



## Information for Students

We have a lot of information that we hope you find interesting and useful!

### 1. Maritime Studies

#### **Australian Maritime College**

The Australian Maritime College is located in Launceston, Tasmania. It offers a variety of maritime learning opportunities, including distance learning.

<http://www.amc.edu.au/>

#### **Hunter Institute of TAFE**

The Hunter Institute's Faculty of Transport runs the Newcastle Maritime Training Centre at the Newcastle Campus. Courses include maritime and marine engineering, boat and ship building etc. The Institute also offers courses online.

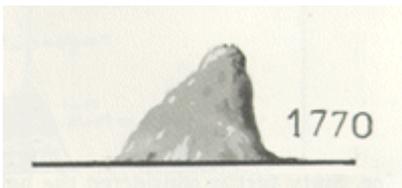
<http://www.hunter.tafensw.edu.au/Pages/default.aspx>

#### **University of Wollongong – Australian National Centre for Ocean Resources & Security (ANCORS)**

Studies in Fisheries Management, Law of the Sea, Maritime Regulation and Enforcement, International Fisheries Law, Master of Maritime Studies.

<http://ancors.uow.edu.au/>

### 2. **Newcastle Harbour's History – From an Island to a Headland, a Penal Colony to a Major City and Port**



#### **The First Discovery of Nobbys**

Nobbys Head is an iconic landmark in Newcastle and is at the entrance to Newcastle Harbour. It was originally an island, "Whibayganba" in the local Aboriginal Awabakal clan language (the home of a giant kangaroo), then "Coal Island" and "Nobbys Island", eventually becoming known by today's name of "Nobbys Head".

Nobbys Island was first sighted by Captain Cook on the 10<sup>th</sup> of May 1770 from the deck of the *Endeavour*. His description was of "a small clump of an island lying close to shore."

The next significant visit to the area by Europeans was in 1797 when a search party led by Lieutenant John Shortland came into the harbour on the way back to Port Jackson (Sydney) after searching Port Stephens for escaped convicts. Lieutenant Shortland named the river that flows through and forms Newcastle Harbour after Governor Hunter. He noted deposits of coal along the river banks, including several visible seams in Nobbys Island (which luckily for Nobbys turned out to be of poor quality), plus a good supply of cedar.

Coal was collected from the area over several years and Australia's first commercial shipment consisted of 50 tonnes of Hunter coal sent on the [barque Hunter](#) to Bengal.

## **From an Island to a Headland**

An early problem with ships trying to enter Newcastle Harbour was the loss of wind in the ship's sails as they passed Nobbys Island. To alleviate this, it was decided to join Nobbys Island to the mainland by a [causeway](#) known as Macquarie Pier (started in 1818 and completed in 1846 and built with convict labour) which was eventually replaced by a [breakwater](#).

The breakwater construction progressed from the Nobbys end using rocks from the island, as well as from the mainland end. Convict labour was chosen to undertake the construction because it was a hazardous job with the convicts having to work under all sea and weather conditions, night and day, and many lives were lost to the sea.

Gradually over the last 170+ years, sand has accumulated along the breakwater to make Nobbys Beach, and the sand and plants make the isthmus appear natural.

Nobbys Island was gradually cut down from its original height (estimated to be around 43m as against its current 27.5m), in part for the breakwater as well as to provide a level platform for a lighthouse.

In the early 1850's holes were tunnelled for explosives to blow the top of Nobbys off to reduce it to around 20m in height for the proposed lighthouse base. Many people in Newcastle became concerned that the harbour might be blocked and the debris might damage the town – luckily for Nobbys their protests were heard and the plans were shelved.

[Nobbys Head Lighthouse](#) was commissioned on the 1<sup>st</sup> of January 1858 and is located on the headland. The lighthouse is the third lighthouse built in New South Wales after the [Macquarie Lighthouse](#) in 1818 and the [Hornby Lighthouse](#) which was also built in 1858. The lighthouse is included in Newcastle's coat of arms.

In 1858, the light burnt China Tea Oil, which gave a more brilliant light than kerosene and was less dangerous. It was later replaced by a fixed, incandescent kerosene vapour lamp. In 1935 the 100,000 candle power light was changed to 580,000 candlepower, visible at a height of 35 metres above sea level.

The headland still houses the port's lighthouse (domed building) and Signal Station (which is now automated) in addition to three vacant cottages that were homes of signal station staff. Contact [Newcastle Now](#) for visiting times.

## **Perfect Weather Station**

Because of Nobbys positioning it has been selected by the Bureau of Meteorology as an ideal weather monitoring station. Nobbys meteorological activity includes automated reporting to the Bureau, of temperatures, wind speed and direction and rainfall.

