Steam Tug Wattle – a significant little ship

The 1993 National Trust of Victoria citation for the steam tug Wattle summarizes the significance of this small ship to Australian maritime history.

"The steam tug Wattle is historically, socially and technologically significant at the National level as the only small harbour steam tug surviving in Australia, and one of only three Australian built steam tugs still in existence and one of only eight Australian built steamships surviving on the Australian coast.

She was built at Cockatoo Island Dockyard during the Great Depression on speculation as an initiative to keep the yard's apprentices employed - the standard of workmanship considered to be unusually high. Of rivetted steel hull with experimental electrical welding used to build the bulkheads and fuel bunkers - the first time this new technology was used in an Australian shipyard.

All steam engines and boilers were built in Australia and the Wattle is one of only three steamships fitted with a compound steam engine still surviving in Australia. The vessel is the first oil fired steam tug in Australia and the only oil fired steamship fitted with natural draught still existing in Australia. She served all her working life with the Royal Australian Navy.

Internationally, the Wattle is one of only twenty-two small harbour steam tugs preserved in the world and one of only twelve oil-fired steam tugs still surviving. Using the International Register of Historic Ships as a guide, there are no more than fifty-eight steam tugs preserved world-wide."
Classified: 16/06/1993

A short history of st Wattle

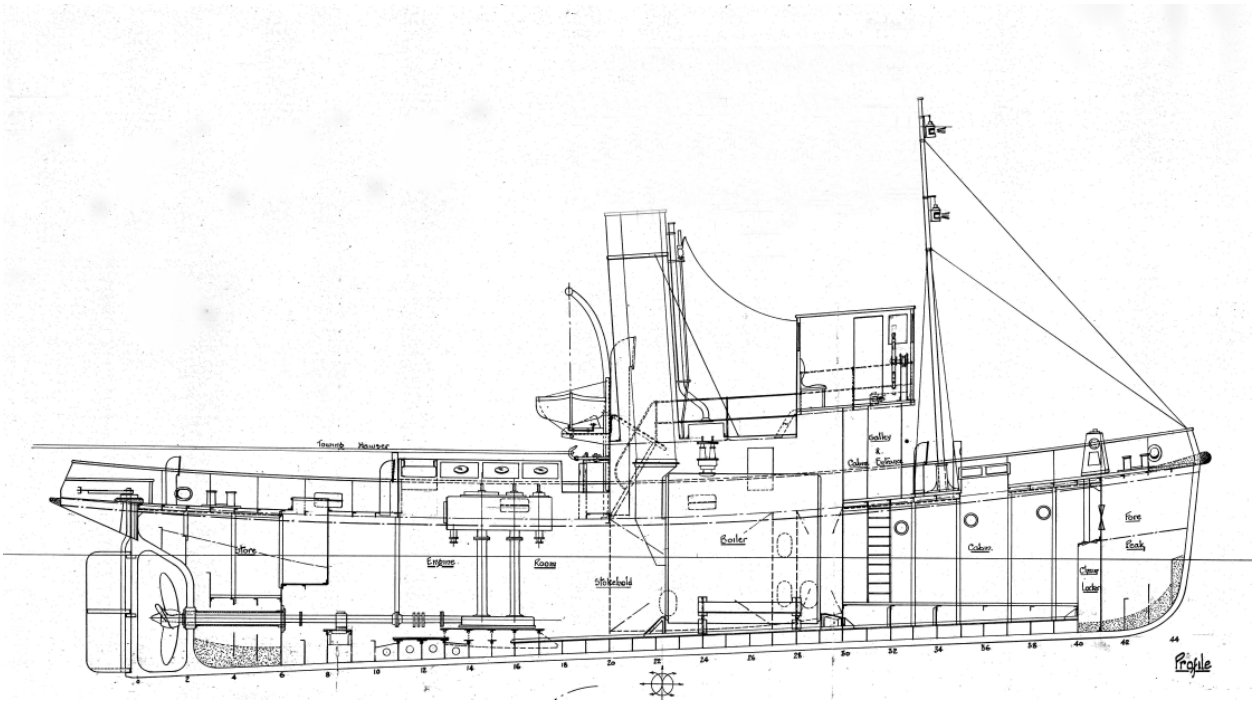
There are three distinct eras of the history of this ship. The first period from 1932 to 1971 is about its construction and subsequent career as a non -commissioned vessel of the Royal Australian Navy. The second concerns the rescue of Wattle by a Sydney based group of enthusiasts from a likely trip to the scrap yard and its association with the eventual formation of the Sydney Heritage Fleet. The third stage is when Wattle moves to Melbourne in 1979 after the Sydney group disperses to pursue careers across the globe and other ship restoration projects. A dedicated marine steam enthusiast from Melbourne established a volunteer group to acquire Wattle and bring her to Melbourne. Since then Wattle has maintained a profile on Port Phillip as the only steam ship available to the public for excursions and functions. After an ownership change Wattle is now approaching the end of a seven year restoration and will be seen again on Port Phillip from 2017.

