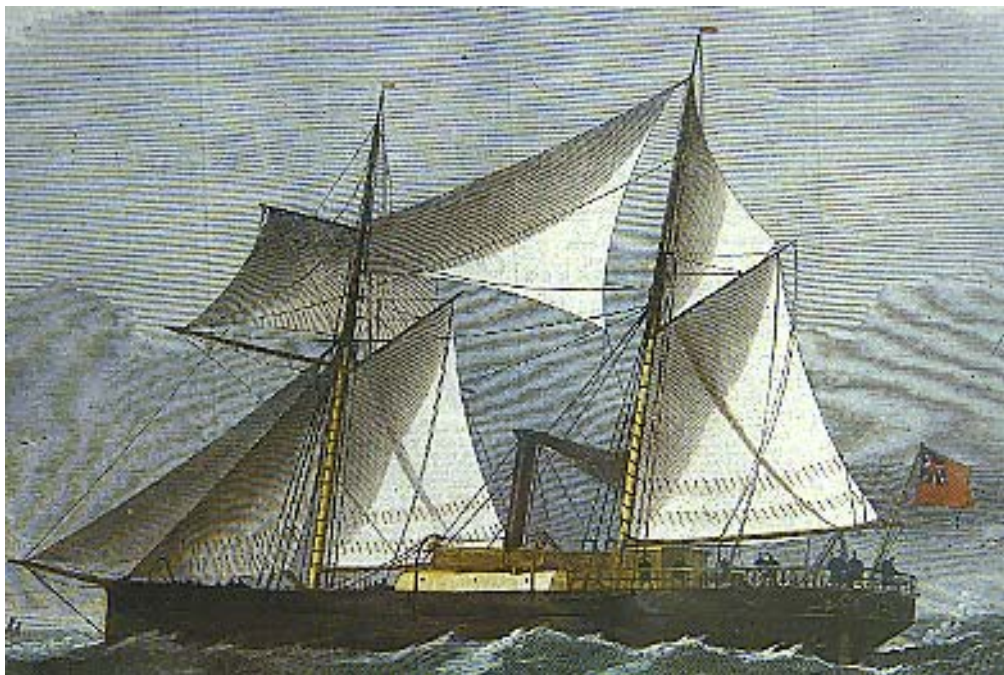


t.s.s. JOHN PENN

WRECK INSPECTION REPORT

Department of Planning, Sydney 1992



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t.s.s. JOHN PENN

WRECK INSPECTION REPORT

INTRODUCTION

The Department of Planning enlisted Manly Hydraulics Laboratory (MHL) to assist in undertaking a survey of the **t.s.s. John Penn** historic shipwreck site (gazetted as an historic shipwreck on 29 October, 1982).

MHL was required to assist in the relocation of the wreck site and to provide diving support for the underwater survey of the remains.

The fieldwork was carried out over a single day (6 February, 1992) and drew upon work previously carried out at the site by Mr. John Riley and others, (John Penn Report, 1984).

Those present at the recent inspection were:

D. Nutley, Department of Planning, Maritime Archaeologist (Officer in Charge)

T. Smith, Department of Planning, Maritime Archaeologist

C. Browne, MHL (Diver Supervisor)

P. Clark, MHL (Boat Attendant and Diver Attendant).

OBJECTIVES

General

To accumulate data regarding the wreck site in relation to its environmental and archaeological characteristics; to develop site interpretation and an assessment of archaeological potential.

Specific

1. To locate the site and record an accurate position of the remains.
2. To assess existing sketches of the site provided by sports divers and to identify any changes.
3. To assess the environmental conditions associated with the wreck site.

METHODOLOGY

Background histories of the **t.s.s. John Penn** were obtained prior to the fieldwork program. The excavation report prepared by the Underwater Archaeological Research Group (UARG) in 1984, had provided an historical summary of the **John Penn** together with the results of the archaeological inspection of the remains. Further information regarding the vessel was drawn from a report prepared for the Department of Planning in 1990, The New South Wales Historic Shipwreck Study.

A 24' work boat was chartered from the Malua Bay Dive Shop for the duration of the survey. The specific survey aims were met although sand levels limited additional recording work.

Wreck site location

The wreck of the **t.s.s. John Penn** was initially located by Mr. John Riley and Mr. Kevin Laybutt in September, 1982. The remains were re-located during the current survey using available site transits, prominent landmarks, the known depth of the site and with a diver tow-line search. A substantial portion of the wreck structure was found to be buried in sand. The extremities of the hull and a portion of the boiler were the only visible parts.

