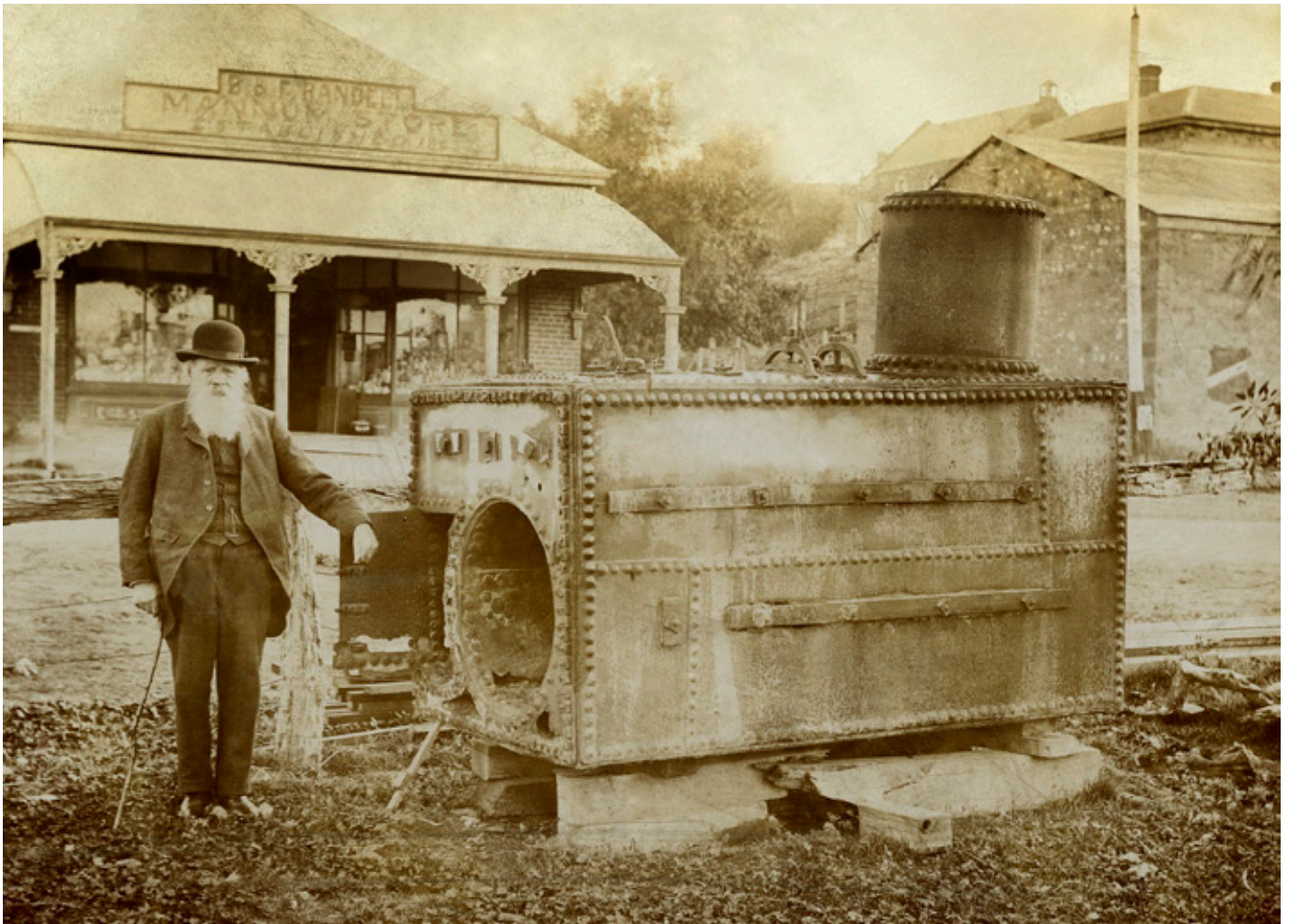


NOMINATION FOR ENGINEERING HERITAGE RECOGNITION

PS MARY ANN, MANNUM DOCK MUSEUM



ENGINEERS
AUSTRALIA

Engineering Heritage SA
October 2014

Cover photograph: Captain William Randell poses with the original square boiler of the PS *Mary Ann* on Randell Street, Mannum [State Library of SA BRG 201/13/2/1]

Table of Contents

1.	Nomination for Engineering Heritage Recognition	1
2.	Agreement of Owner	2
3.	Description of Work	3
4.	Assessment of Significance	5
5.	Steam Navigation on the River Murray	7
6.	The Paddle Steamer <i>Mary Ann</i>	23
7.	The Boiler of the <i>Mary Ann</i>	42
8.	The Steam Engine of the <i>Mary Ann</i>	47
9.	Interpretation Plan	52
10.	People	
	10.1 William Richard Randell	55
	10.2 John Green Coulls	56
	10.3 Claus Gehlken	57
Appendices		
A1.	Acknowledgements	58
A2.	References & Bibliography	58
A3.	Chronology of River Murray Navigation	59
A4.	Murray Navigation – A Romantic History	60
A5.	River Boat Trail Signage	63

This nomination is the first of three nominations for engineering works relating to the Murray-Darling river system and centred on Mannum. Taken together, they provide a comprehensive picture of the development of navigation along this important national trade route.

1. PS *Mary Ann*, Mannum Dock Museum

2. Randell Dry Dock, Mannum Dock Museum

3. PS *Marion*, Mannum Dock Museum

In addition, the related works of the Locks and Barrage of the River Murray and the Goolwa-Port Elliot (later Goolwa-Victor Harbor) Railway have also been recognised by Engineering Heritage Australia.

1. Nomination for Engineering Heritage Recognition

The Administrator
Engineering Heritage Australia
Engineering House
11 National Circuit
Barton ACT 2600

Name of work: Paddle Steamer *Mary Ann*

Location: Mannum Dock Museum
6 Randell Street
Mannum SA 5238
-34.90985, 138.57349
Mary Ann Reserve
River Lane
Mannum SA 5238
-34.915846, 139.311600

Owner: Mannum Dock Museum
PO Box 1
Woodville SA 5011

Access to site: Mannum Dock Museum: paid admission
Mary Ann Reserve: public place

Nominated by: Bernard Arnold
PO Box 195
Birdwood SA 5234

Nominating Body: Engineering Heritage SA



Richard Venus
Chair, Engineering Heritage SA
Date: 19 October 2014

2. Agreement of Owner



6 Randell Street, Mannum South Australia 5238 ~ Fax 08 8569 2383 ~ Web www.psmarion.com
Museum & PS Marion ~ Phone 08 8569 2733 ~ Email museum@psmarion.com ~ ABN 88 313 305 455
Visitor Information Centre ~ Phone 08 8569 1303 or 1300 MANNUM (1300 626 686) ~ Email mannumVIC@psmarion.com

14th April 2014

Mr Bernard Arnold
PO Box 195
BIRDWOOD SA 5234

Dear Bernard,

**Proposal to nominate for Engineering Heritage Recognition:
Steam Boiler, Mannum SA**

We refer to your proposal to nominate the Mary Ann boiler for National Engineering Heritage recognition that was forwarded to Deb Alexander via email 10th December 2013.

The Mannum Dock Museum group have perused the document and has agreed with its contents.

We are also pleased to advise you that the Mannum Dock Museum Board has approved to support this venture and wish you well with the nomination.

We thank you for your ongoing support with the museum and appreciate your efforts over the years.

Please do not hesitate to contact Debbie Alexander, Executive Officer on 0414 857738 if you require anything further with this project.

Yours sincerely,

Rob Bowring
Mannum Dock Museum Board Chairman

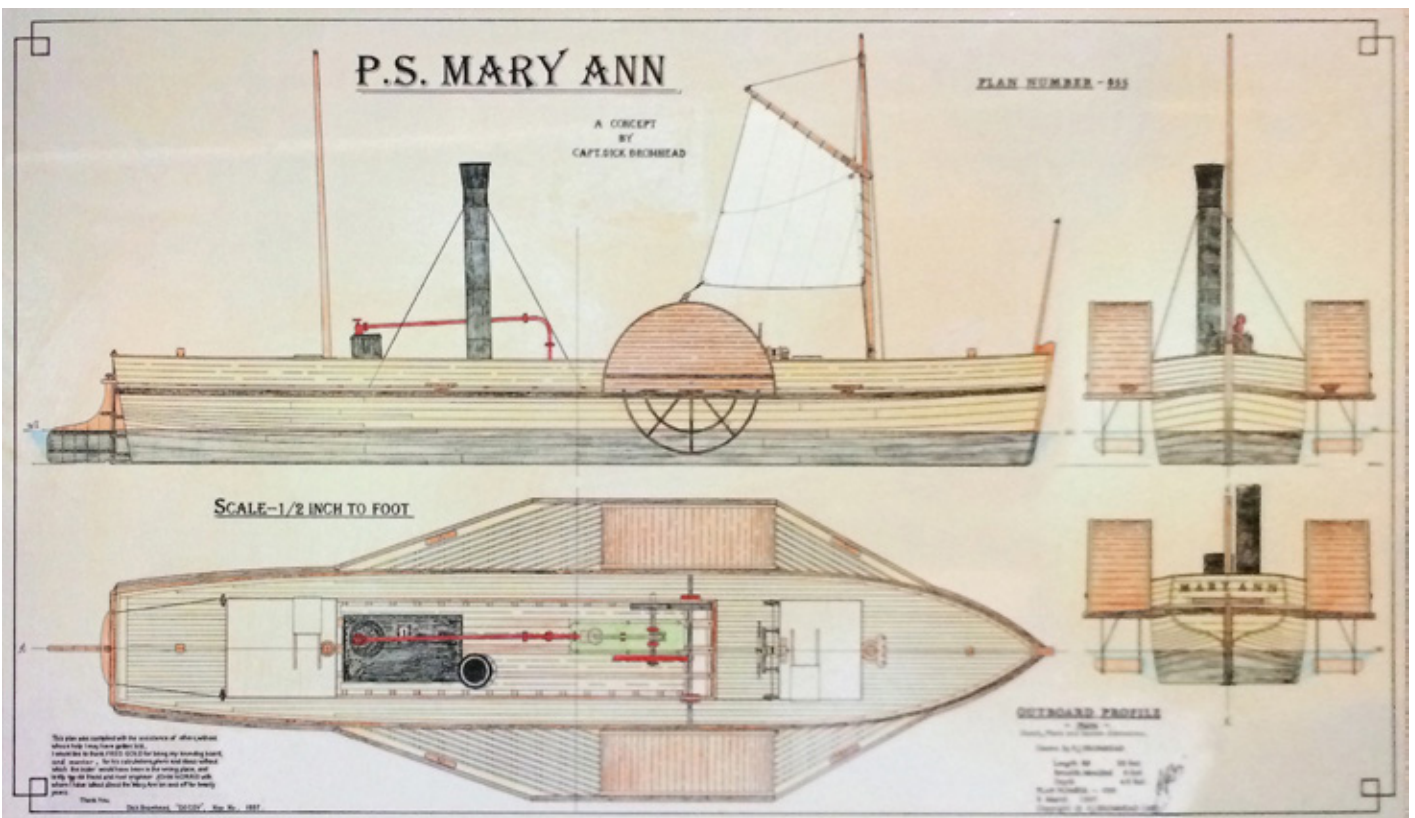


3. Description of Work

Name of Work:	Paddle Steamer <i>Mary Ann</i>
Other/Former Names:	
Location:	All that remains of the <i>Mary Ann</i> is its original square boiler on display in the Mannum Dock Museum; a replica of the boiler has been placed in the Mary Ann Reserve along the Mannum waterfront (see map, page 4)
Address:	6 Randell Street
Suburb/Nearest Town:	Mannum SA 5238
State:	South Australia
Local Government Area:	Mid Murray Council
Current Owner:	Mannum Dock Museum
Original Owner:	William Richard Randell
Current Use:	[Original boiler] Museum display
Former Use:	[Original boiler] Raising steam to drive PS <i>Mary Ann</i>
Proposed Use:	Unchanged
Designer:	William Richard Randell
Builder:	Boat: William Randell and others, Gumeracha and Mannum Boiler: John Green Coulls, Blyth Street, Adelaide Engine: Claus Gehlken, machinist, Hindmarsh
Date Started:	July 1852
Date Completed:	April 1853
Physical Description:	Boat: Timber framed and planked with 1½ inch deal (sawn planks) Boiler: Iron plate, rivetted and bolted, internally stayed Engine: Side-lever type, single 10 inch cylinder
Physical Condition:	[Original boiler] Good; cleaned and painted with minor repairs and now displayed inside the Museum
Heritage Listings:	None



*PS Mary Ann Locations
[Google Maps]*



*Conceptual drawing of the Mary Ann by Captain Dick Bromhead
[Mannum Dock Museum]*

4. Assessment of Significance

Historical Significance:	<p>First powered vessel on the Murray-Darling</p> <p>A catalyst in opening up the river trade so significant to the economies of three colonies from 1853 to the 1920s when railways and motor transport took away much of the trade</p>
Technical Achievement:	<p>A remarkably successful pioneering vessel designed and built by an inexperienced but ambitious owner</p>
Social Impact:	<p>Exporting regional produce (mainly wool) from three colonies and supplying goods to communities which developed along the river</p>
Significant People:	<p>William Richard Randell</p> <p>Francis Cadell</p>
Rarity:	<p>One of only two examples of box boilers known to have been produced in Australia (the other is the <i>Young Australian</i>)</p>
Representativeness:	<p>The side-wheeler design of the <i>Mary Ann</i> made the vessel quite manoeuvrable which suited the winding and at times narrow channels of the Murray-Darling; this became the most common configuration of Murray-Darling paddlesteamers</p>
Integrity/Intactness:	<p>The first boiler of the <i>Mary Ann</i> has been preserved in original condition; it has only been cleaned and painted before display</p>
Research Potential:	<p>This nomination document provides a concise history of both the <i>Mary Ann</i> and its original boiler from secondary sources; few if any primary sources exist (the log book of the <i>Mary Ann</i> was destroyed in a fire in 1863) making further research difficult.</p> <p>In 2013, Peter Reilly completed a 125-page document setting out in considerable detail, with CAD illustrations, his hypothetical version of how the <i>Mary Ann</i> had been constructed.</p> <p>The hull of the <i>Mary Ann</i> is in the river in the vicinity of Mannum; the submerged timbers are probably still in reasonable condition and it is possible that it could be detected by archaeological methods (some attempts to locate the hull have been made by divers but without success).</p>

