PORT AUTHORITY OF NSW HERITAGE INVENTORY

State Heritage Inventory

SHI Number: 5063342		Study Number: N/A
Item Name: Two Mooring Anchors		
Location: 4 Towns Place, Millers Point (Moores Wharf)		
Address: 4 Towns Place, Millers Point		DUAP Region: Sydney South
Suburb / Nearest Town: Millers Point, 2000		Historic Region: Sydney
Local Govt Area: Sydney		Parish: St Philip
State: NSW		County: Cumberland
Other/Former Names:		
Area/Group/Complex:		Group ID:
Aboriginal Area: Gadigal clan / Coodyee (Millers Point)		
Curtilage/Boundary:		
Item Type: Movable / Collection	Group:	Category:
Owner: Port Authority of New South Wales		
Current Use: Interpretation		
Former Uses: Mooring anchors		
Assessed Significance: Local		Endorsed Significance:

Statement of Significance:

Anchor 'A' and anchor 'B' are good examples of relatively rare, specialised mooring anchors. They are representative of Admiralty pattern mooring anchors used in Sydney Harbour and elsewhere along the New South Wales coast in the nineteenth and twentieth centuries. Their significance is at a local level.

Historical Notes or Provenance:

The documentation of the deployment or specific history of the two anchors has not been found to date. Their form places them as post 1841, the year the improved Admiralty pattern anchors were introduced. However, they probably date from the late nineteenth century to early twentieth century.

The improved Admiralty pattern became a favourite anchor, particularly on naval ships, and continued to be used into the early part of the twentieth century. In comparison with its predecessor, the anchor was constructed with higher quality iron, an elliptical shank and curved arms. The shank thickened from its narrowest point near the stock to its junction with the arms at the crown of the anchor. The shank kept to the earlier ration of being three times the length of the arms and the curvature of the arms was kept at one third of the distance up the shank from the crown.

When an anchor is set, the 'unused' arm stands more or less vertical. In deeper water, where there was plenty of clearance below the ship's hull, this was not a problem. In shallow water the ship's Captain has to guard against placing the anchor where a fall in the tide or change of the wind could result in the ship being impaled on the upper arm.

It became common practice in harbours to place establish mooring buoys which were anchored in place by purpose-made, permanent, mooring anchors. The anchors for these permanent moorings were

designed to remove the threat of the vertical, upper arm. The upper arm could be subjected to intense heat and then bent back onto the shank. Alternatively, an anchor could be cast specifically with just one arm to serve as a permanent mooring anchor. In this case, the crown was typically fitted with a 'fishing shackle or a 'buckle' attached around the shank. These served two purposes. When laying the anchor with only one arm it was essential to ensure that the anchor was set with that arm downwards. This could be achieved by attaching one cable to the buckle and a second to the shackle at the end of the far end of the shank while lowering the anchor to the seabed. When 'fishing the anchor' in the event that the mooring anchor needed to be reset or removed the buckle also acted as a lifting point to extract the fluke and arm out of the sediment. The two anchors at Moores Wharf, Walsh Bay are of this form.

While the actual history of the anchors has not been documented, potential origins of the two anchors include:

- Moorings attached to a buoy that was removed from near Kirribilli Point, Athol Bay in the 1900s
- Moorings set to hold the training ship HMAS Tingara in Rose Bay from 1911 to 1927
- Moorings set to hold barges associated with the construction of the Sydney Harbour Tunnel between 1988 and 1992.

Of these, the first two scenarios are the most probable.

Themes:	National Theme:	State Theme:	Local Theme:
	3 Developing local, regional and national economies	Transport	(none)
	3 Developing local, regional and national economies	Technology	(none)

Designer:

Maker / Builder:

Year Started:	Year Completed:	Circa: No

Physical Description:

Both anchors are based on Admiralty pattern anchors developed after 1847 but specifically forged as mooring anchors. They have been formed with just one arm and a fishing shackle fitted at the crown. The anchor with the broken stock has been designated 'Anchor A' and the anchor with the intact stock, 'Anchor B'.

