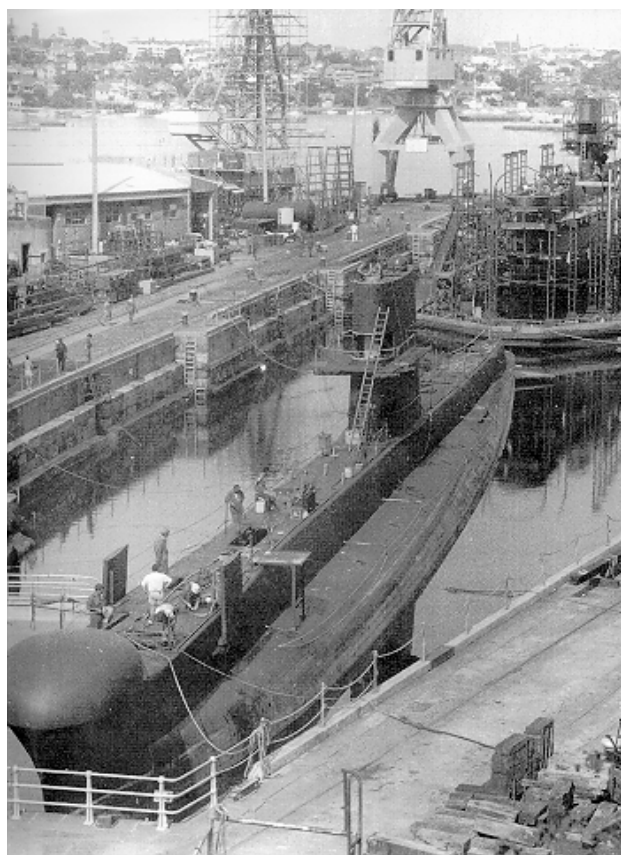


Figure 2.16
Shipbuilders at
Cockatoo
Island in 1968.
By this time,
welded steel
had replaced
riveted iron and
steel as the
norm for ship
construction.
(Source:
National
Library of
Australia)



Figure 2.17
Two Oberon Class
submarines of the
RAN in Sutherland
Dock. The Oberons
provided Cockatoo
Island with her main
workload in the last
25 years of operation.
In this view, one
submarine sits on the
slave dock while the
other floats at the
head of the dock.
(Source: Jeremy, op
cit)



2.3.9 Endnotes

- ¹ There is a vast scholarly and popular literature on Australia's origins as a European outpost. A useful summary of the main positions can be found in G Martin (ed.) 1978, *The Founding of Australia*, Hale & Iremonger, Sydney. Since then the major protagonists, especially Alan Frost, have written a number of books about convicts and empire.
- ² Broeze, Frank 1998, *Island Nation: A History of Australians and the Sea*, Allen and Unwin, Sydney, pp88–9.
- ³ See entries on all these sites in *Events and Places*, Fairfax, Syme and Weldon, 1987.
- ⁴ See James Bird, *Seaport Gateways of Australia*, OUP, 1968.
- ⁵ See P Spearritt 'Demolishing Sydney' in *Heritage Australia*.
- ⁶ See Peter Bolger, *Hobart Town*, and Godden Mackay Logan's The Rocks study.
- ⁷ On Port Arthur see J Davison and P Spearritt, 2000, *Holiday Business: Tourism in Australia since 1870*, MUP, and David Young, 1996, *Making Crime Pay: the evolution of convict tourism in Tasmania*, Hobart.
- ⁸ Gipps to Russell despatch, 13 Oct 1841, HRA (Series 1), Vol XXI, pp541–543.
- ⁹ Gipps to Stanley, 1 Jan 1843 HRA (series 1), Vol XXII, pp455–458.
- ¹⁰ Gipps to Stanley, 12 Nov 1845, HRA (Series 1), Vol XXIV, p611.
- ¹¹ On Norfolk Island, see M Hoare, 1978, *Norfolk Island: An outline of its history, 1774-1977*, UQP.
- ¹² Fitz Roy to Earl Grey 5 April 1848 HRA (series 1), Vol XXVI, pp326–333.
- ¹³ Col.Sec, corro from Cockatoo Island, 1848, 4/2794.4 SRNSW).
- ¹⁴ Gov Medical Adviser to Col.Sec, 2/676 (SRNSW).
- ¹⁵ Col.Sec, special bundles, Cockatoo Island 1860–64, 4/747.1 (State Records NSW).
- ¹⁶ Cockatoo Island, *Illustrated Sydney News*, 5 August 1869, p237.
- ¹⁷ Cockatoo Island Industrial School, *SMH*, 6 May 1871 p6.
- ¹⁸ Public Charities, Journal of the Leg.Cn, 1879–1880, vol 30, part 2, pp1017–1045.
- ¹⁹ 'Docks. Report from Engineer-in-Chief for Harbours and Rivers', Journal of Leg.Cn, 1873–1874, vol 23, Pt.I, pp715–737.
- ²⁰ Jeremy, J, 1998, *Cockatoo Island: Sydney's Historic Dockyard*, UNSW Press, p10
- ²¹ *ibid*, p12.
- ²² 'A New Sydney Graving Dock at Cockatoo Island', *Town and Country Journal*, 20 April 1889, pp27–28.
- ²³ Cockatoo Island, reports on sanitary condition of Journal of Leg. Cn, 1887–1888, vol.43, Part 4A, pp477–488.
- ²⁴ For full documentation, see Cockatoo Island Chronology, 1839–1909, for years 1883–1897.
- ²⁵ Kerr and Jeremy, pp5–16.
- ²⁶ AE Naval Defence.
- ²⁷ Jeremy, op cit, p25.
- ²⁸ *ibid*, p26.
- ²⁹ AE vol. 4, Government Houses, p350.
- ³⁰ For a detailed account of this period, see Jeremy, op cit, Chapter 4.
- ³¹ See the extended appendices in Jeremy op cit, especially pp1–6.
- ³² Jeremy, op cit, p31.
- ³³ Commissioners quoted in Jeremy, op cit, p33.
- ³⁴ Jeremy, op cit, p32.
- ³⁵ Jeremy, op cit, pp36–38.
- ³⁶ See P Spearritt 'Depression Statistics' for the pattern of unemployment in Sydney in J Mackinolty (ed), *The Wasted Years*.
- ³⁷ See the foreword to Jeremy, op cit, which includes his own history of employment on the Island, culminated in his appointment as Managing Director in 1981.
- ³⁸ Jeremy, op cit, p40.
- ³⁹ See Jeremy, op cit, Chapter 6.
- ⁴⁰ Quoted in Jeremy, op cit, p89.
- ⁴¹ Sydney Morning Herald, 1/10/40, cited in Spearritt, P, *Sydney's Century*, UNSW Press, 2000, p80

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- ⁴² See Spearritt *Sydney's Century*, Chapter 4. A detailed account of Garden Island can be found in TR Frame, 1990, *The Garden Island*, Kangaroo Press, Kenthurst.
- ⁴³ AE Shipbuilding entry, Vol 8.
- ⁴⁴ Jeremy, op cit, pp59–60.
- ⁴⁵ *Cockatoo Docks Sydney 1939 War Record 1945*, pp6–7.
- ⁴⁶ *Cockatoo Docks Sydney 1939 War Record 1945*, p17.
- ⁴⁷ Jeremy, op cit, pp130–132.
- ⁴⁸ Jeremy, op cit, pp98–99.
- ⁴⁹ Jeremy, op cit, p134.
- ⁵⁰ For a detailed account see Jeremy, op cit, Chapter 8 on submarines.
- ⁵¹ Jeremy, op cit, pp106–107.
- ⁵² Jeremy, op cit, px.
- ⁵³ Jeremy, op cit, p157.
- ⁵⁴ See Jeremy, op cit, pp159–160.

2.4 History of Cockatoo Island Dockyard: The Historical Development in Each Phase

2.4.1 Phases in the Island's Use as a Dockyard

The following discussion is divided into six historical phases to describe the historical development of the Cockatoo Island Dockyard facility.

2.4.2 Phase 1: The Early Dockyard—Prison and Dockyard 1845–1869

The dockyard at Cockatoo Island had its beginnings in the use of the Island as a convict prison. In October 1845, the Legislative Council approached Governor Gipps to present to Her Majesty's Government the advantages to the Colony and Empire of constructing a dry dock facility in Sydney to accommodate Men of War.¹ Since the beginning of the colony, the authorities had been concerned with the need for docking and repair facilities for vessels of the Royal Navy visiting New South Wales, and although shipbuilding and repair facilities had developed around the harbour early in the nineteenth century, these establishments were not suitable for the work the Royal Navy required. The Royal Navy wanted autonomy from commercial interests, not wanting to have to fit into the schedules of private companies.²

In May 1846, Gipps forwarded a report to the British Government recommending Cockatoo Island as the most suitable place in Sydney for the construction of the dock. The dock was to be 266 feet long, 90 feet wide and with a depth at the entrance of 17 feet. With convicts being used to excavate the Island, the total cost including equipment and materials was estimated at £4,085, taking 100 convicts 470 days to complete.³ The plan was submitted to the Legislative Council in June 1846 by the new Governor, Sir Charles Fitz Roy. This work was approved in 1847 and construction of the Fitzroy Dock began under the direction of Captain Gother Mann as Engineer in Chief, with Governor Fitz Roy laying the keystone in 1853.⁴ Shortly after construction of the dock began on Cockatoo, construction of a privately-owned dock commenced in Balmain (Morts Dock). Morts Dock was finished in 12 months, well before the Fitzroy Dock was completed in 1857. While Mann had acknowledged that the work would have proceeded faster using non-convict labour, free stonemasons and quarrymen refused to work alongside the convicts.⁵ So although the Fitzroy Dock was claimed to be the first large graving dock built in the Southern Hemisphere, it can really only claim to be the first started.⁶ In 1857, the Fitzroy Dock was 284 feet (86.5m) long.