5. Steam Navigation on the River Murray.

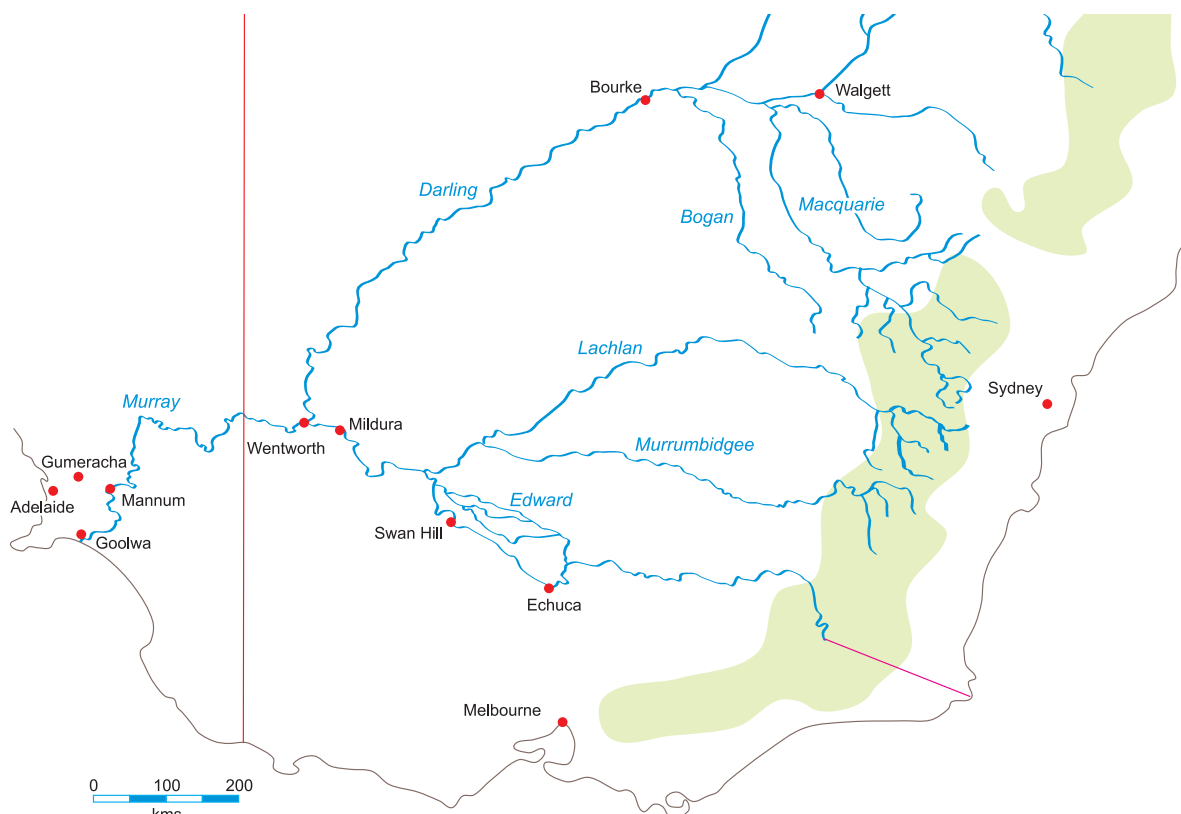


Figure 5.1: Principal rivers of the Murray-Darling

The waterways of the Murray-Darling system interconnect more than one thousand square kilometres of the Australian land mass – one-seventh of the total area. The waterways converge on the River Murray and have a natural outlet to the coast in South Australia. This simple fact of geography should have ensured that the rivers were used as trade routes for the developing agricultural produce of the colonies. However, the capital cities of the eastern colonies were separated from the river system by Australia's most significant mountain range and little attention seems to have been paid to it. It was up to the Government of South Australia to stimulate interest in the great potential of the waterways.¹

The chief proponent was the Lieutenant-Governor of South Australia, Sir Henry Young, and it must have helped that the noted river explorer Captain Charles Sturt was his Colonial Secretary.

5.1 Captain Charles Sturt

Sturt's first adventure on the inland waterways of Australia came in November 1828 when he set out from Sydney with Hamilton Hume to trace the course of the Macquarie River. They travelled north along the Bogan River and encountered a westerly-flowing river which Sturt named the Darling. The following year, Sturt's second expedition left Sydney. This time he followed the course of the Murrumbidgee in his famous whaleboat. In January 1830 he encountered a "broad and noble river" which he named after Sir George Murray, Secretary of State for the Colonies. He followed this all the way to Lake Alexandrina but was dismayed to find the entrance to the sea unsuitable for shipping.²

After the Colony of South Australia was established in 1836, there was considerable interest in the potential of the Murray: "The immense importance to South Australia of opening an inland navigable

1 David Gordon, "The River Murray", in Charles Fenner *et al* (Eds), 1936, *The Centenary History of South Australia*, Royal Geographic Society of Australasia (SA Branch), Adelaide, pp89-90

2 H J Gibbney, 'Sturt, Charles (1795–1869)', *Australian Dictionary of Biography*, National Centre of Biography, Australian National University, <adb.anu.edu.au/biography/sturt-charles-2712/text3811>, published in hardcopy 1967, viewed 6 September 2014



Figure 5.2: Sir Henry Young and Captain Charles Sturt
[State Library SA B 3753 and B3854]

communication of many thousand miles need not be insisted upon,” said the *SA Gazette and Colonial Register* in January 1838.³ A number of prominent settlers petitioned the Resident Commissioner:⁴

The undersigned having heard that a good Harbour at Encounter Bay, land of excellent quality, a plentiful supply of fresh water, and an easy communication with Lake Alexandrina and the great River Murray, have been discovered, they earnestly request that you will instruct the Surveyor General to reserve the site of a town ...

However, in the same issue, the treacherous nature of the entrance to the sea was underscored by the report of the “melancholy disaster” a few weeks before when four men, including judge Sir John Jeffcott, were drowned while attempting to explore “Sturt’s outlet from the lake”.⁵

Sturt himself accepted a post in the new Colony, despite his lack of qualifications, as Surveyor-General and left New South Wales for Adelaide in February 1839. However, Edward Frome arrived in September with a commission for the same post and so Lieutenant-Governor George Gawler appointed Sturt Assistant Commissioner of Lands, albeit at reduced salary.⁶

In January 1840 Sturt took Gawler on a five week expedition to Lake Alexandrina and the Murray. It was Gawler’s wish:⁷

... personally to examine the land on the banks of the Murray, and to determine, as far as time and circumstances would allow, the capabilities both of the river and lake for inland navigation.

Gawler’s own conclusion was:⁸

14. The Murray is admirably calculated for steam navigation. The stunted pine woods and pine scrub, frequently close to its banks, would furnish an inexhaustible supply of the best wood fuel. Navigation by sailing craft would be attended with delays from the lulls, eddies, and shifts of wind in a deep and winding valley. Navigation by tracking would be almost impracticable from the frequent occurrence of long lines of perpendicular cliff’s, besides which it could not be attempted without felling the beautiful gum trees that generally hang over the water’s edge, from the entrance of the river into the Province to within twenty miles of the mouth of the Lake; a sacrifice, in a climate probably the warmest of South Australia, too great, for any other consideration.

3 *SA Gazette and Colonial Register*, 6 January 1838, p3b

4 *Ibid*

5 *Ibid*; the drownings took place on 12 December 1837

6 Gibbney, *loc cit*

7 *Southern Australian*, 9 January 1840, p5a-e

8 *SA Register*, 4 January 1840, p4c

Later that year (September 1840) William Pullen, the Colonial Marine Surveyor, reported to the Surveyor-General that he was “perfectly satisfied of [the channel’s] practicability”.⁹ Pullen had made several crossings of the sandbar at the mouth of the channel in a whaleboat carried by the Government cutter *Waterwitch*. Then in May 1841 he took the cutter itself through the channel.¹⁰

Despite Pullen’s optimism, it continued to be regarded as a “dangerous passage”.¹¹ The opening up of the Murray to steam navigation would have to wait for the appointment of Governor Sir Henry Young who came up with an idea to avoid it altogether, as historian Ron Gibbs explained:¹²

His plan was to connect the river and the ocean, perhaps by linking the Goolwa ‘elbow’ and the Encounter Bay inlet he named Port Elliot. His lengthy personal examination of the coastline bolstered his faith in the southern port. In his mind’s eye he could see wool transported from the inland and robbing harbours from Sydney around to Portland in Victoria of much valuable commerce.

Charles Sturt had been present at the “sumptuous banquet” which was given in London prior to Young’s departure for the Colony in July 1848 and was toasted “as being the first man who had pointed out the advantages of South Australia”. He responded by saying the Colony was “one in which any man might do well, and where he would have less reason to regret leaving his native country than in any other”.¹³ Sturt returned to South Australia on the *Eliza*, arriving at Port Adelaide on 23 August 1849¹⁴ and soon after was appointed Colonial Secretary. There can be no doubt that Sturt’s intimate knowledge of the river – which he had first navigated twenty years before – had a part to play in Young’s enthusiasm.

5.2 The “Grand Trunk” Waterway

The idea of developing navigation along the Murray was not uniquely Young’s. In February 1848, a correspondent to the *Register* had written:¹⁵

The far distant settlers in New South Wales ... could easily avail themselves of these natural internal water communications in order to export their wool, tallow, horns, and hides; and in future years their grain. At certain seasons of the year the great tributaries of the Murray present no obstacle to water carriage; as in Russia, so here, rafts might be made in the backwoods, and on these the produce might be periodically transported at a cheap rate. To suit the varied circumstances of the upper navigation the rafts might be made in detached parts, so that a separation might be effected whenever required, by the occurrence of obstacle or danger; and the parts reunited at any point where the progress of the whole became easy and free from interruption. The current would facilitate the descent of the rafts at the rate of from a mile and a half to two miles an hour, so that a transit to the Goolwa might be effected from stations 600 miles distant in little more than eighteen days; the probability is that less time might often suffice.

However, the *Register* pointed out:¹⁶

The sea mouth of the Murray is often impassable, and is never likely to be practicable for rafts. It is only about eight miles over flat country from the ‘Goolwa’ to a safe anchorage in Encounter Bay.

The *South Australian* had other suggestions:¹⁷

We would suggest that a close examination be made of the mouth of the Murray, which at present is not navigable, solely in consequence of being exposed to the southern ocean. Could not a breakwater be easily constructed to protect it, or could not a canal from the Goolwa to Encounter Bay be made at a small expense? Could a safe and easy entrance be secured, it would lead to the occupation and settlement of a river and country, which by

9 *SA Register*, 10 October 1840, p2cd

10 *SA Register*, 15 May 1841, p3ab

11 “Statistical Account of South Australia”, *Southern Australian*, 11 October 1844, p2c

12 Ron Gibbs, 2013, *Under the Burning Sun: A history of colonial South Australia, 1836-1900*, Southern Heritage, Adelaide, p138

13 *South Australian*, 7 July 1848, p2e

14 *South Australian*, 24 August 1849, p2a

15 *SA Register*, 16 February 1848, p2d

16 *Ibid*

17 *South Australian*, 2 October 1849, p2c

fisheries and agriculture alone, could support hundreds of thousands of inhabitants, would cause a vast traffic from New South Wales, and lead to the establishment of a commercial emporium on the shores of our magnificent Lake Victoria.

In fact, the potential had been recognised even earlier, as the *Register* pointed out in June 1850:¹⁸

The *South Australian Gazette* of February 25th, 1838, thus describes the great natural advantages of this province as compared with those of New South Wales : —

‘The unexampled extent of our luxurious ranges of pasturage opens the finest field for the growth of wool and the breeding of stock; at the same time that the internal water communication we possess brings the market all but to the very door of the most distant farmer. The agriculturist and grazier of New South Wales finds the value of his produce decrease precisely in the ratio he is distant from Sydney; still in some cases it will not bear the expense of sending to market at all, having no inland water communication to Sydney. Now the remarkable fact to which we request attention is, that the whole water communication of the territory of New South Wales flows into South Australia. Look at the map, and you will see at a glance that the natural outlet of its most fertile regions is that part of South Australia which connects itself most directly with the river Murray, the grand trunk and highway of all. ...

... We can afford to believe that the Murray is not a twin-sister of the Mississippi, and that among the Murray’s tributaries there is neither a Missouri nor an Ohio; and yet have sufficient confidence in the ‘Grand Trunk,’ so deservedly lauded in the *South Australian Gazette* of 1838.

So, there were plenty of ideas about how to get cargo from the end of the river to the coast: all that was needed now was some encouragement to establish traffic on the river and that was the particular vision of Sir Henry Young who served as Lieutenant-Governor of South Australia from 1848 to 1854.

5.3 Sir Henry Edward Fox Young

Young took up his post on 2 August 1848. On 11 September 1849, he submitted a Minute to the Legislative Council proposing the establishment of a Commission which would enable him “to enquire into the practicability and cost of establishing places of shipment at the heads of St. Vincent’s and Spencer’s Gulfs, and at the Onkaparinga, and of opening up a communication from the River Murray to Encounter Bay”. Among those nominated by Young were Captain Arthur Freeling, RE, the Surveyor-General, and Captain Thomas Lipson, RN, the Port Adelaide Harbour Master.¹⁹

The Government schooner *Yatala* can be placed at the service of the Commissioners, and a moderate sum for the travelling expenses of the Commissioners would probably be sufficient inducement to the Commissioners, official and non-official, to undertake this highly useful but temporary public service.

Almost immediately it was recognised that the best means of dealing with the difficult conditions at the Murray mouth was to avoid it altogether.