Construction and the RAN

The decision to build a small tug was part of an incentive package by the recently elected Lyons Commonwealth Government (January 1932) to make the Cockatoo Island ship construction and maintenance facility attractive to a potential private leaseholder. The objective of building a small tug without a specific or prospective purchaser was to keep the nucleus staff of Cockatoo Island employed as part of this incentive package.

The Lyons government was anxious to remove Cockatoo Island from Commonwealth control because of its continuing financial losses and incapacity to operate in the heavy engineering open market – due largely to a High Court judgment of 1927.

The General Arrangement drawings for a small tug, ship number 111, were completed by Cockatoo Island in April 1932, based on, but not a copy of, drawings of an earlier steam tug, Bustler (1917).

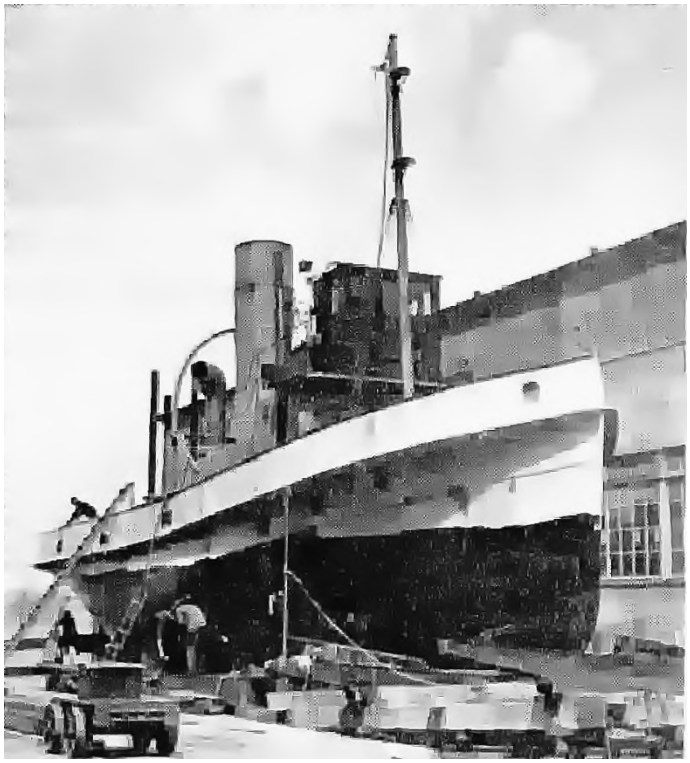


General Arrangement profile of ship No. 111 (Codeco/Wattle) Source: National Australian Archives

The construction of the tug was commenced in 1932 before the dockyard was leased to Cockatoo Docks & Engineering Co. Ltd (Codeco) on 3 February 1933. After this date and up to its transfer to the Royal Australian Navy the tug was referred to as Codeco. This small tug became the last ship built at Cockatoo Island for the Commonwealth Shipping Board signaling the subsequent transfer of all the shipbuilding and maintenance facilities on the island from the Commonwealth to the private lessee.

On the 13th March 1933 the Sydney Morning Herald reported that the new lessee management, in reviewing their first week of operations at Cockatoo Island since taking over the site, noted that a small tug was under construction and did not have an intended purchaser or purpose at that time.

On the 27 June 1933 the completed hull of the tug Codeco was lifted into the water at Cockatoo Dockyards by the floating crane Titan. Codeco was then slipped for further fitting out



Codeco, fitting out, 24 November 1933 at Cockatoo Island. Source Sydney Morning Herald

As the tug Codeco neared completion one of the agenda items listed for Cabinet consideration on the 14 December 1933 by the Lyons government was the *"Disposal Of A Steam Tugboat Recently Built and Financed by the Commonwealth Government at Cockatoo Island Dockyard."* Previous discussion about the disposal of Codeco indicated that she had been built at a total cost to the Commonwealth of 18,500 pounds but would likely only achieve 6,000 pounds at private sale.

First trials occurred on 8 November 1933 during which Wattle achieved a mean speed of 10.6 knots at 133 rpm in "light" condition of 118 tons. As a result of inclining tests carried out in January 1934 3 tons of concrete and iron billets were added as ballast in the forward, boiler, engine and aft compartments (Hope 1989). It was this ballast that created a long term hull and plate corrosion problem which the 2009 restoration group had to address.

