



**TO:** Chairman, International Commission on Shipping

**ATTENTION:** Peter Morris

**FROM:** Grahame Barlow

**DATE:** 21 December 2000      **TOTAL PAGES:** 2      **ATTACHMENTS:** 1

**SUBJECT:** **SUBMISSION TO INTERNATIONAL COMMISSION ON SHIPPING**

Thank you for the opportunity to make a submission to the International Commission on Shipping.

Port Waratah Coal Services Limited (PWCS) located in the Port of Newcastle, NSW, Australia, operates the world's largest export coal handling facilities. PWCS operates two terminals, Carrington and Kooragang with a total annual shiploading capacity of 77 million tonnes. Vessels are loaded for export to coal buyers principally located in Japan, Taiwan and Korea.

Coal received primarily by rail is assembled in cargo lots for vessels containing one or more cargoes. At Carrington Coal Terminal vessels are loaded at rates up to 5,000 tonnes per hour whilst at Kooragang Coal Terminal shiploading rates up to 10,500 tonnes per hour are possible.

PWCS places great importance on regulations and initiatives that maritime authorities such as the International Maritime Organization (IMO) and Australian Maritime Safety Authority (AMSA) have implemented in relation to the safe loading of vessels. These include the Code of Practice for the Safe Loading and Unloading of Bulk Carriers and the Port State Control program.

The suitability of each vessel that is nominated to load at PWCS is assessed prior to acceptance of coal handling contracts. The assessment of vessel suitability is made by reference to the following:

- (a) PWCS Coal Terminals Information Handbook (“the Handbook”) - see attachment

Based on the recommendations contained in the IMO Code of Practice for the Safe Loading and Unloading of Bulk Carriers, the Handbook includes details of safe loading procedures, ship/shore safety checklists and terminal emergency information. The Handbook also contains information in relation to the minimum vessel size, maximum length and beam of the vessel, and requirements for the vessel to receive coal at the maximum shiploader rates.

- (b) Requirements of Regulatory Authorities

In addition to those matters contained in the Handbook, reference is made to the requirements of AMSA, SOLAS and Newcastle Port Corporation as published from time to time.

- (c) Previous Vessel Performance Issues

Reference is made to the previous performance issues at PWCS (if any) in relation to the vessel. AMSA is referred to if the vessel is in excess of 20 years of age or if the vessel has not loaded previously at PWCS.

A PWCS Terminal Representative on board the vessel carries out the monitoring of vessel loading and recording of all loading operations. On initial sign up of the vessel, an IMO approved format load plan is sighted as required by the ship/shore safety checklist. Any deviation from the original load plan by either the Terminal or the vessel is documented and provisions made to record the change in vessel condition (bending moments, shear forces and draughts). This ensures that the vessel maintains a safe condition throughout the loading.

Safety of PWCS employees, vessel crews and providores is a priority in loading of vessels at PWCS. I trust that these comments are of assistance to the Commission.

Yours faithfully

**GRAHAME BARLOW**  
**MANAGER PLANNING**

Attachment - PWCS Coal Terminals Information Handbook

**Port Waratah Coal Services Limited**



**COAL TERMINALS HANDBOOK**

**ISSUE DATE      January 1998**

**This Handbook describes the facilities and operation of  
PWCS terminals at KOORAGANG & CARRINGTON.**

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## **INTRODUCTION**

This information handbook has been prepared to inform Ship's Masters, Owners and their Agents of the relevant operating details of the two (2) Coal Terminals in the Port of Newcastle, Australia. The Handbook is designed to assist those using the coal loading terminals achieve maximum operational efficiency and compliance with the International Maritime Organisation's Code of Practice for the Safe Loading and Unloading of Dry Bulk Carriers.

## **PORT ADMINISTRATION**

The Port of Newcastle is administered by Newcastle Port Corporation (NPC) pursuant to the NSW Ports Corporatisation and Waterways Management ACT 1995 and the NSW Marine Pollution Act 1987. All matters relating to navigation, maximum ship size, pilotage, towage, ship handling, ship safety, marine regulations and marine pollution should be referred to;

The Harbour Master  
Newcastle Port Corporation  
PO Box 663  
Newcastle 2300  
Telephone: 61 49 272400  
Facsimile: 61 49 264596  
VHF Channel 9 (24 hours)

## **COAL TERMINALS**

The port's coal loading business is managed by Port Waratah Coal Services Limited, A.C.N. 001 363 828 (PWCS) a company owned by The Hunter Valley Coal Export Industry and the operator of the Carrington and Kooragang Coal Terminals.