The operation of the dock at Cockatoo Island in the early years was overseen by the Prison Superintendent, who was directly responsible, through the Colonial Secretary, to the Governor of New South Wales and the Legislative Council. During this period, most of the labouring work done on ships in the dry dock was carried out by convict labour. The shoring-up, scraping, cleaning and painting was all carried out by prisoners incarcerated on Cockatoo Island, under strict supervision. While the prospect of Royal Navy warships being worked upon by prisoners of the Crown caused

some apprehension among the captains of the first ships to use the facilities, there appears to have been no trouble in the docks during this period.⁷

In 1856 self-government was granted to New South Wales, with an elected Legislative Assembly, as well as a nominated Legislative Council and a Premier.⁸ The prison authorities continued to deal with the Colonial Secretary (later known as the Chief Secretary) in all matters pertaining to the dockyard.⁹

2.4.3 Phase 2: Dual Use—Public Works and Social Institutions: 1869–1913

Almost as soon as it had been completed, it was recognised that the Fitzroy Dock was not large enough. In 1870 it was lengthened to 400 feet (121.9m) and in 1880 extended further to its current length, 475 feet (144.8m).

Still the need for a larger dock was being discussed from 1870, when Gother Mann proposed extensions to Fitzroy Dock to keep Sydney's maritime prestige intact in the face of new docks at Cape of Good Hope, San Francisco, Hong Kong and particularly in Melbourne. Then, in 1872, Mr EO Moriarty, Engineer in Chief for Harbours and Rivers, reported on surveys and assessments for the extension of Fitzroy Dock or the construction of a new one. The extension was estimated to cost £65,000, with a new one costing £83,000.¹⁰

Although the construction of a new dock was favourably received by Parliament, nothing appears to have been done to forward the plan. However, the problem with the Fitzroy Dock was becoming a concern as newer, larger ships were having increasing difficulty actually fitting into the dock.

In 1880 the Parliament approved £150,000 to build a new dock at Cockatoo Island, large enough to fit the new style ironclads and larger than any existing dock in the world. A preliminary contract was awarded in December 1882 to Keogh and Johnston. Between February 1882 and December 1884, they moved 50,000 cubic yards of rock, 17,000 cubic yards of soft soil and 2700 yards of scabbling at a cost of £10,500.¹¹ The material removed was used to reclaim an area to the south of the site.

A second and major contract was awarded to 23 year old engineer Louis Samuel. Samuel's contract included the completion of the dock, erection and installation of the sliding caisson and the construction of an engine house and boiler house for the pumping machinery. The new pumping station was also connected to the Fitzroy Dock via a culvert.

Although Samuel died in 1887, the work was carried on by his younger brother Edward and opened in March 1890. The new dock, the Sutherland Dock, was named after Minister for Works John Sutherland (1868–1870), and finished for a total of £267,825.

In 1903 the Island facilities included a boilermakers shop, machine shop for large tools, machine shop for small tools, erecting shop, foundry, blacksmiths' shop, pattern shop and shipwrights shop.¹²

The Sutherland Dock was widened in 1911 to accommodate the new flagship of the Australian Navy, HMAS *Australia*.

In the period between 1857 and 1911, approximately 3,400 dockings took place at Cockatoo Island, while between 1870 and 1912, an estimated 150 vessels were built on the Island.¹³

2.4.4 Phase 3: The Commonwealth Naval Dockyard 1913–1933

The Role of Cockatoo Island in 1913–World War I

In January 1913, the keels for the new RAN cruiser *Brisbane* and the two destroyers *Torrens* and *Derwent* (later renamed the *Huon* to avoid confusion with Royal Navy destroyer of the same name) were laid at Cockatoo Island. These works marked a major phase in the working life of Cockatoo Island, with the beginning of the first major naval building program in Australia. The keels were laid by Senator Pearce, then Minister for Defence, as 1913 also marked the start of the Island's ownership by the Commonwealth Government. The *Derwent* was the first launched, on 14 December 1914, the *Torrens* followed in August 1915, and a third destroyer, the *Swan*, was launched in December 1915. The *Huon* (*Derwent*) was completed in February 1916 and represented the first modern warship wholly completed in Australia, with most work for the turbines, internal fittings and steel work being done at Cockatoo Island.¹⁴

With the outbreak of the First World War in 1914, the dockyard was kept busy with refitting, ship conversion and repairs. Between August 1914 and October 1915, 21 ships were fitted out as troop transports. Throughout the war years, the dockyard fitted out transports for the conveyance of over 120,000 officers and men as well as 17,000 horses, and handled nearly 2,000 dockings.¹⁵ After the war, 67 ships were reconditioned for normal service.

In 1917 the pontoon for the 150-ton floating crane *Titan* was also assembled at the dockyard. Due to war shortages, *Titan* was not completed until 1919, from when it continued in service until decommissioned and sold in 1992. In July 1918, the keel of the first commercial cargo ship to be built at Cockatoo Island, the *Dundula*, was also laid.

Between the Wars

Following the end of World War I and the completion of the refitting of former transports, work for the Island began to slow. Although steamers of the Commonwealth line provided the yard with a base load of work, by the mid-1920s government work was not sufficient to fully utilise the yard's resources, and with most navy work being undertaken at Garden Island, the dockyard had to look to other projects to remain operational. In 1921 a Royal Commission report was tabled in Parliament, part of which read:

It is unfortunate that an idea seems to be prevalent in the public mind that the Dockyard at Cockatoo is an unnecessary establishment, and consequently we think it proper to draw attention to the fact that the Dockyard is an important undertaking and a necessary factor in the naval defence of Australia.

What more is needed to dispel such an idea than the utility of the Dockyard demonstrated during the years of the war? If there had not been in existence such establishments as those at Cockatoo Island, Garden Island and Williamstown it would not have been possible for Australia to have placed her troops with such remarkable expedition at the various theatres of war; and whatever credit has been given to Australia, in this respect, should in part, be attributed to the hearty response of the management and employees at these establishments. We also desire to point out the importance of Cockatoo Island as a naval repair establishment for ships of the Royal Australian Navy; also bearing in mind the probable visit to these shores of ships of the Royal Navy and Allied Fleets.

Cockatoo Dockyard is the only naval establishment of its kind in the Commonwealth, and in spite of certain limitations as regards size and docking facilities, we are of the opinion that it should be maintained in its efficiency for the purpose of effecting whatever repairs and fittings may be necessary for ships of war. It may be mentioned that the present docking facilities at Cockatoo Island cannot accommodate a ship larger than the Battle Cruiser 'Australia'.

Evidence is before us that Cockatoo Dockyard compares most favourably with the best equipped Dockyards in the British Empire as regards machinery and appliances. Notwithstanding this fact, we are of the opinion that the Dockyard is handicapped by the want of a dock capable of taking the largest capital ship at present in the Royal Navy, or such a ship as is likely to be built and may visit these shores.¹⁶

One project which raised concern among some of Cockatoo Island's competitors was a contract to supply, erect and maintain six turbo-alternator sets for the Sydney Municipal Council-owned Bunnerong Power Station in 1926. Following the successful tender bid by Cockatoo Island, in conjunction with Metropolitan Vickers Limited and the NSW Government Dockyard in Newcastle, the NSW Chambers of Manufacturing objected on the grounds that Cockatoo Island was not independent from the government.¹⁷ The matter was put first to the Parliamentary Joint Committee of Public Accounts concerning the venture into the field of private enterprise. This was followed by a High Court action from the Chamber of Manufacturing, which ruled that, as a Government instrument, the dockyard could not compete in these projects against private enterprise, and the contract was placed elsewhere.¹⁸ The result of this decision was that work at the dockyard was drastically reduced and the numbers employed rapidly declined. Between 1928 and 1932, the workforce fell from 1,290 to 560.

In April 1928, Prime Minister Bruce announced the sale of the Commonwealth line of steamers and followed it up with a call for tenders to lease Cockatoo Island Dockyard. Both the Commonwealth line and Cockatoo Island Dockyard had been administered by the Commonwealth Shipping Board, whose last job was to oversee the handover of the dockyard. With falling profits and declining workload, the Dockyard was taken up by an Australian company, Cockatoo Docks and Engineering Company Ltd. The company took over for a period of twenty-one years from 1 March 1933, having been established in January of that year specifically for this purpose.

2.4.5 Phase 4: Private Ownership and World War II 1933–1948

Approach of War 1933–1939

The signing of the lease between the Commonwealth Government and Cockatoo Docks and Engineering Company Limited in March 1933 allowed the dockyard to work for any customer, free from the restrictions that had plagued it in earlier years. The agreement was ratified by the Cockatoo Island Dockyard Agreement Act 1933, with rent being paid by the company to the Commonwealth based on turnover. To make the agreement viable, a minimum payment of £1,000 per annum and a maximum of £50,000 was set. Although priority was to be given to Navy work, other jobs could be taken on.

This part of the agreement opened the way for the dockyard to begin using its skills in the wider community, and to diversify its workload. It was immediately apparent in a promotional brochure published by the Cockatoo Docks and Engineering Co Ltd in 1933, advertising their services. While the pamphlet is dominated by shipbuilding work, the backbone of the dockyard, attention is paid to other services, including aircraft construction and machinery that could be utilised in dairy production, such as regenerative pasteurisers, stainless steel cream-holding vats and other equipment.