Coincidently during October 1933 the RAN, expressed some interest in Codeco as it had recently lost a small tug due to collision. Consequently after RAN evaluation the Commonwealth government on 28 December 1933 approved the transfer of Codeco to the RAN without cost.

On the 15 February 1934 Codeco was renamed the Wattle as a non commissioned vessel of the RAN operating in the Sydney region with a civilian crew until it was paid off in 1969.

Steam Tug Wattle Specifications at October 1933

Launched at Cockatoo Island on 27 June 1933 by Cockatoo Docks & Engineering Co. Ltd. (CODECO) on order from the Commonwealth Shipping Board.

Length overall	80 feet 8 inches
Length	75 feet
Breadth	17 feet 3 inches
Moulded depth	9 feet 3 inches
Displacement	120 tons (in modern terms 132 tones light vessel weight)
Speed	10 knots
Bunkers	4 tons of oil fuel with 2.4 tons of reserve feed

36 hours endurance at 300 IHP = 10 knots = 360 miles

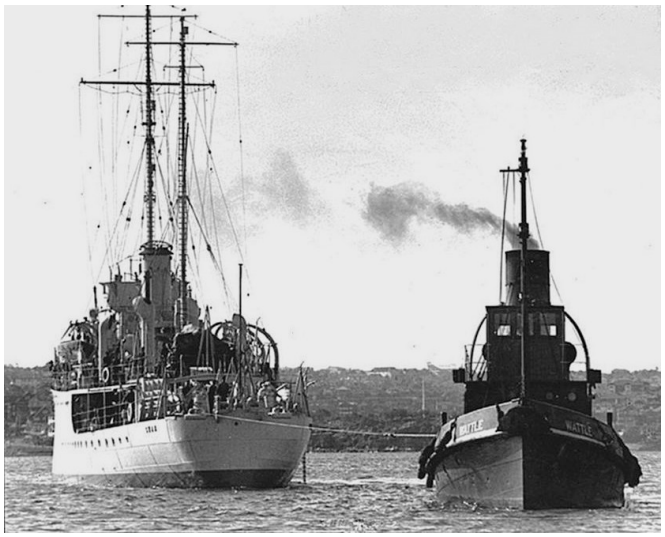
Engine
Single screw, compound two cylinder (HP and LP)
Indicated horsepower (IHP) 300 at 134 RPM

Boiler
Return tubes main type , 2 x Deighton withdrawable furnace – 3 foot diam. X 7 feet 10 inches long. Heating surface 1196 square feet. Boiler 10 feet 6 inches diameter, 11 feet long, Working pressure 130 lbs.

Source NAA

For its near forty year life with the RAN Wattle was engaged in a variety of harbor duties including maneuvering smaller warships, towing targets and barges, rescue work and transporting goods and personnel between ships and shore. During World War II Wattle was also engaged in de gaussing experiments.

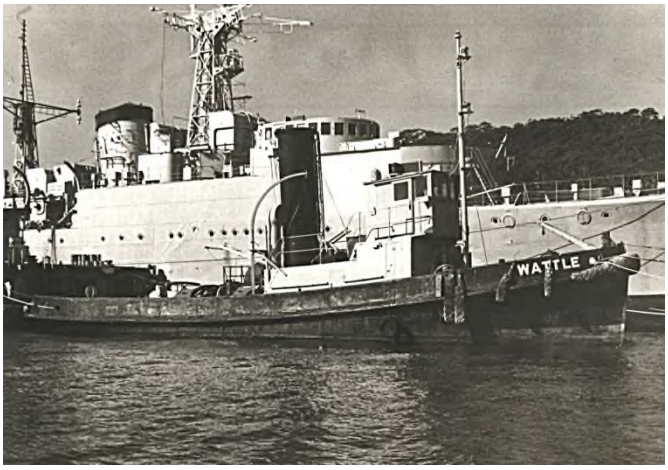
Some of these activities are shown below:



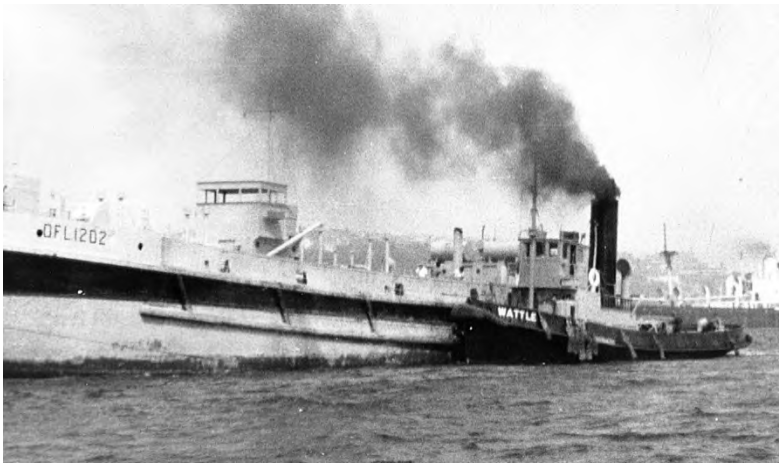
Wattle performing a compass swing for HMAS Swan 1936 *Wattle at Garden Island 1939 NSW Govt*