In November 1849, Freeling (who had been appointed Chairman of the Board of Commissioners) placed an advertisement in the *Register* saying the Commission “will be prepared to receive any communications or suggestions as to the best means of connecting the navigation of the River Murray with the Harbour of Freeman’s Nob”.²⁰

In May 1850, Thomas Lipson provided a report on the relative merits of Rosetta Head (now known as The Bluff at Victor Harbor) and Port Elliot as anchorages in Encounter Bay and concluded, wrongly as it turned out, that Port Elliot would be more suitable. The Commission’s Surveyor Richard Hill provided a report and costings for a railway from Goolwa to Port Elliot: the railway would cost £18 909 5 shillings; a harbour at Port Elliot (including a jetty and breakwater) £1800; and a jetty at Goolwa £500.²¹

At its meeting on 5 June 1850, the Legislative Council considered the estimates or budget for 1851. Under “Roads, Streets, and Bridges” was a sum of £20 000 (“one-half this year”) for a Railway from Port

18 “The Goolwa and Port Elliot Railway”, *SA Register*, 21 June 1850, p2d

19 *SA Register*, 12 September 1849, p3b

20 *SA Register*, 17 November 1849, p4b

21 *SA Register*, 25 May 1850, p4e

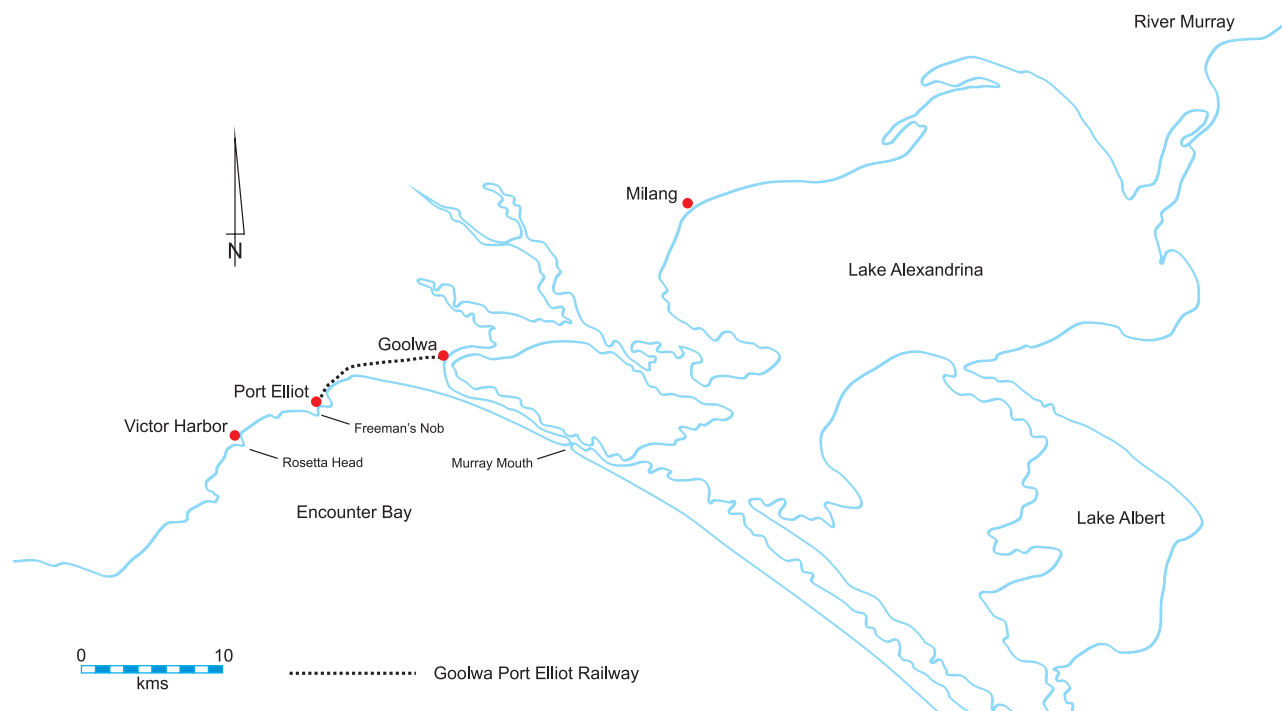


Figure 5.3: Locations around Goolwa

Elliott [sic] to the Goolwa, to open the navigation of the Murray to the Sea”. Several members thought that this was putting the cart before the horse; that before a railroad was built they first should ensure that there were steamers working on the river.²²

Captain Charles Bagot, a former soldier and manager of the Kapunda copper mine, brought a wealth of practical experience to the Legislative Council.²³ He said:²⁴

He should like to see a bonus of £2000 offered for the two first suitable steam-vessels that were started on the Murray, vessels drawing about two feet of water, and of at least forty horse power.

Charles Sturt, the Colonial Secretary, had the contrary view:

... He was satisfied that the railroad would more certainly encourage the placing of steam-vessels on the river than that steam-boats would produce a necessity for a railroad. The project was calculated to open up a fine tract of country, and pour a stream of commerce from the bosom of that noble river. ...

Captain Bagot wished to know if his Excellency would entertain a definite proposition on the subject of the steam navigation of the Murray.

His Excellency would entertain any definite proposition on the subject. He believed the traffic would follow, not precede, the establishment of a Port, which was the principal object in view, and not merely the construction of a railway. A sea-port secured a port on the Goolwa; he thought assisted private enterprise would effect the rest.

Bagot then gave notice of a motion he proposed to put the following day:

I shall move that his Excellency be requested to put on the Estimates the sum of £4000 for the purpose of giving a bonus of £2000 each for the two first steamers put upon the River Murray. Also, that a bonus not exceeding £6000 in aid of an equal amount raised by any private parties engaged in the navigation of that River.

Bagot duly put his motion but, rather than a bonus matching any capital raised by private enterprise, he proposed a Government loan. John Morphett objected to the loan: “there was private energy enough to effect the object,” he said. “He likewise thought there was no necessity to limit the navigation of the

22 *SA Register*, 6 June 1850, p2e-3a

23 “Bagot, Charles Hervey (1788–1880)”, 1966, *Australian Dictionary of Biography*, National Centre of Biography, Australian National University, <adb.anu.edu.au/biography/bagot-charles-hervey-1730/text1903> viewed 8 September 2014

24 Proceedings of the Legislative Council, 5 June 1850, reported in *SA Register*, 6 June 1850, p3a

Murray between the Goolwa and the junction at the Darling.” Charles Sturt agreed:

The Colonial Secretary thought it a pity the steam boats should not be required to proceed above the junction with the Darling from the Goolwa to that point (1000 miles); there was no impediment, but twenty miles above the junction there was a shoal across the river, leaving a very narrow passage. He approved of iron steamers, and knew that the power required by the motion was necessary to meet the strong currents that were in some places. ...

Captain Bagot deplored his misfortune in not being able to explain a very simple idea. He would require the steam-boats to go a certain distance, but they might go as much farther as the enterprise of their owner would venture on.

Governor Young advised Bagot to split his motion which he did. Only Morphett opposed the motion, which had been seconded by Sturt, to award a bonus but only Jacob Hagen, the seconder, voted with Bagot in favour of the loan.²⁵ The official record also shows that no limitation would be placed on prospective navigators, their task being to “successfully navigate the waters of the River Murray, from the Goolwa to (*at least*) [emphasis added] the junction of the Darling”.²⁶

The proposal for steam navigation on the Murray was inextricably bound up with the construction of the railway from Goolwa to the coast. The latter and its estimated cost of £20 000 had divided opinion in the Colony. A memorial was published in the *South Australian* on 14 June expressing “surprise and alarm”:²⁷

... that your Excellency had forwarded an application to the Lords of Her Majesty’s Treasury for their sanction to an expenditure of £20,000, to be taken from the Land Fund of the province, and applied to the construction of a line of railway between a point on the Murray River, named the Goolwa, and the sea-coast at Encounter Bay.

The Land Fund had been created with the proceeds of land sales in the Colony and was used to pay for the passage of the immigrants who were expected to provide the labour in the Colony – hence the contention of the memorialists that “the Land Fund should at all times be scrupulously and faithfully devoted to the PURCHASE of labour and not to its EMPLOYMENT”. Among their other points were that the decision was not reflective of general opinion in the Colony, being only made by “a narrow majority”; that the diversion of labour to “the extensive Government works in progress” was already having an adverse effect on the local labour market; that the railway itself was “neither required for the existing traffic of the district, nor for any known or defensible public purpose”; and that there were already “numerous points on the river from which access to the capital is easy”.

On Monday 17 June 1850, a deputation led by William Giles, manager of the South Australian Company, “waited upon” the Governor “to declare themselves inimical” to his railway scheme”. The *Register* observed:²⁸

The Memorial was spun out to an extraordinary length, and the reply of his Excellency necessarily partook of the same quality; and was unsatisfactory to the memorialists in other respects, perhaps because they found it unanswerable.



Captain Charles Harvey Bagot
[State Library SA, B17890]

25 Proceedings of the Legislative Council, 6 June 1850, reported in *SA Register*, 7 June 1850, p3ab

26 “EXTRACT minute of the proceedings of the Legislative Council, at its session on the 6th June, 1850”
[*South Australian*, 15 August 1850, p1b]

27 *South Australian*, 14 June 1850, p1ef

28 *SA Register*, 18 June 1850, p2cd; the Governor’s response and the subsequent resolutions of the memorialists were reported in the next column

Young's reply was, in essence, that it was up to Her Majesty the Queen to decide if the proposed railway was an appropriate use of the Land Fund. The memorialists went away and convened a meeting at the Exchange. They considered Young's response "not satisfactory" and formed a committee to prepare their own petition to the Queen.²⁹

In a letter to the *South Australian*, "A Voice from the South" pointed out that the memorialists were:³⁰

... against the proposed measures for opening the navigation of the Murray, and facilitating the traffic of the Southern Coast, with the declared object of concentrating the *whole* trade of the colony to Adelaide and its Port ... what in the name of all that is just and respectable, individuals living and having their business sixty or seventy miles from the scene of action, have to do with the people and trade of the South, embracing as that trade does, or ought to do, a connecting link with the people and trade of the interior of the country.

A "large and respectable meeting" was held at Encounter Bay on 4 July to consider submitting a memorial of their own on the subject of the railway and to "contradict the false statements put forward by the projectors of the Adelaide Memorial respecting it". Echoing the words of Napoleon, their second resolution was:³¹

That the interference of certain parties, principally shopkeepers in Adelaide, with the proposed improvements at Encounter Bay, is impertinent and uncalled for, and the principle enunciated by them of 'concentrating the whole of the traffic upon Adelaide and its Port' is inexpedient, impracticable, and unjust, and that the inhabitants of the great Capital of South Australia have no more right to raise objections to rendering accessible to shipping the natural Port of the Murray, than the citizens of London to projected improvements at Liverpool."

A decision on the Goolwa railway was still some time off but the Government pressed on with the plan to offer a bonus to the first two vessels to navigate the Murray at least as far as the Darling junction. An advertisement was prepared and first appeared in the local papers on 8 August 1850 (see page 14).³²

The *South Australian* scoffed at the need to bypass the mouth of the Murray:³³

In a Government notice, copied in another column, it is stated that "the great surf that is constantly breaking on the Encounter Bay coast, at the spot where the River Murray discharges itself into the sea, renders the entrance into the sea most dangerous and, indeed, impracticable." We cannot understand where the Government got this information; for the latest report on the subject is that by Captain Pullen, Marine Surveyor, employed by Governor Gawler to survey the mouth of the Murray, who, on the 8th of May, 1841, in the cutter *Waterwitch*, passed the bar, and made the entrance deemed dangerous or impracticable without either danger or difficulty. His report will be found in the *Government Gazette* of the 14th of May, 1841 ...

The above report by the only public officer who ever entered the mouth of the Murray, flatly contradicts the Government notice in two important particulars. It shows, first, that there is not a great surf "constantly" breaking on the sea mouth of that river, and second, that the entrance is far from being "most dangerous and indeed impracticable." Seeing the gross ignorance of the Government as to the most commonplace facts connected with the navigation of the Murray, the Goolwa project is not so inexplicable a hallucination as we supposed; but as to the matter in hand we trust the notice will be altered, and we suggest the following:— "There is a difficulty in entering the Murray from the sea, on account of a surf on the bar, which is occasionally dangerous. The Government are not aware of the average period during the year in which the entrance is dangerous, but it is certain that intervals of a week's duration occur in which steamers drawing six feet water can get in or out with safety.' To avoid this entrance the Goolwa railway was proposed, but for our own part, so far from appreciating the necessity for such a railway, we do not despair of the day arriving when steamers will regularly and constantly brave and overcome the "impracticable" surfs of the great river.

29 *SA Register*, 18 June 1850, p2e

30 *South Australian*, 21 June 1850, p1f

31 *South Australian*, 19 July 1850, p3d

32 *SA Register*, 8 August 1850, p3c

33 "Entrance to the Murray", *South Australian*, 8 August 1850, p2bc

NOTICE

The Governor and Legislative Council of South Australia having offered a bonus of £4000 to be equally divided between the two first iron steamers of not less than 40-horse power, and not exceeding two feet draught of water, when loaded, as shall successfully navigate the waters of the River Murray, from the Goolwa to (at least) the junction of the Darling — computed to be about 551 miles; and provision for the said sum of £4000 having been made in the Ordinance No. 9, of 1850, entitled 'An Ordinance for the Further Appropriation of the Revenue for the year 1850, and for the General Appropriation of the Revenue for the year 1851.' Notice is hereby given that the above awards will be severally claimable in respect of the two first vessels, which shall at any time, from and after the 1st day of October, 1851, successfully navigate the Murray, under the prescribed conditions.

The following particulars, collected from various sources, respecting the waters of the Murray between the above-named points, are published for general information :—

The great surf that is constantly breaking on the Encounter Bay coast at the spot where the River Murray discharges itself into the sea renders the entrance into the river from the sea most dangerous, and, indeed, impracticable; hence any steamer intended for the inland navigation must either be built or put together on the shores of the River or Lake.

Commencing from the Goolwa, the navigation is through a Channel about 14 miles long, and averaging a mile in width, with a depth of water varying from 6 to 32 feet.

The Goolwa Channel then opens out into Lake Victoria, a sheet of water 30 miles long by 10 broad, the navigation across which is 25 miles in length, the depth of water varying from 6 to 18 feet.

Fresh water commences about the middle of this Lake.

The River Murray, thence to Moorunde, 121 miles distant, is from 150 to 250 yards wide, and varies from 10 feet in depth to 14 fathoms; to this point there are no obstructions to navigation.

From Moorunde to the Darling, 391 miles distant, sand shoals exist in nearly every reach, but a channel is invariably to be found in which there is three feet of water at the lowest season, which is in the month of July.

The annual floods increase the depth of water from eight to twelve feet.

The current varies in strength according to the season and the distance from the sea; and its rate is from one and a half to three miles per hour.

Abundance of wood for fuel is to be obtained along the banks of the River generally, throughout its whole length.

Wool, tallow, and hides would probably, in the first instance, form the chief articles of transport.

By command,
CHARLES STURT,
Colonial Secretary.
12th August, 1850.

[*South Australian*, 15 August 1850, p1b]

STEAM NAVIGATION OF THE RIVER MURRAY.

Extract Minute of the proceedings of the Legislative Council, at its Session on the 6th June, 1850 :

MOVED by Captain Bagot, seconded by the Colonial Secretary, and carried—

That his Excellency be requested to place the sum of £4000 upon the Estimates of 1851, for the purpose of granting a bonus of £2000 each for the first and second Iron Steamer, of not less than 40 horse-power, and not exceeding two feet draft of water when loaded, that shall successfully navigate the waters of the River Murray from the Goolwa to (at least) the junction of the Darling.

True extract,
W. L. O'HALLORAN,
Clerk of Council.

NOTICE.

The Governor and Legislative Council of South Australia having offered a bonus of £4,000, to be equally divided between the two first Iron Steamers of not less than 40-horse power, and not exceeding two feet draft of water when loaded, as shall successfully navigate the waters of the River Murray, from the Goolwa to (at least) the junction of the Darling, computed to be about 551 miles; and provision for the said sum of £4000 having been made in the Ordinance No. 9, of 1850, entitled, "An Ordinance for the further appropriation of the Revenue for the year 1850, and for the general appropriation of the Revenue for the year 1851 :"

Notice is hereby given, that the above awards will be severally claimable in respect of the two first vessels which shall at any time, from and after the 1st day of October, 1851, successfully navigate the Murray, under the prescribed conditions.

The following particulars, collected from various sources, respecting the waters of the Murray between the above-named points, are published for general information :—

The great surf that is constantly breaking on the Encounter Bay Coast, at the spot where the River Murray discharges itself into the sea, renders the entrance into the river from the sea most dangerous and indeed impracticable, hence any steamer intended for the inland navigation, must either be built or put together on the shores of the River or Lake.