The new company was headed by George Davis, the founder of the Davis Gelatine Company, who was later knighted, as Chairman, and Norman Frazer as Managing Director. Frazer, a veteran of the Boer War, having served with the 4th Queensland Contingent of the 1st Imperial Bushman Regiment¹⁹, kept the company under tight economic management. Norman Frazer had had no previous experience in shipbuilding before starting at Cockatoo Island, but was familiar with the management of a large industrial enterprise, having run his own timber and saw-milling company, Bell & Frazer, for many years in Balmain. As part of his economic management, Frazer reduced the workforce, placed stricter controls on the stockkeeping system to prevent unnecessary loss of equipment and collected valuable scrap metal for reuse or resale. After the first year of trading, the company reported a net profit of £510.²⁰

To transport materials around the Island, particularly in the days prior to World War II, horse-drawn trolleys were used. Narrow gauge railtracks for the trolleys were laid around the Island, extending down to the slipways. The horses were stabled close to the former powerhouse on the Island. They were eventually replaced by trucks, with the last horse drowning after slipping off the edge of a wharf.²¹

As the 1930s progressed, the dockyard's workload gradually increased as Navy ships were overhauled and updated, particularly as the prospect of war grew. Other engineering work also increased after 1937 when the dockyard won the contract to build condensers for the Bunnerong Power Station. This work continued through until 1939, with much of it being carried out at the power station by workers from Cockatoo Island.

In September 1937, the Island's large storehouse, which had been constructed during World War I near the Sutherland Dock, was destroyed by fire. The storehouse was a large wooden building used by the dockyard for the storage of electrical and other equipment in use on vessels that were being constructed or in dock at the time. It also held a lot of old DC equipment from the nearby powerhouse, which was in the process of being transformed to mainland-supplied AC power. The fire was fought by Sydney Harbour fire boats, but little could be done to save the storehouse.²² In December of the same year, the Island was connected to mainland electrical power, supplied from Balmain Power Station via an underwater cable. The AC supply was passed to the Island's low-voltage DC supply through two transformers and two banks of Hewittic mercury arc rectifiers, after which the power station was converted into a switch room to regulate the power supply from the shore.

On the eve of the outbreak of the World War II, Cockatoo Island was the only dockyard of any size in Australia that was actively building ships and was capable of the massive increase in conversion work for ships preparing to go to war.

The Role of Cockatoo Island in World War II

This period of Cockatoo Island's history is generally regarded as the dockyard's 'golden age'. With the declaration of war, plans were implemented to further extend the facilities on the Island. Work was funded by the Australian Shipbuilding Board, with over £400,000 spent between 1939 and 1945. Work at the dockyard included the construction of a new slipway in the northern shipyard, a new turbine shop for the assembly of marine propulsion engines, a plater's shop built on reclaimed land, a new non-ferrous foundry, four new wharves, plus extensions to a number of the workshops and the erection of new facilities for dockyard personnel.²³ The construction of the new turbine shop and brass foundry in December 1943 required a massive program of excavation of the natural cliff face, upwards of 100,000 cubic yards. The excavated rock was used as fill to reclaim more land, extending the dockyard on the northern side of the Island, upon which the plater's shop was built. In addition, two stone houses to the north of the former Soldiers' Barracks building were demolished and stonework from parts of the military guard room, dating from 1833, were also removed to be reused for road pavement and to build an arsenal and ammunition store.²⁴ A road, christened the Burma Road, was built during this period to connect the top of the Island to the shipyard. Air-raid shelters were also built, as were two tunnels through the centre of the Island, allowing for easier access from both sides. One of these tunnels had a first-aid station included and was protected by 8-inch thick steel blast doors left over from the refitting of the cruiser HMAS *Canberra*.²⁵

The first major jobs for the dockyard were the conversion of a number of famous liners of the Cunard line into troopships. Included in this was the *Queen Mary*, *Queen Elizabeth*, *Aquitania* and *Mauretania*. Both the *Queen Mary* and *Queen Elizabeth* were fitted out to carry 5,000 troops, while other liners were converted to hospital ships, and into invasion ships later in the war.

With the Japanese advance through Asia and the fall of Singapore, Cockatoo Island became the only dockyard in the southwest Pacific area where important naval construction, turbine work and major ship repair could be carried out.²⁶ During the early part of the war, the Army was stationed on the Island. As part of the defence of the dockyard, a concrete searchlight platform was built on the top of the Island, and a number of machine guns were set up in case of aircraft attack. However, as other gun emplacements were established around Sydney and the threat of attack diminished, the Army removed the guns from the Island and the residents, who had been incorporated into the Army, were left to man the lights through the war.²⁷

The dockyard played a large role in the repair of damaged ships and was associated with Australia's increasingly close relationship with America during World War II. As the war in the Pacific intensified, particularly between August 1942 and March 1943, increasing numbers of allied ships, damaged during the fighting, were making their way to Sydney for repairs at Cockatoo Island. Heavy demands were made on the resources and men of the dockyard. Repairs varied from emergency work to keep the vessel afloat to entire rebuilding projects on the more heavily damaged vessels. In the second half of 1942, four US cruisers were repaired at Cockatoo Island, all having been extensively damaged by torpedoes in the Pacific. Of these, the USS *New Orleans* was the most severely damaged. The USS *New Orleans* had been torpedoed during the battle of Lunga Point in November 1942. The resulting explosion had ripped 150 feet of her bow away, including the forward gun turret. The job required the fitting of a temporary bow that would allow the vessel to return to the US for permanent repairs.

The importance of Cockatoo Island for the war effort was demonstrated by the fact that the dockyard was considered a protected industry. For those who worked there, this meant that they were required to stay on at the yard during the war.

The enormous workload was mirrored in the staff levels, which reached 3,200 employed during the peak years of the war. As well as repair work, ship construction was still a major part of the dockyard. Nineteen ships were laid down and constructed during the war years, work on which caused some concern to the US Navy in 1943 because of delays in the progress of repairs to their ships.

By the war's end, more than 40 major repair jobs had been undertaken at the dockyard. Of these, 11 were from the Royal Australian Navy, including the HMAS *Hobart*, who had been torpedoed and suffered damage not unlike that of the American cruisers. Nine ships were from the Royal Navy, including the aircraft carriers *Illustrious*, *Indomitable* and *Formidable*, who had all suffered kamikaze attacks, and fifteen ships from the US Navy.²⁸ There had also been 20 major conversions, the fitting of defence equipment to 42 ships and extensive alterations or repairs to large passenger liners on 45 occasions. The docks had recorded 355 naval dockings and 395 merchant ship dockings, totalling 3,855,446 gross tons of shipping.²⁹

2.4.6 Phase 5: Post-World War II—New Technologies in a ‘New’ World 1948–1992

The Vickers Era

As had occurred after the end of World War I, at the close of World War II Cockatoo Island was again heavily involved in the reconditioning of ships, and the conversion of armed merchant cruisers back to liners for the Australian coastal trade. Liners such as the *Westralia*, *Manoora* and *Kanimbla* were all refitted for peacetime shipping.³⁰

In 1947 an important change occurred at Cockatoo Island as Vickers Limited of London took over the majority shareholdings of the dockyard. Vickers had had an ongoing interest in Cockatoo Island since 1937, when Vickers Armstrong had taken up a small nominee shareholding, with Sir Keith Smith, Vickers’ representative in Australia since 1923, becoming the director of the company in 1938.³¹ Vickers remained associated with Cockatoo Island, in various guises, until February 1986. In this time, Vickers Limited had become Vickers Australia Limited in 1956, and then Comsteel Vickers (formed in 1984 with the merge of Vickers Australia Limited with Commonwealth Steel Company Limited). Comsteel Vickers was then taken over by Australian National Industries Limited in February 1986, ending nearly 50 years of involvement by Vickers in Cockatoo Island.

Vickers supported the development of the dockyard via an active program of encouragement to advance their personnel’s training. One of the first major projects undertaken by Vickers at Cockatoo was the construction of the new Daring class destroyers from 1949, with two of the three being built at Cockatoo Island, and the engines and boilers for all three being made there as well. The two Daring class destroyers to be completed on the Island were the HMAS *Voyager* and *Vampire*. These ships were the first all-welded hulls to be built in Australia, as opposed to the former riveted hull construction. The new technique required a number of Cockatoo Island’s technical staff to be sent to the UK for training.³² The transfer of staff and overseas training program was a feature of the Vickers period that continued at least until the 1970s.

As well as being the first all-welded ships, the Daring class also represented a major shift in technology and ship design. To meet the new accuracy demands for the types of turbines and reduction gears of the Daring class, Cockatoo Island was equipped with a new Standard room, which was, at the time, thought to be one of the finest in the Commonwealth, and was used not only for naval design but also for high grade commercial and scientific work. Another change was that the Daring class had a higher proportion of aluminium used in their superstructure, utilised a more sophisticated weapons control, radar and communications system, as well as an extensive electrical and electronic system. The change in design meant that a larger electrical labour force was needed. Through the Daring class design and construction process, Cockatoo Island became a leader in welded ship construction in Australia and helped other Australian dockyards with the transition.

The next series of destroyers, the Type 12 Leander Class, which included the *Parramatta* and *Stuart*, were laid down and built through the later 1950s and early 1960s. Again, these new designs

required further technological advance, including the installation of the first IKARA anti-submarine guided missile system.