PWCS's office and centre of administration is located at the Kooragang Terminal.

For further information and inquiries regarding coal bulk handling and loading please refer to:

The General Manager  
Port Waratah Coal Services limited  
PO Box 57  
CARRINGTON NEWCASTLE NSW 2294  
Telephone: 61 49 693111  
Facsimile: 61 49 690200

## TERMINAL DATA

### **CARRINGTON Dyke Berths #4 and #5**

#### Berth Characteristics:

Berth depth	16.5m
Channel depth	15.2m
Maximum Draft	15.7m
L.O.A.	up to 290m (combined L.O.A. 550 m)
Beam	47m
Minimum vessel size	10,000 DWT
Berthing	Starboard Side Dredged
Length at Berth Face	615m
Berth Structure	Reinforced concrete/ steel piles. Open deck layout

#### Air Draft:

The practical maximum: 18.5m  
This distance has been calculated on the basis of a measurement taken from the tip of the shiploading spout to the ISLW, with the boom at 15 degrees and fully extended. This Air Draft will ensure sufficient clearance and enable the shiploader to change hatches with the operator remaining in the front cabin.

To assist the Master or Cargo Officer, at PWCS CARRINGTON a mark has been placed on the shiploaders indicating when the limit is being approached so that action may be taken by the ship in de-ballasting to ensure the limit is not exceeded.

#### Loading Facilities:

Number of Ship Loaders	3 (Shared)
Outreach	29.2m from fenders
Travel Distance	490m
No. of Reclaimers	4
Reclaimer Capacity(TPH)	2,500
Shiploader Capacity(TPH)	2,500
Maximum Loading Capacity(TPH)	5,000
Cargo Planning Purposes (TPH)	
(two heads)	3,600
(one head)	1,800

Measured from boom centre line;

Maximum Travel Distance for Shiploader 1	331m and 500m
Maximum Travel Distance for Shiploader 2	61m and 470m
Maximum Travel Distance for Shiploader 3	31m and 228m

Measured from extreme outside of the shiploader;

Maximum Travel Distance for Shiploader 1	321.5m and 514m
Maximum Travel Distance for Shiploader 2	53m and 489.5m
Maximum Travel Distance for Shiploader 3	2m and 234.5m
Operational Hours per Day	24
Sampling Method	Automatic

### **KOORAGANG Kooragang Berths #4 and #5**

#### **Berth Characteristics:**

Berth depth	16.5m
Channel depth	15.2m
Maximum Draft	15.7m
L.O.A.	Up to 300m
Beam	50m
Minimum vessel size	40,000 DWT
Berthing	Port Side
Dredged length at Berth Face	626m
Berth Structure	Reinforced concrete/steel piles. Open deck layout.

#### **Air Draft:**

The practical maximum: 21.5m  
This distance has been calculated on the basis of a measurement taken from the tip of the shiploading spout to the ISLW, when the spout is retracted and the boom is at 15 degrees. This Air Draft will ensure there is sufficient clearance and enable the shiploader to change hatches with the operator remaining in the front cabin. The Air Draft quoted is NOT the maximum permitted.

#### **Loading Facilities:**

Number of Ship Loaders	2 (one per berth)
Outreach	35m (55m coal fall)
Travel Distance	586m
No. of Reclaimers	2
Reclaimer Capacity(TPH)	8,000
Shiploader Capacity(TPH)	10,500
Maximum Loading Capacity(TPH)	10,500
Cargo Planning Purposes (TPH)	5,000
Operational Hours per Day	24
Sampling Method	Automatic

## **TERMINAL OPERATIONS AND PROCEDURES**

### ***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. Conveyor weightometer readings are available as a guide, however no guarantee of accuracy can be given. Reference to these will not relieve the Master of the responsibility of adequately maintaining draught checks and supervising the loading of the vessel.

Both terminals have conveyor weightometers installed on all conveyor streams and the readings of the conveyor weightometers are to be used for determining total and partial mass of coal pours during loading. Final conveyor weightometers figures will be supplied to the Mate on the Mate's Receipt at the finish of loading.