An accurate position for the site was established using an EDM and theodolite from land based stations.

Wreck Inspection

An initial underwater inspection located the boiler and the central area of the site. A general survey of the remains followed. The exposed portion of the boiler was photographed and drawn whilst the poorly exposed bow and stern areas were examined. Existing sand levels were recorded using a permanent reference point situated on the aft face of the boiler (Figure 3). There was insufficient structure visible to warrant recording on video.

Figure 1 Site Location

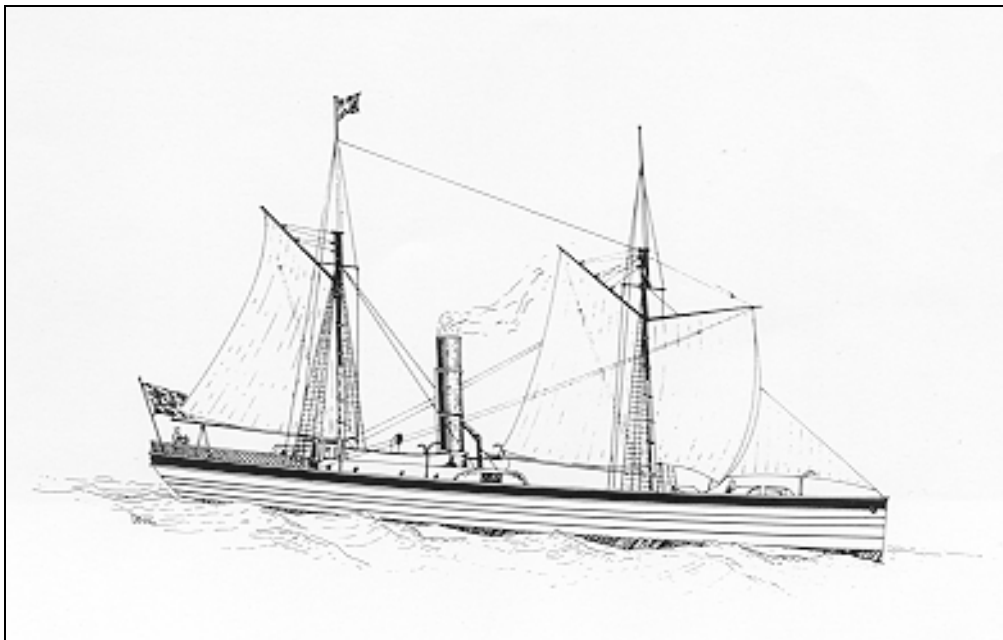
Site Transits

HISTORICAL CONTEXT

Adapted, in part, from Riley, J. et al., "John Penn Report, 1984", and from Wolfe, A., "The New South Wales Historic Shipwreck Study, 1990", prepared for the New South Wales Department of Planning.

The **t.s.s. John Penn** was built in 1867 by Thames Ironworks and Shipbuilding Company of Blackwall, London, a company established in 1854 (1). The steamer was ordered by Mr. Williamson, President of the Bank of New Zealand and was intended for service in the coastal trade of New Zealand. The new owner was John Johnson of that colony. A newspaper report at the time of launching (2) stated that the vessel was custom built for service on the west coast of New Zealand. The **John Penn** was specially constructed with a shallow draft and a sliding keel or centre board. These features enabled it to navigate the dangerous entrances to the local harbours, and to keep off a lee shore when passing between ports.

Figure 2: Sketch of John Penn by Dean Claflin



Passenger accommodation was well fitted out and the steamer could cater for 70 first and second class passengers. Provision was also made for the transportation of cattle and horses in the main hold.

The **John Penn's** dimensions were as follows, Length 140', Breadth 22'6" and Depth 8'. The steamer could reach 10 knots on the measured mile. The 'simple' twin horizontally mounted engines were built by John Penn and Sons of Deptford, London. The engines consisted of two pairs of direct acting cylinders working twin propeller shafts, and were capable of achieving 50 horse power (3). The **John Penn** was named in honour of the shipbuilder, Mr. John Penn.

The engines are significant, being designed principally for use in iron-clad warships and paddle steamers of the 1850's. Being of low profile, they could be

installed below the waterline in naval vessels, lowering the centre of gravity and limiting their destruction from enemy gunfire (4).