Twice during the 1960s, the Australian Navy aircraft carrier and flagship HMAS *Melbourne* was involved in collisions at sea which required extensive repairs to be undertaken on her bow section. The first collision, in February 1964, resulted in the sinking of the RAN destroyer HMAS *Voyager* (which had been built at Cockatoo Island), while the *Melbourne* entered the docks at Cockatoo to have a new bow fitted. At the time, the *Empress of Australia* was being built, but the priority for the shipyard was to repair the *Melbourne*, the Navy flagship at the time. This meant that resources were taken from the merchant or private shipbuilding program to satisfy the traditional dockyard commitment to giving preference to naval work. *Melbourne* was involved in the second collision, this time with the US Navy destroyer USS *Frank E Evans*, in June 1969 while on exercises in the South China Sea. The repairs were nearly identical to the first collision, but were delayed by an industrial dispute, during which time the aircraft carrier was held hostage in the docks.³³

During both jobs, an unusual method of repair was used. The new bow section was fabricated separately on the Island and then positioned in the Sutherland Dock. Once the new section was correctly placed, the *Melbourne* was floated over the new bow, and the dock was then pumped dry, allowing the ship to settle into the correct position before it was welded together. The technique was one example of the innovative approach that Cockatoo Island took towards the shipbuilding and repair industry.

It was close to this time that the Island introduced its first computer. The first mainframe computer was introduced to the Island in 1971 for accounting and payroll purposes. At the time, there were few programs available for the type and scale of work that the dockyard required. To overcome this, the dockyard imported existing programs from the UK and adapted them to the needs of Cockatoo Island itself. While they were originally intended for accounting, the computer, once introduced began to find its way into all the aspects of work at Cockatoo Island, until the Island was entirely 'on-line', with a common database covering documentation control, quality control, planning, scheduling, ordering and purchasing, labour costing and certain management projects. Initially designed to be running within nine months, the computer system took closer to five years to complete.³⁴ The delay was due partly to the trials of establishing a new system, but was also hampered by the cumbersome managerial procedures that were in place. The system that the dockyard operated under, with both a board of management and the direction of the Department of Defence, often slowed the acquisition of new or untested equipment.

While the dockyard enjoyed a close and supportive role with the Commonwealth, the combination of main client and landlord sometimes became problematic. An example of the potential difficulties would arise around each federal election. While the shipyard continued to operate regardless of a government or ministerial change, a new Defence Minister would require a briefing upon entering the job, and it was not uncommon for the dockyard to need to explain its methods or systems. This

continued after 1972 when a new lease agreement was established between the Island, Vickers and the Commonwealth. Under this Trading Agreement and Lease, taking effect from 1 January 1972 for 21 years, the company was given full responsibility for profit and loss on the Island, as well as the provision and maintenance of machinery at the works. While the Commonwealth remained responsible for the buildings, services, wharves and cranes, they no longer gave Cockatoo Island preference for commonwealth work except submarines. This then paved the way for the main work program for the remainder of the dockyard's working life: submarines.

The Submarine Facilities

Cockatoo Island had a long and distinguished involvement in Australia's submarine fleet. From the very beginnings of a submarine fleet in the RAN, Cockatoo Island Dockyards were involved, to the extent that in the last 25 years of operation, the submarines provided the Island with its main work base.

The first submarines to utilise the dockyard were the *AE1* and *AE2*, E Class submarines that were commissioned into the RAN on 28 February 1914. Their association with the Island was brief; they were docked between 6 June and 25 June 1914, after which both were lost at sea during service in World War I. The *AE1* disappeared in September 1914 off the coast of New Britain, while the *AE2* was sunk in the Sea of Marmora during the Gallipoli campaign in April 1915.³⁵ Following the loss of the two E Class submarines, the RAN ordered six new J Class vessels from Britain, arriving in Australia in June 1919. All required refit after the voyage, with Cockatoo Island and Garden Island sharing the work. In 1924 the J Class were replaced by O Class submarines, which were handed back to the Royal Navy (RN) in 1931 due to cuts in Australia's defence expenditure during the depression and to boost Britain's submarine tonnage, which had been reduced under a 1930 Naval treaty.

It was not until 1963 that Cockatoo Island would again have the opportunity to service Australian submarines. After gaining refitting experience on allied submarines during the war, and then serving the RN T Class refit and modernisation program through the 1960s, Cockatoo Island was chosen as the dockyard to refit the six new Oberon Class submarines delivered to the RAN between March 1967 and April 1978.³⁶ The Oberon Class submarines were the most advanced conventional submarines at the time, and Cockatoo Island underwent a substantial building program as part of its own upgrade to serve the refit program. The Commonwealth approved \$4.7 million for the construction of new workshops, wharves and facilities. Two new large brick buildings were erected close by the Fitzroy Dock: one on the eastern side for the mechanical and electrical work, and one on the southern side for repair of weapons and electronics.³⁷

The first Oberon to enter the dockyard for refit was the HMAS *Oxley* in March 1971. Despite some initial teething problems causing the refit to take almost twice as long as expected, Cockatoo Island

Dockyards eventually established a very reliable service routine that was both predictable and effective.

As surface shipbuilding and commercial ship repair work began to decline, the dockyard relied more and more on the submarines for work. To ensure an ongoing project, the dockyard became highly specialised in the task of submarine refitting. The hostile nature of a submarine's work environment and the dependence of the crew on the quality and integrity of the vessel and its operating systems for their survival, means that the refit process has to be rigorous, with a high attention paid to detail. The high level of workmanship achieved at Cockatoo Island was reflected in the pride amongst those involved in a job well done.

The process of a submarine refit began with each submarine being completely stripped of all equipment internally, with each piece being removed through the existing access hatches in the hull. The only pieces that were not removed from the submarine were the main motors, main generator bedplates and main frames. The submarine would then be placed on the slave dock for the remainder of the refit. The slave dock was a purpose-built dock, specifically for use in refitting submarines. Built at Cockatoo Island, the slave dock had no pumping or flooding arrangements of its own and depended on another dock for its operation. It was built in 1974 at the start of the 'two-stream' submarine refitting program. Under this, two submarines would be worked on simultaneously, which, without a third dock, would have tied up the only two docks available for commercial work in Sydney.

Every piece of equipment on board the submarine was subjected to testing, had repairs made to it, was degreased, cleaned and repainted. This included all piping, electrical equipment, internal surfaces and the external hull. The accommodation bulkheads, fittings, doors, handles and internal linings were also worked on. Each refit involved nearly every aspect of Cockatoo Island, from joiners to electricians to painters and dockers. As an example of the amount of work required, every battery was removed for testing and charging. Over 400 such units, weighing half a ton each and standing at just over one metre high, were individually removed, serviced and later replaced.³⁸

Not only was there an enormous amount of work to be done, but due to the unique makeup and componentry of the submarines, all the work had to be done with the utmost precision. When working on the 'furniture' in the battery room (that being all the overhead timber work) after the batteries had been returned to their mounts, all the tools, such as hammers and spanners, needed to be completely bound in insulation tape so as not to cause any sparking. The danger from sparks was acute in a confined area, due to the amount of hydrogen that was produced by the batteries, which, if ignited, could destroy the vessel and kill anyone onboard. When the batteries were being recharged, the electricians, inspectors and shipwrights who were involved would be locked in the submarine overnight to conduct tests for hydrogen levels.³⁹

The submarine program also provided the Cockatoo Island Dockyard with opportunities to display their high levels of expertise that they had accumulated in over a century of shipbuilding. In each

refit, an average of 30,000 individual parts was required to complete the work. Many of these were produced on the Island. The refit program also allowed the dockyard to fully utilise its computer system, set up in the 1970s, making it the largest use of network analysis techniques anywhere in Australia.⁴⁰ The idea of the refit was to return each submarine to as-new condition, and the Navy required the dockyard to develop an entire costing, planning and quality assurance program, making it the first dockyard in Australia to adopt such measures and, in the process, creating the best conventional submarine refit centre in the world.⁴¹

After all the equipment was restored to the vessel, the final process of the refit was to test the submarine in the water. This was usually carried out in the Captain Cook graving dock at Garden Island where it was deep enough to submerge within a controlled facility. Following these last trials, the submarine would be returned to Cockatoo Island where it would be handed back to the Navy in a ceremony resembling a mini-ship launch. The Navy band would play and all the submarine crew would be present.

The last submarine to be refitted, HMAS *Orion*, was handed back to the Navy on 4 June 1991, ending the refit program and ending the long association of Cockatoo Island with the Royal Australian Navy.

HMAS Success

The last surface ship built at Cockatoo Island Dockyard was the Fleet Underway Replenishment Ship, HMAS *Success*. The *Success*, or AOR as she was known, was ordered from the dockyard in October 1979, the keel was laid in August 1980 and she was launched on 3 March 1984, the largest naval ship ever built in Australia.

The process by which the AOR was secured was one that took many years of negotiation between the company, the Navy and the government, but was one that was seen as vital to the continuing viability and relevance of Cockatoo Island as a naval dockyard. While submarines provided the majority of the workload through the last 20 years of the dockyard, and other work, such as turbines for power stations, was recognised around the world as first class, Cockatoo Island's own identity rested in its ability to build surface ships, especially naval ships.

During the 1970s, Cockatoo Island Docks had unsuccessfully tendered for a number of large shipbuilding projects for the Australian Navy. In 1973, the fast combat support ship HMAS *Protector*, which had been intended for Cockatoo Island, was cancelled after the new Whitlam Government decided that the cost was too high. Similarly, a detailed tender that was under way for the construction of three light destroyers was also scrapped. This particular project was being run in conjunction with a another Vickers' shipyard in Canada and with Gibb & Cox, naval architects and marine engineers in New York. Then, in 1977, the new Fraser Government announced that the troopship *Tobruk* would be built at Carrington slipways in Newcastle, and the tender to build 14 patrol

boats was awarded to shipyards in Queensland, North Queensland Engineers and Agents in Cairns.⁴²

The loss of all of these projects had a twofold effect on the Island. As well as the financial loss that resulted, the Island also needed another major ship to build in order to keep the skills of its workforce up to date. By the late 1970s, many of the old hands who had learnt their trades during or soon after World War II were getting close to retirement. It was vital for the dockyard's future to train young people in project management and to develop their technical skills, which could best be done with a variety of projects. For these reasons, the dockyard was very keen to tender on the next big ship to be built in Australia, that being the AOR.

