

## PORT AUTHORITY OF NSW HERITAGE INVENTORY

### State Heritage Inventory

SHI Number: 4560061		Study Number: N/A	
Item Name: Bay Class Bronze Propeller			
Location: White Bay Cruise Terminal, Robert Street, Balmain			
Address: Robert Street		DUAP Region: Sydney South	
Suburb / Nearest Town: Balmain 2041		Historic Region: Sydney	
Local Government Area: Inner West		Parish: Petersham	
State: NSW		County: Cumberland	
Other/Former Names:			
Area/Group/Complex:		Group ID:	
Aboriginal Area: Wangal			
Curtilage/Boundary: The Bay Class Bronze Propeller is a moveable heritage item currently located outside the entrance to the White Bay Cruise Terminal in Balmain.			
Item Type: Moveable / Collection		Group: Transport - Water	Category: Vessel - seagoing
Owner: Port Authority of NSW			
Current Use: N/A (Interpretation)			
Former Uses: Ship's propeller—from one of the Bay Class Overseas Containers Ltd (OCL) container ships.			
Assessed Significance: Local		Endorsed Significance:	
<p>Statement of Significance: The Bay Class ships have historical significance as the first large cellular container ships to be purpose designed. The propeller itself is of some historical interest as a remnant element of this progressive shipping fleet, but it is not considered to have historical significance in its own right.</p> <p>The propeller has sculptural and landmark qualities, despite being removed from its context. It was designed and fabricated in Germany and has a high level of aesthetic significance, with its five blades of massive proportion and form which represents over 100 years of refinement of propeller design and manufacture.</p> <p>The propeller is considered to exhibit a high degree of technical achievement. It is understood that there were only six of these propellers fabricated and it is representative of the evolution of propeller design since the 1870s. That the propeller was salvaged intact and retained is a rare occurrence as redundant propellers are normally melted down and recast</p>			
<p>Historical Notes or Provenance: The propeller has been identified as being from one of the six Bay Class container ships that entered service in 1968/69. The Bay Class comprised the 'Encounter Bay', the 'Discovery Bay', the 'Moreton Bay', the 'Botany Bay', the 'Jervis Bay', and the 'Flinders Bay', all constructed in Germany. They were the first fully cellular container ships, and the first large container ships to be purpose designed. They travelled the Australian route from 1969.</p> <p>All six ships were ordered in January 1967 by the consortium known as OCL (a consortium of shipping lines formed in 1965 by P and O, Ocean Steam Ship, Furness Withy and British and Commonwealth) at a</p>			

cost of approximately 5 million pounds each. Three Hamburg shipyards formed the Container Ship Consortium Hamburg (CSCH), which also produced all drawings for the building of the ships, with the responsibility of the design and supervision of construction the responsibility of Ocean Fleets Ltd.

The Scottish-born Marshall Meek (1925-2013), one of Britain's leading naval architects, was responsible for the ships' design. His first ship was the Centaur, which was custom-built to carry 200 passengers, 5,000 sheep and 700 cattle on the Western Australian-Straits service. He was technical director of the British Maritime Technology and served as President of the Royal Institution of Naval Architects from 1996.

The process of manufacture of the propeller would have included a reinforced pattern in which a single casting of bronze was poured. It represents the epitome of the pattern makers and foundryman's art.

The Motor Ship article (W Wilson (ed), April 1969) makes the point that there is a direct relationship between the relatively shallow draught of the ship, the power of the engine and the fact that this is transmitted through a single shaft and propeller. Documented design considerations of the time included the use of single-screw propulsion because of its better hydro dynamic efficiency (favoured over the more manoeuvrable twin-screw arrangement), obtaining adequate propeller diameter with a draft of only 9.1m (30 ft) which was a requirement of the brief, and the number of blades (propellers with four, five and six blades were investigated).

It has not been possible to identify the exact ship from which the propeller originated, although it would appear the inscription 'OCL 5' would identify the ship. It is not known how the propeller came to be under the ownership of Port Authority of NSW. 'Flinders Bay' was scrapped in 1996, and 'Encounter Bay' was in use up to c2000. The OCL ships would not have been broken up in Sydney Harbour as there were no facilities available for such large ships.

While there are some large marine propellers on display in Sydney (such as the Morts Engineering site, the Garden Island Naval Base, the Water Police site in Cameron's Cove, and the Australian National Maritime Museum) and in Canberra (Australian War Memorial) it is understood from discussions with the Heritage Office that there has not been an assessment of the significance of the group as a whole.

