests and diseases. Exotic pests or diseases may be detected during a biosecurity incident, or they may only be suspected. Examples of an actionable biosecurity incident include the discovery of webbing, borer holes, egg masses, or soil contamination.

The method for responding to a biosecurity incident is ISOLATE, CONTAIN, REPORT & TREAT.

All biosecurity incidents must be reported immediately to the Terminal Representative and the Department of Agriculture and Water Resources.

PWCS maintain Biosecurity Response Kits, which are located at the Wharf Security Gate at each Terminal.

8. PORT INFORMATION

8.1 PORT ENTRY AND BERTHING

The Coal Exporter must provide or cause the Master of the Vessel or Vessel Agent to provide updates of the vessel's ETA to PWCS at least 10 days, 7 days, 48 hours and 24 hours before the ETA and at all other times requested by PWCS. These are to be provided via the PWCS Services Portal website.

If the vessel intends to discharge or partially load at another terminal in Newcastle prior to berthing at PWCS, the Vessel Agent must notify PWCS at least ten (10) days prior to ETL.

Restrictions apply to vessels entering port in a part-cargo condition. Requests must be made to the Harbour Master for assessment.

Two navigational charts are published for Newcastle: AUS 207 (Approaches to Newcastle) and AUS 208 (Newcastle Harbour).

The entrance is subject to swell conditions and the port may be restricted due to bad weather. The port is tidal; consequently, deep draught vessels are subject to tidal conditions as per the Port Authority's Ship Handling Safety Guidelines.

All vessels must be ballasted and trimmed as follows:

- Minimum draughts are Forward: 2% of LOA and Aft: 3% of LOA; and
- The propeller is fully immersed and trim by the stern does not exceed 1% of the vessel's overall length.

The Master of the Vessel shall also ensure that the air draught restriction (refer [Section 9.1 Air Draught](#)) at the allocated Terminal is met.

Chart:	AUS 207 & 208
Maximum sailing draught:	Promulgated Channel Depth + Tide – 10% UKC
Channel design depth:	15.2 m (subject to promulgation)
Tidal range:	0.1 m to 2.1m
Highest astronomical tide (HAT):	2.1m
Lowest astronomical tide (LAT):	0 m (Chart Datum)
Minimum Lower High Water (LHW):	1.1m
Water density:	1023kg/m ³ during typical weather Down to 1000kg/m ³ following heavy rains in river catchment

Table 2: Port Entry Information

8.2 WATER DENSITY

During periods of normal to dry weather water density can be expected to be approximately 1023kg/m³ (by draught survey hydrometer calculated in air) or 1025kg/m³ (by loadline hydrometer calculated in a vacuum, Australian Standard AS2026-1994).

This will not relieve the Master of the Vessel of his responsibility to regularly check the water density using the appropriate standard practices during the loading process.

During periods of excessive fresh water flow following heavy rains in the catchment area water density has been known to reach 1000 kg/m³. This will largely depend on the tidal flows at the time of surveying.

8.3 WEATHER

Where, in the opinion of either PWCS or the Master of the Vessel, weather conditions make loading perilous, PWCS shall cease loading and record the occurrence and period(s) of non-working due to weather in the vessel loading delay statement.

Exceptional conditions caused by adverse weather or excessive fresh water flow in the Port following heavy rains, may impact vessel movements in the Port area.

Entry and sailing times may be changed (through the Vessel’s Agent and in consultation with PWCS) to allow for these conditions.

Typical Weather Conditions	Summer (Dec-Feb)	Autumn (Mar-May)	Winter (Jun-Aug)	Spring (Sept-Nov)
Average Max Temp (°C)	25	22.6	17.9	21.9
Average Minimum Temp (°C)	19.3	15.6	9.6	14.4
Mean Monthly Rainfall (mm)	88.6	120.1	82.7	72.3

Table 3: Weather Information

8.4 SAILING DRAUGHT GUIDELINES

Maximum draughts to or from PWCS Terminals is provided in the table below. Current promulgated depths must also be considered. Promulgated depths are published on the Port Authority New South Wales website.

Tide Prediction (m)	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 4: Maximum Sailing Draughts

All vessel draughts are based on a 10% static underkeel allowance and based on two (2) decimal places.

Whilst at berth the underkeel clearance of the vessel shall not be less than 0.3 of a metre. It is the responsibility of the Master of the Vessel to ensure the required clearance is provided.

Vessels are required to provide to the Port Authority 12 hours prior to sailing their maximum sailing draught so that it can be analysed in the Swell and Under Keel Clearance System (SAUCS). This system provides Pilots with greater information with regards to the vessel's condition, Port condition and the prevailing weather.

8.5 AUSTRALIAN MARITIME SAFETY AUTHORITY (AMSA)

All vessels may be subject to Port State Control inspections by AMSA Surveyors. In some instances, the severity of any deficiencies may result in the vessel being Provisionally Detained until repairs are affected. This can result in the vessel being delayed from sailing.

Depending on the nature of the rectification work required, it may be necessary to cease loading operations until repair work is completed at the berth or to have the vessel moved to a suitable alternate holding berth for the repair work to be completed, at the vessel owner's cost.

PWCS must receive immediate written notice of any provisional detention and release that occurs whilst alongside at the Terminals.

Notices must be forwarded by the Vessel Agent to ShippingIssues@pwcs.com.au (Note: the underscore must be included in email address).

Contact details for AMSA in the Port of Newcastle are:

Senior Marine Surveyor

Australian Maritime Safety Authority

8 Cowper Street

Carrington NSW 2294

AUSTRALIA

Telephone: +61 2 4961 6300 - Fax: +61 2 4961 2694 - Email: sydney@amsa.gov.au

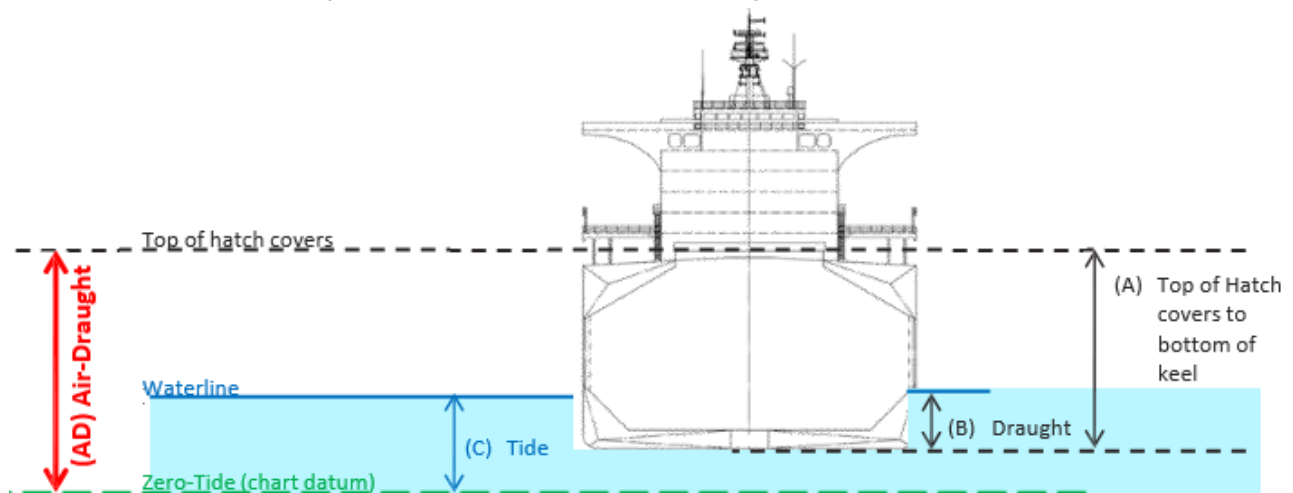
9. TERMINAL LOADING FACILITIES

	KOORAGANG Berths - K4, K5, K6 and K7	CARRINGTON Berths - D4 and D5
Layout:	Four berths operated continuously to accommodate up to five vessels; Three shiploaders	Two berths; Two shiploaders
Operating Hours:	365 days/year, 24 hours/day	365 days/year, 24 hours/day
Typical Vessel Size:	70,000 to 210,000 dwt	30,000 to 180,000 dwt
Berth Alignment:	1110T	1750T
Berthing:	Port side-to (or starboard side-to at berth K4 as required)	Starboard side-to
Berth Design Depth:	16.5 m (subject to promulgation)	16.5 m (subject to promulgation)
Dredged Length at Berth Face:	1396 m	615 m
EQUIPMENT		
Shiploader type:	Longitudinal travel, telescoping outreach, luffing type	Longitudinal travel, telescoping outreach, luffing type
Shiploaders per Vessel:	Single head loading	Single or dual head loading
Maximum Shiploading Rate:	10,500 tph	2,500 tph per shiploader
Typical Gross Shiploading Rate:	5,000 to 7,300 tph Shiploader rate (through to trim) 7,000 tph	Single shiploader: 2,000 to 2,300 tph Dual shiploader: 3,000 to 3,500 tph
Maximum Shiploader Outreach:	35 m from fender face line	31.3 m from fender face line to tip of shuttle
Maximum Shiploader Coal Throw:	55 m from fender face line	47 m from fender line
Shiploader Travel Distances:	Shiploader 7.08: 19 m to 599 m marks (berths K4 - K5) Shiploader 7.09: 81 m to 1068 m marks (berths K4 - K7) Shiploader 7.10: 327 m to 1315 m marks (berths K5 - K7) (Distance along the wharf measured from boom centre line)	Shiploader 4: 27.8 m to 472.1 m chainage Shiploader 5: 63.7 m to 508 m chainage (Distance along the berth apron measured from boom centre line)
Berth Structure:	Reinforced concrete/steel piles, open deck layout	Reinforced concrete/steel piles, open deck layout
Fenders:	Seibu TTV (K4 berth) Bridgestone Super Cell (K5-K7 berths)	Bridgestone Super Cell
Mooring System:	Quick release hooks and capstan winches	Quick release hooks and capstan winches
VESSEL RESTRICTIONS		
Minimum Vessel Size (PWCS):	60,000 dwt	25,000 dwt
Max Vessel LOA:	300 m	270 m (combined LOA 510 m) 275 m (with Harbour Master approval)
Max Vessel Beam:	50 m	47 m
Minimum Distance between Berthed Vessels:	30 m	30 m
Maximum Air Draught:	20.5 m from chart datum to top of hatch cover	18.5 m from chart datum to top of hatch cover

9.1 AIR DRAUGHT

Air draught is the vertical distance from the top of the hatch cover to the chart datum (zero tide). It is the responsibility of the vessel Master to ensure the air draught is maintained below terminal limits, taking into account tidal fluctuations.

Horizontal lines have been marked on each shiploader to indicate the air draught limitation. The top of hatch covers must remain below these marks. If these limits are exceeded prior or during loading the Terminal Representative should be notified immediately, and PWCS will defer or cease loading while the vessel ballasts.



Example:

(A) Distance from top of hatch covers to bottom of keel	24.0m
(B) Vessel draught	6.0m
(C) Tide	1.5m

$$\begin{aligned}\text{Air Draught} &= A - B + C \\ &= 24.0 - 6.0 + 1.5 \\ &= 19.5\text{m}\end{aligned}$$

9.1.1 KOORAGANG AIR DRAUGHT

Air draught is the vertical distance from the top of the hatch cover to the chart datum (zero tide). Horizontal lines have been marked on each shiploader to indicate the air draught. The top of hatch covers must remain below these marks.

The air draught limit at KCT is 20.5m above chart datum (zero tide).

To allow for the normal tidal range, coal load plans where the air draught exceeds 19.5m will be rejected, and where possible the master should plan to stay under 18.5m.

9.1.2 CARRINGTON AIR DRAUGHT

Air draught is the vertical distance from the top of the hatch cover to the chart datum (zero tide). Horizontal lines have been marked on each shiploader to indicate the air draught. The top of hatch covers must remain below these marks.

The air draught limit at CCT is 18.5m above chart datum (zero tide).

To allow for the normal tidal range, coal load plans where the air draught exceeds 17.5m will be rejected, and where possible the master should plan to stay under 16.5m.

9.1.3 DUAL SHIPLOADING AT CARRINGTON

Vessels must initially submit a coal loading plan for single head shiploading and will be measured against this plan. Additionally, vessels loading at Carrington which can accept dual shiploading will be requested to prepare and submit an alternative plan for dual shiploader operation.

When preparing a dual head loading plan:

- At least 1 hatch separation is required between simultaneously loading hatches.
- Hatch pass tonnages should be equal and paired for dual shiploader operation.
- Vessels loading multiple brands of coal are required to submit a coal loading plan commencing with loading different coal types from each shiploader.
- Consideration will be given to de-ballast rates.

Dual head shiploading is dependent on equipment availability and other operational constraints. Opportunities to dual head load will be discussed at vessel sign-up and throughout loading. The Terminal Representative will advise vessels of the availability of a second shiploader prior to commencing loading.