Towards the end of 1977, the then managing director, Dick Humbly, wrote to the Prime Minister, Malcom Fraser, requesting that Cockatoo Island be allowed to submit to tender for the proposed Fleet Underway Replenishment Ship. By this stage, the tender had already been let out to a French shipbuilding firm, DTCN, which was proposing to build a version of the French Durance Class replenishment ship, then underway in France. Dick Humbly reminded the government that Cockatoo Island had originally asked to tender for the job in 1975, and after negotiations it was agreed to transfer the project to Cockatoo Island Dockyard.⁴³

The ship was beset with problems due to differences in the working drawings received from France and the ship as defined in the contract. The result was a substantial increase in the cost of the project and time to complete it, and was the cause of a major contractual dispute between the Navy and the dockyard.

The *Success* was launched by Lady Valerie Stephen, the wife of the Governor-General, in March 1984. The launch of a ship had always been a spectacular site attracting large crowds of spectators, both on the Island and on the water. The launch of *Success* attracted more than usual, as it was incorporated into an open day for families of workers on the Island.⁴⁴ A certain feeling of pride existed amongst the workers and management of the Island on the launching day, as what had been an inanimate object that had stood on the slipway for so long, suddenly came to life to the sound of the shipwrights' mauls (flat-faced sledgehammers) and slid into the water for the first time.

When the *Success* was launched, there was hope that another AOR project would be forthcoming, but as work progressed on the ship, it became known that no more ships would be built.

The final hand-over to the Navy was in April 1986, after extensive sea trials. The HMAS *Success* became the flagship of the RAN after December 1989 and served with distinction with the Navy in the 1990–91 Gulf War and in the ongoing Persian Gulf patrols, having the longest deployment of any allied warship.

The *Success* was the last ship to be built at Cockatoo Island Dockyard.

Closure

By the 1980s, it became obvious that the Island needed a substantial upgrade if it was to continue operating successfully. Machinery that had been declared obsolete 20 years beforehand was still in use and an estimated \$30 million was required to build new facilities and workshops. However, a more difficult problem for the Island was the very fact that it was an island. Access to the facilities was extremely difficult, especially as more and more components were prefabricated off site and shipped in for specific jobs. In 1987 the Labor Government decided it would not renew the lease when it expired in 1992. By the early 1990s, the Island's profitability and future as a shipbuilding and repair establishment could no longer be sustained. The operation of the yard ceased at the end of 1991, and auctions of the machine tools, equipment and cranes occurred through late 1991 and 1992. The docks were flooded and demolition began on some of the buildings and wharves after the end of 1992.

2.4.7 Phase 6: The Present Period—The Sydney Harbour Federation Trust

The Sydney Harbour Federation Trust was established in 1999 by the Sydney Harbour Federation Trust Act to take on the planning and management responsibilities for a number of former defence sites in and around Sydney Harbour, including Cockatoo Island.

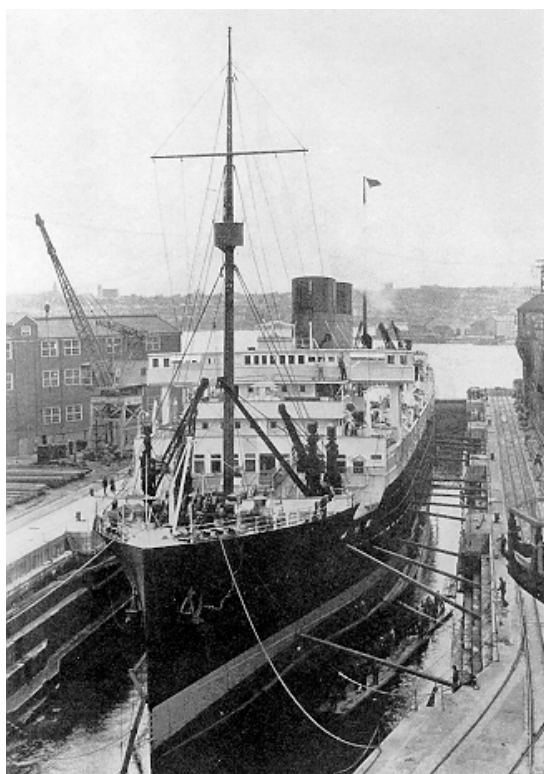


Figure 2.18
Royal Mail Steamer
Monowai in Sutherland
Dock for overhaul c1928.
Commercial dockings
were a crucial part of the
operation of the Dockyard
but the competition with
private industry caused
considerable friction.
This led, in 1929, to the
decision to lease the
Dockyard to private
enterprise and, in 1933,
the Cockatoo Docks and
Engineering Co Ltd was
founded. (Source:
Cockatoo Docks and
Engineering Co Ltd,
Sydney, Australia, 1933)

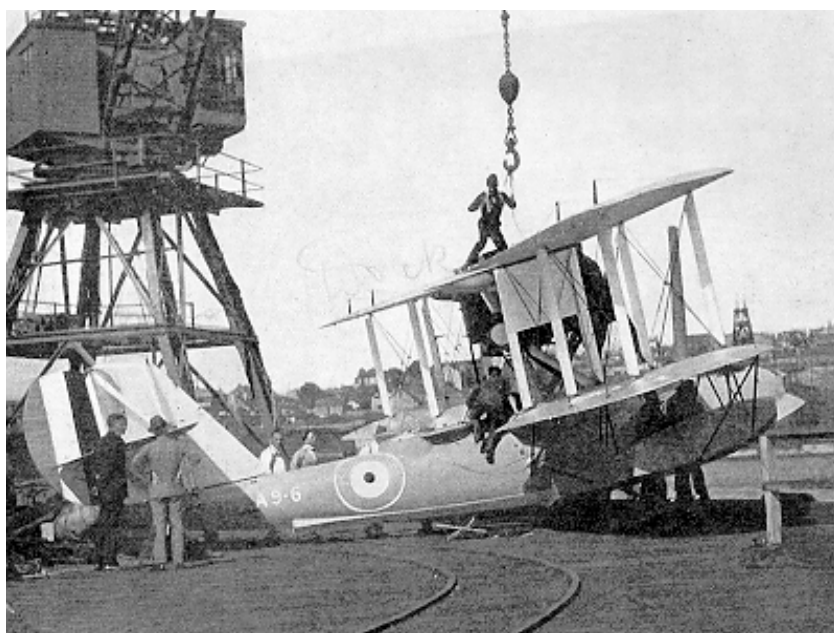


Figure 2.19
A Supermarine Seagull
III seaplane repaired at
Cockatoo Island. Six
Seagull III seaplanes
were based on HMAS
Albatross and were
serviced in the Aircraft
Department at Cockatoo
Dockyard between 1929
and 1933 (when the ship
was placed in reserve).
(Source: Cockatoo
Docks and Engineering
Co Ltd, Sydney,
Australia, 1933)

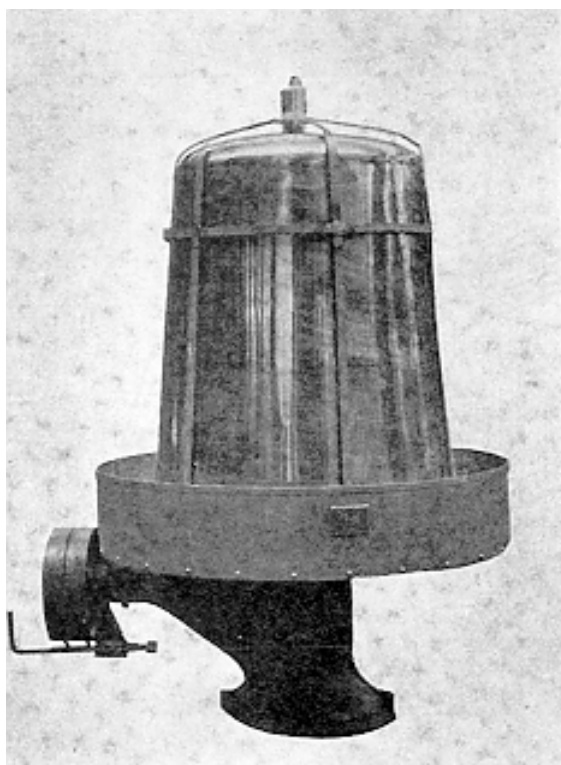


Figure 2.20 A stainless steel milk pasteuriser. Cockatoo Island was capable of producing high quality material for industries other than shipbuilding, including the dairy industry. (Source: Cockatoo Docks and Engineering Co Ltd, Sydney, Australia, 1933)

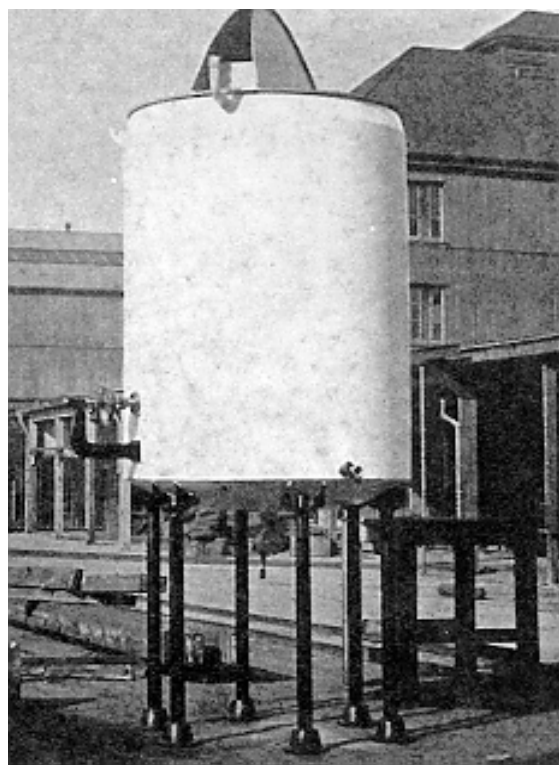


Figure 2.21 1,000 litre vat for milk, c1930. Contracts such as these caused some industry friction about competition from government enterprise. (Source: Cockatoo Docks and Engineering Co Ltd, Sydney, Australia, 1933)