Wattle with HMAS Australia 1938

Wattle alongside a Tribal class destroyer 1948



Wattle and HMAS Quiberon, Athol Bay 1969 Collection



Wattle working a barge 1967 Graeme Andrews

Apart from being a harbor tug with limited endurance and power a major concern with Wattle was its maneuverability in a harbor environment. Wattle was found to be hard on the helm requiring considerable effort to accurately steer in tight situations. Consequently a steam steering engine taken from a Sydney ferry was fitted on deck just aft of the engine room in September 1942.

After a long service period with the RAN Wattle was paid off in 1969 and put with the "reserve fleet" at Athol Bay in expectation of being sold for scrap.

Saved from the scrap yard

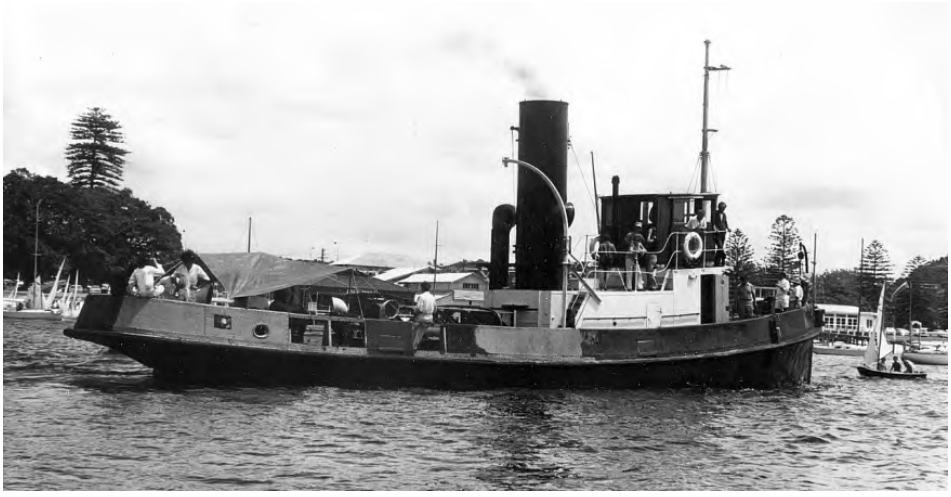
In the early 1960's a group of Sydney based marine steam enthusiasts made an unsuccessful bid to save the tug Bustler from the wreckers. At that time they were aware that the Wattle was approaching the end of its life with the RAN but turned their attention to acquiring and restoring other steam ships (Lady Hopetoun, Waratah and John Oxley) and in the process established the Sydney Maritime Museum. Warwick Turner, a young advertising executive with a passion for vintage steam, was one of this group of five and later became a member of Bay Steamers Maritime Museum when Wattle moved to Melbourne as well as becoming a stalwart of paddle steamers on the Murray River at Echuca..

After Wattle was paid off in 1969 the Sydney group established close liaison with officials at Garden Island naval base to declare their interest in preserving the ship and to stave off any would be attempt to sell her for scrap.

When Wattle was passed from the RAN to the Department of Supply for disposal in 1971 the syndicate of five joined together and submitted a tender of $1,500 based on the estimated scrap value of the ship. After winning the tender the group steamed Lady Hopetoun to Athol Bight, lashed Wattle to her side and towed her to Blackwattle Bay alongside the other ships of the Sydney Maritime Museum. The Wattle did not become part of the Sydney Museum collection of ships as the Museum was fully occupied with the restoration of their own ships including the recently acquired James Craig. Wattle remained separately owned by the syndicate.