9.2 POTABLE WATER

Potable (fresh) water is available at all PWCS berths and the outlets are provided with male staunch fittings. The Terminal Representative can provide direction on the location of the potable water outlets. Any hoses used for provision of potable water are to be provided by the vessel and are to be removed prior to the vessel leaving the berth.

9.3 LOADING SHIP'S STORES

Storing should not interfere with loading operations and should be scheduled not to delay the vessel departure after the completion of loading. The Terminal Representative must be informed before any storing operation is to commence.

Storing will remain the responsibility of the vessel. No PWCS labour shall be supplied.

Any vessel lifting device shall be used for vertical lifts only. Handling practices that could damage PWCS property are prohibited, including the dragging of loads across deck areas, use of guard rails to lower/support loads or the spillage of products.

9.4 VESSEL BUNKERING

Bunkering via road tanker or drums is prohibited from PWCS berths. At the time of publication, a barge is available to provision drums from the waterside (contact Port Authority regarding permits); however, a bunker barge is not available.

9.5 CARGO WEIGHT DETERMINATION

The mass of coal loaded into a vessel as a ship consignment shall be the mass determined by a draught survey of the vessel.

PWCS maintain belt weightometers using a planned maintenance system that includes comparative belt weightometer variance analysis and calibration checking. Belt weightometer readings may be used for determining total and partial mass of coal pass during loading, however regular draught checks should be performed in accordance with [Section 10.9.3 Loading](#).

In the event of more than one coal brand being loaded into a vessel, belt weightometers are used to calculate tonnages during loading. The draught survey weight of the vessel will be apportioned for each coal brand in the same proportions as the weights recorded by the belt weightometers owned and operated by PWCS.

The Terminal Representative at the completion of loading will supply final belt weightometer figures to the Master of the Vessel on the Shiploading Certificate/Mates Receipt and Deviation Advice or other agreed documents as designated by PWCS.

9.6 CARGO MAXIMUMS AND MINIMUMS

Where a Vessel is contracted to carry a cargo maximum or minimum, whether it is individual coal type or total tonnage, it shall remain the responsibility of the Master of the Vessel, in cooperation with the Marine Surveyor, to load in accordance with that agreement.

PWCS will not be accountable for tonnage differences when a vessel is contracted to carry a cargo maximum or minimum.

9.7 VESSEL ACCEPTANCE CRITERIA

The Terminals are designed to accept single deck, self-trimming bulk carriers. Such vessels are expected to be classed Lloyd's 100A1 or equivalent and have a valid ISM Certificate. Upon nomination, PWCS will review all vessels to determine their suitability to safely and efficiently load at the Terminals.

In determining whether or not a vessel is suitable, the following will be considered by PWCS but is not limited to:

- Vessel characteristics, such as minimum deadweight capacity, maximum length and beam (refer [Section 9 Terminal Loading Facilities](#)).
- The requirements stipulated by the various Australian State and Federal agencies and the vessel's flag state authority.
- Information and assessment available and supplied regarding the vessel's safety, security and operational performance by RightShip or any other relevant sources
- Information supplied by the vessel regarding its safety, security and operational performance via the PWCS Vessel Acceptance Questionnaire, vessel and performance criteria and any other relevant information
- Previous safety, security and operational performance at PWCS Terminals or any other similar bulk terminals
- Whether the Master of the Vessel has previously failed to provide a Coal Loading Plan or to accede to any request to amend a proposed Coal Loading Plan
- Any actual or potential legal action that may cause the vessel to be arrested or otherwise detained
- Any other vessel suitability requirements that PWCS may reasonably determine from time to time.

In respect to geared vessels, it is expected that the vessel's gear will be positioned to not impede the normal operation of the shiploader and otherwise reduce the loading performance of the Terminals. It is the intention of PWCS to load most geared vessels at the Carrington Terminal.

Owners/Charterers of vessels wishing to load at PWCS for the first time may be required to submit a General Arrangement drawing showing the dimensions of their hatches, deck structures and gangway position. Periodically, vessels will be required (via the Vessel Agent) to submit vessel dimension details to assist with planning vessel positions along our berths.

Please be aware that Coal Exporters will request information to permit them to submit a new vessel for nomination and 'Vessel Acceptance Questionnaire' to PWCS.

9.7.1 VESSEL EQUIPMENT

All vessel equipment including stores cranes, deck cranes and deck machinery shall not at any time extend beyond the extreme breadth of the vessel on the berthed side unless authorised by the Terminal Representative.

For the purpose of storing, the Master of the Vessel must inform the Terminal Representative of the need to use the vessel's stores crane, the use of which must not delay shiploading operations or cause damage to PWCS property (refer [Section 9.3 Loading Ship's Stores](#)).

9.7.2 DANGEROUS VESSELS

If in the opinion of PWCS a vessel is in such poor repair or otherwise not suitable to load at the Terminals such that it could endanger the Port of Newcastle, the Terminals or the health and safety of any persons, PWCS may refuse to load that vessel notwithstanding that PWCS may have previously advised that the vessel was suitable to load or request that the vessel leave our berth.

9.7.3 GAS FREEING VESSELS

It is expected that in accordance with good seamanship, the Masters of OBO vessels will ensure that prior to presenting for loading at PWCS Terminals their vessel is Gas Free with a valid Gas Free Certificate. The International Safety Guide for Oil Tankers and Terminals (ISGOTT) details the recommended procedures to be followed. The Master of the Vessel is advised they may be required to establish their vessel (OBO) is gas free during an inspection by AMSA.

The Gas Free Certificate must have been issued by an authority acceptable to PWCS prior to presenting the vessel for loading. A Gas Free Certificate signed only by the Master of the Vessel will not be acceptable.

Acceptance of any vessel carrying slops is subject to the approval of PWCS and the Harbour Master. Slop tanks must be fully inerted, positively pressurised and with an oxygen content of not more than 8% by volume in accordance with ISGOTT. Slop tanks shall remain positively pressurised during loading and must not be manually vented whilst the vessel is at, or near the Terminal. Washing and gas freeing of slop tanks at the Terminal is prohibited.

9.8 VESSEL BERTH ALLOCATION

Vessels shall be allocated a terminal and berth as determined by PWCS. There is a preference for vessels loading multiple brands of coal and vessels with deck gear to be loaded at CCT.

Not later than ten (10) days prior to the vessel's ETL, a provisional berth allocation and order of loading will be determined by PWCS for the vessel based on the ETA of the vessel in comparison with the ETA of all other vessels allocated to that Terminal.

The ETL, order of loading and berth allocation may be varied by PWCS from that provisionally advised. As a result, the vessel may be scheduled to enter port earlier or later than initially indicated.