Commencing from the Goolwa, the navigation is through a Channel about 14 miles long and averaging a mile in width, with a depth of water varying from 6 to 32 feet.

The Goolwa Channel then opens out into Lake Victoria, a sheet of water 30 miles long by 10 broad, the navigation across which is 25 miles in length, the depth of water varying from 6 to 18 feet. Fresh water commences about the middle of this Lake.

The River Murray, thence to Moorundi, 121 miles distant, is from 150 to 250 yards wide, and varies from 10 feet in depth to 14 fathoms; to this point there are no obstructions to navigation.

From Moorundi to the Darling, 391 miles distant, sand shoals exist in nearly every reach, but a channel is invariably to be found in which there is three feet of water, at the lowest season, which is the month of July.

The annual floods increase the depth of water from eight to twelve feet.

The current varies in strength according to the season and the distance from the sea; and its rate is from one-and-a-half to three miles per hour.

Abundance of wood for fuel is to be obtained along the banks of the River generally, throughout its whole length.

Wool, tallow, and hides, would probably, in the first instance, form the chief articles of transport.

By command,
CHARLES STURT,
Colonial Secretary.
12th August, 1850.

Young himself undertook a voyage along the river in September and October 1850, accompanied by his wife and baby son³⁴, in boats rowed by Aborigines. He published a memorandum of soundings and observations to record the “capabilities of the waters of the Murray for the navigation of steamers” and concluded.³⁵

The distance from the Goolwa to the Darling is about 680 miles; there are no falls, or rapids, or other impediments of any kind, except the insignificant ones already alluded to; and throughout the entire distance there is a channel most amply deep and wide for steamers of greater draught of water than that of the limit proscribed by the Legislature of South Australia to the competitors for the premium for the successful navigation of the River Murray from the Goolwa to the Darling.

This, said the *Register*, made no small stir in New South Wales and quoted an article in the *Sydney Morning Herald* which started by referring to the “day-dreams” of a *Register* correspondent and concluded that even the Lachlan “once pronounced useless for the purposes of transport, might become an important branch in a great system of internal navigation”.³⁶

The point was also not lost on the populace of Victoria, with the *Register* quoting from the *Melbourne Herald* in December 1850:³⁷

There can be but little doubt that some enterprising person or persons will speculate in this scheme, which promises a remunerating interest upon the outlay. The traffic in wool alone would go far to repay a considerable portion of the original expense; and once set going, if the freight be reasonable, every settler will prefer this more expeditious and convenient transit for his farm store. How must this operate on the Port Phillip District? It will transfer all the traffic of our north-western boundary from Melbourne to Adelaide, to enrich that colony at the expense of ours, simply because we sleep over these matters of commerce, in which our neighbours appear to be more alive to their interest. The step is one of sound policy on their part, and requires an anti-movement on the part of the Port Phillipians to secure to the district the benefits accruing from the commerce of the border-settlers, a numerous and wealthy body, who bring their produce into Melbourne, but cannot be expected to renounce the advantages of steam transit from mere *amor patriæ*. Let our Government look to this in time. The produce of such a district as the Murray ought not to be lost to the province on any terms.

5.4 The Role of Gold

While the South Australian Legislative Council discussed the merits of opening the Murray to steam navigation, gold had been discovered in remote California. But when gold was discovered a few years later in the neighbouring colonies, there was a significant impact on South Australia which brought with it a different view of navigation along the Murray.

Buying passage to California made that gold rush something most people only read about in the paper. But when the gold was just next door in Victoria – that was a different matter altogether. If you were keen enough – or desperate enough – you could even walk there:³⁸

Those with some capital could travel in relative comfort by sea to Melbourne, perhaps in a small party, and equip themselves for a lengthy goldfields stay. Most, however, could afford only uncomfortable steerage berths, and ships calling at Robe Town and Beachport crammed in more prospective diggers. Those buoyed by hope rather than money trudged overland for weeks, crossing the Murray at the Wellington ferry before heading through the scrub ...

The exodus to Victoria had a significant impact on South Australia and its economy, almost bringing it to a standstill. “By April 1852,” said Ron Gibbs, “a few of them had succeeded grandly, returning to

34 Gibbs, 2013, p138; the party, which included Captain and Mrs Freeling and Mr and Mrs Torrens, departed Government House on 10 September and returned on 29 October [*South Australian*, 31 October 1850, p4ab]; Bernard Arnold notes that Augusta Young stayed in a camp at Moorundie with the child (and presumably the other ladies) while the Governor went exploring [notes on the draft nomination, 29 September 2014]

35 *SA Register*, 28 October 1850, p3cd

36 *SA Register*, 12 December 1850, p2e-3a

37 *SA Register*, 14 September 1850, p3a

38 Gibbs, 2013, p139



Forest Creek, Mount Alexander, from Adelaide Hill, 1851
George French Angas, engraved by J Allan [State Library Victoria, H25116]

buy valuable land.”³⁹ One of them was Albert Landseer who established a successful trading business at Milang on Lake Alexandrina. And there was another surprising outcome which indicated that the tide might be turning for South Australia. As Ron Gibbs explained:⁴⁰

Governor Young was sorely tried. Merchants, foretelling the colony’s ruin, petitioned him: could gold dust be given a convertible value at an assay office in Adelaide, and could duties, taxes and land be paid for accordingly? ... [Young’s] response made him seem an emperor fiddling while Adelaide burned. He did, however, consult the three local bank managers, and at a special session in January 1852 the Legislative Council passed a bullion act. It provided for a government assay office to receive gold for refining into ingots against which banks could issue notes as legal tender. This bold move, although criticised, gave South Australian a new form of currency, allowing it to outbid Victoria in purchasing gold.

With concerns about the money supply addressed, a new air of confidence returned to South Australia and the voracious goldfields, previously seen as a black hole sucking in miners, now came to be perceived as an opportunity, a market for the Colony’s produce:⁴¹

The goldfields were a magnet for South Australia’s produce, attracting much flour and other foodstuffs, together with imported and local hardware and a variety of softgoods. Sales to the swelling population of Victorian diggers and townfolk began to dazzle almost as much as gold itself. Victoria’s population, about 168,000 at the end of 1852, almost doubled in the next two years. Yet with overland shipments proving cumbersome and expensive, some alternative means of transport had to be found. ... At Gumeracha in the Mount Lofty Ranges, the miller William Richard Randell dreamed of sending a steamboat up the Murray to provision settlers and diggers along the Goulburn River. ...

5.5 Captain Francis Cadell

The first person to respond to the SA Government’s offer of a bonus for the navigation of the Murray was Francis Cadell, a Scottish sea captain who first appeared in Adelaide as master of the *Royal Sovereign* in January 1849.⁴² Historian A T Saunders was a regular correspondent to the *Register* and had a particular

³⁹ *Ibid*

⁴⁰ Gibbs, 2013, p142

⁴¹ Gibbs, 2013, p143

⁴² “Shipping Intelligence”, *SA Register*, 20 January 1849, p4a

interest in Cadell and the story of steam navigation on the Murray: his father Captain T A Saunders was the first harbourmaster at Port Elliot and the man who “defined the channel” for Cadell to take his steamer, the *Lady Augusta*, through the Murray Mouth in 1853. Saunders drew attention to the fact that the Adelaide agent for the *Royal Sovereign* was W Younghusband & Co:⁴³

... thus began business relations between Cadell and Younghusband, who was a member of the Government which resulted in the navigation of the Murray by Cadell.

Cadell later took charge of the *Queen of Sheba*, a barque which he had sailed to Sydney from San Francisco, arriving on New Year’s Day 1852, and which then began plying between Adelaide and Melbourne.⁴⁴ Possibly – or even presumably – this experience of the trade between the two colonies during the Gold Rush stimulated Cadell’s interest in taking up the South Australian Government’s challenge to open up the route along the Murray.



Captain Francis Cadell
[State Library SA, B13508]

In May 1852, the *Register* reported Cadell’s intentions – and also his financial expectations:⁴⁵

It has been, understood for some time past, that a gentleman has been in communication with the Government on the subject of the Navigation of the Murray, and the practicability of entering at the sea mouth. The gentleman alluded to is, we understand, Capt. Cadell of the *Queen of Sheba* who has made a definite proposition for carrying a steam vessel direct from the sea into the Lake, and navigating her as far as the Darling. Captain Cadell proposes to have the vessel constructed in Sydney, and to make the experiment by the 1st of October next. The proposed vessel is to be 84 feet long with a breadth 11½ feet, to be fitted with a 16-horse engine, and to be calculated for a cargo of 54 tons. Several longitudinal sections, some of them representing models adapted for river navigation, have been constructed by Capt. Cadell and are now on view at the Exchange. For taking a vessel into the sea mouth of the Murray, Capt. Cadell asks a bonus of £500; for navigating the river as far as its junction with the Darling a further sum of £1000; and for any extra distance beyond that point a rateable addition; and £250 per Quarter besides.

William Younghusband and twelve other members of the Legislative Council presented a memorial to the Governor, pledging their support to the tune of £2500:⁴⁶

Your memorialists are fully alive to the important advantages that may be derived from the navigation of that noble river, particularly at the present time, if it is found to facilitate the communication between this province and the goldfields of Victoria ...

Your memorialists do not express any opinion upon the terms or details of Capt Cadell’s proposition, the consideration of which belongs more properly to your Excellency, aided by your Executive Council; but your memorialists beg to intimate to your Excellency, that in case any engagements be made with Capt Cadell in furtherance of his project, they will consider themselves bound to support in their places in Council any votes of money that may be required to forward them to the extent of £2,500.

However, two of the memorialists – John Hart and Charles Hare, while supporting Cadell’s proposition, considered the £500 bonus “for the entrance to the river was unnecessary”. This point was highlighted years later by A T Saunders – Captain William Pullen in the *Waterwitch* had demonstrated in 1840 that the entrance into the Murray mouth was achievable.⁴⁷

Cadell might have been an opportunist and his demands excessive but it was an opportunity that someone had to grasp. The *Register* pointed out the benefits for South Australia:⁴⁸

43 “Capt. Francis Cadell/A Remarkable Man”, *Register*, 4 December 1917, p5c

44 *Ibid*

45 “Navigation of the Murray”, *SA Register*, 22 May 1852, p3a

46 *SA Register*, 29 May 1852, p3ab

47 “Navigable Entrance to the Murray”, *SA Register*, 10 October 1840, p2cd

48 “Navigation of the Murray”, *SA Register*, 22 May 1852, p3a

Although this scheme differs in so many features, from that which was connected with the standing bonus of £2000 for each of two iron steamers; yet so pressingly important are the considerations that render the navigation of the Murray River desirable at this moment that any pecuniary cost seems to be little enough if we can thereby purchase the desired advantage. It is probable, also, that the same formations [of auriferous quartz] will be found extending along the banks of the river wherever the surface of the country is broken into ranges, we may therefore expect that the machinery and the produce of some of the quartz-crushing companies to be established in Victoria will ascend and descend the Murray, and by that great highway Australian Gold, along with the produce of all other industrial operations, will be conveyed easily and cheaply, preparatory to shipment to the great marts in Europe, India, and elsewhere. The importance of pushing steam communication, as far up the river as possible will soon be made apparent. Every mile gained beyond the junction of the Darling will open to us a better country more productive fields of industry, and a greater choice of markets. The Australian Alps present insuperable barriers which prevent trading communication with the ports on the eastern coast, and the natural outlets for all those vast regions which surround the sources of the Murray and of the Murrumbidgee must verge towards Melbourne or Adelaide, although, territorially, a large portion of country belongs to New South Wales. Melbourne can only be reached by a tedious land journey, distressing in the heats of summer, and all but impracticable in winter. Steam on the waters of the Murray will decide the question — the ‘iron drudge’ which never tires and is seldom arrested by summer heat or winter flood, will accomplish another great task by unfolding benefits and advantages immense and inestimable.

In June 1852, Cadell left the *Queen of Sheba* and in July the Melbourne *Argus* reported that he had made arrangements in Sydney “for the building of a small steamer for the purpose of navigating of the River Murray”.⁴⁹ Governor Young had not been idle either: reports, such as this one in the *Adelaide Morning Chronicle*, started appearing:⁵⁰

STEAMERS FOR THE MURRAY.-There seems a great likelihood that in a short time the magnificent and long neglected Murray will be covered with steamers. There is now a certainty of three at least, if not four, before another year. Captain Cadell proposes to have two, one for passengers and another to act as a tug. Messrs. Randall [sic], of Gumeracka [sic], are preparing another to take flour for the diggings, and the Governor has sent £5000 for an iron steamer for the same river. It would require a strong imagination to conceive the changes a few years will produce.

When the Legislative Council reconvened on 1 September 1852, the Governor had this to report:⁵¹

The premium offered in 1850 for the introduction of iron steam boats of light draught of water, to navigate the River Murray, has not yet been claimed; but there is reason to expect that a Company from England will soon enter on this project. Meanwhile, I have not hesitated to approve of a contract for the plying of a small steamer on the river in November next; and I rely with confidence on your making provision for this important service. I have also moved the Lords of the Treasury to send from England an iron steam-boat of the kind mentioned in the conditions of the Colonial premium, to be paid for out of the Crown moiety of the Land Fund, in the event of its appearing certain that no private Company shall then have under taken the steam navigation of the River Murray. In connection with this subject, I avail myself of the present occasion of stating to the Council that the works and improvements at Port Elliot and the elbow of the Murray, at the Goolwa, which have been considered necessary for opening up new settlements to intending emigrants and for facilitating the transit of the commerce of the river to its sea mouth, are progressing satisfactorily. Their cost, including the tramway between Port Elliot and the Goolwa, according to the latest report and estimate of the Supervisor of Public Works, which I have directed to be placed before you, will be within the original estimate and amount authorised by Her Majesty’s Government to be appropriated to these purposes, viz., £21,000. Since the commencement of these improvements, the sales

49 *SA Register*, 22 July 1852, p3d quoting the *Melbourne Argus* of July 12; that issue of the newspaper is not available in the National Library’s digitised newspaper collection

50 *Adelaide Morning Chronicle*, 16 August 1852, p3a

51 *SA Register*, 2 September 1852, p3cd

of Crown Lands in that locality have progressively increased in number and value. Port Elliot town lots sell readily at the minimum price of £80 an acre. Whatever difference of opinion may formerly have existed between the Executive and the Legislature in reference to these Works, I trust that the increased and urgent importance given to the navigation of the Murray to its sea mouth, by the discovery of the Gold-fields of Victoria, which approach its borders, and the general recognition of the immense results eventually to arise to this Colony from penetrating the interior of the Australian Continent by this great river, will cause those differences to merge into a cordial unanimity and cooperation, in effecting whatever may be necessary to ensure to the object a speedy and successful issue.