### ***DRAUGHT SURVEY***

Draught survey may be used by the exporters and purchaser's agents to determine final cargo weight by hold, by type and in total. To facilitate the conduct of the draught survey, access ladders shall be placed at the location of the draft marks on the offshore side of the vessel, and the master shall ensure that a safety harness and line is provided for the surveyor's use.

Draught marks on vessels should be legible.

Every vessel should possess trim correction tables for all tanks, failing which all ballast tanks should be either full or empty during draught survey.

#### **Water Density at berths**

A range can be expected for example, during periods of normal to dry weather water density can be expected to be approximately **1023** kg/m<sup>3</sup> (Draught Survey Hydrometer calculated in Air or 1025 Loadline Hydrometer calculated in a Vacuum)

During periods of excessive fresh water flow following heavy rains in the catchment area water density can be expected to reach approximately **1005** kg/m<sup>3</sup>

### ***BERTH ALLOCATION***

Vessels shall generally be berthed and loaded at an allocated berth, to be determined by PWCS after consultation with ship's agents.

At the Carrington berths vessels are normally berthed **starboard** side to the wharf.

At the Kooragang berths vessels are normally berthed **port** side to the wharf.

### ***BUNKERING***

Bunkering arrangements must not interfere with shiploading and must be scheduled to not delay ship's departure after completion of coal loading.

## **MOORING**

Mooring services are provided by a separate company and booked by ship's agents. Contact details;

The Manager  
Lovett, McCracken & Bray  
PO Box 103  
Carrington 2294  
Telephone: 61 49 692411  
Facsimile: 61 49 622968

Mooring lines must be taken ashore by a lines launch. First lines must always be of synthetic or similar floating type. Vessels using heavy wire ropes for whatever purpose as mooring lines shall have the ends terminated with a rope tail finished with a standard eye for placing over the bollards and slip mooring hooks. For guidance, the rope tail should be 17 metres long to facilitate manual handling.

All mooring ropes and wires to have a 3 metre tail of light rope spliced into the eye to facilitate the transfer from on board the launch to the bollard or hook.

Mooring lines which do not meet this specification may be refused.

No vessel shall be moored or fastened to any terminal berth except to bollards, slip hooks or other securing places provided for the purpose. Ship's lines should not be fastened so as to obstruct shiploading operations, shiploader maintenance or other ship's lines.

### **Tending of mooring lines**

It is the Masters' responsibility to ensure the safe mooring of their vessels and that all mooring lines are adequate and in good condition.

Mooring lines shall be kept taut and secure at all times at the berth.

PWCS CARRINGTON Berths 4 and 5 are adjacent to the main shipping channel with passing vessel traffic and as such hydraulic interaction (surge forces) can be experienced in a similar fashion to channel berths in other ports. Vessels moored at PWCS CARRINGTON can anticipate experiencing surge forces as fully laden cape size vessels pass the berths. The Newcastle Ports Corporation and the Terminal Representative will notify of vessels passing the PWCS CARRINGTON Berths 4 and 5. Normal procedure is for shiploading to stop while vessels are passing these berths. When berthed at PWCS CARRINGTON Masters are to ensure lines are attended to while other vessels are passing in the channel.

If shiploading is stopped due to storm activity, the ship may use Storm bollards, deployed at the Carrington and Kooragang berth areas for extra security of the ship.

## **VESSEL SUITABILITY**

### **Vessel Type**

The PWCS CARRINGTON & PWCS KOORAGANG loading berths are designed to accept single deck, self-trimming bulk carriers. Such vessels are expected to be classed Lloyds 100A1 or equivalent.

In determining the suitability of a vessel to load at the loading berths, PWCS will give consideration to:

- (a) the minimum vessel size, maximum length and beam of vessel, and its ability to receive coal at the maximum shiploader rates;
- (b) the requirements stipulated from time to time by the Newcastle Port Corporation, the Australian Maritime Safety Authority or any other relevant authority;
- (c) any other requirements on vessel suitability that PWCS may reasonably determine from time to time.

In respect to geared vessels, it is expected that such vessels' gear will not impede the normal operation of the shiploaders and otherwise reduce the loading rate of the terminals.

Vessels using the port for the first time may be required to submit drawings showing the dimensions of their hatch deck structures.