10. SHIPLOADING

10.1 COAL LOADING PLAN

PWCS will distribute to the Master of the Vessel, via the Vessel Agent, a blank copy of the Coal Loading Plan.

The Master of the Vessel must, or must cause the Coal Exporter to:

- Submit a Coal Loading Plan no later than ten (10) days prior to the vessel's ETL and in accordance with the conditions set out below
- Reach agreement with PWCS on the Coal Loading Plan no later than two (2) business days prior to the vessel berthing

PWCS may communicate directly with the Master of the Vessel to confirm the vessel's ETA, obtain the vessel's proposed Coal Loading Plan, and to reach agreement with the Master of the Vessel as to any proposed amendments to the Coal Loading Plan.

The order of loading of the vessel may be impacted if significant amendments to a Coal Loading Plan are submitted to PWCS later than two (2) days prior to the vessel berthing. PWCS requires vessels use the supplied Coal Loading Plan to help synchronise the deballasting program with the loading sequence.

10.2 COAL LOADING PLAN GUIDELINE

The Coal Loading Plan must set out details of the vessel stowage plan, hatch loading sequence, deballasting operations, and any requirement to access cargo holds (refer [Section 7.6 Working in Cargo Holds](#)).

Vessels loading at Carrington Terminal may be required to submit an additional Coal Loading Plan in case that dual shiploaders are utilised to load the vessel (refer [Section 9.1.3 Dual Shiploading at Carrington](#)).

In completing the Coal Loading Plan, the Master of the Vessel should be aware of and provide details relating to the following matters:

- Port Authority Port Entry Requirements (refer [Section 8.1 Port Entry and Berthing](#))
- If loading more than one cargo, the cargoes must be loaded to completion before commencing the next cargo (with exception of dual head shiploading at Carrington).
- The maximum number of passes is two passes per hatch plus a maximum of two trim passes.
- Recommended minimum cargo size is 20,000 tonnes
- Trim passes must be of one coal type only
- The maximum planned percent full for trim hatches to be 97% or less to allow for variances in stowage factors, trim tonnages and placement of the cargo
- The deballast time is configured so that the minimum load rate for KCT is 5,000 tph or 2,000 tph at CCT. If unable to synchronise the deballasting program with loading operation, please provide an approximate stoppage duration and pass number at which loading will stop.
- Kooragang terminal averages over 6,000tph loading rate from first coal to last coal on board and over 7,000tph from first coal until interim draught survey.
- It is preferable that the Master of the Vessel reduce or eliminate deballast stoppages provided it is safe to do so. If the vessel is not loading to a loadline or does not have a discharge port draft restriction, then stripping should be kept to a minimum therefore reducing deballast time. The appointed Marine Surveyor can be consulted to help with management of the deballasting program
- Vessels that are loading to their summer draft or have a discharge port draft restriction should identify this in the load sequence.
- Vessels must meet terminal air draught requirements (refer [Section 9.1 Air Draught](#)). PWCS require vessels to allow sufficient margin in air draught calculations for tide (note highest astronomical tide is 2.1 metres)
- First passes within a hatch should be as large as possible, rounded to the nearest thousand tonnes ('000) where possible, unless completing the hatch
- The vessel should avoid a negative trim position (down by the head) during the loading sequence
- The Coal Loading Plan should note an interim draught survey prior to the two trim passes, departure draughts, expected departure tide and de-ballast time
- Notice of the Marine Surveyor engaged to perform interim draught survey and assist in the trimming of the vessel.

The Master of the Vessel must ensure that the Terminal Representative is made aware of the requirements for harmonisation between ballast operations and cargo loading or unloading rates of their ship and the time required for deballasting operation.

At the same time a Coal Loading Plan is initially submitted, PWCS must also be notified if the vessel will discharge or partially load in Newcastle prior to berthing at PWCS:

10.3 COAL LOADING PLAN REVIEW

Following receipt of the Coal Loading Plan PWCS may:

- Confirm agreement of the Coal Loading Plan after reviewing it against the vessel's previously submitted Coal Loading Plan and this Handbook; or

- Request the Master of the Vessel to amend the Coal Loading Plan. PWCS may at any time prior to loading, request the Master of the Vessel to amend the Coal Loading Plan due to:
 - Sailing times changing (tide)
 - Coal availability
 - Stockyard conflict
 - Breakdown issues
 - Any other reason PWCS considers necessary, including improving the performance of the vessel or Terminal.

The Master of the Vessel has the final decision on the manner in which the vessel is to be loaded and is not obliged to accede to any request by PWCS for amendments to the proposed Coal Loading Plan.

PWCS must receive confirmation of final tonnages, loading sequence at least two (2) days prior to vessel berthing. PWCS may request the vessel to update the sailing draught and hence planned tonnage less than two (2) days prior to the vessel berthing in the case of tide restricted vessels.

The cargo type to be loaded in the first pass must be the same as on the Coal Loading Plan approved by PWCS, as the Terminals may have already sent cargo to the wharf.

10.4 READINESS TO LOAD

A vessel must be ready to load before berthing at a PWCS terminal. PWCS requires that vessels do not conduct any activities at our berths which detract from the overall efficiency of the Terminal and disrupts PWCS Operations or the activities of other coal exporters.

10.5 VESSEL DEFECTS AND MAINTENANCE

No vessel repairs are to occur at PWCS berths without prior authorisation from both PWCS and the Port Authority. Such repairs include any works that could extend the vessel's normal time at the berth or otherwise affect loading and/or departure of the vessel.

PWCS requires that vessels do not conduct repairs or any other activities at our berths which detract from the overall efficiency of the Terminal and disrupts PWCS Operations or the activities of other coal exporters. Vessels may be required when entering port to move to a lay-by berth while repairs or other activities are carried out.

PWCS will notify the Coal Exporter where such action is required and will use all reasonable endeavours to maintain the order of loading for the vessel. Please be aware that it is the obligation of the Coal Exporter (not PWCS) to inform the Master of the Vessel of any of the above requirements. PWCS will not be liable on any account whatsoever for any costs associated with the above actions.

A Hot Work Permit must be issued by the Port Authority prior to commencement of any hot works.

No vessel repairs shall be carried out whilst alongside a PWCS berth that will immobilise the vessel or involve the turning of the propeller, other than using the turning gear.

PWCS does not authorise or control diving activities for vessel repairs. The Master of the Vessel must make arrangements with the Port Authority via their Diving Notification System to ensure any diving activity is carried out safely and in accordance with any legislative or other requirements. Diving must be compliant with AS2299 and the Work Health and Safety Act 2011 (NSW).

At times PWCS may carry out diving activities on its wharves. On these occasions PWCS will contact the relevant Master of the Vessel and discuss control procedures for this work.