In the event, steam navigation was successfully established on the Murray and the Government “iron steam-boat” was not required – although, in February 1853, there was a report that:⁵²

... two iron, steamers, with the requisite engines and machines, have been shipped for this colony, and that the shipment is accompanied by skilled mechanics and engineers by whom the steamers will be put together, fitted, and placed upon the Murray. The engines are of 34 horse-power, but the buoyancy of the vessels is such that they will not draw more than two feet of water. The arrival in this colony may be daily expected.

The proponent of this scheme was Samuel White who had published a “Proposal for the Navigation of the River Murray in Australia” in London early in 1852. The *Register* said:⁵³

We have not deemed it worth while to transfer a copy of it to our pages, as, although of some considerable length, it is merely an embodiment of the facts, and statements, and calculations, which have from time to time appeared originally in the *South Australian Register*. With the superabundance of money in England seeking a fair field for investment just now, according to all the recent advices, there may be much probability of the necessary funds being provided by some Joint Stock Association in London. We shall watch with no little interest the fate of this attempt.

A few months later the *Register* reported “the uncertainty attaching to the intentions of the company” but noted that the project of Captain Cadell “will be carried out”.⁵⁴ As proof of his intentions, Cadell travelled overland to Swan Hill in August, taking with him:⁵⁵

... a boat formed of canvas, stretched upon a light wooden frame-work, in which he intends to descend the Murray at least as far as Wellington, and probably to the Goolwa, to examine the actual condition of the river channel, with a view to providing in time against any obstacles that might be found to delay the accomplishment of his purpose hereafter.

The canvas boat, named the *Forerunner*,⁵⁶ needed constant attention:⁵⁷

“Whenever she leaked,” wrote Cadell, “we clapped the frying pan on the fire, and after cooking our chops, gave her a coat of tallow grease, which was at all times most effectual.”

The mutton fat clearly did its job because, on Monday 6 September, the *Register* was able to publish a report from “an esteemed correspondent” that Cadell and his companions (“four successful Adelaide Gold-diggers”) had achieved their objective:⁵⁸

They had been twenty-one days from Swan Hill, a distance of 1,300 miles by the river. The gallant explorer expressed himself most sanguinely as to the possibility of safely navigating a steamer up to Swan Hill; the road from which to the Diggings at Mount Alexander he describes as being excellent, and the distance about 120 miles. He intended to proceed in his boat to examine the sea-entrance of the Murray, and would probably reach Adelaide in the middle of the week.

52 *SA Register*, 2 February 1853, p3c; there is no further mention of White or his steamers

53 *SA Register*, 23 March 1852, p3a

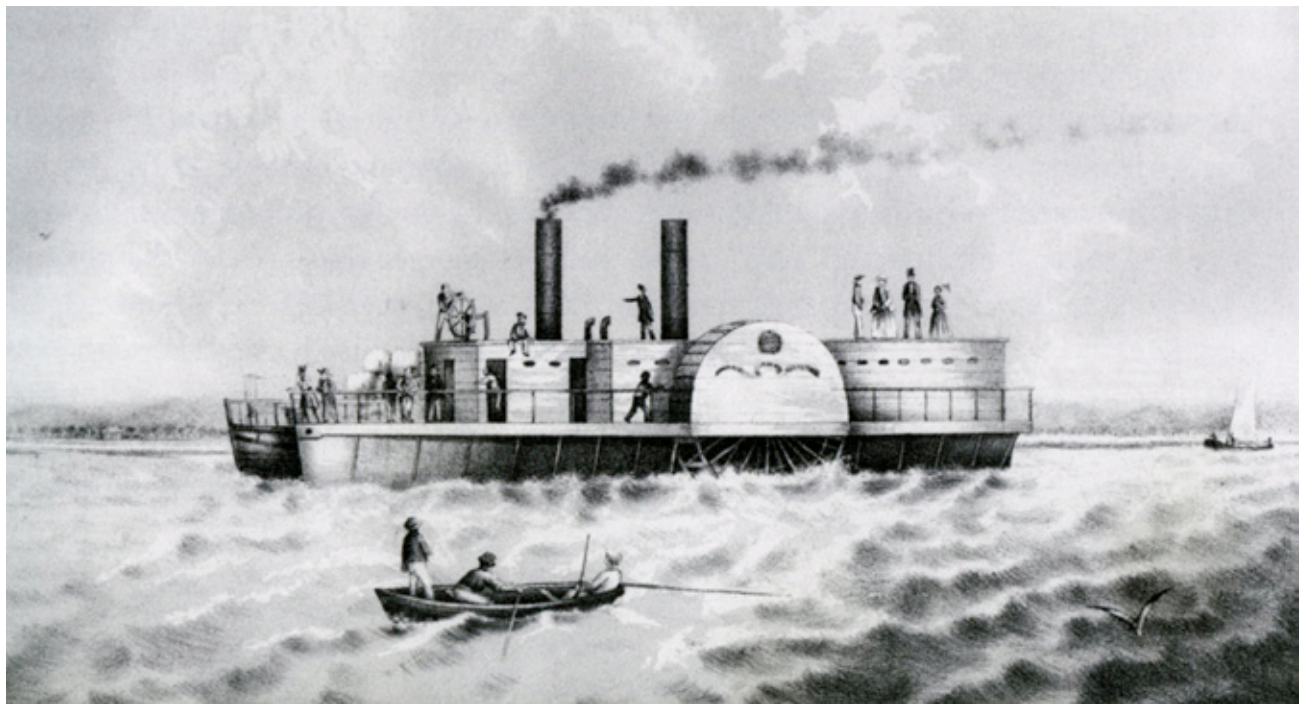
54 *SA Register*, 21 July 1852, p3a

55 *Adelaide Morning Chronicle*, 9 August 1852, p3a

56 Rosalind Stirling, 2006, “Paddle-steamers of the Murray-Darling Rivers”, *Australian Heritage*, Winter issue, Australian Heritage Publishing, p37a (available online at www.heritageaustralia.com.au/pdfs/Heritage%200606_Paddle%20steamers.pdf)

57 Quoted in “The River Murray”, Gordon, 1936, p90

58 *SA Register*, 6 September 1852, p2d



*The Lady Augusta with its tender the Eureka on the far side
[State Library SA, B599]*

5.6 The *Lady Augusta*

Cadell's boat, named the *Lady Augusta* in honour of Sir Henry Young's wife, was built at Jacksons Landing, Pyrmont (Sydney), by Thomas Chowne, builder of the first Manly Ferry.⁵⁹ In February 1853, the *Sydney Morning Herald* reported that the vessel was "fast arriving towards completion" and the "little steamer" was launched on Thursday 24 March.⁶⁰ Cadell then hosted a lavish "festival" on his steamship *Cleopatra* which "presented a beautiful appearance as she floated in conscious pride and exquisite symmetry on the blue waters of the harbour".⁶¹

The *Lady Augusta* was cleared from Sydney on 31 May "in ballast" with Captain William Davidson at the helm.⁶² The steamer called in to Port Philip for coal on 26 June and made a favourable impression:

... with her light draught of water, combined with speed, we think she is well adapted. Although only 19 tons register, she offers very great accommodations by a house on deck, her entire length, and she is fitted with two engines of 15-horse power each, by Russell of Sydney, working up to 20, on the horizontal principle, which is well adapted for such small vessels, as taking up very little space. She is a very fine model, and reflects much credit on her projector and builders

The *Lady Augusta* left Melbourne on 18 July but encountered heavy weather and put into Portland.⁶³ It arrived at the Murray mouth on Friday 12 August and anchored near Victor Harbor.⁶⁴ Then, on what the *Register* said would be "amongst our memorable days", Cadell took the *Lady Augusta* through the sea-mouth and along the deep water channel to anchor at Goolwa.⁶⁵

NAVIGATION OF THE MURRAY PASSAGE OF THE SEA-MOUTH ACCOMPLISHED BY STEAM.

The 15th of August (1834) has long been remarkable as the day on which the South Australian Act passed the British Parliament; and, after the lapse of nineteen years, the 16th day of August will also be amongst our memorable days, as that on which the first steam passage of the Murray's sea-mouth was effected by Captain Cadell.

⁵⁹ *History of Jacksons Landing, Pyrmont* website, 2012, Jacksons Landing Community Association, <www.jacksonslanding.net.au/history/industries/shipbuilding-and-metalworking/>, viewed 11 September 2014

⁶⁰ "The Lady Augusta", *Sydney Morning Herald*, 25 March 1853, p2a

⁶¹ "Festival on board the Cleopatra", *Sydney Morning Herald*, 25 March 1853, p2e

⁶² "Clearances", *Sydney Morning Herald*, 1 June 1853, p2a

⁶³ *SA Register*, 8 August 1853, p3c

⁶⁴ *SA Register*, 13 August 1853, p2f

⁶⁵ *SA Register*, 18 August 1853, p2f

The steamer *Lady Augusta* left her moorings in Port Elliot at 5 o'clock in the morning, and having steamed up, dropped anchor in five fathoms, opposite the bar at the Sea-mouth of the Murray, about half-a-mile clear of the breakers, there to await a smoothing. At noon the life-boat came through the surf, and in the afternoon it was observed that, as the northerly wind, which had been keeping the breakers down all day, lulled, they became worse, it was therefore determined at once to push the steamer through.

The anchor was weighed at 3 o'clock in the afternoon, and after taking two or three round turns at half-speed, whilst the steam was being fully got up, Capt. Cadell rushed the steamer through the bar passage — a feat which was accomplished in good style. Two whaleboats — a nine-oared boat and a five — followed the steamer in, and although the nine oared boat was filled to the 'thwarts, both came in safe. The *Lady Augusta* then steamed up through that part of the Lake which is known as the Goolwa, or "deep water channel of the Murray," and on arriving in the waters of the township so called, made fast to the Goolwa Jetty; when she was welcomed by the population of the entire district with volleys of musketry, and a salute from the guns of the steamer's cargo vessel *Eureka*.


The *Eureka* will probably be launched on Monday, and on Tuesday the *Lady Augusta* will take her in tow and proceed upon her first voyage up the river.

Capt. Cadell wishes it to be understood that his first will be an experimental trip rather than a river voyage with a view to profit. He will be honoured with the company of the Lieutenant-Governor, and although it is probable *Lady Young* may not be of the party, His Excellency will be accompanied by several gentlemen, with the ladies of their families. Capt. Cadell is determined to conduct the steamer as far up as possible, and there seems to be a very general intention among his distinguished passengers to be the companions of his memorable first voyage to the utmost extent.

Cadell later formed the River Murray Navigation Company and the *Lady Augusta* became the flagship of quite a fleet which included a large iron ship, the *Melbourne*; two new steamers, the *Albury* and *Gundagai* made by Napier & Son of Glasgow and assembled at Goolwa; and six barges. The *Albury* and *Gundagai* were the work horses and the *Melbourne* made the coastal run between Port Elliot and Port Adelaide: the *Lady Augusta* was kept on standby.⁶⁶ The first advertisement for the Company appeared in the *Register* on 1 January 1855⁶⁷ but there was no published record of its formation. A prospectus for public shares was published in June which showed that two more barges and a teak sailing schooner of 100 tons had been added to the fleet.⁶⁸

Despite the huge volume of business in the developing river trade, the Company doesn't appear to have been a financial success and was wound up after three years. According to A T Saunders, who had the original minute book of the company in his possession, the business was "mainly speculative – buying goods and sending them up the river and to Victoria for sale". The costs were high and the profits were mainly on paper.⁶⁹

But this was the beginning of a significant new era of steam navigation on the Murray-Darling: "Within ten years there were 20 paddle-steamers plying the river, and within 20 years there were hundreds, carrying 25,000 bales of wool each year as well as lead and copper from Broken Hill and timber from Echuca."⁷⁰ River ports were established and towns grew up around them. Boats yards were set up to build



**RIVER MURRAY NAVIGATION
COMPANY'S LADY AUGUSTA
LINE OF STEAMERS.**—Having now
commenced PLYING on the River
MURRAY and its Tributaries, Settlers desirous of sending
their produce to market, or for shipment to England,
by this safe and expeditious mode of transit, will please
apply to
MESSES. W. YOUNGHUSBAND, JUN., & CO.,
Adelaide;
MESSES. R. & P. TURNBULL, Melbourne; or
LAIDLEY, IRELAND, & CO., Sydney.
N.B.—Wool of the district of the Murray and its tribu-
taries, river-borne, is authorized to be cleared by the Col-
lector of Customs at Port Elliot, in Encounter Bay, on
certificate of origin, as the produce of South Australia,
Victoria, or New South Wales, as the case may be.
[219mev]

Advertisement for River Murray Navigation Company services [SA Register, 1 January 1855, p1a]

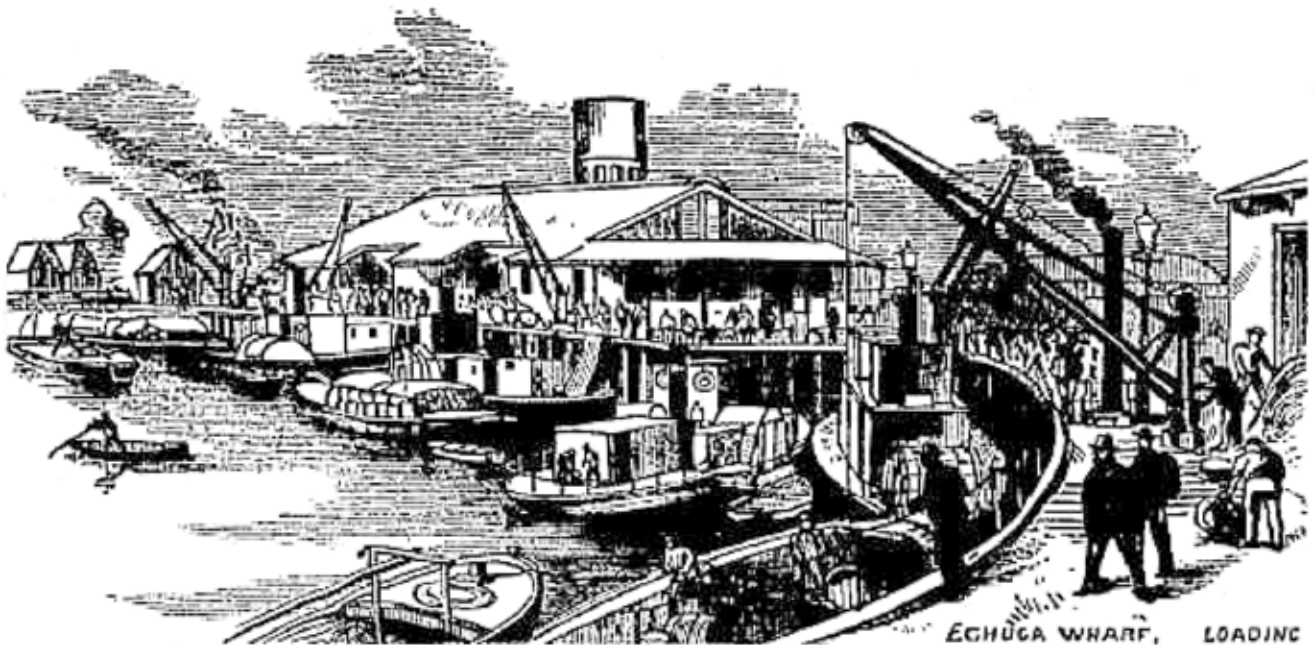
66 "River Murray Navigation Company", *SA Register*, 7 March 1855, p2f

67 *SA Register*, 1 January 1855, p1a

68 *SA Register*, 19 June 1855, p1g

69 *Register*, 8 January 1921, p8g; Saunders also made an interesting point about the *Lady Augusta* which he referred to as the *Lady Agusta*, saying that the Acting Registrar of Shipping had informed him that this misspelling was the officially registered name of the vessel [*Register*, 11 September 1920, p11fg]

70 Stirling, 2006, p43a



*Echuca, 1878 – the largest river port in Australia with a wharf 1.2 kilometres long
[Illustrated Australian News, 28 November 1878, page 201]*

and repair the side-wheelers vessels uniquely suited to manoeuvring through the twists and turns of the river. A timber industry developed to supply materials for the builders and fuel for the boilers, stripping the river banks of the mighty red gums and creating a problem of bank erosion and loss of habitat for fish and other native animals.