### Australian Maritime Safety Authority

All ships that visit Australia are required to comply with the IMO Bulk Cargo Code and are subject to Port State Control inspections by Surveyors from the Australian Maritime Safety Authority (AMSA). In some instances the severity of the deficiencies may result in the vessel being Provisionally Detained until repairs are effected. This can at times 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 other holding berth for the repair work to be completed.

Contact details for the Australian Maritime Safety Authority;

Senior Marine Surveyor  
Level 2,  
8 Denison Street  
Newcastle West  
Telephone: 61 49 612997  
Facsimile: 61 49 612694

### Gas-Freeing Vessels

It is expected, that in accordance with good seamanship practice Masters of vessels, and in particular Oil-Bulk-Ore vessels, will ensure that prior to presenting for loading at PWCS's Terminals their vessels are gas free. The International Safety Guide for Oil Tankers and Terminals (ISGOTT) details the recommended procedures to be followed. Masters are advised they may be required to establish their vessel is gas free during inspection by AMSA.

## **LOADING PROCEDURES**

Both PWCS' terminals expect to *commence loading* no more than twenty (20) minutes after *vessel berthed*. In order to ensure this target is met procedures have been developed to ensure loading plans are exchanged and agreed two (2) days prior to *vessels entering*. These are detailed in Appendix A .

### **Terminal Representative**

Immediately after *vessel berthed* a duly authorised Terminal Representative will meet with the Master/Mate to establish liaison, confirm the coal loading plan and arrange for *commence loading* upon completion of the *initial survey*.

The Terminal Representative will ensure the Master is in possession of the current edition of this Terminal Handbook and if not, will issue a copy to him and supply an Emergency Procedures card.

### **Loading Plan Procedure**

PWCS has developed a procedure for communicating the preparation of coal loading plans for ships visiting its berths, the principles of which are;

The Masters submitting coal loading plans at least seven (7) days prior to the vessel ETA and,

The Master and PWCS reaching agreement to the coal loading plan two(2) days prior to the vessel ETL.

Details of this procedure are contained in 'GUIDELINES FOR VESSEL LOADING PLANS FOR COAL LOADING AT PWCS CARRINGTON AND PWCS KOORAGANG PORT OF NEWCASTLE, AUSTRALIA' and are attached as Appendix A

Vessels will be loaded according to the Master's requirements.

Vessels are expected to load on a continuous basis, at the terminal's most efficient nominated operating rates.

Vessels are expected to load and depart on the closest tide to the estimated time of loading completion.

During loading operations the trim and stability of the vessel remains the responsibility of the Master at all times.

In the event of more than one parcel being loaded into a single hold, or more than one coal type being loaded into a vessel, conveyor weightometers are to be used to calculate tonnage.

Vessels should plan for a maximum of two draught surveys requiring a cessation of shiploading, subject however to Master's instructions.

Coal is reclaimed from the terminal stockpiles to the ship by bucket wheel reclaimers or transferred direct from the rail receival stations.

All coal contained on the outloading conveying system must be run off into the ship at completion of loading. The PWCS terminal representative will be able to give an estimate of the quantity to be expected.

### **Deballasting**

To minimise delay, vessels should cease deballasting prior to arrival at the berth and refrain from further deballasting until the draught surveyor gives approval.

Ballast shall be adjusted to ensure that at High Water a minimum clearance of 1.0 metre is maintained between the vessel's structure and the shiploader.

Ballast is to be discharged so that water does not flow onto berths nor, obstruct, interfere or present a safety hazard to shiploading operations.

Notification of de-ballast rates where these may impact on loading rate is a requirement of preparation of Loading Plans.

## **ACCESS TO WHARVES**

### **Ship Repairs**

Masters are advised that maintenance and repair works to ships may require clearance for safe working from the Harbour Master. It is recommended that all hot works be cleared prior to commencement.

### **Landing Location for Gangways**

At both PWCS terminals accommodation ladders are to be placed to avoid obstructing shiploading operations. During berthing the Port Corporation Marine Pilot can advise on the landing point location for gangways and/or accommodation ladders.

The Ship' Master is responsible for the adjusting of gangways to prevent damage to the gangways and berths.

### **General Access**

Any Agent, Contractor, Invitee, Visitor or other person having business with the Owners and/or Master of a vessel or in connection with a vessel shall undertake and agree to comply with all PWCS safety requirements and comply with and obey all lawful instruction which may be issued or given by PWCS (including attendance at PWCS Safety Induction training) and indemnify PWCS against loss or damage incurred. Any Agent, Contractor, Invitee, Visitor or other person refusing to give such an undertaking and enter into such agreement will be refused access to the terminal.