Figure 2.22

The turbine shop c1930. Steam turbine propulsion had been fitted to all new Royal Navy ships since 1905 and the first turbine powered battleship, HMS *Dreadnought*, was launched in 1906. (Source: Cockatoo Docks and Engineering Co Ltd, Sydney, Australia, 1933)

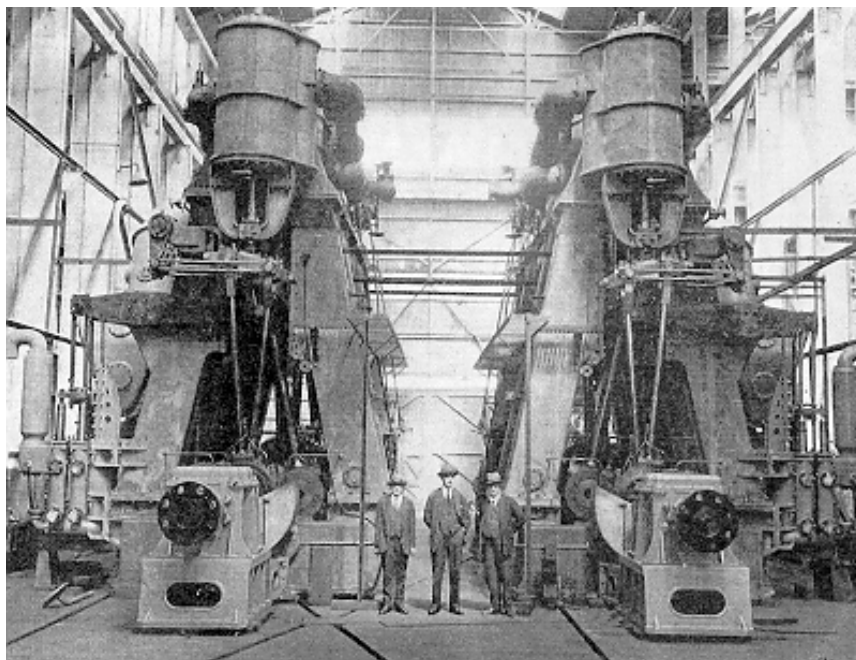


Figure 2.23

Quadruple expansion reciprocating steam engines for the *Fordsdale* or *Ferndale* merchant ships built at Cockatoo Island in the early 1920s, an example of the engineering capabilities of the Island. These were the largest engines ever built in Australia up till that time. (Source: Cockatoo Docks and Engineering Co Ltd, Sydney, Australia, 1933)

Figure 2.24

The aftermath of the General Store fire in September, 1937.

This building was quickly replaced.
(Source: Jeremy, op cit)

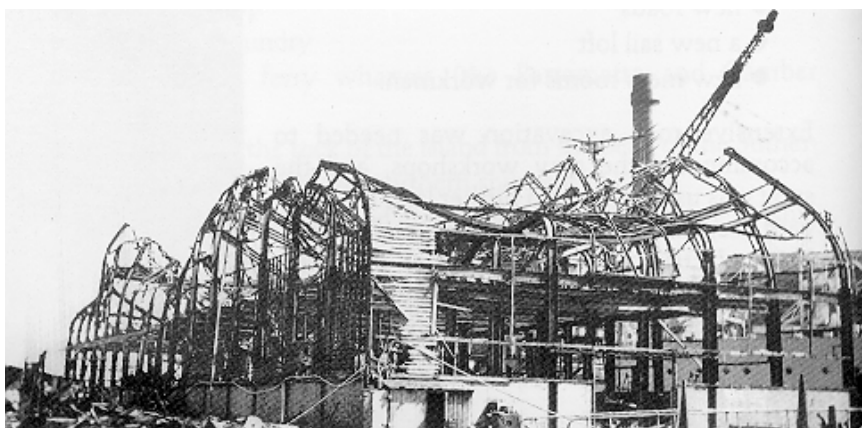


Figure 2.25

HMAS *Melbourne* after colliding with and sinking the HMAS *Voyager* in February 1964.

Cockatoo Island Dockyard cut away the damaged section and fitted a new bow.
(Source: Jeremy, op cit)

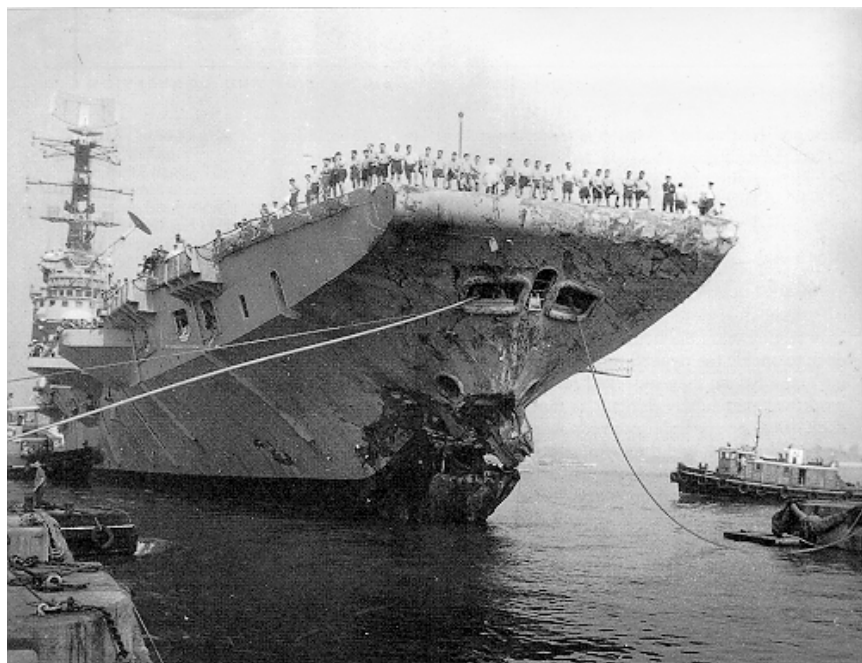




Figure 2.26
HMAS *Melbourne*
being fitted with
another new bow
after a second
collision in 1969, this
time with the
destroyer USS *Frank*
& *Evans*. (Source:
Jeremy, op cit)

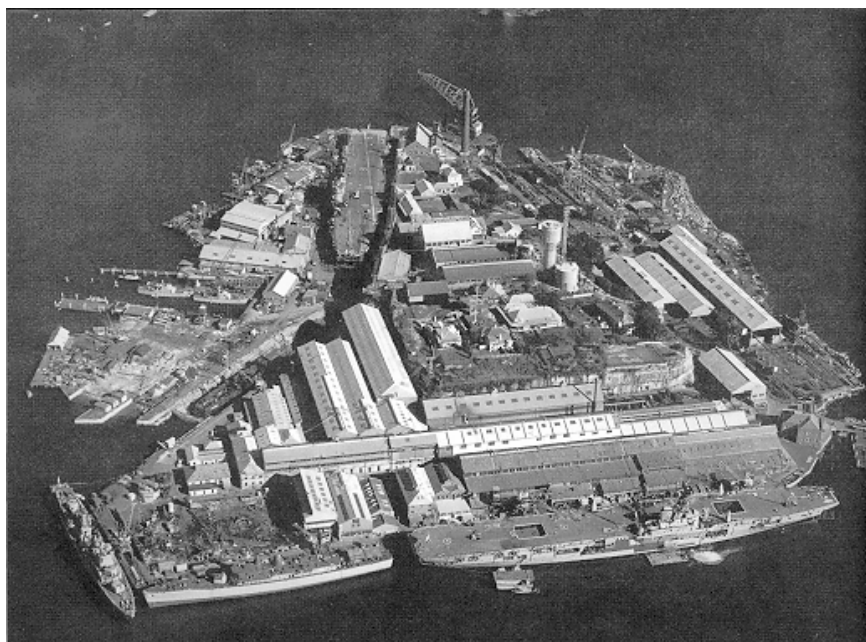


Figure 2.27
Cockatoo Island in
1969, a busy time
during the Vietnam
War. The HMAS
Melbourne is in the
Sutherland Dock
being repaired after
its collision with the
USS *Frank E Evans*,
with the troop carrier
HMAS *Sydney* at the
Cruiser Wharf in the
foreground. (Source:
Jeremy, op cit)

Figure 2.28
HM Submarine
Telemachus in Fitzroy
Dock in 1950. This
submarine was part of
the Royal Navy
squadron based in
Sydney. Notice the
shoring to hold it in
dock during work.
The lessons learned
maintaining and
refitting these British
vessels became to
basis for the future
submarine refit
program for the
RAN's Oberon class
submarine fleet.
(Source: Jeremy, op
cit)