The proportions of the anchors were based on Imperial measurements, and it has been recorded accordingly. Anchor 'A', shown in Figure 4 has a shank measured at 16' 10' (5131mm). The improved Admiralty Anchor introduced in 1841 retained the proportions of the old long-shank Admiralty anchor (Upham 1983 22) with the shank being 3 limes the length of the arms. Anchor 'A' demonstrates the 31 proportions. With the 16' 10" shank, the 5' 6" arm length is precisely a 3:1 ratio. The length of the stock on an Admiralty anchor was typically equal to the length of the shank. The length of the surviving portion of the stock on anchor 'A' however, suggests that this component was significantly shorter than the length of the shank. From the length of the surviving section, the estimated original length of the stock, (taking into consideration the cross-section of the shank, the visible length of the remaining half of the stock and the length of the ball end), was 1Z Z' – significantly shorter than the 16' 10' shank. This raises the possibility that this component was either a design choice for this mooring anchor or, perhaps more likely, a refitting with a stock from another, shorter, anchor. For a fixed mooring anchor the length of the stock would perhaps have been less critical than for a regular anchor that was being set and reset. The 'pea' or 'bill', between the outer end of the fluke and the tip of the arm, one of the defining characteristics of the Admiralty anchors, is 7.5 inches in length.

Apart from being a slightly smaller anchor and marginal differences in the size of its components, the main point of departure of anchor 'B' from anchor 'A' is the stock. The stock on anchor 'B' is intact, has never been fitted with ball ends, and, at 14', is the same length as the shank. The shank, at 14 fl in length, is two feet and 10 inches shorter than anchor 'A'. The fishing shackle has a cross section of just one inch compared to the two inches diameter cross section of this item on anchor 'A'. The shackle for attaching the anchor chain is also smaller, being two foot six inches in total length compared to two feet 10 inches for anchor 'A'. Its flukes are also slightly smaller. The 'pea' or 'bill' at the tip of the arm is seven inches in length. While still of a substantial size it was designed for slightly lighter loads than anchor 'A'.

The anchors were moved to their current location at Moores Wharf in 2015 and mounted with interpretation in 2017.

Physical Condition:

Neither anchor is in an archaeological context.

Anchor A retains considerable inherent strength. This is visibly evident by virtue of potential its crown and arm resting on the anchor's inherently weakest component - the fishing shackle and its lodging pin attached to the crown. The entire weight of the crown and arm are supported by the two-inch diameter shackle.

Based on a comparison of a 1998 photograph of this anchor, the shell accretion from the upper portions of the shank and the remains of the stock have since been removed. The presence of the shell in 1998 is an indication that much of the anchor had been exposed above the seabed for some lime prior to it being removed from the water. Some of the shell has clearly been dislodged, most likely by the lifting tackle during its recovery. However, the relatively thin layer of shell on the arm and fluke may indicate that this portion had remained buried in the bed of the harbour for a longer period than the shank. The absence of shell or other concretion from the upper end of the surviving half of the stock is most likely an indication that this has been removed during or following recovery. In its current setting the anchors are not particularly susceptible to salt spray on a regular basis. Any salts accumulating on the surface are periodically rinsed by natural rainfall but some of this will be trapped in crevasses within the layers of concretion and at the junction of the stocks. shackles and shank.

Shank: The section of the shank from which the precious concretion and shell has been removed is relatively sound with some minor surface corrosion. The sections towards the arm and crown are showing fissures the underlying corroded metal. This will be allowing the ingress and entrapment of water and airborne salts and will continue to accentuate corrosion within and below these crevasses. The arm itself is in a similar condition to the lower end of the shank.

Shackles: The fishing shackle at the crown is showing high levels of active corrosion with corroded meta falling away onto the asphalt below. This is an area that is under intense pressure due to the weight of the crown and arm of the anchor resting on the shackle. It is also an area where crevasse corrosion occurs due to the gaps between the crown, the shackle and the pin.