### **Damages and Indemnities**

All events occasioning damage to the ship or shiploading equipment are to be reported to the Terminal Representative and written reports will be exchanged between the Master and the Terminal Representative.

Subject to those State and Federal laws for the time being of Australia which may apply to this paragraph and which may not be excluded, the owner, master and agent of each vessel shall each be responsible for and shall each jointly and severally indemnify PWCS and keep it indemnified from and against liabilities, damages, losses and expenses suffered or incurred by PWCS or its employees, agents, contractors or invitees caused by or arising from any injury or death to any person or damage or loss to any property belonging to or under the management of PWCS, Newcastle Port Corporation or any other party which is caused directly or indirectly by the vessel or its operation or which is caused directly or indirectly by the owner, master, agent or employees of the vessel, except in the case of any injury or death to any person where such liability, damage, loss or expense is due to the negligence or default of PWCS. PWCS may sue for and recover damages in any court of competent jurisdiction from the owner, master or agent of the vessel for or in respect of any such indemnifiable liability, damage, loss or expense. Without prejudice to the foregoing, the owner, master or agent of the vessel must promptly following the direction of PWCS repair and make good to the reasonable satisfaction of PWCS any such loss or damage caused to any of the property referred to above.

### **Exclusion from Liability**

PWCS and its Employees, Agents, Licences, Contractors and Sub-Contractors shall not be liable in any way for any damages, costs, claims, demands, actions, or other liability in respect of any loss of or injury to any persons or property (including a vessel), whether or not involving negligence, caused or arising out of or incidental to or connected in any way with any matter or thing done or omitted to be done by PWCS and any of its Employees, Agents, Licences, Contractors or Sub-Contractors.

## Weather

In the event of weather conditions which, in the opinion of either PWCS or the Master, make shiploading perilous, PWCS shall cease loading and endorse the shipping documents recording the occurrence and period(s) of non working due to weather.

Exceptional conditions caused by adverse weather or excessive fresh water flow in the port following heavy rains, will occasionally preclude any vessel movements in the port area. Booking times may be changed to allow for these conditions.

All such matters on navigation are to be referred to the Harbour Master of the Port Corporation;

Newcastle Port Corporation  
PO Box 663  
Newcastle 2300  
Telephone: 61 49 272400  
Facsimile: 61 49 264596  
VHF Channel 9

## **SAILING**

The Port Corporation sets sailing times based on available movement opportunities to meet advice from PWCS and ships agents on *finish loading* times. Masters are requested to ensure preparation for sea is completed as soon after *finish loading* as possible in accordance with good seamanship practice so the timetable of shipping movements set by the Port Corporation can be met.

## **TERMINAL EMERGENCY PROCEDURES**

After berthing the PWCS Terminal Representative will provide the vessel with an Emergency Procedures Card, similar to the sample below. Each card has been prepared to identify the actual berth, and must be placed next to and be clearly seen when using ship's telephone. (Ship's telephones are provided by the Port Corporation)

Sample Emergency Procedures card, separate cards are supplied for each berth.



## EMERGENCY PROCEDURES FOR SHIPS LOADING COAL

AT

### CARRINGTON

Use the provided ship's telephone or on any operating mobile telephone

## RING 000

**ASK FOR** ; FIRE, POLICE, AMBULANCE

**STATE:** Vessel Name .....

Location **PWCS CARRINGTON BERTH 4 or 5**  
**DYKE ROAD**  
**CARRINGTON**

Cross Street SELWYN Street

Type of emergency

**ON VHF** NOTIFY NEWCASTLE HARBOUR  
**CHANNEL 9]**

ADVISE THAT THE EMERGENCY SERVICES HAVE BEEN NOTIFIED.(OR  
ASK THAT THEY BE NOTIFIED)

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

**SHIP'S TELEPHONE NUMBERS**  
Carrington Berth 4 4961 2856  
Carrington Berth 5 4961 2208

### Useful Phone Numbers

Stevedore / Terminal 4969 0297  
Representative

Ships at PWCS Kooragang Terminal

Berth 4 - 4920 1154  
Berth 5 - 4920 1064  
Stevedore - 4928 0326

Australia Collect 0176  
International Collect 0107  
Taxi 4979 3000  
Seaman's Club 4961 5007