## **Convict Built Pier**

Governor Macquarie ordered the start of what we now call Macquarie Pier (between Nobbys Beach and the headland) in 1818 to help create the port. After a number of stops and starts, it was completed in 1846.

Convict labour was chosen to undertake the construction because it was a hazardous job with the convicts having to work under all sea and weather conditions, night and day, and many lives were lost to the sea.

The rock taken from lowering the height of Nobbys was used in the construction of Macquarie Pier.

## **Nobbys Breakwater**

The breakwater beyond Nobbys was started in 1875 and extended a number of times before being finished in 1915. It is also called the "southern breakwater".

For those of you on the north side of the harbour, the northern breakwater was built between 1898 and 1912 and runs a distance of 530 metres from the high water mark on Stockton Beach.

## Then and Now

Various bicentenary projects in 1997 focussed on the vivid history surrounding Nobbys and the breakwater, including a series of sculptures displayed along the breakwater and a viewing platform overlooking a set of historic convict steps.

Full-time staff last worked at Nobbys in 2001 when the Vessel Traffic Information Centre was transferred to the current Pilot Station of the Newcastle Foreshore, which is now known as Port Authority of New South Wales' "Port Centre".

For more historical information visit:

[Hunter Living Histories - Coal River Working Party](#)

[NSW State Library Archives](#)

[In Search of Nobbys Tunnels - by Roslyn Kerr](#)

## 3. Coal – Australia's First Export

### Two Centuries of Coal Loading in the Port of Newcastle

Not until the discovery of coal by Europeans in 1797 by Lt. John Shortland was the region viewed as having any significance.

Newcastle can claim the honour of developing Australia's first export - the loading of coal for India.

This summary lists significant historical events in the development of Australia's largest export port – Newcastle Harbour.

1770	Captain Cook describes Nobbys Headland as "a small clump of an island lying close in shore S.82deg. West; dist 32 deg.53".
1788	First Fleet arrives and settlement of Australia commences.
1797	Lt. John Shortland was the first European to discover the Hunter River and collect coal samples scattered on the shores. Shortland had been in the area looking for escaped convicts who had seized the HMS Cumberland as it sailed from Sydney Cove.
1799	50 tonnes of Newcastle coal exported to Bengal via Sydney in the vessel <i>The Hunter</i> .
1801/2	First notation of Nobbys being called "Coal Island". The area was settled in 1801 with the establishment of a secondary punishment penal colony called Coal River, then King's Town (after Governor King). The first coal mine established under the present Fort Scratchley using convict labour. The colony was discontinued in 1802 after 8 months and in this period the first direct shipment of coal was made to the Cape of Good Hope in the vessel <i>Anna Josephs</i> .
1804	"Coal River" or "King's Town" was re-established as a penal settlement in 1804 and named "Newcastle" after the northern English coal mining city. In its first years, Newcastle was little more than a highly restricted prison and no one was allowed to enter or leave the settlement without the express prior permission from the governor. Even a wayward crew member or captain from a visiting ship could be punished with lashings if found on land after dark. Coal was obtained by driving tunnels into nearby cliffs. Ships were loaded by wheelbarrow from a dump at the foot of Watt Street.
1812	Gunner Eckford becomes Newcastle Harbour's first recognised pilot.

1818	Governor Macquarie lays the foundation stone for the start of the construction of Macquarie Pier.
1823	Last convicts are removed from Newcastle and the area is no longer a penal settlement.
1823-1835	Construction halted on Macquarie Pier by Governor Brisbane due to financial constraints.
1829	The total amount of coal shipped since European discovery reached 50,000 tonnes.
1831	A short wharf and loading chute erected at the foot of Brown Street and on 31 December the Australian Agricultural Company officially opened Australia's first railway at the intersections of Brown and Church Streets.
1850	The Australian Agricultural Company commenced construction of coal staithes (elevated stagings) near Merewether Street.
1855	The top of Nobbys Headland is cut to its current shape and height (27.5m down from 43m) in part to build the lighthouse but also to reduce the loss of wind in the sails of ships entering the harbour.
185-58	Nobbys Lighthouse is built in 1857 and the light first shone in 1858.
1860	The Newcastle Wallsend Coal Co. given permission to erect steam cranes at Kings Wharf.
1872	Coal exports for the year amounted to 566,000 tonnes.
1873	On the 24 <sup>th</sup> of June there were 69 vessels in port waiting for cargo.
1878	First hydraulic cranes erected at Bullock Island (now Carrington).
1885	The largest soap factory in the southern hemisphere is built in Tighes Hill by the Sydney Soap and Candle Company which was amalgamated into Lever and Kitchen (Unilever) after WWI.
1907	Coal exports to overseas and interstate ports for the year exceeded 4,500,000 tonnes.
1908	The controversial "McMyler Hoist" erected at the Dyke.
1911	Newcastle Harbour is chosen by Broken Hill Proprietary Company (BHP) in preference to Port Kembla due to better port facilities and superior coal from the Hunter Valley.
1913	A record 5,236,621 tonnes of coal shipped through the port.
1915	First electric cranes built at the Dyke. BHP steelworks is completed at Port Waratah in Newcastle Harbour. Port Waratah steelworks will run for the next 84 years and help drive industry in NSW.
1942	Early hours of 8 June, Japanese submarine i-21 shelled Newcastle East, the dockyards, BHP steelworks and the Newcastle Ocean Baths. There was minimal damage and no casualties.
1952	Newcastle Industrial Benefits Hospital Fund (NIB) was established by BHP workers in after discussion about how to pay for medical bills when a BHP colleague's wife had and extended illness. NIB is now one of Australia's largest private health care funds.
1958	Newstan Colliery built the Dyke Loader, the first modern conveyor type loader.
1967	The MSB commenced operation of the Basin Coal Loader with a capacity of 7 million tonnes per annum (Mtpa).