A 1973 photo has been located showing a propeller on the deck of the 'Flinders Bay' in Sydney Harbour; however, no details are known. The propeller may be a four-blade propeller, in which case it would not be from any of the Bay Class ships.

In early 2013 the propeller was moved to a new location in Balmain as part of the development of the White Bay Cruise Terminal. The propeller is now located on display above an open hard landscaped area at the entrance to the cruise terminal.

Themes:	National Theme: 3. Economy	State Theme: Transport	Local Theme: None
Designer: Mr Marshall Meek, Chief Naval Architect of Ocean Fleets Ltd			
Maker / Builder: Hamburg Container Ship Consortium for OCL.			
Year Started: 1966	Year Completed: 1968	Circa: No	
Physical Description: A five-blade overlapping marine propeller of diameter 6.1m (20 ft), made of cast bronze, approximately 1.5m deep. The blades are of the Troost section type, exhibiting a sharp trailing edge. It is a right-hand propeller which rotates clockwise when viewed from astern facing forward. The propeller has a sculptural quality and is finely crafted. The propeller is currently supported by a small metal plinth structure installed as part of its relocation and repositioning at a new location in Balmain.			

There are a number of inscriptions and painted notations on the propeller. The original incised engravings comprise a licencing panel and a series of roman numerals I–V numbering each of the propeller blades. The licencing panel reads:

OCL5

ANC169622

ALCUNIC

(B?) or (D?) 6100m/m

Hm 5570 ?/m

Fe/F 88%

G 28729 kg

OD2 205660 kg/m<sup>2</sup>

LLOYDS HAM

VO 5586

15 8 68 AK

In addition, there is a rough painted sign 'Folio 121 08.321.000U Bay Class' and the word 'UTAH'.

**Physical Condition:** The propeller exhibits some slight pitting, but is otherwise in excellent condition overall. There are four apparently randomly placed holes of approx. 7–10cm diameter in the boss running roughly towards the centreline. They appear to have been drilled but their purpose is unknown.

There is no archaeological potential.

**Modification Dates:**

The propeller has an engraved inscription indicating that it was repaired in 1974. The inscription reads:

REPAIRED

ZR73646

LONDON

26-2-74

LLOYDS

405601

The numbers '7364' are also stencilled in faded paint on the propeller. It could be that this stencil originally read '73646'.

In 2013 the propeller was moved to a new location in Balmain as part of the development of the White Bay Cruise Terminal. This included the addition of a small metal plinth structure to the base of the propeller as part of its relocation and repositioning.

**Recommended Management:** It is recommended that the propeller be kept on public display in its current location outside the entrance to the White Bay Cruise Terminal.

It is not considered that the propeller needs to be protected from the weather.

Preparation of a Maintenance and Conservation Works Schedule to ensure acceptable condition and assist in long-term conservation.

<p>The item should be inspected for rust and any signs of deterioration annually and treated accordingly to conserve its condition for the future.</p> <p>The provenance of the propeller could be further researched through the Lloyds register, however confirmation of the ship that it came from is not likely to affect its significance.</p>			
<p>Management: Statutory Instrument</p>			
<p>Further Comments: The propeller is currently displayed at the entryway to the White Bay Cruise Terminal in Balmain. It is considered that continued exposure to weather will not adversely affect its condition.</p> <p>A search of the NSW State Heritage Inventory, Queensland Heritage Register, Victorian Heritage Database, SA Heritage Places Database, Tasmanian Heritage Register, inherit Western Australia, ACT Heritage Register, NT Heritage Register, and Australian Heritage Database, has not identified any other single propellers that have heritage listings.</p> <p>The provenance of the propeller could be further researched through the Lloyds register or in consultation with a naval architect, maritime historian or other relevant specialist.</p>			
<p>Criteria a) The Bay Class ships have historical significance as the first large cellular container ships to be purpose designed. They represent a major commitment to increasing shipping trade between Europe and Australia in the late 1960s.</p> <p>The propeller itself is of some historical interest as a remnant element of this shipping fleet; however, it does not meet the threshold for listing</p>			
<p>Criteria b) The propeller exhibits an association with a number of major shipping companies and is a remnant element of the progressive design exhibited in the Bay Class OCL container ships despite being removed from its context. However, it does not meet the threshold for listing.</p>			
<p>Criteria c) The propeller has sculptural and landmark qualities. It was designed and fabricated in Germany and has a high level of aesthetic significance, with its five blades of massive proportion and form which represents over 100 years of refinement of propeller design and manufacture</p>			
<p>Criteria d) The item does not meet this criterion for listing.</p>			
<p>Criteria e) The propeller is considered to exhibit a high degree of technical achievement.</p>			
<p>Criteria f) That the propeller was salvaged intact and retained is rare, as redundant propellers are normally melted down and recast. It is understood that there were only six of these propellers fabricated</p>			
<p>Criteria g) The propeller is representative of the evolution of propeller design since the 1870s.</p>			
<p>Integrity / Intactness: The propeller is in excellent condition.</p>			
References:	Author:	Title:	Year:
	BF Bindia	Propeller and Propulsion Terminology	
	Editor W Wilson	The End of Break Bulk Liner Shipping, Four Case Studies, Part Two, The first of the Container Ships	1969
	Images and information by various contributors	Encounter Bay, the first of OCL's six container ships enters service	
		The Motor Ship pp:21-27 ShipSpotting.com	