The chain cable shackle has no current concretion and, without this layer to trap water and salts, is showing minimal signs of active corrosion.

Stock: The stock on Anchor A has been broken and only one half, the half with the collar at the junction with the shank, survives. An iron ball is attached to the far end of the stock. At present this ball is in relatively good condition and is not showing signs of cracking. However, it is likely that this will eventually occur as salts within the structure continue to cause corrosion.

Anchor B:

General condition: Anchor 'B' is generally in a sound condition. Unlike anchor 'A' there are no earlier photographs of its condition. To date there is also no certainty about when it was recovered and placed on the rock wall at Walsh Bay beside anchor 'A'. As with anchor 'A' however, shell and concretion have

been removed from about two thirds of the anchor. The shell and concretion around the crown and adjacent shank indicates exposure above the seabed, but this could also have accumulated while partially in the tidal zone against the seawall at Wash Bay. There is almost no concretion on the remainder of the arm or the fluke. While concretion could have been removed after the anchor was recovered, it is more likely a sign that and fluke was buried in the sediment until it was recovered. Shank: The section of the shank from which the previous concretion and shell has been removed is relatively sound with some minor surface corrosion. The sections towards the arm and crown are showing advanced fissures within the underlying corroded metal. This will be all allowing the ingress and entrapment of water and airborne salts and will continue to accentuate corrosion within and below these crevasses. The arm itself is in a similar condition to the lower end of the shank. Shackles: The cross-sectional diameter of the shackle at the crown is one inch – half that of anchor 'A'. This component is showing high levels of active corrosion. As with anchor 'A" this is an area where crevasse corrosion occurs where water and salts are trapped between the crown, the shackle and the shackle pin. The chain cable shackle has almost no current concretion and shows minimal signs of active corrosion - except at the junction between the shackle and the shank. Fluke: The fluke on anchor 'B' has almost no concretion but layers of corroded iron are exfoliating, particularly on the upper surface.
Modification Dates: 2015 – Anchors moved to their current location at Moores Wharf 2017 – Position of anchors reconfigured to a standing position, with new setting and interpretation
Recommended Management: Retain in situ and conserve Preparation of a Maintenance and Conservation Works Schedule to ensure acceptable condition and assist in long-term conservation. Undertake regular maintenance works as per recommendations in the 2015 Heritage Assessment prepared by David Nutley, including: undertake scheduled, periodic monitoring to identify any signs of renewed corrosion, deterioration of the protective fish oil coating or mounting structure. Re-apply fish oil coating annually or as needed (information to be incorporated into Maintenance and Conservation Works Schedule).
Management: Statutory Instrument
Further Comments:
Criteria a) The anchors would meet the requirements of this criterion at a local level if they can be associated with the Sobroan/HMAS Tingara
Criteria b)
Criteria c)
Criteria d)
Criteria e)
Criteria f) The two specialised mooring anchors used in harbour facilities in New South Wales are uncommon in comparison with regular anchors and the Admiralty Pattern mooring anchors, as a subset of that group, meet this criterion of significance at a local level.

Criteria g) Anchor 'A' and anchor 'B' are representative of specialised mooring anchors used in harbour facilities in the nineteenth and twentieth century and meet this criterion of significance at a local level.			
Integrity / Intactness:			
References:	Author:	Title:	Year:
	K Atkinson	The Sydney Harbour Tunnel maritime archaeological survey. Bulletin of the Australian Institute for Maritime Archaeology, Volume 12(2) 37-42	1988
	J Carpenter	Report: Inspection and condition assessment of the James Services (1878) Anchor	2012
	G Cotsell	A Treatise on Ships' Anchors	1856
	V Evans	Anchors and Cables. Model Shipwright No. 85. pp. 62-9	1991
	V Evans and David Nutley	Hooked on Anchors. Bulletin of the Australian Institute for Maritime Archaeology. v15(2). pp. 41-4	1991
	N E Upham	Anchors. Shire Publications Ltd	1983