On arrival in New Zealand in 1869, the steamer was employed carrying agricultural produce, cattle, horses and passengers. Johnson operated the **John Penn** until 1870 when the ownership was transferred to the New Zealand Insurance Company, perhaps due to financial difficulties (5). However, the vessel was soon purchased by Montefiore and Company of Sydney and arrived there on 14 February, 1871 (6). In a rapid transfer of ownership, the **John Penn** was purchased again in March by the Illawarra Steam Navigation Company (7).

The **John Penn's** registry was transferred to Sydney and the vessel began a nine year career serving the New South Wales south coast. Familiar ports of call included Eden, Tathra, Merimbula and Wollongong. Typical cargoes included butter, whale oil, bark, potatoes, cheese and livestock (8).

Cut in half and lengthened by 20 feet in June, 1879, modifications to the engines included the fitting of a return flue box boiler. This work was carried out at Morts Dockyard in Sydney at a cost of several thousand pounds (9), and made the vessel more economical to run.

Wreck Event

The **John Penn** sailed from Tathra for Sydney on Friday, 7 November, 1879 with a mixed cargo and a number of passengers. By midnight, thick fog had encroached upon the steamer, making it impossible to see more than half the length of the vessel. Captain Holden did not reduce speed but steered a course which he thought would keep the vessel well off the dangerous coast.

However, just before 2 am, the **John Penn** drove up on rocks at the foot of Burrewarra Head in flat seas (10). Captain Holden later blamed the wrecking on a faulty compass.

The Captain, passengers and crew disembarked onto the rocks and one of the ship's boats was dispatched to Bateman's Bay to notify the authorities of the loss.

The steamer **Hunter** dutifully ventured to the scene the following morning and took on board the passengers and cargo. Hawsers were then passed between the vessels in an attempt to refloat the **John Penn** at highwater. With some effort, the steamer was dragged from the rocks and towed stern first towards nearby Broulee Bay.

Damage to the hull was more severe than anticipated, and the **John Penn** foundered whilst under tow in 12 metres of water. A later attempt to drag the steamer ashore with the **Hunter** and **Kiama** failed. The wreck was subsequently sold at auction on 3 December, 1879 for £250. A Marine Board of Enquiry found Captain Holden culpable in not slowing his speed and for not using a sounding lead in the foggy conditions. His certificate was cancelled for three months.

CONSTRUCTION DETAILS

t.s.s. JOHN PENN -

Official Number :	56860 - Port Number 20 of 1871
Launched :	14 September, 1867
Where Built :	Blackwall County, Middlesex, London
Builders :	Thames Ironworks and Shipbuilding Company
Owners :	Illawarra Steam Navigation Company
Construction :	Iron twin screw steamer. 1 deck, 4 bulk-heads, two masts, schooner rigged, round stern
Dimensions :	1867 : L.140', B.22'6", D.8'1" 1879 : L.160', B.22'6", D.8'1"
Gross Tonnage :	1867 : 199.35 tons 1879 : 236.13 tons
Engines :	Two pairs of horizontal, direct acting cylinders working twin propeller shafts.

SOURCES

1. John Penn Project Report. UARG, 1984. p.3.
2. Illustrated London News. 15 February, 1868.
3. John Penn Project Report. UARG, 1984.
4. Byron, T., 1986, Scuba Divers Guide, South Coast of NSW. p.149.
5. Wolfe, A., 1990, The John Penn: New South Wales Historic Shipwreck Study. p.4.
6. Sydney Morning Herald, 25 February, 1871.
7. John Penn Project Report. UARG, 1984. p.4.
8. Sydney Morning Herald, 18 September, 1879.
9. John Penn Project Report, UARG, 1984. p.4.
10. John Penn Project Report, UARG, 1984. p.4.
11. Register of British Ships, Port of Sydney. No. 20 of 1871.

ENVIRONMENTAL DESCRIPTION

Location

The site's co-ordinates are:

Lat 35^o 51' 07.7" Long 150^o 11' 00.0"

Notes: These co-ordinates supersede those currently stated for the **t.s.s. John Penn** in the Government Gazette.

The **John Penn** lies close inshore opposite Broulee Beach and can be dived in most weather conditions. Wreckage lies in 12 metres of water on a gently shelving sand bottom. The bow faces out to sea and site visibility is generally workable.