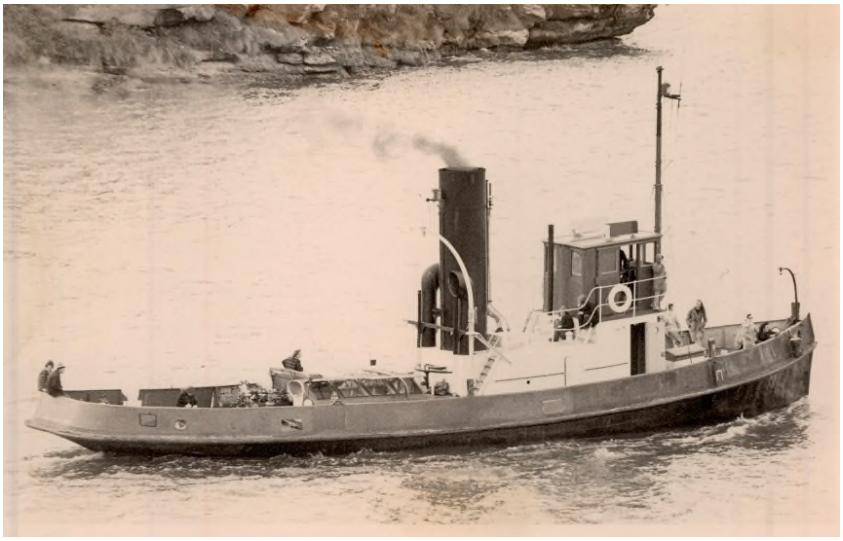
Since acquiring Wattle in 1971 the syndicate maintained and steamed the ship on Sydney Harbour mainly for friends and members of the museum. However, the five syndicate members experienced limitations as to the time and effort they could spend on the ship. The museum and its growing collection of ships, family and career moves eventually led to the conclusion to hand over the ship to another party interested in preserving maritime steam..

Photographs of Wattle during the Sydney Syndicate time are below:



Wattle at The Spit 1974 *Graeme Andrews Collection*

Wattle alongside John Oxley at Simmons Point 1974 Graeme Andrews Collection



Wattle 1975 Graeme Andrews Collection

Wattle on the slip at Berry's Bay 1978 Graeme Andrews Collection

Wattle at Blackwattle Bay 1979 Graeme Andrews Collection

The Wattle comes to Melbourne

In 1976 a young man with a passion for vintage steam ships, Leigh Doeg, formed the Victorian Steamship Association (VSA) for the purpose of acquiring a vessel to operate on Port Phillip. A small not for profit volunteer group the VSA commenced a search for an appropriate steam ship. After missing out on the Adelaide based steam tug Yelta, Leigh, who was aware of the problems that the Sydney syndicate was experiencing with Wattle, commenced discussions with them concerning its preservation. During 1978 the syndicate agreed to gift Wattle to the VSA in an unencumbered state. In November of 1978 before accepting the ship Leigh had her slipped at Berry Bay for inspection and some painting and maintenance.

In January 1979 Leigh and Murray Hill (a marine engineer and member of VSA) raised steam on the Wattle and completed some test runs of the ship on Sydney Harbour assisted by a scratch crew from the Sydney Maritime Museum.

Wattle arrived in Melbourne on 11 September 1979 under tow from the Howard Smith tug Edina. The tow was a gift from Howard Smith to the VSA and the people of Melbourne.

The VSA volunteers then commenced at 20 Victoria Dock a major restoration program to bring Wattle into commercial passenger survey. Coincidently the berth at Victoria Dock also marked the start of an ongoing association with the sail training schooner Alma Doepel, also undergoing restoration at that time.

Wattle at Victoria Dock with Alma Doepel 1979 Graeme Andrews Collection

From 1980 restoration progressed with a small volunteer workforce, in-kind donations from industry and supporters and limited finances. Restoration accelerated in 1984 when VSA received a grant ($110,000) from the Community Employment Program (CEP) to engage long term unemployed in the restoration. This was a short term temporary program initiated by the Australian Government at a time of high unemployment. In the same year the Victorian Government invested $45,000 from the Victorian Economic Development Committee (VEDC) in the Wattle restoration.