1970	Canwan Coals Ltd. completed a conveyor link with the Basin Coal Loader increasing capacity by 4 million tonnes per annum (Mtpa).
1974	<i>MV Sygna</i> ran aground on Stockton Beach.
1976	Port Waratah Coal Services Pty Ltd. (PWCS) commenced operations at the 16 Mtpa Steelworks Channel Loader.
1982	PWCS upgrade its facility at Port Waratah increasing capacity to 28 Mtpa.
1984	Kooragang Coal Loader Ltd. (KCL) commenced operation of a new loader on Kooragang Island. Stage 1 of the facility had a capacity of 15 Mtpa, bringing present port capacity to 43 million tonnes Mtpa.
1986	The 315 metre <i>Iron Pacific</i> leaves port with a record lift of 182,464 tonnes of coal. Of that, 103,238 tonnes was loaded in Newcastle, the remainder in Port Kembla. Receival berth for coal from Catherine Hill Bay on the self-discharge vessel <i>Wallarah</i> completed at Dyke 6.
1987	Monthly tonnage record of 3,326,020 loaded in June.
1988	The <i>Iron Pacific</i> loads a record 177,289 tonnes of coal at KCL in August. The Basin Coal Loader is decommissioned in December after 21 years of operation. In the financial year 1987/88 coal exports exceed 30 million tonnes.
1989	KCL loads its 50 millionth tonne of coal onto the <i>Shirotae Maru</i> in April. The <i>Concorde Maru</i> sailed from PWCS on 2nd June with a record load for that facility of 144,936 tonnes. On 28 December Newcastle was shaken by a 5.6 size earthquake which killed 13 people and injured 162.
1990	The MSB Hunter Ports Authority withdraws from coal operations in the port on the 1 July, with maintenance and operations now controlled by PWCS Ltd. The port's two coal loading facilities, PWCS and KCL, merge on the 4 July and as a result form the largest capacity coal loading operation.
1996	The <i>Iron Pacific</i> loads a new record 183,904 tonnes of coal in January (record is still current). Second coal loading head commissioned at Kooragang Island.
1999	BHP closes the Port Waratah works at Carrington after 84 years of operation with 50,000 people being employed at the works over that period.
2000	Marine Pilots start to be transferred to/from vessels offshore by helicopter as well as pilot cutter.
2007	On 8 June the 225m <i>MV Pasha Bulker</i> ran aground on Nobbys Beach in what was one of the worst storms to hit NSW in 30 years.
2014	On 30 April Hastings Fund Management and China Merchants secure a 98 year lease of Newcastle harbour with responsibility for vessel scheduling, property management and port development, cruise shipping, trade development, maritime security functions and wharf and berth services. On 30 June Sydney Ports Corporation, Port Kembla Corporation and Newcastle Port Corporation amalgamated to form Port Authority of New South Wales. Port Authority retains responsibility for pilotage services, vessel traffic information centre, incident reporting, emergency response and Hunter coal export framework in Newcastle harbour.
2016	161 million tonnes of coal was exported from Newcastle Harbour.

#### 4. Vessel Traffic Information

The primary role of the Vessel Traffic Information Centre (VTIC) included long term planning, reviewing bookings and coordinating vessel movements.

The VTIC operates 24 hours per day, 365 days per year.

## 5. Pilotage in the Port of Newcastle

The Port of Newcastle is a compulsory pilotage port which means that a ship's pilot, employed and certified by Port Authority of New South Wales, is transferred to all ships entering and exiting the port.

About 80% of Marine Pilot transfers are completed by helicopter, the remaining 20% being by pilot cutter vessels.

The Marine Pilot takes charge of the conduct of the navigation of the vessel whilst the master retains command of the vessel.