	Susan Bennett (ed)		'Marshall Meek, CBE, RDI (1925-2013), The William Shipley Group for RSA History, Newsletter 40		February 2014
Studies:	Author:		Title:	Number:	Year:
	Godden Mackay Logan Pty Ltd				2011
	Nicole Cama and Zach Nix, NBRS		Section 170 Heritage and Conservation Register, Port Authority of New South Wales	4560061	2022
Parcels:	Parcel Code:	Lot Number: 201	Section:	Plan Code: DP	Plan Number: 1274455
Latitude: -33.860687			Longitude: 151.187848		
Listings:	Name: Heritage Act – S.170 NSW State agency heritage register		Title: Bay Class Bronze Propeller	Number: 4560061	Date:
Data Entry:	Date First Entered: 22/07/2011		Date Updated: 19/10/2022		Status: Basic

Image: 1



Caption: Encounter Bay (1969)27,835grt, Reg.Great Britain First generation container ship along with five sister ships were largest container ships when built.

Copyright: Wayne Acourt

Image By: Wayne Acourt

Image Date: 1/01/1999

Image File: 4560061b5.jpg

Image: 2



State Library of Western Australia

Caption: Encounter Bay container ship arriving at Fremantle Harbour

Copyright: For personal use only. To publish or display, contact the State Library of Western Australia

Image By: Stevenson, Kinder & Scott Corporate Photography

State Library of Western Australia

Image Date: 1970

Image File: 4560061b10.jpg

Image: 3



Caption: Container ship Encounter Bay at Fremantle

Copyright: For personal use only. To publish or display, contact the State Library of Western Australia

Image By: Stevenson, Kinder & Scott Corporate Photography

State Library of Western Australia

Image Date: August 1971

Image File: 4560061b11.jpg



Image: 4



State Library of Western Australia

Caption: Container ship Encounter Bay at Fremantle

Copyright: For personal use only. To publish or display, contact the State Library of Western Australia

Image By: Stevenson, Kinder & Scott Corporate Photography

State Library of Western Australia

Image Date: August 1971

Image File: 4560061b12.jpg

Image: 5



Caption: Cadet officer Les Mills sits on propeller import on the deck of the container ship Flinders Bay, White Bay

Copyright: Australian Photographic Agency

Image By: Ros White

Australian Photographic Agency - 37990

Image Date: 17/10/1973

Image File: 4560061b6.jpg

Image: 6



Caption: View of the Glebe Island Bridge the day before the opening of the new Anzac Bridge with the P & O cargo ship Encounter Bay moored at White Bay

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Image By: John Ward Transport Collection