Where PWCS causes damage to a vessel PWCS reserves the right to organise for a third party to inspect, photograph and estimate the cost to repair damages caused by PWCS.

10.6 CARGO HOLD CLEANLINESS

Prior to berthing the Master of the Vessel must ensure all cargo holds are clear of residue waste material, previous cargo and/or other foreign objects (other than holds containing ballast).

If waste is present, the vessel must dispose of all material responsibly and notify PWCS prior to berthing.

Waste removal must not impact the safe and efficient loading of the vessel.

10.7 MOORING OPERATIONS

Mooring services are arranged by the Vessel Agent and provided by contractors accredited by PWCS.

It is the responsibility of the vessel to ensure that the mooring and rope systems have been inspected and are fully operational prior to berthing. PWCS expects that the vessel maintains the correct standard of lines used and that the crew attend to the tension of the ropes whilst at berth. The vessel Master and his crew should pay attention to the following.

Prior to berthing:

- Ensure only polypropylene or similar synthetic material mooring lines are in use.
- Ropes should have approximately 3 metres (10 feet) of light line spliced into the eye to help transport the line to the shore based mooring hooks.
- Ropes have been inspected and are in good condition.
- Avoid flaking out excessive amounts of rope onto the deck due to the risk of the line injuring a crew member or linesman.
- Under normal circumstances a Panamax or larger vessel will require - 4 x headline; 4 x Stern line; 2 x breast line; 2 x Spring Line
- Under normal circumstances a Handysize or Handymax vessel will require - 4 x headline; 4 x Stern line; 2 x Spring Line
- The Marine Pilot will advise the Master of the Vessel in determining an appropriate mooring arrangement, which may vary from the typical mooring arrangement to account for prevailing conditions, berth positioning/equipment and shipboard equipment. Any reasonable direction given by the Pilot in this regard should be observed.

During mooring Operations:

- Communication between shore and vessel shall be via visual/hand signals. One linesman in each group shall wear a red hat, indicating that they will perform the communications role. In performing the mooring operations:
- Vessel crew must maintain visual contact with the linesman wearing the red hat – if contact is lost, mooring operations will stop
- Monitor the position of linesmen and the lines boat – stop operations if any person is in a dangerous position
- No mooring lines are to be tensioned until instructions are given by the linesman wearing the red hat.

Whilst the Vessel is berthed:

- Crew members tension the lines appropriately and set brake on the winding drum.
- Crew members avoid stepping over mooring lines or being in the snap-back
- Crew members attend to the ropes on the vessel at least every hour ensuring the correct tension on the line.
- Shipboard winches and brakes shall be in good condition and set correctly
- The vessel must report any snapped or slipped mooring lines to the vessel agent and to PWCS.
- Crew members must monitor movement of passing vessels (refer [Section 10.8 Hydraulic Interactions](#)).
- The Terminal Representative may request line(s) be temporarily slackened to facilitate personnel access on the berth or movement of a shiploader to its maintenance position.

- Mooring lines must not obstruct loading operations, shiploader maintenance or another vessel's lines. No mooring shall be secured to any berth structure except the quick release hooks unless authorised by PWCS.
- Vessel crew must not operate terminal mooring equipment except in cases of extreme emergency or as directed by the Harbour Master.

Failure to demonstrate adherence to these requirements may result in the vessel being refused pilotage by PANSW and/or deemed unsuitable to load at PWCS Terminals.

10.8 HYDRAULIC INTERACTION

Vessels moored at PWCS Terminals can be subject to significant hydraulic interaction when vessels pass in the adjacent channel. This can cause the moored vessel to move significantly if mooring lines are not adequately tensioned. Such movement has the potential to result in snapped mooring lines, disconnection of gangway/brow access, damage to wharf and equipment and serious personnel injuries.

To ensure potential for hydraulic interaction is minimised, the Master of the Vessel must ensure that moorings are appropriately configured and maintained at all times, especially whilst a vessel passes in the channel. The gangway should not be accessed while a vessel is passing in the channel.

Hydraulic interaction is particularly pronounced at the Carrington Terminal (Berths D4, D5) which is located in close and limited proximity to the Steelworks Channel. Prior to a vessel passing, the Terminal Representative shall follow designated guidelines in deciding whether loading can continue safely. Access to vessel gangways and the lower wharf deck at Carrington is prohibited whilst a vessel is passing.

The Kooragang Terminal (Berths K4, K5, K6, K7) are less affected due to their differing location and configuration. When vessels transit the channel past the Kooragang Terminal, moored vessels will continue to load as usual, but Masters should be prepared and vigilant.

Hydraulic interaction occurs in all conditions but is most severe when high volumes of fresh water are flowing down the Hunter River following rain in the river catchment. Failure to appropriately configure and maintain moorings may render the vessel liable for the consequences of injury to people and damage to property.

Refer [Terminal Safety Poster](#) to inform vessel crew about hydraulic interaction.

10.9 LOADING PROCEDURES

10.9.1 RESPONSIBILITY OF MASTER OF VESSEL

The Master of the Vessel is accountable for the safe loading of the vessel at all times. Reference should be made to IMO BLU Code and the Master of the Vessel must comply with the terms of the BLU Code.

Vessels will be loaded according to the Master of the Vessel's requirements, the agreed Coal Loading Plan and in accordance with the Shipment Contract between PWCS and the Coal Exporter (i.e. the Master of the Vessel must take into account the contracted tonnes between PWCS and the Coal Exporter).

It is the responsibility of the Master of the Vessel to ensure that solid bulk cargoes are loaded and trimmed reasonably level to the boundaries of the cargo space so as to minimise the risk of cargo shifting throughout the voyage.

10.9.2 VESSEL SIGN UP

Immediately after the vessel provides safe access, a Terminal Representative will meet with the Master of the Vessel or their representative to establish liaison, confirm the Coal Loading Plan and discuss the Ship/Shore Safety Checklist.

The cargo type to be loaded in the first pass must be the same (with regard to cargo type, hatch number and quantity) as on the Coal Loading Plan approved by the terminal.

No significant changes should be made to the Coal Loading Plan at the confirmation stage, including any change to sequence or cargo type.

The Terminal Representative will make available a copy of this Handbook to the Master of the Vessel and discuss its contents.