Its importance was summed up in 1936 by the Honourable Sir David Gordon, MLC, writing in the *Centenary History of South Australia*:⁷¹

Trading boats did much to open up country in proximity to the rivers, a task which was recognized some sixty years later when three States united in a bold scheme of locking the Murray to ensure a permanent waterway for purposes of production and cheap transport. ...

South Australia thus led the way in this enterprise, and its people were quick to realize that every effort would have to be made to regulate the flow of water in order to give permanence to these intermittent streams. Having taken the initiative in proving the rivers suitable for transport for long distances inland, South Australia invited New South Wales and Victoria to co-operate in making improvements to the channels and generally facilitating transport.

In 1863 an “Intercolonial” Conference was held in Melbourne, at which the following resolution was carried: “That, in the opinion of this Conference, the commerce, population, and wealth of Australia can be largely increased by rendering navigable and otherwise utilizing the great waters of the interior, such as the Murray, Edward, Murrumbidgee, and Darling; and that the obligation of carrying into effect the necessary works to accomplish these objects devolves primarily upon the respective Governments having jurisdiction over such rivers.” For nearly fifty years the fight for riparian rights was waged by South Australia. The other riparian States ..., at first sympathetic, began to treat the representations of South Australia coldly as soon as their railways approached the valley of the Murray. ... Victoria, in particular, pushed her railways to the river, and fostered rail traffic with the object of destroying the South Australian river trade. Federation eased the situation, although the railways had practically ruined river navigation. ...

The river trade never recovered from the downturn of the Second World War but its heritage and many of its vessels are preserved by dedicated enthusiasts and a thriving tourism industry.

⁷¹ Gordon, 1936, pp91-92

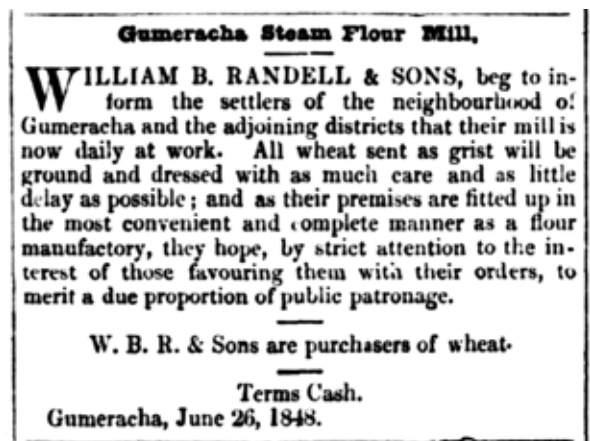
6. The Paddle Steamer *Mary Ann*

The flamboyant Francis Cadell and the *Lady Augusta* claimed the Government bonus for being the first iron steamer of not less than 40-horse power to reach (at least) the junction of the Darling but it was not the first engine-powered boat on the Murray-Darling. While the *Lady Augusta* (named after the wife of the Governor of South Australia) was nearing completion in Sydney, a much smaller vessel was being manhandled down the banks of the Murray at Reedy Creek, south of today's Mannum (see map, page 26), and being fitted with a spindly engine of only about seven horsepower and a box boiler which flexed alarmingly when in steam. This was the *Mary Ann* and it was built, not by a ship's captain or even a boat builder, but by a 28-year-old flour miller who named it after his mother.

William Richard Randell, miller, pioneer river trader, farmer, and later Member of the SA Parliament, not only earned his unassailable place in posterity but became one of the legendary captains on the Murray.

6.1 William Richard Randell

Randell was 13 when his family immigrated from Devon, arriving in South Australia on 20 October 1837. His father, William Beavis Randell, had been appointed General Stock Manager for the South Australian Company⁷² and in 1839 he bought land along the Torrens Valley to the north-east of Adelaide. The Aboriginal name for the fine waterhole here was "Umeracha" which somehow became "Gumeracha" when the name was recorded by the Company in London.⁷³ Randell built his family home here and in 1853 began laying out the nearby township of Gumeracha.⁷⁴



SA Register, 28 June 1848, p2b

In 1848 W B Randell built a flour mill which W R Randell and his brothers rented. Randell Snr also had land on the western bank of the Murray near today's Mannum where he raised cattle. In the early 1850s, when he was about 28, Randell conceived an idea. At a time when, it seemed, half of South Australia had gone to the Victorian goldfields to seek their fortune, Randell's vision was to use the river as a trade route, supplying the produce of his mill and other goods to the miners and settlers.

As his granddaughter Mabel Kinmont imagined it:⁷⁵

Before him came visions of steamers plying up and down carrying goods and produce to isolated settlers upon its banks. Why hadn't he thought of it before? What a boon it would be to station-owners away up north, who depended entirely on that slowest of all transport, the bullock waggon! Numbers of men were always busy looking for gold, or trying to discover fresh benefits for the colony. This was HIS chance.

Randell's practical knowledge of machinery had been acquired by working at the mill. With the aid of local carpenters, Randell began building the frame of a small steamer. There is no indication of where he got the plans or the ideas for a sea-worthy vessel – one can only assume there was sufficient knowledge of shipbuilding among the community or local tradesmen. In 1924, the carpenters were named as "Messrs. Bond, Weise and Teakle, all of Gumeracha" by John Francis, an "old river hand".⁷⁶ However, after more than 70 years, the recollection might not be reliable.

⁷² Mabel Kinmont, 1951, *Family Portrait of William Richard Randell: First steam navigator of the River Murray and its tributaries*, self published, Adelaide, p4

⁷³ "Town History of Gumeracha", *Adelaide Hills On-Line* website, <www.adhills.com.au/tourism/towns/gumeracha/history.html> viewed 12 September 2014

⁷⁴ Extracts from W B Randell's diary were published in the *Mount Barker Courier*, 3 April 1947: the entry for 31 January 1853 reads "Engaged about making a rough sketch of our intended town of Gumeracha" [p6c-e

⁷⁵ Kinmont, 1951, p8

⁷⁶ *Murray Pioneer and Australian River Record (Renmark)*, 11 January 1924, p6a



*William Beavis and Mary Ann Randell, parents of William Richard Randell
[Gumeracha and District History Centre]*

Some sources say the mill's blacksmith made the boiler using the only techniques available to him, riveting together flat sheets of iron to make a big rectangular box. However, there is no record of the mill having a blacksmith and Randell's own account in the *Adelaide Observer* states that the boiler was made by John Coulls in his Blyth Street (Adelaide) foundry and blacksmith's shop.⁷⁷ The engine was built by German-born machinist Claus Gehlken. The *Register* described the cylinder as "an excellent piece of workmanship".⁷⁸ However, there is no evidence that Gehlken had his own workshop and it is more likely that he was supervising the work in someone else's, possibly George Wyatt's. [See discussion, page 47ff.]

By mid-August 1852, news of Randell's project had been published:⁷⁹

STEAMERS FOR THE MURRAY.-There seems a great likelihood that in a short time the magnificent and long neglected Murray will be covered with steamers. There is now a certainty of three at least, if not four, before another year. Captain Cadell proposes to have two, one for passengers and another to act as a tug. Messrs. Randall [sic], of Gumeracka [sic], are preparing another to take flour for the diggings, and the Governor has sent £5000 for an iron steamer for the same river. It would require a strong imagination to conceive the changes a few years will produce.

The wooden frame was dismantled and carted to the river, no easy task because there was just a track through mallee, native pine groves, and sand dunes between Palmer and Mannum which, even by 1859, was only cleared half-way. The remaining road to Gumeracha, while cleared, was still very rough.

The component parts were then reassembled on the river bank on the north side of Reedy Creek⁸⁰ (south of today's Mannum) on land leased by John Baker. Installing the boiler and engine must have been quite a challenge. William Snr's diary records some key dates and notes that Elliot (the fourth son who seems to have done most of the carting) took the engine to the Murray on 6 October 1852.⁸¹

The entry for 18 December is particularly telling:⁸²

Engaged in afternoon with William, just returned from Murray. William has returned poorly and is completely sickened of his steam boat building job in hand there.

77 "Murray Navigation in the Past", *Adelaide Observer*, 12 August 1905, p29a-c

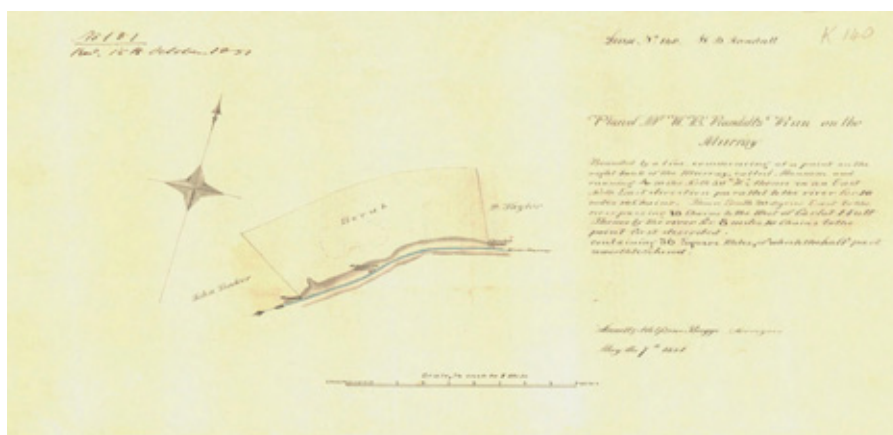
78 *SA Register*, 22 February 1853, p3a; the *Register* spelled his name Ghelkin

79 *Adelaide Morning Chronicle*, 16 August 1852, p3a

80 *Register*, 9 March 1903, p4g

81 Kinmont, 1951, p9

82 *Ibid*



Location map [modern road shown]

The *Mary Ann* was constructed on the north bank of Reedy Creek which was on John Baker's lease and not the area leased to Randell's father (see plan, left).

The *Mary Ann*'s first voyage was to Baker's Wall Station which was further south. For its first upstream voyage, the little steamer was launched from the Randells' cattle station, Noa No.

The *Register* painted a similar picture of the challenge in the construction of the *Mary Ann* which:⁸³

... was built upon the banks of the river, by Mr. Randell, her enterprising owner and commander, who, before the completion of his own little craft, had never been on board a steamer in his life. In the construction of this vessel all the inconveniences arising from inexperience and the want of skilful labour were felt by the projector. House carpenters had to be employed, and the materials carted from a great distance. Annoyances of various kinds from time to time obstructed and delayed the work, and rendered its eventual completion a matter of great uncertainty. A person less enthusiastic than Mr. Randell would have given it up in despair; but, strong in his faith in the practicability of a cherished project, he persevered until he saw his little vessel proudly floating on the waters of the noble stream.

However, speaking about it to the *Advertiser* 50 years later, Randell was more matter-of-fact:⁸⁴

I got a few carpenters together ... and framed a boat in Gumeracha, and then carted it down to Mannum, and put it together there. I knew a good deal about the engines, because I had had experience with the machinery in the flourmill.

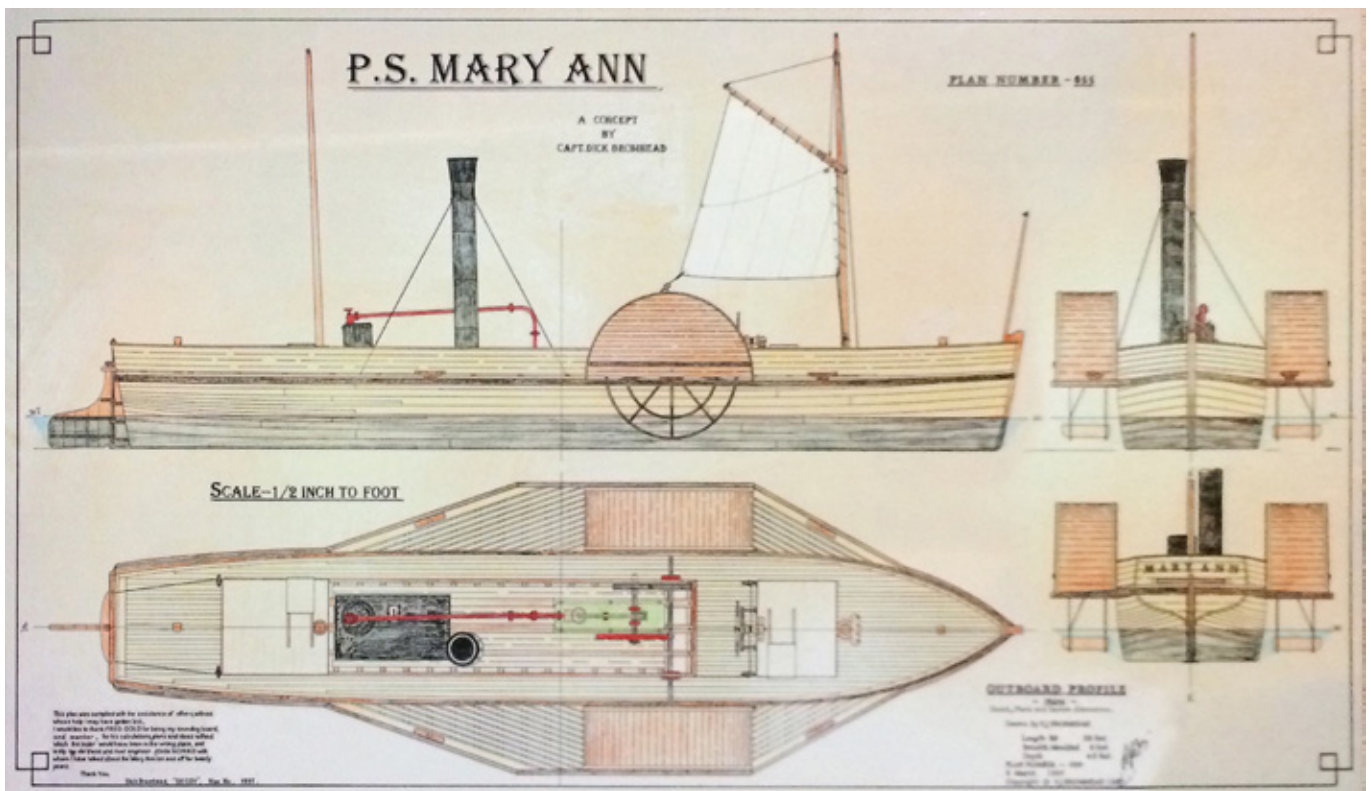
The boat was constructed in an interesting manner, according to another pioneer settler, Simpson Newland, speaking at the official opening of the Randell Memorial in Mannum on 1 January 1914:⁸⁵

Randell had little or no experience in boatbuilding or machinery, but such details did not daunt, much less deter, old settlers. Perhaps some of the initial difficulties were overcome

83 *SA Register*, 15 October 1853, p3b

84 *Advertiser*, 2 May 1903 pp7i, 8a: the machinery at Randell's mill included an engine, possibly of "marine construction", made in the Colony by George Wyatt (see discussion, page 51)

85 *Mount Barker Courier and Onkaparinga and Gumeracha Advertiser*, 9 January 1914, 4g



*Conceptual drawing of the Mary Ann by Captain Dick Bromhead
[Mannum Dock Museum]*

by a new process being adopted. The vessel was built bottom up, and then turned over right side up for completion. When the river rose the boiler was put in and she was floated off.