Archaeological Remains

Remains of the **John Penn** survive remarkably intact with the hull sitting upright in sand. The lower midships section is often completely buried whilst the elevated bow and stern generally remain visible. Portions of the vessel's sides have fallen away and lie alongside. The box boiler being the most conspicuous element, is located immediately forward of the engine room.

The wreck site was partially excavated in January/February 1983 by UARG, under a permit from the then Minister of Home Affairs and the Environment. Results of this work were compiled in a report, The John Penn Project Report, which detailed the surviving wreck structure.

The bow was found to be intact to the level of the decks, the iron deck beams and internal structure having collapsed. An anchor, winch, bollard and miscellaneous pieces of hull plating were located.

Substantial portions of the engine room remain together with the engines which are in a remarkable state of preservation. The engines consist of two pairs of horizontal, direct acting cylinders working twin propeller shafts. All connecting rods, piston rods, valve slides, etc. remain intact. A donkey boiler is located in the forward port corner of the engine room. Coal bunkers are located on either side of the boiler.

The box boiler has three furnace doors facing aft and includes an economiser mounted around the smoke box uptake and a circular hole for the funnel.

The stern area survives up to the level of the quarter deck, the iron deck beams and tie plates being mostly intact. The rudder post with tiller reaches to above deck level.

A number of artefacts were raised during the excavation and a detailed examination of their analysis appears in the John Penn Excavation Report, 1984. The artefacts are currently stored with the federal Department of Transport.

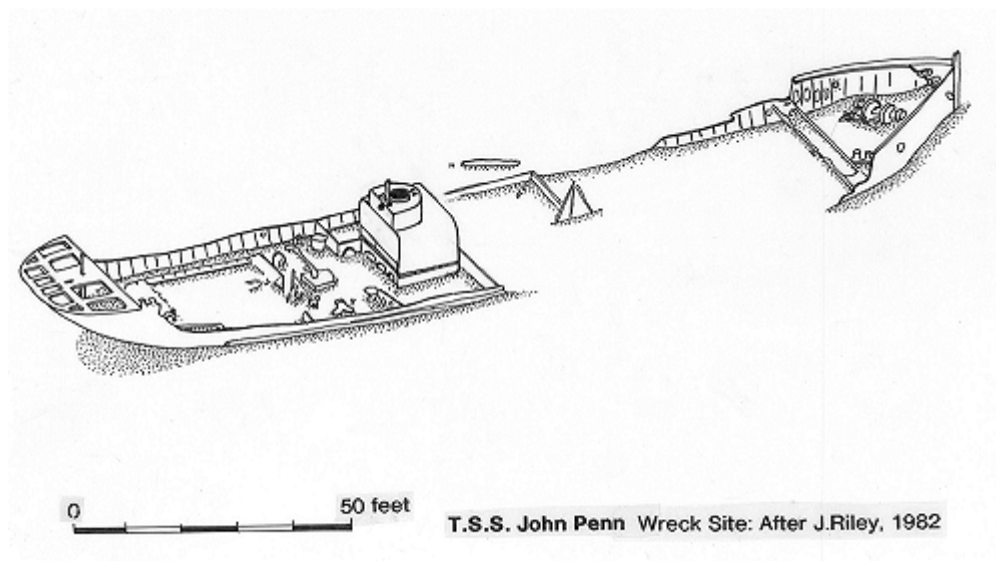
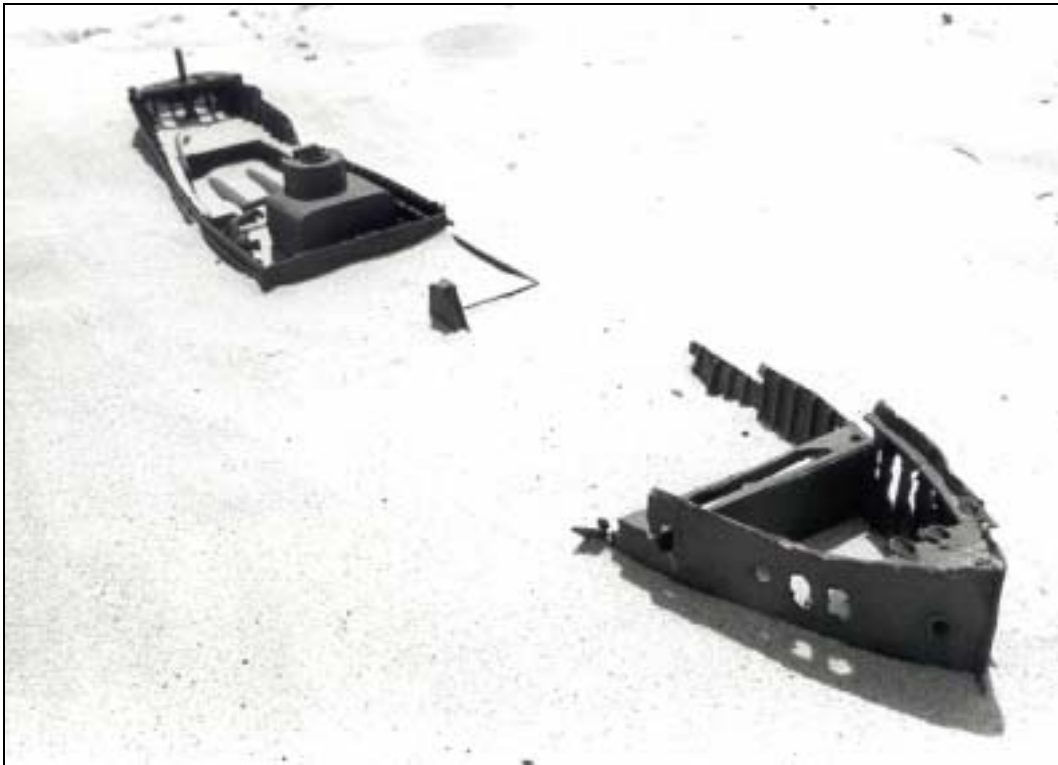