The Terminal Representative will also provide the Master of the Vessel for its duration at Port Waratah berths:

- A mobile device to monitor loading progress on the vessel. The device is to be used only for this purpose and is not a general-use mobile device
- A best efforts Wi-Fi device to allow seafarers to access internet-based services (which is supplied at no cost to the Vessel Agents, Vessel Owners or Vessel Masters)

The Master of the Vessel shall confirm (via signature) that they assume liability for the devices should they be damaged or lost whilst on the vessel at the same time as they confirm understanding and agreeing to comply with the content of the Coal Terminals Information Handbook. Use of these systems must comply with Australian laws and use of the devices will be audited by Port Waratah in accordance with Australian Workplace Surveillance laws.

PWCS expects to commence loading no more than fifteen (15) minutes after the previously submitted Coal Loading Plan has been confirmed by the vessel and the Terminal Representative.

10.9.3 LOADING

Shiploading equipment will be planned to operate at maximum flow rates. Vessels are expected to load on a continuous basis at the Terminal's most efficient nominated loading rates. Note that Kooragang terminal averages over 6,000tph loading rate from first coal to last coal on board and over 7,000tph from first coal until interim draught survey. If the vessel is required to stop for deballast it should provide the terminal representative 60 minutes notice in order to enable the system to be run clear of coal.

The Master of the Vessel must conduct and record draught checks against the agreed loading plan at regular intervals throughout loading. Any variances against the Coal Loading Plan must immediately be communicated to the Terminal Representative. Note that terminal weightometer readings are to be used as a guide only.

The vessel must be loaded in accordance with the Master of the Vessel's instructions and in line with the agreed Coal Loading Plan.

10.9.4 VESSEL MARINE SURVEYORS, RUNNING AND INTERIM DRAUGHT SURVEY

The Master of the Vessel, the Vessel Agent or the Vessel Owner must, at their cost, engage a Marine Surveyor to attend the loading of each vessel from the commencement of the loading pass performed immediately prior to the interim draught survey through to the completion of the loading of the vessel.

The engagement of the Marine Surveyor is to include performing the running draught survey, interim draught survey and provision of advice and assistance to the Master of the Vessel with the vessel trimming procedure.

The Vessel Representative must ensure the Marine Surveyor has access to the vessel and all necessary information to enable them to properly carry out their functions and duties.

The running draught survey is to be completed at the commencement of the loading pass immediately prior to the interim survey. This survey will assess the condition of the vessel.

Vessels should plan for a maximum of one interim draught survey requiring a cessation of loading. A weightometer check is also carried out during this survey.

Any issues identified during the interim draught survey concerning vessel trim are expected to be corrected with a maximum of two passes but will depend upon the particular circumstances and will be judged on a case by case basis.

Coal ships visiting the Port of Newcastle are not to utilise rope ladders for reading draught marks.

Vessels are required to have a functioning and accurate manometer to determine the list of the vessel and hence calculate the outboard midship draught by reference to the wharf side reading.

Marine surveyors will utilise a remotely viewed camera to read the outboard midship draught marks.

The following are suggested design criteria for a manometer to work correctly and provide accurate readings:

- Clear plastic tubing with wall thickness of 1.5mm or more to prevent collapsing
- Tubing internal diameter should be between 5mm & 10mm
- Overall length of tube must be a minimum beam plus 4m to allow for camber and sufficient upright length (1.5m to 2m)
- The tube when run across the deck must have no kinks or be constrained in any way
- The uprights must be made fast to the ships rails – full beam of vessel
- Food colouring should be added to the filling water for easy reading and bubble checking
- Upright graduations must be on a calibrated steel ruler and not hand markings
- Rulers on each side must be placed with zero mark on the deck
- The coloured water must be siphoned into the tube so that there are NO bubbles
- The water level at each side should be more than 1.2m for easy reading and above the deck camber
- Tube ends should be open to allow air flow. If valves are fitted, they must be opened

10.9.5 TRIMMING

At the interim draught survey stage, calculation of the final trim tonnage requirement will be determined. This trim tonnage must be loaded in two complete passes (500-1500 tonnes each) into separate hatches and shall be of a single coal type.

Cargo will not be revisited once complete. If extra trim passes are requested after delivery of the two complete passes following the interim draught survey, and whether or not these additional passes are supplied by the Terminal, the vessel may be provided with a 'Preliminary Advice of Unsatisfactory Vessel Performance'.

No tonnage under 200 tonnes will be loaded due to equipment constraints.

10.9.6 DRAUGHT SURVEY

Draught survey is used by Coal Exporters to determine final cargo weight in total.

To facilitate the conduct of the draught survey:

- An accurate manometer or equivalent device for measuring vessel list.
- Rope ladders are not to be used for reading draught marks at PWCS berths.
- Draught marks must be legible.

Every vessel should possess trim correction tables for all tanks, failing which all ballast tanks should be either full or empty during the draught survey. Marine Surveyors recommend that tank soundings be taken when the vessel attains at least one (1) metre trim by the stern at completion of deballast operations.

10.9.7 COMPLETION OF LOADING

The vessel will be deemed to have completed loading based on the trim tonnage delivered to the vessel as determined by the Terminal belt weightometers.

Final draught surveys are expected to be completed and the vessel ready to sail sixty (60) minutes after completion of loading and prior to the first available Port movement opportunity.

All coal contained on the out-loading conveying system must be run off into the vessel at the completion of loading. The Terminal Representative will provide an estimate of the quantity to be expected.

No tonnage under 200 tonnes will be able to be loaded due to equipment constraints. PWCS will not be held responsible for any short shipments as a result of the vessel calling for additional coal that cannot be delivered to the vessel.

10.9.8 SAILING

Port of Newcastle sets sailing times based on available vessel movement opportunities to meet advice from PWCS on the completion of loading times and in accordance with the Port Authority's Ship Handling Safety Guidelines. The vessel is required to sail at this time.

The Master of the Vessel must ensure the vessel is ready to sail sixty (60) minutes after completion of loading, in accordance with good seamanship practice so that the timetable of vessel movements set by Port of Newcastle can be met.

Vessels are required to provide to the Port Authority 12 hours prior to sailing a completed Swell and Under Keel Clearance System (SAUCS) form. This system provides Pilots with greater information with regard to the vessel's condition, Port condition and the prevailing weather (refer [Section 8.4 Sailing Draught Guidelines](#)).

For tide restricted vessels, PWCS will determine and then advise the vessel of the tide it will depart on. This can occur at any point prior to loading, during sign up and/or during loading. Vessels are not permitted to wait for a later tide to enable additional cargo to be loaded. PWCS reserves the right to complete loading at the maximum draught to sail on the minimum LHW tide, particularly where weather or other events could delay a departure beyond the next high tide.

10.10 BALLAST OPERATIONS

De-ballasting must not occur whilst the vessel is under pilotage.