## 6. Vessels in the Port

### Coal Vessels

There are three size groups of coal vessels that regularly visit Newcastle Harbour. These are:

**Handy size** (between 20,000 and 35,000 tonnes) and Handy Max (between 35,000 and 50,000 tonnes) which load and discharge from river ports around the world

Description comes from being able to meet dimensional restrictions of the locks of St Lawrence Seaway which limits breadth to 23m, length to 222m and draft to 7.9 m

**Panamax size** which load between 50,000 and 90,000 tonnes, their description coming from the ability to sail through the Panama Canal.

Description comes from being able to meet dimensional restrictions of the locks of Panama Canal which limits breadth to 32m, length to 275m and draft to 11 m

**Cape size** which load between 90,000 and 180,000 tonnes, their description coming from inability of passing through the Suez Canal or Panama Canal because of size but able to sail around the Cape of Good Hope and Cape Horn

### Other Vessels

Other vessels calling into port are small tankers, navy ships, cruise ships, heavy lift ships and general cargo and bulk ships.

**Note 1:** There are exceptions to the rule.

**Note 2:** Largest ship to enter port: *Iron Pacific* at 315 metres in length which loaded 183,904 tonnes of coal in January 1996. The *Iron Pacific* was specifically constructed with twin rudders for Newcastle and Port Kembla. Coal was exported from Newcastle and Hay Point to Japan and then iron ore was loaded in Western Australia for Port Kembla and Newcastle steelworks.

## 7. Distances within the port

The distance from the breakwater at Nobbys at the entrance to Newcastle Harbour to the coal and bulk berths at Kooragang Island is about six kilometres.

It takes a vessel between 40 and 50 minutes to navigate up the main shipping channel to the berths at the Port Waratah Coal Services coal terminal and up to 70 minutes to reach the Newcastle Coal Infrastructure Group coal terminal in the South Arm of the Hunter River.

Vessels sailing to the Basin area (grain, general cargo and heavy lift berths) take about 30 minutes to sail the 3.5 kilometres from the port entrance.

## 8. Pilotage in Newcastle Harbour

In 1812 Gunner Eckford, of the Royal Navy, was selected to be Newcastle Harbour's first pilot to assist ships navigate safely through the dangerous harbour entrance and narrow channels. He was

selected as he had a good knowledge of local conditions and was provided with a small 20 foot long whaleboat with a convict crew to row him out to incoming ships.

Gunner Eckford didn't receive a formal salary but was allowed to charge a fee per pilotage, dependent on the size of the vessel. Eckford retired after 21 years and a descendant of his works for Port Authority here in Newcastle today!

Pilotage didn't come under formal government control until 1875, with 26 Harbour Masters being appointed since 1834. The Harbour Master has powers under the *Marine Safety Act 1998* to direct and control the time and manner in which any vessel may enter or leave Newcastle harbour.

## 9. Do You Know?

Do you know how far you walk or jog when you go out along Macquarie Pier (from Nobbys Beach carpark to the road leading up to Nobbys headland) and the southern breakwater (from Nobbys headland out to sea)?

The area is a popular site these days for early morning walkers or joggers as they try to keep fit while trying to take in the stunning views of Newcastle Harbour.

The distance from Nobbys carpark to the fork in the road that leads up to Nobbys headland is about 550 metres. If you continue to the end of the southern breakwater it's about another 800 metres – a return trip of approaching three kilometres.

For those of you on the north side of the harbour, the northern breakwater was built between 1898 and 1912 and runs a distance of 530 metres from the highwater mark on Stockton Beach.

Do you know that there is an old tale in the port that if you walk along the shores of Stockton you walk on top of every country in the world. It's a little farfetched but there is rubble, soil, gravel and stone from many countries in the world that came to Newcastle in the form of ballast in old sailing ships.

And it's not only Stockton that has a small slice of the world in its make-up. The foreshore on the southern side of the harbour (including the area near Customs House), Dyke Point, Carrington and Honeysuckle site have been partly filled with ballast.

The ballast includes stone from Mauritius in the Indian Ocean, soil and gravel from Peru, Chile and Ecuador in South America, and even rubble from the famous 1906 San Francisco earthquake.

There was a time when vessels from China, Indonesia, Japan, Madagascar, New Guinea, the Philippines and the Seychelles were refused permission to dump ballast on the edge of the harbour because of a health scare. The ships were ordered to dump their ballast at sea before entering the port.

Ships visiting the Newcastle Harbour these days no longer use solid material as ballast but utilise a water ballast system.

### References:

Newcastle Herald

"A Harbour from a Creek" by Rosemary Melville

Wikipedia

Newcastle City Council

Keith Powell, former Public Affairs Officer, Newcastle Port Corporation