Figure 3 - Isometric View Of Wreck Site

Figure 4- Model reconstruction of wreck site (model by Mr. John Riley).



ASSESSMENT OF SIGNIFICANCE

Significance has been assessed in accordance with the nature and degree of significance of the site's primary attributes. These include attributes related to historical, social, archaeological, scientific and interpretative significance.

Historical (concerned with range of context)

The t.s.s. John Penn has the potential to illustrate the history of sea trade on the New South Wales and New Zealand coasts.

The vessel documents a period in Australian history when small coastal steamers were the only means of transportation, supplies and news for scattered settlements.

The remains of the John Penn are associated with the achievements of nineteenth century marine engineering companies.

The builder of the engines, Mr. John Penn, was a notable marine engineer who's company produced many innovative and respected marine engine designs.

The extensive 1879 modifications were undertaken by the important marine engineering facilities of Morts Dockyard, Sydney.

Technical (concerned with technical or creative achievement)

A site which contains evidence of creative developments in marine engineering in the Australian and New Zealand colonies and Great Britain during the latter Nineteenth Century.

The vessel utilised the latest marine steam engine technology available, independently driven twin screws having only been introduced five years earlier in 1862. The remains have the potential to document the state of the art of this technology, representing the only example of this type in New South Wales.

Archaeological (Concerned with research potential through investigation of material remains)

A site which, due to its integrity, has the potential to document aspects of ship construction and marine engine technology. Associated artefacts have the ability to provide an insight into the working life onboard a coastal steamer of the mid to late Nineteenth Century.

Interpretative (Concerned with public education values)

The remains have the potential for on-site or shorebased interpretation using the assembled documentation and results of the archaeological inspection.

A site which rates as an easily accessible and well integrated wreck dive.

Degree of Significance

Rare (concerned with the uncommon or exceptional)

The engines are rare and intact examples of an important phase in marine steam engine development.

The independently driven twin screws were a new development in marine engineering.

STATEMENT OF SIGNIFICANCE

The **t.s.s. John Penn** was built in a period of great technological innovation and experimentation. The latest technology was employed in building and equipping the vessel. A study of the engines has the potential to provide detailed information regarding the engine builders' craft in 1889. Details of the vessel's specialised design survive in the archaeological record. The wreck site has recreational potential for divers and photographers and serves as a monument to the transport, communication and commercial achievements of the New South Wales coast.

RECOMMENDATIONS

As a result of the historical research, wreck site inspection and subsequent assessment of significance, it is recommended that:

1. the previously gazetted position for the **t.s.s. John Penn** be amended to:

Lat 35^o 51' 07.7"

Long 150^o 11' 00.0"

2. interpretative broadsheets be prepared for distribution to dive shops, dive clubs and the Eurobodalla Shire Council.
3. a Management Plan be prepared for the site and its associated relics.

Figure 5: Upper surface of boiler showing circular

Upper surface of boiler showing circular opening to which uptake was fitted.