Wattle and Alma Doepel at Victoria Dock 1984 Graeme Andrews Collection

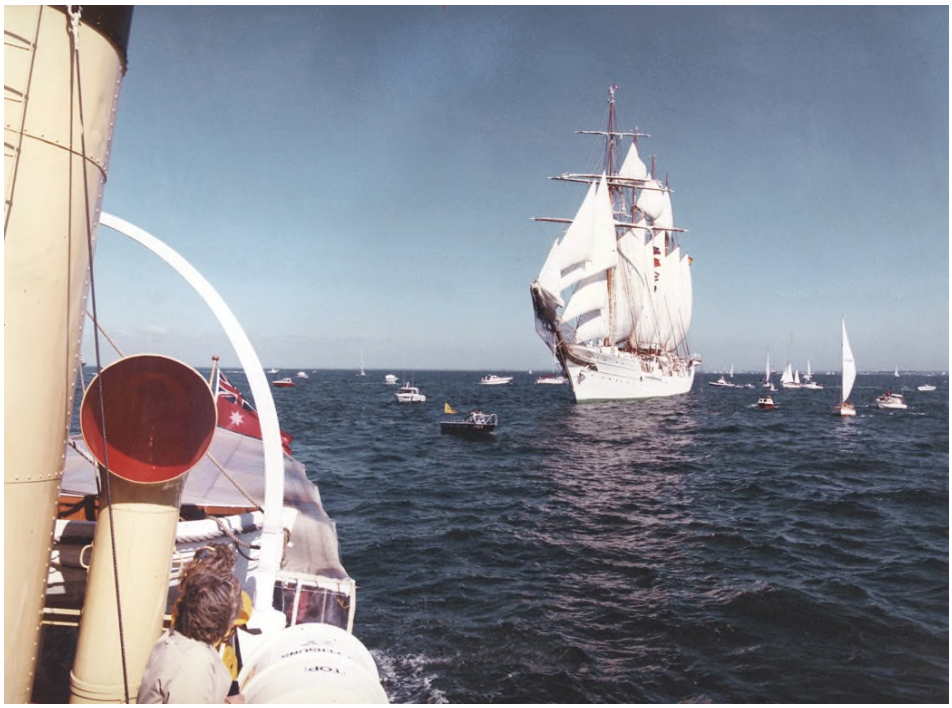
From 1985 cruises commenced within Hobsons Bay and the Yarra River. In 1986, after obtaining survey to carry up to 50 passengers and 5 crew on Port Philip, the VSA commenced a regular commercial service for Wattle with two hour cruises on Sundays on the Yarra and Hobsons Bay and all day return cruises on Saturdays to Portarlington. Private charters also became available for special events such as birthdays, weddings, anniversaries and corporate functions. VSA also moved Wattle into the holiday market by locating the ship at Rye pier on the Mornington Peninsula during the December/January summer holidays and taking holiday

makers out into the bay to view seals on the channel markers in the bottom end of Port Phillip.

Wattle passengers viewing seals at South Channel marker 1986 Jeff Malley

By 1987 Wattle was a well established sight steaming around the Melbourne waterside and Port Phillip.

Events leading up to and during 1988 raised the profile and activity of Wattle and the VSA. The Australian Bi-Centennial Authority engaged Wattle to lead the international Tall Ships Fleet into Port Phillip and then to Melbourne. Accordingly on 30 December 1987 Wattle led the Tall Ships fleet to their overnight berth off Rye and then the next day to Station Pier Melbourne.



Wattle and tall ship Juan Sebastian De Elcarno Port Philip Dec 1987 Peter English

After leading the Tall Ships entry to Melbourne Wattle returned to her usual holiday station from Rye pier.

Early on 16 January 1988 Wattle steamed from Rye to Portsea to be the official start boat for the Petersville Regatta yacht race to Devonport. Unfortunately two of the Pit Special aerobatic planes putting on a show before the start of the race collided with one crashing into the sea just ahead of Wattle. Captain Ralph McDonell, in charge of the Wattle, played a key part in communications and initial search actions at this incident.

In March of 1988 Wattle was part of the welcoming fleet to Melbourne for the First Fleet Re-enactment sailing ships.

The National Trust of Victoria awarded Wattle a citation in 1993.

From 1987 to 1996 Wattle established a profile of cruises around Port Philip with a growing private functions component complete with a catering service.

Wattle steaming out of Victoria Dock on a members cruise 1993 Jeff Malley

A 1990 newspaper advertisement for Wattle (right)

Wattle and Canberra at Station Pier 1997 Andrew Mackinnon

Growth and popularity however did create problems for Wattle and the VSA. One ongoing issue was the capability to raise volunteer crews to meet demand as charter work during the working week expanded. Frantic "ring arounds" the day before to locate qualified volunteer Masters, Marine Engineers, deck crew and greasers was a frequent occurrence.

Another problem was finding slipways to accommodate Wattle for major maintenance at a reasonable cost. Wattle was slipped five times in the period 1980 to 2009 at Williamstown (1987), Geelong (1990), twice at Appleton Dock Melbourne (2001 and 2002) and Hastings (2008) in Westernport Bay.

Other VSA activities were creating tensions within the membership. Much of this centred on the search for another steam vessel to restore and eventually run alongside Wattle. Local circumstances led to Lyttelton II, a 300 ton twin screw triple expansion coal burning tug, being acquired by Bay Steamers Ltd in 1987, a separate company formed by VSA members.