If loading is not planned to commence immediately upon berthing vessels should consider using this time to commence de-ballasting provided the vessel remains in a safe condition and remains within air draught limitations (refer [Section 9.1 Air Draught](#)).

Ballast must be discharged so that water does not flow onto berths or mooring equipment, and all vessels undertaking ballast operations must comply with the Australian Ballast Water Guidelines as set out by the Australian Department of Agriculture and Water Resources.

If de-ballasting is unable to keep up with loading, then loading may cease until it is safe to continue loading. PWCS must be notified of any intended de-ballast delays. Please be aware that de-ballast stoppages are included in the performance monitoring for all vessels.

PWCS may transfer loading operations to another vessel if the vessel intends to stop loading to continue de-ballasting.

11. VESSEL REVIEW

11.1 NON-PERFORMANCE

PWCS is committed to improving the service and value it provides to the Hunter Valley Coal Chain and the loading performance of vessels is an important component of this. To achieve this aim, PWCS will monitor and review each vessel's performance in relation to safe and efficient shiploading.

The main measure utilised by PWCS in its review is the Vessel Load Rate (VLR) metric. VLR is the average loading rate in tonnes per hour from load start to load completion, excluding terminal related delays.

PWCS review of vessel performance includes the following key performance measures:

- Vessel loading rate (refer [Table 5: Vessel Load Rate \(VLR\) Performance](#)).
- Delays prior to start of loading due to vessel issues such as but not limited to excessive air draught, sign up delays, gangway rigging or opening hatches
- Stopping of loading in an unplanned manner due to vessel issues or requests
- Stopping loading due to deballasting. PWCS is mindful that some vessels may be able to achieve suitable load rates and still require a deballast stoppage. PWCS is also aware that due to shear forces, bending moments and other safety requirements the vessel will require a stoppage
- Excessive delays during loading for standard vessel operations such as for Interim Draught Surveys
- Causing inefficiencies to shiploading (e.g. vessels loading multiple cargoes each cargo must be completed in its entirety before commencing the next cargo)
- Ensuring the vessel is ready to sail no later than 1 hour from last coal on board.
- Any other performance criteria that PWCS may reasonably determine from time to time.

Terminal	Unsatisfactory VLR
Carrington	< 2,000 tph
Kooragang	< 5,000 tph
Kooragang (LOA > 270m)	< 5,500 tph

Table 5: Vessel Load Rate (VLR) Performance

11.2 UNSATISFACTORY VESSEL PERFORMANCE

In the event that PWCS determines that a vessel has performed unsatisfactorily it will advise the Master of the Vessel and the Vessel Owners via the Vessel Agent and the Coal Exporter in writing. This written notice will include the relevant details of the unsatisfactory performance and be provided within five (5) business days of the vessel sailing.

Where PWCS has determined there has been unsatisfactory performance and the Master of the Vessel and/or the Vessel Owners have been unable to provide acceptable reasons and corrective actions for this performance, the vessel will remain unsuitable and will not be accepted to return to PWCS.

PWCS will keep Coal Exporters, the Master of the Vessel, the Vessel Owners, the Vessel Agent and any other relevant parties informed of all communications in relation to vessel performance.

12. OTHER MATTERS

12.1 Indemnity and Release

12.1.1 INDEMNITY

The owner, Master of the Vessel and Vessel Agent, jointly and severally, will indemnify PWCS, its employees, agents, licensees, contractors and sub-contractors against all claims which PWCS, its employees, agents, licensees, contractors and sub-contractors may incur or which may be brought against or made on PWCS, its employees, agents, licensees, contractors and sub-contractors, arising out of or in connection with any claim arising out of or in any way related to:

The breach of any rule contained in this Handbook;

- a) PWCS taking steps to ensure compliance with any rule contained in this Handbook; or
- b) Any injury, death, damage or loss caused by the vessel or a person associated with the vessel, related directly or indirectly to the vessel berthing, unberthing or being, or intending to be, at the Terminal or otherwise arising out of or in any way related to this Handbook and caused by an act or omission of the Owner, Master of the Vessel or Agent or their employees, agents, licensees, contractors and sub-contractors; and
- c) Any wilful, negligent or unlawful act or omission of the Owner, Master of the Vessel, Vessel Agent or their employees, agents, licensees, contractors and sub-contractors, except to the extent that such breach, injury, death, damage, or loss is caused by PWCS' own negligence.

Subject to the above, it is recognised and agreed that PWCS has responsibilities for routine repair and maintenance of the Terminal, and this may result in it incurring a loss in respect of damage to the Terminal. In any proceedings by PWCS relating to damage or loss in respect of routine repair and maintenance to the Terminal, PWCS will be taken to have incurred the relevant damage or loss itself.

12.1.2 RELEASE

On and from the date of agreement to comply with this Handbook, or any previous version of the Handbook if not resigned, and in return for PWCS allowing a vessel to use the Terminal, each owner, Master of the Vessel and Vessel Agent of the vessel hereby releases PWCS, its employees, agents, licensees, contractors and sub-contractors from all claims whatsoever which the owner, Master of the Vessel or Vessel Agent have or may have had against them, whether arising out of or in connection with this Handbook, to the fullest extent permitted by law, including without limitation claims for any injury, death, damage, or loss arising out of anything which PWCS does or fails to do in relation to a vessel or relating to a vessel berthing, unberthing or being at the Terminal.

12.2 RESPONSIBILITY FOR DAMAGE CAUSED

The parties acknowledge and agree that:

- a) to the extent any damage is caused to a vessel by PWCS equipment (whether before, during or after the berthing process) PWCS will, on request from the owner of that vessel and presentation of valid receipts, reimburse the owner of that vessel the full value of the cost of any repairs to the vessel required as a result of that damage
- b) to the extent any damage is caused to PWCS berths or associated equipment (including but not limited to wharf fenders, wharf decking, shiploaders, etc.) by a vessel (whether before, during or after the berthing process) the owner of that vessel will, on request from PWCS, immediately reimburse PWCS the full value of the cost of any repairs to the berth required as a result of that damage.

13. REVISION HISTORY

Date	Revision
2020 March	Rev 6.1
2019 July	Rev 6.0
2017 January	Rev 5.4

14. AUTHORISATION

This document is authorised by the Manager Service Assurance

15. REVIEW PERIOD

This document will be reviewed every 24 months or sooner on an as required basis.