City of Sydney Archives, A-01110039

Image Date: 2/12/1995

Image File: 4560061b13.jpg

Image: 7



Caption: Bay Class Bronze Propeller

Copyright: Sydney Ports Corporation

Image By: Godden Mackay Logan Pty Ltd

Image Date: 22/07/2011

Image File: 4560061b1.JPG

Image: 8



Caption: Bay Class Bronze Propeller

Copyright: Sydney Ports Corporation

Image By: Godden Mackay Logan Pty Ltd

Image Date: 22/07/2011

Image File: 4560061b2.JPG

Image: 9



Caption: FLINDERS BAY at Genoa 1986

Copyright: ShipSpotting.com

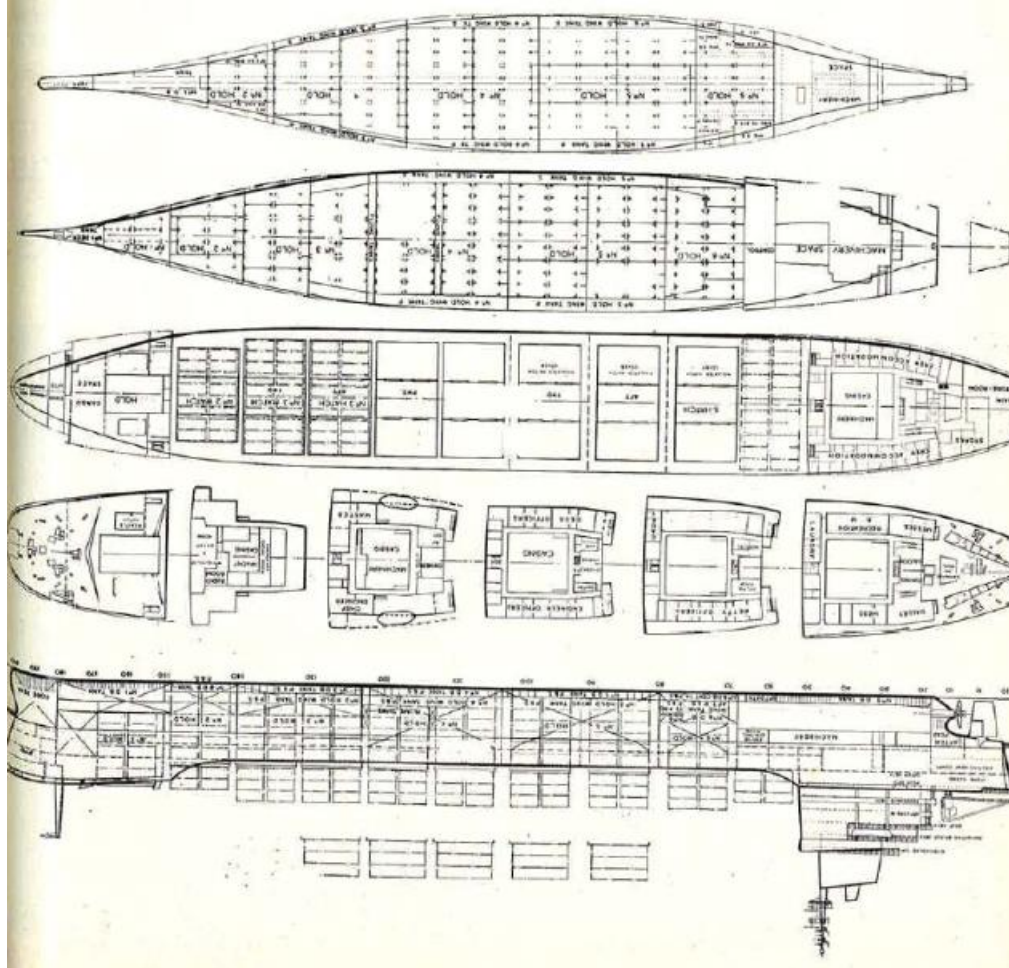
Image By: Gianpaolo

Gianpaolo IMO 6822541

Image Date: 1/01/1986

Image File: 4560061b4.jpg

Image: 10



Caption: General Arrangement Drawings of the OCL 1 300-Container capacity, 22 Knot Ships

Copyright: W Wilson (Editor)

Image By: W Wilson (Editor)

Image Date: 1/01/1969

Image File: 4560061b3.jpg

Image: 11



Caption: Bronze Class Propeller Bronze in current location at White Bay Cruise Terminal

Copyright: NBRS

Image By: NBRS

Image Date: 05/10/2022

Image File: 4560061b7.jpg



Image: 12



Caption: Bronze Class Propeller Bronze in current location at White Bay Cruise Terminal

Copyright: NBRS

Image By: NBRS

Image Date: 05/10/2022

Image File: 4560061b8.jpg

Image: 13



Caption: Bronze Class Propeller Bronze in current location at White Bay Cruise Terminal

Copyright: Port Authority of NSW

Image By: Nicole Cama - NBRIS

Image Date: 05/10/2022

Image File: 4560061b9.jpg