Wattle steaming up with Lyttelton II behind 1989 Jeff Malley

Lyttelton II at Victoria Dock 1988 Jeff Malley

The protracted financial and physical effort required to restore Lyttelton II was too much for the volunteers of the VSA resulting in internal differences, legal costs and a change in name and management. From August 1997 the Victorian

Steamship Association was extinguished with the Bay Steamers Maritime Museum Ltd (BSMM Ltd) replacing it and taking ownership of the Wattle. Lyttelton II remained under the ownership and management of Bay Steamers Ltd, a separate entity but with a Board of Directors drawn from BSMM Ltd members. Later due to financial difficulties Bay Steamers Ltd disposed of Lyttelton II and dissolved the organization.

By 2002 problems were emerging with the condition of Wattles hull resulting in her dry docking at Appleton Dock slip on the Yarra. Survey restrictions also confined Wattle steamings to Hobsons Bay. Subsequently commercial services were suspended during 2003 and in January 2004 survey for Wattle was withdrawn.

Wattle with James Craig, Williamstown 25 January 2008 Jeff Malley

Whilst not allowed to operate as a commercial passenger vessel Wattle could still do limited steaming in the confined waters of the Yarra and Hobsons Bay with prior approval from the marine authority. In late March 2004 she steamed from Victoria Harbour to Williamstown and back to participate as a moored exhibit for the Heritage Boat Show. On the 25 January 2008 BSMM members again steamed to Williamstown to inspect James Craig, temporarily stranded awaiting a replacement part for her engine.

From 2002 the deteriorating condition of the hull presented BSMM with a significant financial issue. Major hull restoration work was required, there was no income flow from paying passengers and no major sponsors or benefactors were coming forward, despite extensive media appeals. Wattle was now laid up at various berths in the now renamed Victoria Harbour (formerly Victoria Docks) and Docklands precinct. The future for Wattle looked grim unless a source of significant funding could be found to cover the cost of a major restoration that would at least require the replacement of hull frames and plates. The search for benefactors began in earnest in 2005 with hundreds of appeal letters sent to various organizations and businesses.

The Restoration Journey

In early 2007 a group of businessmen interested in marine history formed the Sorrento Steam entity for the purpose of re-establishing a steam tram service at Sorrento on the Mornington Peninsula, similar to one that operated there from the 1890's to 1921. The cost and planning difficulties of this project led them to look at other project possibilities. By mid 2007 Sorrento Steam became aware of the Wattle and the financial problems facing BSMM. They also identified the possibility of linking the restoration of the steam tug Wattle with a longer term vision of steam trams running at Sorrento. Subsequently in 2007 Sorrento Steam initiated discussions with BSMM on ways to save the Wattle.

After due consideration Sorrento Steam signed a Statutory Declaration on the 31 March 2008 stating their intent to fund the restoration of Wattle. On 8 April 2008 Sorrento Steam purchased Wattle for $1 and formed an agreement with BSMM for both entities to co-operate and do all that was necessary to restore Wattle to an approved seaworthy state with Sorrento Steam covering restoration and survey costs.

Not long after this co-operative arrangement was made to restore the Wattle the Australian National Maritime Museum (ANMM) placed the ship on the Australian Register of Historic Vessels (19 September 2008).

A first attempt to address the deteriorating hull condition of Wattle occurred in June 2008 when BSMM and Sorrento Steam, in response to a restoration quotation form Crib Point Engineering, obtained permission to steam the ship to Western Port for slipping. After slipping it was determined that the restoration quotation underestimated the extent of corrosion in the hull. Unable to agree on a new quotation Wattle was returned to the water and BSMM volunteers steamed her back to North Wharf Melbourne.

Wattle on the Crib Point slipway June 2008 *Rob Newland*

Alma Doepel and Wattle at North Wharf May 2009 Jeff Malley

Back at North Wharf Wattle shared a berth with Alma Doepel, both ships urgently requiring lifting out of the water due to deteriorating hull conditions.
In due course solutions were found for both ships. Alma Doepel was floated onto a dedicated pontoon and Wattle was lifted onto the hard at 19 South Wharf on 22 October 2009.

After returning from Western Port the respective members of Sorrento Steam and BSMM investigated their collective capacity to restore Wattle from their membership. After careful analysis of skills and finances, and the offer from Parks Victoria of a site at South Wharf for a peppercorn rent it was decided to restore Wattle with a mix of volunteer labour and the use of specialist contractors when required. At that time two factors were known but uncertain. One was the extent of restoration work required (and hence the time it would take) to bring Wattle back into survey. The other was the longer term availability of the site at 19 South Wharf as developers continued their downstream creep of building medium and high rise apartments.

Needless to say the restoration of Wattle took longer than expected.Wattle was lifted out of the water to commence her restorationat 19 South Wharf on the 22 October 2009 and six years later was relaunched back into the Yarra River on 30 September 2015. The relaunch at that time was encouraged by the site developer (MIRVAC) demolishing buidings adjacent to the restoration site and offering assistance to move the ship as soon as possible.