### **SHIP/SHORE SAFETY CHECK LIST**

The **International Maritime Organisation's** Code of Practice for the Safe Loading and Unloading of Dry Bulk Carriers has been developed to ensure vessel safety. PWCS's procedures comply with the Ship / Shore Safety Check List as detailed:

<b>Check List Item</b>	<b>Subject</b>	<b>PWCS Procedures</b>
Item 1	Depth of water and air drafts	Detailed in this Handbook Carrington Page 4, Kooragang Page 5
Item 2	Mooring	Detailed in this Handbook Page 6
Item 3	Emergency departure	Subject to Harbour Master's direction (see Page 3)
Item 4	Safe access to wharf	Ship's responsibility, detailed in this Handbook Page 10
Item 5	Ship/Terminal communications	Detailed in this Handbook Page 3
Item 6	Liaison contact person	Terminal Representative by introduction, specific details in Handbook Page 9
Item 7	Staff for emergency	Ship's responsibility procedures Page 11
Item 8	Bunkering	Ship's responsibility
Item 9	Intended works/repairs alongside	Ship's responsibility
Item 10	Reporting / recording damage	Detailed in this Handbook Page 10
Item 11	Ship provided with details of terminal procedures	Issue of this Handbook is registered
Item 12	Master provided with properties of cargo	Coal Shipper's responsibility to provide prior to commencement of loading
Item 13	Safe atmosphere in enclosed spaces	Ship's responsibility detailed in this Handbook Page 8
Item 14	Cargo handling capacity	Detailed in this Handbook Pages 4 and 5
Item 15	Loading plan	Detailed in this Handbook page 9, Appendices A and confirmed by Terminal Representative
Item 16	Loading Plan (hold sequence)	Detailed in this Handbook page 9 Appendices A and confirmed by Terminal Representative
Item 17	Trimming of cargo	Detailed in this Handbook Page 9 and Appendix A
Item 18	Stops for de-ballasting	Detailed in this Handbook Page 9
Item 19	Unloading procedures	Not applicable
Item 20	Final trim	Detailed in this Handbook Page 9 and Appendix A
Item 21	Time to prepare for sea	Detailed in this Handbook Page 11

## **DEFINITIONS**

Air Draft	This is the distance of the hatch (depending on the type of hatch cover) above chart datum, not the distance between coaming/cover and the existing water level.
Cleared port	Time and date vessel passes Nobbys outwards
Cleared to load	Time and date Master advises readiness to receive coal
ETL	The estimated time of commencement of loading of a vessel at the coal loading facilities.
ISLW	Indian Summer Low Water
Shiploading Commenced	Time and date when first coal is delivered into the hatches of the vessel
Shiploading Completed	Time and date when loading is completed as advised by the Master of the vessel.
Stowage Factor	Is the figure which expresses the number of cubic metres which one tonne of material will occupy
Vessel Arrived	Time and date vessel reaches anchorage as advised to Nobbys Signal Station or in the case of close or conflicting arrival times the crossing of a 5 nautical mile radius from Nobbys radar monitored and as advised by Nobby Signal Station.
Vessel Berthed	Time and date when the vessel is securely and safely berthed and all lines are secure at berth
Vessel Entered	Time and date when the vessel passes the southern breakwater, inbound to the Port of Newcastle as recorded by Nobbys Signal Station
Vessel Cleared Berth	Time and date when the last line securing the vessel to the berth is let go

## BERTH DRAWINGS

1.	Newcastle Port Chart	KSK00032
2.	PWCS - Carrington Coal Terminal Shiploader Elevation	KSK00024
3.	PWCS - Carrington Coal Terminal Shiploader Aircraft Envelope	KSK00025
4.	PWCS - Carrington Coal Terminal Shiploader and Wharf Plan	KSK00026
5.	PWCS - Carrington Coal Terminal Schematic Layout	KSK00027
6.	PWCS - Kooragang Coal Terminal Shiploader Elevation	KSK00028
7.	PWCS - Kooragang Coal Terminal Shiploader Aircraft Envelope	KSK00029
8.	PWCS - Kooragang Coal Terminal Shiploader and Wharf Plan	KSK00030
9.	PWCS - Kooragang Coal Terminal Schematic Layout	KSK00031