By September 1852, the *Register* was predicting the imminent completion of the craft:⁸⁶

We take the opportunity to state that in a very few weeks the small steamer building by Messrs. Randall [sic], of Gumeracka [sic], will be launched on the Murray, and soon after commence her first voyage towards the Victoria diggings with a cargo of flour. Her dimensions are – length, 50 feet; breadth of beam, 9 feet; draught, when loaded, 2 feet. From information carefully obtained by Messrs. Randall [sic], they are convinced their little steamer will be able to reach a point not more than forty miles distant from the northernmost diggings.

However, the work wasn't finished until February 1853 and the little vessel had its maiden voyage on Saturday 19 February which the *Register* announced a few days later:⁸⁷

We announce with much pleasure that the Messrs. Randall [sic] have successfully started the steam-boat Mary Ann, built by them on the banks of the Murray. The experimental trip was made on Saturday last, when the steamer went down the river as far as Wall, Mr. Baker's station, a distance of twelve miles, performing the whole distance, twenty-four miles, in four hours, including stoppages. Wood-fuel was used exclusively, and the steamer made good way even on the return trip against wind and current. When the breeze happened to be favourable in some of the reaches sails were used, but the distance was chiefly accomplished by steam. ...

There is no indication that there were ever any plans drawn for the *Mary Ann*; in any case, none survive. Based on the available descriptions, Captain Dick Bromhead drew the illustration above. The dimensions varied according to the source but the most reliable would have to be the description George Randell gave to the Legislative Council's Select Committee in November 1853: "The "*Mary Ann*" is 56 feet long, 9 feet beam, is about 7 horse power, or has a 10 inch cylinder."⁸⁸ Dick Bromhead said the overall length would have been 57 feet, taking into account the thickness of the stem and stern posts.⁸⁹

⁸⁶ *SA Register*, 6 September 1852, p2d

⁸⁷ *SA Register*, 22 February 1853, p3a

⁸⁸ *SAPP* No 102, November 1853, p5

⁸⁹ Personal communication, 15 October 2014



*The port of Goolwa in 1854: the Lady Augusta is on the left
[State Library of SA, B12160]*

In addition to the small engine, the *Mary Ann* had two masts, fore and aft, and a lugsail: “whenever the breeze becomes favourable, which happens oftener from the bending of the river than the veering of the wind, the little vessel glides through the current at a greatly increased rate”.⁹⁰

George Randell told the Select Committee the *Mary Ann* had cost £1800 to build⁹¹ – a significant sum, about \$170 000 in today’s dollars.⁹² On 18 March 1853, Randell’s father wrote in his diary:⁹³

... I see myself but very little chance for their remuneration adequate to the immense outlay of time, money, &c., and the great anxiety they have been exposed to in this undertaking

6.2 First Voyages of the *Mary Ann*

Randell was now sufficiently confident that the *Mary Ann* was ready for its first trading voyage and he loaded it with 112 bags of flour, 24 bags of bran, 5 bags of biscuits, 69 bags of sugar, 21 boxes of tea, 4 cases of sundries, 400 lbs of tobacco, and about 4 tons of wood fuel.⁹⁴ However, because he was travelling to another colony, he first had to travel 140 miles down river to Goolwa to have his cargo cleared by customs officials. This “humbug and red tapeism” was not only annoying but also dangerous because it forced him to cross the exposed waters of Lake Alexandrina in the little vessel:⁹⁵

... on one of the occasions I nearly lost the boat, cargo, and all on the lake, as I was caught on a heavy storm, and the boat not having sufficient power and myself being an inexperienced navigator, I had great difficulty in getting across. After twice submitting to this unfair treatment Mr. George Elder, of Elder, Stirling, & Co., was kind enough to go with me to state the case to Governor Young, who rectified the grievance immediately, and after that an officer was sent to Mannum when required, I paying his travelling expenses.

News of this first voyage had quickly spread and when the *Mary Ann* arrived at Goolwa, early in the morning of Friday 4 March 1853, the little steamer was received by a delighted crowd of several hundred, including the Governor Sir Henry Young. The *Register* shared the excitement:⁹⁶

It affords us the highest possible satisfaction to announce that the first steamer on the Murray has now started on her first voyage up that splendid stream.

The arrival of the *Mary Ann* at the Goolwa was expected on Thursday afternoon, but in consequence of a strong head wind, her passage down the River and through the

⁹⁰ *Register*, 12 September 1853, p3c

⁹¹ SAPP No 102, November 1853, p5

⁹² \$168 730 using the University of Melbourne’s website *Historical Value of the Australian Dollar*, Retail Price Index Numbers. Giblin Library Reference Collection ABS 1301.0 AUST

⁹³ Quoted in the *Adelaide Observer*, 9 January 1909, p37e

⁹⁴ *SA Register*, 31 March 1853, p3a

⁹⁵ “Murray Navigation in the Past”, *Adelaide Observer*, 12 August 1905, p29c

⁹⁶ *SA Register*, 7 March 1853, p2c

Lake was impeded. Early Friday morning, however, she made her appearance, which was hailed with delight, not only by the Lieutenant-Governor and the large party who accompanied His Excellency, but by some 200 or 300 persons of the respectable yeomanry of the surrounding districts, many with their wives and families, and several gentlemen from Adelaide.

The little steamer was saluted on arrival by a volley from 19 guns, and other demonstrations of joy ... The cheering was most hearty and enthusiastic.

The Governor and his entourage boarded the little boat and were treated to “a very hospitable and even splendid lunch” which included some of the produce of Randell Snr’s garden and “wines, spirits, &c, [which] were excellent, and in profusion”.⁹⁷

Soon after 12 o’clock, on Saturday the *Mary Ann* took her departure under canvas and steam, and amidst deafening plaudits, with the full expectation of reaching Wellington, distant 40 miles, before sundown.

Randell returned to Mannum and then began the real test for the *Mary Ann* – the trip upstream. Departing at 12 o’clock on Friday 25 March 1853,⁹⁸ he hoped to reach Swan Hill or even further and the *Register* wished them well.⁹⁹

We are sure that we are only echoing the general voice of the colony when we express our best wishes for the successful termination of the trip and the adventure. Great results will doubtless arise in the course of a very few years from this actual commencement of steam-navigation on the Murray. It will be one of the most gratifying tasks of the Adelaide journalist to record from time to time the rapid growth of the important traffic which will inevitably be created by the facilities about to be afforded by steam communication on the waters of that noble stream.

However, beyond Moorundie, the river proved difficult to navigate and he finally abandoned the attempt on Thursday 7 April 1853, having reached “about 30 miles this side [of] Lake Bonney ... here our progress was entirely put a stop to, the river being so very shallow that we found it impossible to proceed”.¹⁰⁰ Randell returned to Mannum on 14 April.¹⁰¹

A few days later he wrote an account for the *Register*:¹⁰²

... I proceeded homewards the next day, and had considerable difficulty in getting back, the river having shoaled so much that the boat grounded on several sandbanks in returning, that she had passed over with ease on going up; and at the N.E. bend had to discharge several tons of cargo to get her over a shoal existing there. I feel very disappointed at my ill success, but am fully convinced that the navigation of the river is impracticable for any boat at this season of the year. Six months of the year, from August to February, I believe, is the right time, and have no doubt but that it may be successfully navigated during that period.

The *Register* disagreed with his conclusion:¹⁰³

It is quite evident that the little steamer’s lading made a very considerable addition to her draught of water; and her failure to advance beyond the point reached, at a season when the Murray is usually low, is not so much to be surprised at. We have not forgotten the soundings of the Darling downwards, which have been published on sufficient authority, and confirmed by the report of Capt. Cadell, extending over some hundreds of miles farther up the river, and until the *Lady Augusta* has made her experimental trip we shall certainly not conclude that the Murray navigation is only practicable during some six months in the year, as at present imagined by Mr. Randell, jun.

While Randell waited for the river to rise sufficiently to try again, he made the most of the delay to work on the boat and also had second thoughts about how much cargo he would carry:¹⁰⁴

97 *Op cit*, p2cd

98 Extract from William Randell Snr’s diary, “Navigators of the Murray”, *Adelaide Observer*, 9 January 1909, p37e

99 *SA Register*, 31 March 1853, p3a

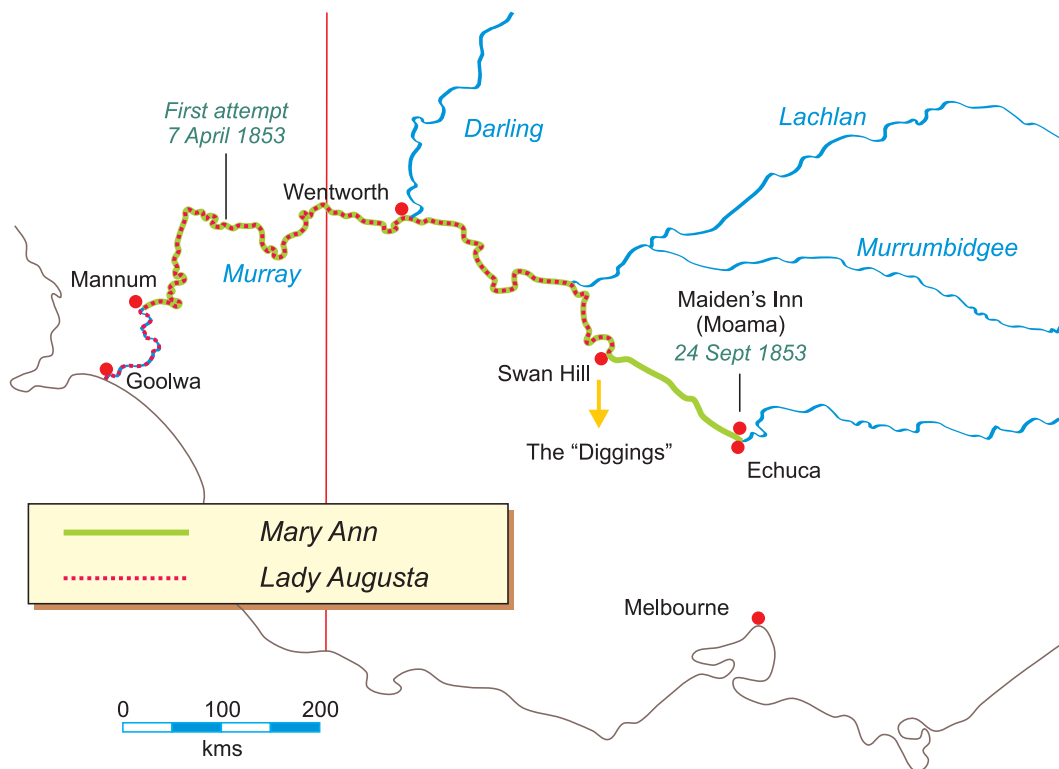
100 *SA Register*, 19 April 1853, p3b

101 “Navigators of the Murray”, *Adelaide Observer*, 9 January 1909, p37e

102 *SA Register*, 19 April 1853, p3b

103 *Ibid*

104 *SA Register*, 18 August 1853, p2f



*Voyages of the Mary Ann and the Lady Augusta
April-September 1853*

... Previous to this her second attempt to ascend the Murray, she has undergone a thorough refit, certain improvements have been effected, and about half her cargo has been landed; making her intended voyage partake more of the experimental character than seemed to belong to her first voyage, undertaken with a full cargo at an inauspicious season of the year, and when the waters of the Murray were more than usually low.

He set off again on Monday 15 August 1853. The same day, Captain Cadell had successfully brought the *Lady Augusta* through the Murray mouth and anchored at Goolwa (see pages 20 and 21). Cadell's more powerful boat caught up with the *Mary Ann*, which had moored for the night, at about 11:00pm on Wednesday 14 September. The next day, the competitive nature of both men came into play:¹⁰⁵

... for the rest of the afternoon and night, we were not far from each other; in fact, we had a race which lasted till long after sunset, and during which we passed and re-passed each other four or five times. At length we resolved on a temporary suspension of the struggle, and, putting off the steam, allowed the *Lady Augusta* to pass, and came to for the night. The next day [Friday] at noon we came up to her again as she was taking in wood: and while we were doing the same in the evening, she again came up and anchored within sight of us. When we arose in the morning, we found the *Lady Augusta* had started during the night. At sun-rise, we got under way, and arriving at Swan Hill about 5 in the afternoon, found that the *Lady Augusta* had been there three hours.

Cadell had made the point – the *Lady Augusta* had navigated the Murray to “at least” the junction of the Darling and nearly 600 miles beyond. Randell, however, with the smaller craft, then went on to travel nearly another 350 river miles to James Maiden’s Junction Inn (present day Moama):¹⁰⁶

The reception we met with at Mr. Maiden’s deserves to be mentioned most gratefully. When we came up we were greeted by loud cheers from a large number of people assembled on the banks, and saluted by a vigorous fire from numerous small-arms and one swivel gun belonging to Mr. Maiden. But besides the cordiality of our reception, we were entertained by Mr. Maiden, and supplied with everything necessary. In short, we were treated with marked kindness and liberality during our whole stay. Not only was all this done without charge, but he offered to pilot us to within a few miles of the diggings, and get us a lot of passengers.

¹⁰⁵ *SA Register*, 14 October 1853, p3ef

¹⁰⁶ *SA Register*, 14 October 1853, p3f

The river in the neighbourhood of Maiden's Inn has a good width, and is easier of navigation than at some other points both above and below Swan Hill. The land also is better than on any other part of the river as far as we had opportunity of observing; the banks are high and covered with a species of mimosa bearing a beautiful flower similar to that of the wattle of South Australia.

Both steamers were side-wheelers, a design particularly suited to the winding river because it made the vessels very manoeuvrable.