2009 and 2010 – the first year

The first task was to lift Wattle out of the water and move her to a restoration site. A lifting weight of 120 tonnes required the services of two large mobile cranes operating from a strenghened wharf area just west of the Bolte Bridge. Once placed on a special low loader Wattle was then transported 300 metres east under Bolte Bridge to a specially prepared hard berth adjacent to 19 South Wharf.

Wattle lifted out of water at South Wharf 22 October 2009 Lindsay Rex

Wattle lifted onto blocks 19 South Wharf 22 October 2009 Lindsay Rex

Once Wattle was settled on her engineering designed blocks and staunchions the surrounding area became a mini shipyard with shipping containers converted to workshops for engineering, tools, wood work, administration, galley and storage for dismantled Wattle parts.

Wattle on blocks with staunchions at commencemnt of restoration 29 Ocobert 2009 Lindsay Rex

After removal of many years of marine growth from below the waterline it became apparent that the hull was in very poor condition. One primary cause of this was at the building stage in 1933 the placement of conrete ballast with embedded steel ingots in the length of the ship from the waterline down. After some seventy years of sea water penetration between the concrete ballast and the ship's frames and plates the result was extensive corrosion from the inside out. In addition to this, particularly from the 1960's on, the welding of "doublers" and in some cases "triplers" to cover evident corrosion on the existing external hull plates added to the corrosion problem.The extent of this corrosion is indicated in the following photographs.

The restoration prioities for 2010 were therefore concentrated on the hull of the Wattle, both fore and aft, as well as engine room components and the salvage and restoration of timber fittings.

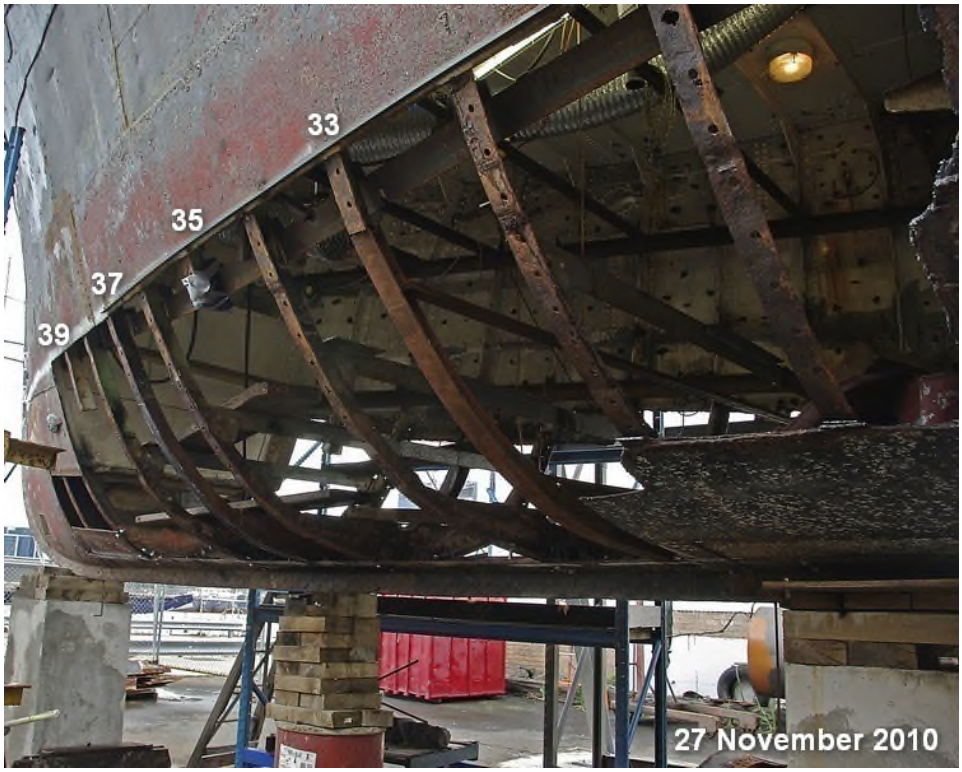
Removing concrete from the forecabin. The brown line indicates the level of the ballast. *Jeff Malley*

Using a jack hammer to remove concrete *Jeff Malley*

Frame corrosion *Jeff Malley*

Plate corrosion on outside of hull under a "doubler". Jeff Malley

Moving from forward to aft the major hull activities for 2010 included the removal of concrete ballast, the removal of corroded plates and frames from the forward cabin up to the boiler rooom bulwark and the removal of the rudder and post, steering quadrant and propeller.



Removal of corroded plates and frames from the forward hull Jeff Malley

Rudder removal May 2010 *Jeff Malley*