16. APPENDICES

Item	Title
16.1	Definitions

16.1 DEFINITIONS

Term	Definition
Air Draught	Height from Chart Datum to the top of hatch covers.
AMSA	Australian Maritime Safety Authority.
Australian Ballast Water Guidelines	Guidelines for the control and management of ships' ballast water to minimize the transfer of harmful aquatic organisms and pathogens as applied by the Department of Agriculture and Water Resources.
BLU Code	Code of Practice for the Safe Loading and Unloading of Bulk Carriers published in March 2007 and as amended from time to time.
Brow	The brow is a short wharf or extension ladder which is to be attached to the bottom of the vessel's accommodation ladder. This extension ladder rests on the wharf and is supplied by PWCS.
Bunkering	The act of supplying fuel oils and/or lubricants to a vessel via road tanker, bunker barge or drums.
Business Day	A day in New South Wales that is not a Saturday, Sunday or public holiday gazetted by either the New South Wales or Federal Governments and on which banks are generally open for business in Newcastle.
CCT	Carrington Coal Terminal.
Chart Datum (CD)	The plane or level to which soundings (elevations) or tidal heights are referenced. For Newcastle, this is the Lowest Astronomical Tide, CD = 0.0m.
Coal Exporter	Any person, partnership, company, trust, co-operative or other association or entity to which PWCS provides coal handling services.
Coal Loading Plan	Plan submitted by the Master of the Vessel indicating hatch tonnages, coal type(s), pass sequence, de-ballast time and operations, sailing draught and sailing tide and in the form set out in 8.4 Sailing Draught Guidelines.
Commenced Loading	Time and date when first coal is delivered into a hatch of the vessel.
Completion of Loading	Time and date when the vessel has received the coal tonnage requested by the Master of the Vessel as determined by a draught survey.
Contract Management System	Safety system used by PWCS to manage organisations that perform work on PWCS sites.
Department of Agriculture and Water Resources	The Australian Government Department of Agriculture and Water Resources develops and implements policies and programs to ensure Australia's agricultural, fisheries, food and forestry industries remain competitive, profitable and sustainable.
Dwt	Deadweight in metric tonnes.
ETL	The estimated time of commencement of loading of the vessel at the coal loading facilities.
Gas Free	When sufficient fresh air has been introduced into the space to lower the level of a flammable, toxic or inert gas to that required for a specific purpose.
Gas Free Certificate	Certificate issued by an authorised chemist confirming that, at the time of testing a compartment, it was gas free for a specific purpose.
Handbook	PWCS Coal Terminals Information Handbook.

Term	Definition
Harbour Master	The official responsible for enforcing the regulations of the Port Authority of New South Wales in order to ensure the safety of navigation, the security of the harbour and the correct operation of the port facilities.
Hatch	An opening in a deck of a ship providing access to a hold through which cargo is loaded.
Hold	The under-deck space in which cargo is placed.
Hydraulic Interaction	Reaction of a vessel's hull to pressure exerted on its underwater volume caused by a passing vessel.
IMO	International Maritime Organisation.
IMSBC Code	International Maritime Solid Bulk Cargo Cargoes Code as amended from time to time (replaces BC Code as of 1 st January 2011).
Inducted Person	Employee or contractor who has successfully completed PWCS Induction training.
Interim Draught Survey	The draught survey undertaken prior to the trimming of the vessel to ensure the vessel is loaded to the correct trim and agreed tonnage.
ISPS Code	International Ship and Port Facility Security Code as amended from time to time.
ISM Certificate	International Safety Management Certificate.
KCT	Kooragang Coal Terminal.
LHW	Lowest High Water.
LOA	Length Overall.
MARPOL 73/78	International Convention for the Prevention of Pollution from Ships 73/78 with amendments.
Master of the Vessel	Person accountable for the safe operation of the vessel including loading and unloading. The Master may nominate a Vessel Representative (e.g. Chief Officer) to interface with PWCS.
Mates Receipt / Shiploading Certificate	Document of that title provided to the vessel on behalf of and at the request of the Coal Exporter. PWCS is not responsible for the accuracy or the quality of the information stated in any such document.
Marine Orders	The Marine Orders prepared by the Australian Maritime Safety Authority in accordance with the Navigation Act 2012 and as amended from time to time.
Marine Surveyor	Any person who is a full member, or their employer includes a full member of the Institute of Marine Surveyors. This person must have proven proficiency in bulk loading of vessels, including hold preparation and cargo draught surveys and must be accredited or is employed by a company that is accredited in the PWCS contractor management system.
OBO	Oil-Bulk-Ore Carrier.
Personal Protective Equipment (PPE)	Protective clothing, helmets, goggles, gloves, or other garments designed to protect the wearer's body from injury.
Port Authority (PANSW)	Port Authority of New South Wales. The organisation responsible for port safety functions including pilotage, navigation services, dangerous goods, marine pollution and emergency response.
Port of Newcastle	The port lessee. Responsibilities include vessel scheduling, pricing for navigation services and maintenance of major port assets including the channel.

Term	Definition
Provisionally Detained	Vessel detained as per AMSA's Port State Control mandates.
PWCS	Port Waratah Coal Services Limited.
PWCS Services Portal	Website used by PWCS for the management of coal handling services.
Terminal Representative (VBLO)	PWCS accountable person assisting the PWCS Operations Supervisor in the safe loading of cargo into vessels in accordance with the agreed sequence and tonnage stated in the vessel's Coal Loading Plan and Marine Orders part 34.
RightShip	Ship vetting system that advises PWCS on vessel suitability based on vessel specifications, history and physical inspections.
Operations Supervisor	PWCS employee accountable for the safe operation of the Terminal including, but not limited to, rail receipt, stockyard and loading cargo into vessels in accordance with the sequence and tonnages stated in the vessel's Coal Loading Plan.
Ship Handling Safety Guidelines	The document so titled and published by the Port Authority.
Ship / Shore Safety Checklist	Checklist that assists with the safe loading of bulk carriers as prescribed in the BLU Code.
Shiploader	Mechanical device designed to load coal by gravity from conveyors.
PWCS Terminals	PWCS Carrington or PWCS Kooragang.
PWCS Operations Supervisor	PWCS Operations Supervisor.
TPH (tph)	Tonnes Per Hour.
UKC	Under Keel Clearance.
Vessel Agent	Person or firm authorised by the vessel owner or charterer to act on their behalf.
Vessel Load Rate (VLR)	Measure used by PWCS to assess vessel performance. Average tonnes per hour loaded in the period of time between commencement and completion of loading less time incurred due to delays not attributable to the vessel (e.g. caused by PWCS).
Vessel Owner	Relevant organisation listed as the registered owner or the fleet manager of the vessel.
Vessel Questionnaire	Document completed by the Master of the Vessel that provides information to PWCS that assists PWCS in determining the suitability of loading a vessel.
Vessel Representative	Master of the Vessel, or a person nominated by the Master of the Vessel, to be the interface between the vessel and PWCS.