Studies:	Author:	Title:	Number:	Year:
	David Nutley	Mooring Anchors – Barangaroo – Heritage Assessment		2015

Parcels:	Parcel Code:	Lot Number:	Section:	Plan Code:	Plan Number:
Latitude: -33.855734			Longitude: 151.202457		

Listings:	Name:	Title:	Number:	Date:
	Heritage Act – S.170 NSW State agency heritage register	Two Mooring Anchors	5063342	2015

Data Entry:	Date First Entered:	Date Updated:	Status:
	22/10/2015	25/01/2023	Basic

Image: 1

Caption: Admiralty Pattern mooring anchors at Moores Wharf, Walsh Bay
Copyright: Comber Consultants
Image By: David Nutley
Image Date: 2015
Image File:

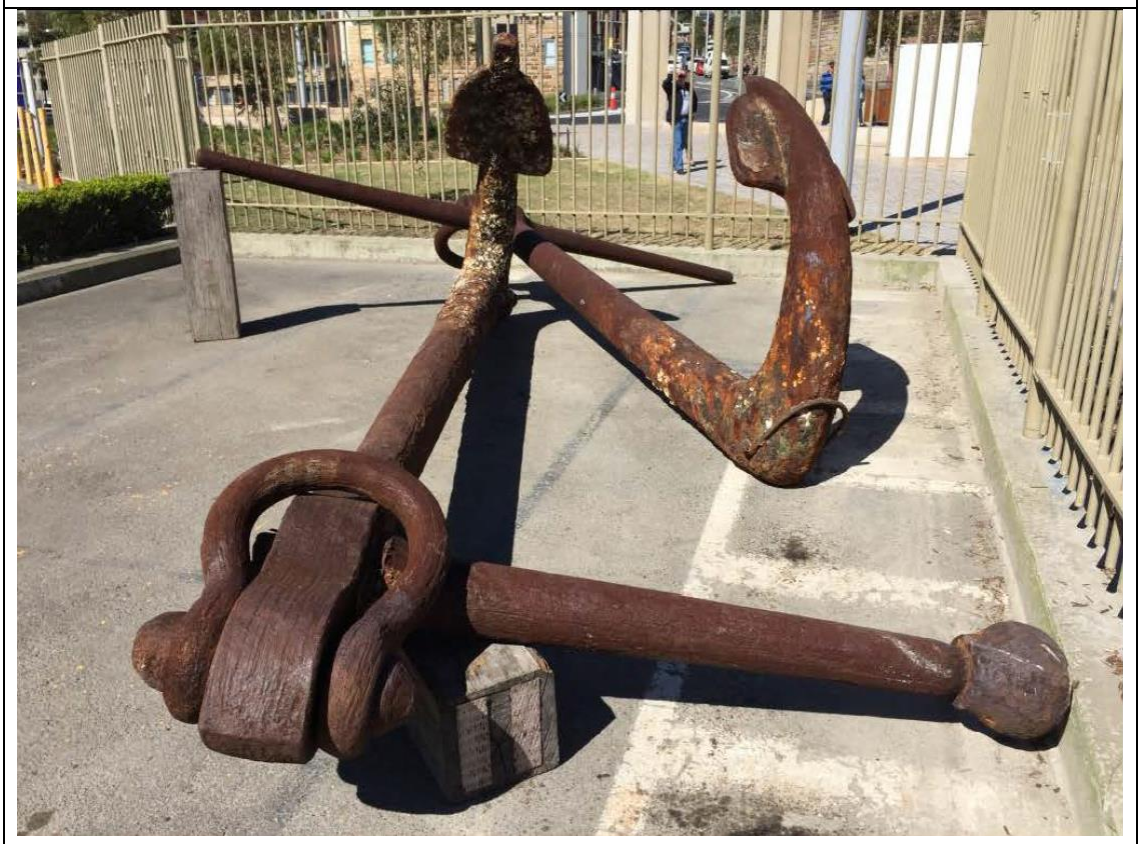
Image: 2

Caption: Admiralty Pattern mooring anchors at Moores Wharf, Walsh Bay
Copyright: Port Authority of New South Wales
Image By: Ryan Bennett
Image Date: 2015
Image File:

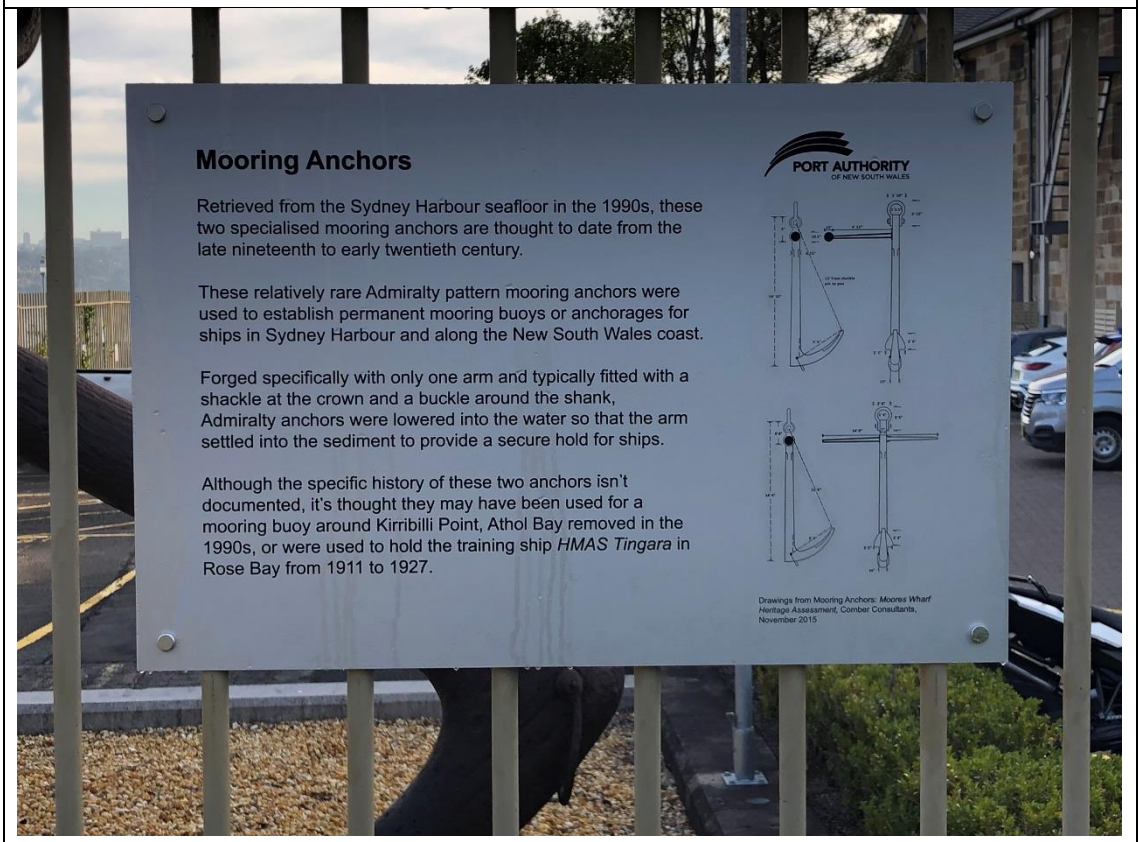
Image: 3

Caption: Admiralty Pattern mooring anchors at Moores Wharf
Copyright: Port Authority of New South Wales
Image By: Nicole Cama - NBRS
Image Date: 20/09/2022
Image File:

Image: 4

Caption: Interpretive signage
Copyright: Port Authority of New South Wales
Image By: Ryan Bennett, Port Authority of New South Wales
Image Date: 01/06/2021
Image File: IMG_0019 1 June 2021.jpg

Image: 5



Caption: Interpretive Signage

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Image By: Ryan Bennett, Port Authority of New South Wales

Image Date: 01/06/2021

Image File: IMG_0018 1 June 2021.jpg