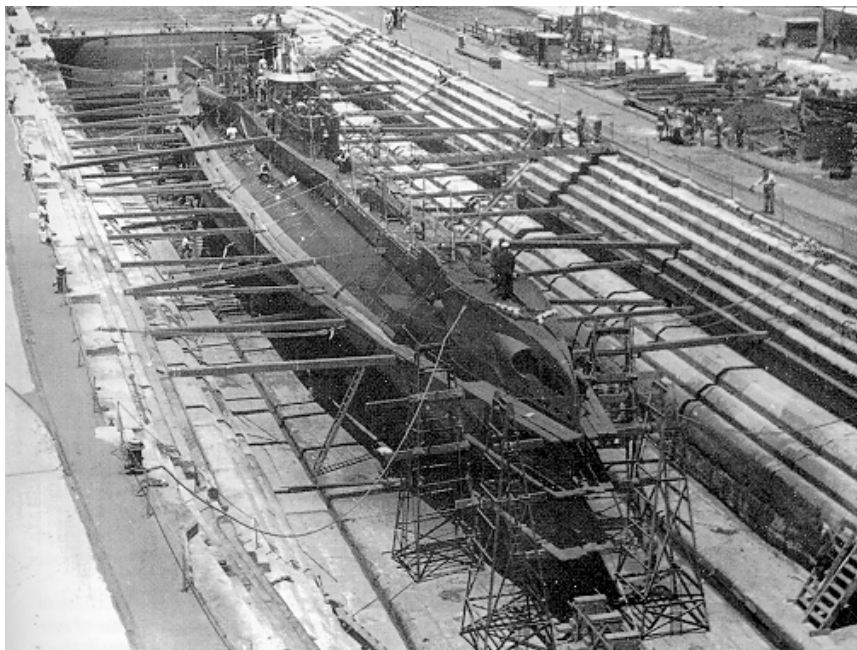


Figure 2.29
Looking south from
close to the
Parramatta Wharf in
1992 showing the
demolition process
following the Island's
closure. (Source:
Jeremy, op cit)



2.4.8 Endnotes

- ¹ Jeremy, J 1998, *Cockatoo Island: Sydney's Historic Dockyard*, UNSW Press, Sydney, p7.
- ² Davies, S 1984, *Islands of Sydney Harbour*, Hale and Iremonger, Sydney p77.
- ³ Jeremy, op cit, p8.
- ⁴ Parker, RG 1977, *Cockatoo Island: A History*, Nelson, Belowne, p10.
- ⁵ Jeremy, op cit, p9.
- ⁶ Parker, op cit, p10.
- ⁷ *ibid*, p14.
- ⁸ *ibid*, p13.
- ⁹ *Ibid*, p14.
- ¹⁰ Jeremy, op cit, p10.
- ¹¹ *ibid*, p13.
- ¹² Royal Commission of Inquiry into the Working and Administration of the Government Docks and Workshops at Cockatoo Island, July 1903, p3.
- ¹³ Jeremy, op cit, p20.
- ¹⁴ *ibid*, p70.
- ¹⁵ Cockatoo Docks and Engineering Company Limited, 1933, Sydney Australia, p5.
- ¹⁶ *ibid*, p33.
- ¹⁷ Jeremy, op cit, p36.
- ¹⁸ Parker, op cit, p35.
- ¹⁹ Australian Dictionary of Biography.
- ²⁰ Jeremy, op cit, p40.
- ²¹ *ibid*.
- ²² Jeremy, op cit, p59.
- ²³ Jeremy, op cit, p59.
- ²⁴ Balint Godden Whitaker Associates, 1982, *Historical Equipment and Facilities Cockatoo Island*, prepared for the Department of Housing and Construction, Sydney, p50.
- ²⁵ Interview with George McGoogan, 24 May 1999 by Mark Dunn for Cockatoo Island Oral history project, prepared by Godden Mackay Logan for the Sydney Property Disposal Unit, December 1999
- ²⁶ Department of Housing and Construction, Cockatoo Island, *Assessment of Cultural Significance*.
- ²⁷ Interview with Alan Mitchell, op cit.
- ²⁸ Parker, op cit, p50.
- ²⁹ Jeremy, op cit, p130.
- ³⁰ Parker, op cit, p53.
- ³¹ *ibid*, p53.
- ³² Parker, op cit, p58.
- ³³ Jeremy, op cit, p134.
- ³⁴ Interview with John Jeremy, op cit.
- ³⁵ Jeremy, op cit, p143.
- ³⁶ *ibid*, p148.
- ³⁷ Parker, op cit, p69.
- ³⁸ Interview with Ian Roberts by Mark Dunn for Cockatoo Island Oral history project, prepared by Godden Mackay Logan for the Sydney Property Disposal Unit, December 1999.
- ³⁹ *ibid*.
- ⁴⁰ Jeremy, op cit, p151.
- ⁴¹ Interview with John Jeremy, op cit.
- ⁴² Jeremy, op cit, pp 107–108; Interview with John Jeremy, op cit.
- ⁴³ Interview with John Jeremy, op cit.
- ⁴⁴ Interview with Steve Matthews by Mark Dunn for Cockatoo Island Oral history project prepared by Godden Mackay Logan for the Sydney Property Disposal Unit, December 1999.

2.5 History of Cockatoo Island Dockyard: Selected Themes of Historical Significance

2.5.1 Cockatoo Dockyard—Supporting The British Navy

Cockatoo Island Dockyard has had a long and involved industrial history, dating from its establishment as part of the prison for Imperial convicts (ie those sentenced in England to transportation to the colony of New South Wales) who had committed additional crimes while in the colony. The transported convict was given considerable levels of compulsory labour on road gangs and assignment to farms and many minor punishments for infringements of process or duties or behaviour. At the furthest end of the scale of punishment (above execution) was ‘Confinement to Prison with Hard Labour’ and the fundamental purpose of Cockatoo Island in this hierarchy was to be the worst possible place imaginable and the ultimate deterrent. After the cessation of the excavation of grain silos, on instruction from the English Government, the need for a large labour project was acute and the excavation of a dry dock offered an ideal opportunity.¹

Cockatoo Island Dockyard was commenced as part of a larger agenda, whereby the completed dry dock would be of value to the colonial administration for servicing naval ships. The desire for a dedicated dock for this purpose reflects a long tradition, even at that time, of separation of the Royal Navy from the general community, with the Navy setting its own standards and undertaking its own support services. This separation is reflected in a number of historical associations in Sydney, the naming of Garden Island being a typical case, where, in the first year of the colony, lands were allocated to the Royal Navy ships for growing their own fresh food supplies.

Further, one of the express purposes of the establishment of the colony in 1788 was, as stated to Captain Philip by Admiral Sir George Young, to establish ‘Ports of Shelter and refreshment for our ships should it be necessary to send any into the South Seas’.² This fundamental purpose had not altered in the decades since 1788; for example: the British had administered the Dutch East Indies from 1795 to the 1820s; the established colony at Calcutta was subject to the Anglo-Burmese wars in the 1820s; a trading post had been established in Singapore in 1818; and the colony of Hong Kong was established in 1841, after the first Opium War with China in 1839–1840. The Royal Navy’s particular interest in Sydney Harbour as a port of shelter had become greater rather than less as the Empire’s interests in South East Asia and the South West Pacific expanded. In 1821, the Australia Station was established as a division of the East Indies command and ships of the East Indies squadron included Port Jackson on their tours.

In relation to the ships, vessels of the Royal Navy bore many differences to merchant vessels and the standards of craftsmanship were expected to be of a higher order and, in this regard, a Government Shipyard had been established on the western side of Sydney Cove from the 1796. Apart from the construction of colonial government vessels for local use, the Government Shipyard undertook the servicing of visiting Royal Naval vessels, which was often necessary after the long voyage to Sydney. Crowded and old by the 1830s, the Government Shipyard was shut down in 1833

and, from then, all services to the Royal Navy were provided by commercial shipwrights such as Humphrey McKeon, JW Russell and Thomas Chowne. More often, the work was carried out by the ships' crews, as occurred with the HMS *Beagle* prior to its survey expedition in 1838. By the 1840s, the Navy were dissatisfied with the need to wait upon vacancies in these commercial yards and, although they established a preferential arrangement with John Cuthbert's yard at Millers Point, the lack of a dry dock inhibited the extent of work that could be achieved and the lack of control over standards was a matter of concern. The Patent Slip established by Towns and Darley in 1830 in Darling Harbour provided some relief (eg HMS *Pelorus* was slipped in 1838) but the slip failed in 1846 under a ship of 365 tons, forcing ships back to careening for hull repairs.³

In this context, Governor Gipps proposed and promoted the establishment of a government dockyard specifically to service the Royal Navy from the mid-1840s. This proposal took advantage of the need to utilise the prison labour in some manner and, from the Navy's perspective, the acquisition of a dock whereby most costs were paid by either the colonial government or through the Colonial Office's expenditure on accommodating convicts, was relatively attractive in a decade of considerable financial constraint.

The Admiralty did contribute to the construction cost of the Dock, on the basis that Naval ships would have preferential use, but 20 years later, in 1869, the NSW Colonial Government could not establish that there was any formal arrangement between the Admiralty and the NSW Government to guarantee this preference. By this time, the issue was seen to have been of little import, as it appears that the Navy was given early reservation for access to the dock and emergency works to Navy vessels were always carried out promptly. In 1859, an area on Cockatoo Island was considered for the site of the Royal Navy Depot—in the event, the existing site on Garden Island was retained.

After the Fitzroy Dock opened in 1857 until the closure of the prison in 1869, the dockyard appears to have operated as a basic utility, with a few skilled employees and the convicts providing labour. No shipwrights appear to have been permanently operating in the dockyard, although it appears to have been regularly 'hired' by the commercial shipwrights in Sydney. In the late 1860s, John Cuthbert was hiring the Fitzroy Dock to perform repairs to the HMS *Galatea* and HMS *Charybdis*, and his firm had exclusive rights to work upon ships of the French Navy, of which *Dorada* was repaired in Fitzroy Dock in 1868.⁴

Under the management of the NSW Department of Public Works after 1870, the Cockatoo Island Dockyard continued to provide priority access (with minimal fees) to the Royal Navy, in addition to its own requirements for dredgers and tugs and a constant stream of commercial work (though much of this, it seems, still occurring as short-term hire by external shipwrights). The use of Cockatoo Island Dockyard by the Navy was not exclusive, though, as the Alfred Dock in Melbourne (from 1874) and Calliope Dock in Auckland (from 1888), provided alternative facilities. Minor works and services, as well as accommodation, were also provided at the Naval Depot at Garden Island from the early 1890s.

The position and importance of Cockatoo Island as a facility of the Royal Navy during the nineteenth century and up to the middle of the twentieth century reflects the context of Australia as a component part of the British Empire. In 1902, Lord Selbourne, First Lord of the Admiralty, stated at the 1902 Colonial Conference that:

'it is desirable that the populations of the Dominions should become convinced of the truth of the proposition that there is no possibility of the localisation of naval forces and that the problem of the British Empire is in no sense one of local defence. The sea is all one and the British Navy, therefore, must be all one'.⁵

The availability of Cockatoo Island Dockyard was more than a means of attracting the business and protection of the Royal Navy; it was a fundamental contribution by one of the Dominions to the infrastructure of the Empire. This philosophy was elemental to the formation of the Australian Navy as a squadron of the Royal Navy in 1913, a philosophy which underpinned both the operation of the Australian Navy (despite a degree of political rhetoric to the contrary) and, consequently, Cockatoo Island Dockyard, until the end of World War II.

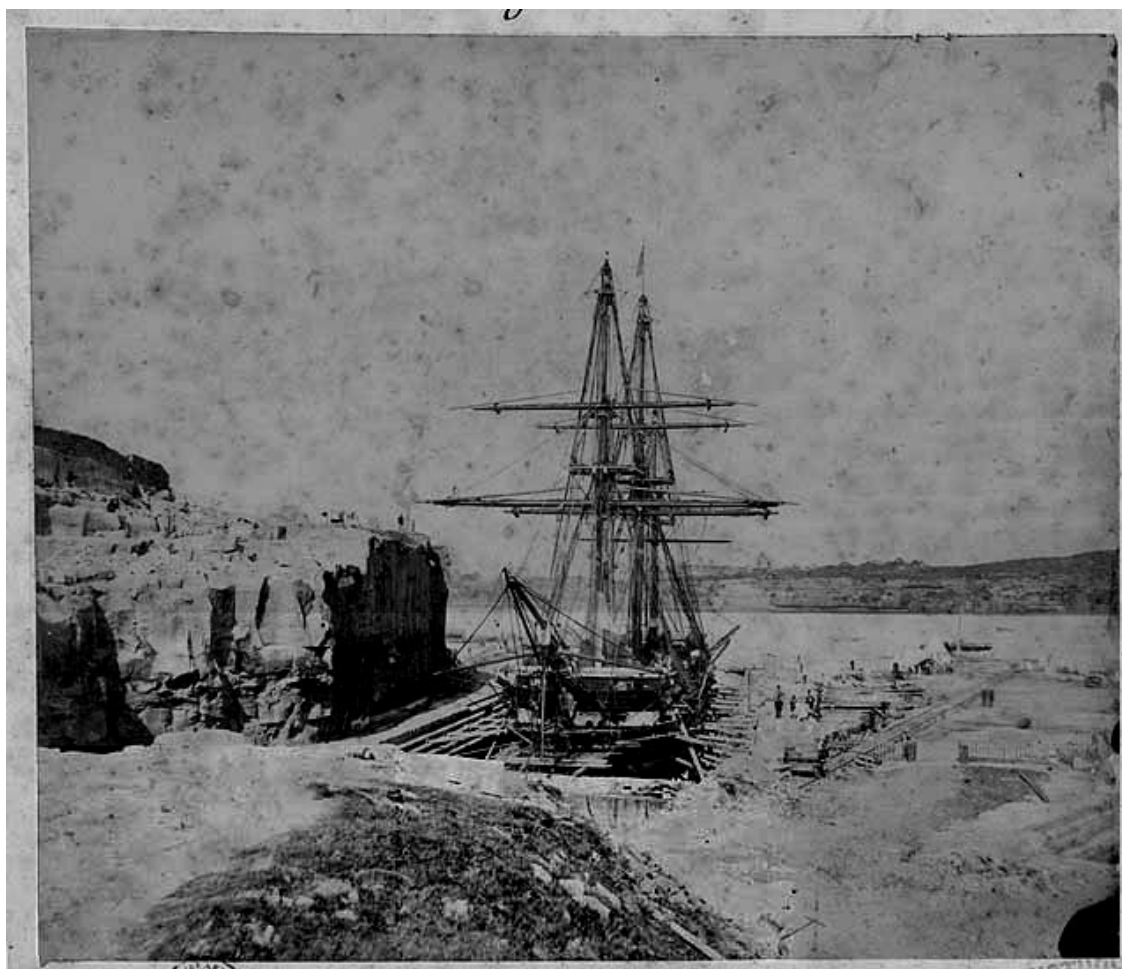


Figure 2.30 HMS *Curacao*, flagship of the Australia Station from 1863 to 1867, in Fitzroy Dock in 1864.
(Source: PICMAN, SLNSW)

2.5.2 Cockatoo Island Dockyard as a Government Enterprise

Cockatoo Island has been a government-owned place throughout its life under European control and as a dockyard. During its life, it has been operated as a government business under the NSW Colonial Government, NSW State Government and the Australian Commonwealth Government control. It has also been operated (under leasehold) as an Australian-owned private company and as a subsidiary company of a multinational company. In each circumstance, the dockyard has both expanded and contracted in its activities subject to both market forces and government policies.

Under the NSW Colonial Government, Cockatoo Island Dockyard was a part of the Harbours and Rivers Branch of the Department of Public Works (PWD), which had been established in 1856. By 1860, G.K. Mann was both Chief Engineer of the Dockyard and Superintendent of the Prison and, in view of the special relationship with the prison, the Dockyard remained its own separate section within Public Works until the prison closed in 1869 and Mann's retirement in 1870. At that point, the New South Wales Premier, John Robertson, considered leasing the dockyard to private firms to operate, with a priority for Naval vessels⁶; however, this proposal appears to have lapsed and E.O. Moriarty, Engineer-in-Chief of the Harbours and Rivers Branch, commenced a ship-building program and began to consider the need for a new, larger dry dock.

The PWD was the largest design and construction organisation in Australia in the late nineteenth century and was, amongst other things, responsible for the design and construction of the Upper Nepean Water Supply Scheme, the NSW Government Railways system, the mains roads system of New South Wales, the sewerage and stormwater drainage of Sydney and the creation and on-going maintenance of coastal and river ports along the New South Wales coast. Up until 1912, Cockatoo Island Dockyard played an integral part of these activities, building and repairing the tugs, dredgers and punts that undertook the coastal port work, manufacturing points, crossings and signals for the railways and building narrow-gauge locomotives and trucks used for the construction of water supply dams. It manufactured cranes and machinery for use in the Navy workshops at Garden Island, cast-iron pipes and weir gates for water supply works and fabricated the ironwork components for road bridges (eg Coraki and Dunolly Ford Bridges). The colonnade ironwork and cab-awning roofs for Central Railway Station were manufactured and erected by the dockyard.

However, as with all such activities, the financial side of the operation of the dockyard provided ample scope for political criticism. An enquiry into the works in 1899 produced a number of recommendations but the lack of subsequent improvement led to the appointment of a Royal Commission in 1903, which found that the works had been subject to extensive political interference by the previous Minister⁷ and recommended, amongst other things, that the dockyard be operated by a Managing Committee to ensure it functioned independently. A Managing Committee was immediately appointed from the Public Service Board and ran the dockyard thereafter, until the dockyard was transferred to the Commonwealth Government in January 1913.

The Commonwealth Government took over the dockyard and created the Commonwealth Naval Dockyard, under the control of the Naval Board, modelled on the Naval Dockyards that had operated in England for centuries. This arrangement operated during the war years but, in 1921, with the outcomes of the Washington Disarmament Conference of 1922 in the wind, a Royal Commission was appointed to consider the future of both Cockatoo Island and Garden Island. It found that there was insufficient naval work to sustain both dockyards and found in favour of Cockatoo Island continuing to provide the maintenance and repair services to the Australian Navy (minor works could be undertaken at the Naval Depot at Garden Island). The Navy, though, was expecting the fleet to reduce, rather than expand, and management of the dockyard was transferred to the Shipping Control Board of the Prime Minister's Department (later reformed as the Australian Commonwealth Shipping Board) in June, 1921. This transfer was part of another initiative, to create a Commonwealth Government-owned line of merchant ships to service the Australian cargo trade, and Cockatoo Island completed the construction of several of these ships in the ensuing years.

The world-wide economic depression of 1928 and the following years had a severe impact upon large industrial operations such as Cockatoo Island. The dockyard had been economically handicapped shortly prior to this by the decision of the High Court in November 1927 that, despite the financial necessity of the dockyard undertaking commercial work to support itself in the absence of sufficient government contracts, the Australian Constitution did not permit the Commonwealth Government to operate a primarily commercial business in peacetime. The contract to manufacture the Bunnerong Power Station boilers (at the centre of the High Court case) was lost and staff at the dockyard declined from nearly 1,300 in 1928 to 560 in 1932.⁸ The Commonwealth, recognising that its direct control inhibited the ability of its Naval Dockyard to actually survive, except through public subsidy, negotiated with several Australian companies and, in January 1933, a consortium was formed to take over the operation of the dockyard. Control of the dockyard was transferred to the Cockatoo Docks and Engineering Company Limited in March 1933. Cockatoo Island was run as if it was a private concern, with significant government contracts and support, from this time until it closed in 1992.