Randell returned to Mannum on 11 October¹⁰⁷ having completed a trip of some 3000 miles – not a bad effort for an inexperienced boat builder and novice river captain!

The *Register* summed it up well:¹⁰⁸

Mr. Randell entered upon the undertaking entirely at his own expense and risk, and without much knowledge as to the description of boat required for the Murray traffic. The *Mary Ann*, we understand, is not of a construction to render her altogether fit for the service for which she was intended, and Mr. Randell will consequently suffer a considerable loss. We have too much confidence, however, in the public spirit of the colonists, and particularly of those of them who are especially interested in the trade of the Murray, to suppose that they will allow such a loss to fall upon a gentleman who has taken such a praiseworthy part in the solution of a great commercial problem.

The *Mary Ann* was not eligible for the Government bonus of £2000: it was a wooden boat, not iron; it had an engine rated significantly less than the specified 40 horsepower; and it had a draught greater than two feet (something which Randell had quickly realised was a problem). However, the Randells had been awarded with £300 from the Land Fund after their triumphant arrival at Goolwa:¹⁰⁹

We learn that the patriotic colonists who had the spirit, at their own cost, to lead the way in the honourable and useful enterprise of navigating the Murray, have received an official recognition of their zeal and success, although not a compensation (undesired and unexpected as that would have been) for their outlay. A donation of £300 has been awarded to them from the Crown moiety of the land, fund. Augmented as this fund will be by the sales of Crown land on the banks of a great river, first opened to commercial enterprise by steam navigation, it is not unmeet that the first boat should receive some consideration, although from its dimensions it is incapable of competing with the larger boats, whose size and power require the stimulus of premiums not only honorary, as that granted to the Messrs. Randall's [sic] wooden boat and little engine, but remunerative or profitable like those designed for the steamer of Capt. Cadell ...

On 21 October, the Legislative Council decided to have three gold medals struck to commemorate Cadell's achievement: one for the Captain, one for the Governor, and one for the Council archives. Charles Hare (the member for West Torrens) proposed that a fourth medal be awarded to the Randells. Some discussion ensued and the House concluded that the Randells were deserving of recognition but that the medals were intended specifically to recognise Cadell's achievements.¹¹⁰

In November, Hare moved that the Legislative Council established a Select Committee "with a view to award those gentlemen some honorary distinction or some pecuniary reward".¹¹¹ It took them the best part of a month but they decided to ask the Governor to pay the Randells another £300 which he promptly agreed to do.¹¹² Hare also wrote to William Randell Snr and the letter was found after his death, carefully preserved with the proud father's private papers:¹¹³

I have just now passed through the Legislative Council an address to His Excellency the Governor, requesting His Excellency the Governor to pay your sons £300 (in addition to that which they have received) for their energy and enterprise in first navigating the River Murray by steam.

107 *SA Register*, 14 October 1853, p3f

108 *SA Register*, 15 October 1853, p3b

109 "Navigation of the Murray", *SA Register*, 14 March 1853, p2e

110 Proceedings of the Legislative Council, 21 October 1853 [*SA Register*, 22 October 1853, p3bc]

111 Proceedings of the Legislative Council, 9 November 1853 [*SA Register*, 10 November 1853, p3c]

112 "Message from His Excellency", *SA Register*, 8 December 1853, p3c: "the Lieutenant-Governor ... had directed the payment of a further sum of £300 to the Messrs. Randell, for their navigation of the River Murray."

113 Kinmont, 1951, p24; Hare's name has been incorrectly transcribed as "Hoar"



In addition to the three gold medals commemorating Cadell's navigation of the Murray, at least six bronze medals were also cast: one of these was offered for auction in July 2014 by Noble Numismatics in Sydney
The 77 mm medal was cast by the Royal Mint in England and had an estimated value of \$35 000
The motto "tria juncta in uno" translates as "three joined in one"
 <www.noble.com.au/auctions/lot?id=318444>

I thought you would like to have to keep by you among your memorabilia a copy of the Report of the Committee by which it is intended by me fully to accredit your sons as the FIRST STEAM NAVIGATORS OF THE RIVER.

In January the following year Garran's *Royal South Australian Book Almanack and General Directory for 1854* was published and included:¹¹⁴

... Navigation of the Murray, being Extracts from a Journal kept on board the *Lady Augusta* during her Exploratory Trip, by E. W. Andrews, Esq., to which is appended the Journal of the Voyage of the *Mary Ann*, by Mr Randell ...

In October 1853 a subscription list was opened "for the purpose of enabling the colonists to express their appreciation of the services of the Messrs. Randell in connection with the opening of the navigation of the Murray"¹¹⁵ and a presentation of a purse containing 400 sovereigns was made to William and Thomas on Thursday 1 February 1855 (actually it was a Treasurer's cheque for £400). The testimonial concluded:¹¹⁶

... Our hope is that in the esteem of your fellow-colonists, as in the future commercial results of your enterprise, you will yet find ample compensation for the expense, labour, and anxieties you have undergone in conferring a great and lasting benefit on your adopted country.

An interested attendee was Thomas Fewson who had captained the ship which brought the Randells to South Australia in 1837:¹¹⁷

At that time they were but boys, and he little thought of the service they were destined to render to their adopted country, in proving the practicability of the River Murray navigation, which was now acknowledged by all as a most important benefit to the colonies of Australasia.

The Randell brothers decided to put their purse of sovereigns to good use. On 23 October 1853, George Randell wrote to the Adelaide shipping and general commission agents, Alexander Elder & Co:¹¹⁸

114 *SA Register*, 19 January 1854, p2e
 115 *SA Register*, 26 October 1853, p3ef
 116 "The Randells' Testimonial", *SA Register*, 2 February 1855, p3a
 117 *Ibid*
 118 *SAPP* No 102, 1853, Appendix, pp7-8

Gentlemen – As it is our intention to place an iron steamboat on the river Murray, we should feel obliged by your ordering one from England for us, as soon as practicable, of about the following dimensions, say, not less than 90 feet long, 20 feet broad, and 6 feet high, to carry as much cargo as possible on a draft of water not exceeding 2 feet, or, at the outside, 2 feet 3 inches.

The boat is to be as free as possible from ornamental work on the outside, or from anything likely to entangle in branches of trees, &c. The power of the engine required to be such as to drive her at the rate of seven or eight knots, at least, against a four-knot current – to be fitted with two high pressure, oscillating, engines, with expansion valves, boiler to be of the most approved construction and fitted for wood fuel. I would beg leave to intimate that particular attention should be made to the fire-boxes that they should be large enough to contain sufficient body of wood to raise the steam – most of the boilers that have come into the Colony have failed in this particular. The hold to be reserved for cargo only; the deck to be fitted up with cabins, in the American style, so as to carry as many passengers as possible; to be fitted with a single mast to ship or unship easily – with a large square sail. We expect the whole to be shipped, free of expense, for £1,500, or at the most, £2,000.

However, days later the brothers learned that the Legislative Council intended to award Cadell a bonus not of £2500 but of £4000, provided he employed “two additional steamers, not inferior in capability to the *Lady Augusta*, to ply on the Upper Murray, Murrumbidgee, and Darling, for a space of time not less than three years”.¹¹⁹ William Randell immediately cancelled the order, telling the Select Committee he “considered that no person could compete with others, who had such Government patronage”.¹²⁰

The “concertina boiler” was replaced by a more conventional boiler towards the end of 1853¹²¹ and Randell continued to operate the *Mary Ann* through 1854 although it seems that he only took it as far as Maiden’s Punt (the Junction Inn) one more time, in September.

However, as the *Melbourne Morning Herald* noted, there was plenty of business along the river:¹²²

To show the utility of this channel of traffic, we may mention that the *Lady Augusta* and the *Mary Ann* have already discharged cargo, consignments of supplies, &c., at no less than twenty different points. Indeed, had their tonnage been triple what it is it would have been all eagerly bespoke.

The old boiler had been unceremoniously dumped on the river bank.¹²³ Here it remained for decades until the Mannum community decided to salvage it and put it on display in recognition of the achievements of William Richard Randell and his brothers (see Section 6.7).

6.3 *Mary Ann* acquires a twin – the *Gemini*

To increase his cargo-carrying capacity, Randell decided to modify the *Mary Ann* and by April 1855 was well advanced on building a new vessel – the twin-hulled *Gemini*:¹²⁴

A twin steamer, to be called the *Gemini*, will appear upon the Murray in about ten weeks. Messrs. Randell, the spirited owners of the *Mary Ann*, are not only lengthening her considerably, but intend that she shall be united to a new hull, and therewith propelled by a central paddle-wheel of 14 feet diameter. The extreme length of the twin steamer will be 75 feet, with steering apparatus at each end. A new engine of 20 horse-power, with its boiler, made expressly to order by Messrs. Wyatt of this city, will be fixed upon deck, the extreme breadth of which will be 27 feet. It has been calculated that the *Gemini* will not draw more than 2 feet 6 inches with 50 tons deadweight; and her capacity for deck lading may be estimated from the dimensions stated. The timber, plank, and materials necessary for lengthening the *Mary Ann* for the construction of the new hull and otherwise, having

119 SA Register, 28 October 1853, p2f

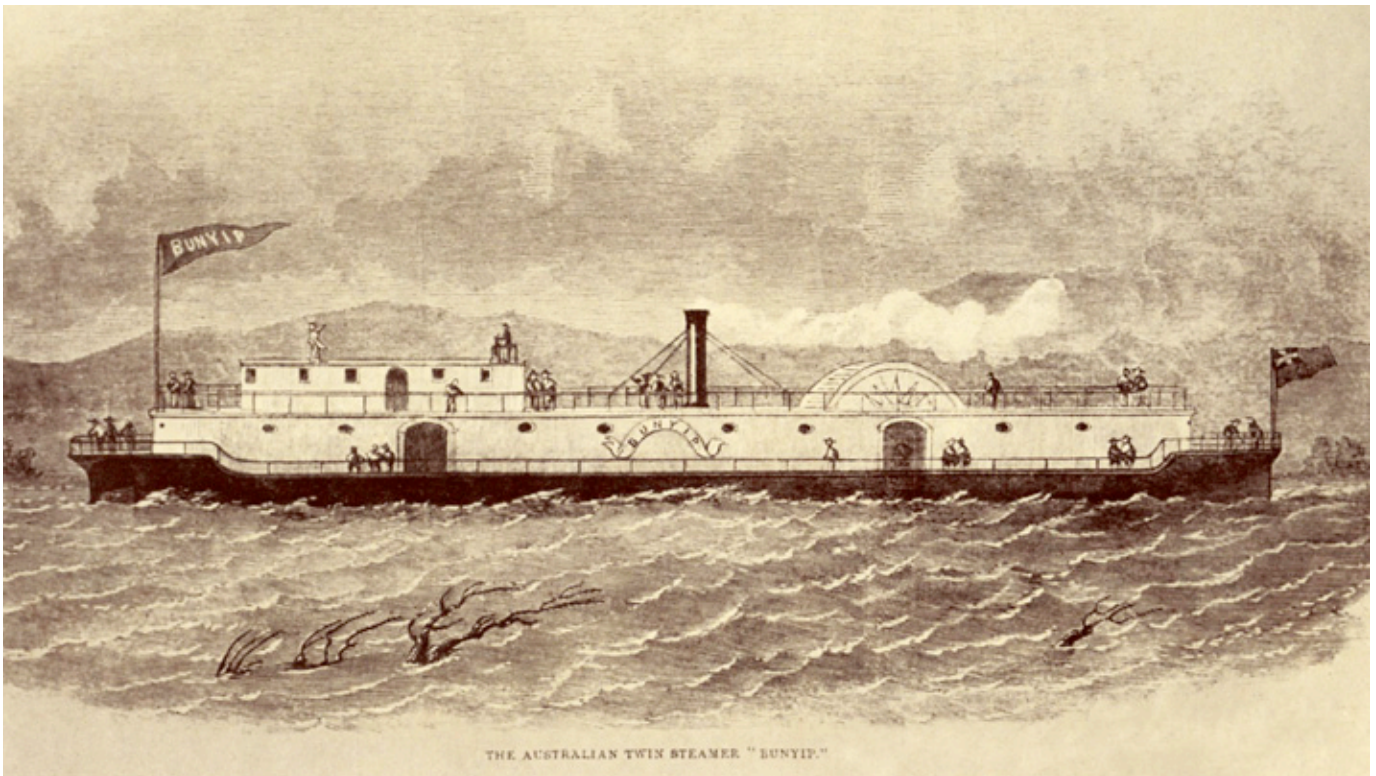
120 SAPP No 102, 1853, p6

121 On 28 November 1853, William Randell told the Select Committee, “Our vessel will draw less, when she has her new boiler put in her.” [SAPP No 102, 1853, p5]

122 SA Register, 2 October 1854, p2g

123 SAPP No 102, November 1853: “[Messrs Randell] are now procuring a new boiler for their present boat”

124 SA Register, 20 April 1855, p2g



Paddlesteamer Bunyip [Kinmont, 1951, p13]

been not only provided but carried up the river from the Goolwa, no unexpected delay is likely to retard the enterprise.

Mabel Kinmont said Randell placed the wheel in the middle “to avoid snags ripping the floats”.¹²⁵ An article in the *Sydney Morning Herald* provided more details of the *Gemini*’s “peculiar” construction:¹²⁶

... consisting of two separate hulls connected by strong beams and flooring, and having a paddle-wheel in the centre. The hulls are even in four water-tight compartments, so that in case of a snag entering one compartment the safety of the twin-boat would not be affected.

The horizontal engine was made by George Wyatt in his North Terrace workshop in only ten weeks:¹²⁷

The cylinder is a beautiful specimen of the founder’s art, and its internal finish, as well as the external fittings, may vouch for the fact that Mr. Wyatt’s establishment is not deficient in any of those powerful implements and mechanical appliances which modern science has introduced or perfected.

A new boiler (obviously not square) was also required but it is not clear from newspaper reports who made it. Boiler-making was not Wyatt’s speciality: some years later, Wyatt made two engines for the paddlesteamer *Kennedy* and the boiler was made by Robert Lindsay of Port Adelaide.¹²⁸

The *Gemini* was ready for launch by 23 July 1855 but would prove to be a difficult vessel: Mabel Kinmont says, “She seems to have been wrecked a number of times.”¹²⁹ Early in 1856 (probably in February), the *Gemini* sank but Randell recovered it and brought it back to Mannum on 9 March. He carried out further modifications to the hulls, this time fitting each one with six watertight compartments¹³⁰ – or possibly five. When it arrived at Goolwa on 2 June 1856, the *Register* said:¹³¹

... She has been fitted up with a new condenser, and divided into ten watertight compartments, with iron partitions, and other alterations have been made, so as to give her much greater deck accommodation for goods.

125 Kinmont, 1951, p20

126 28 August 1858; quoted in *SA Weekly Chronicle*, 9 October 1858, supp p3f

127 *SA Register*, 20 June 1855, p3a

128 *SA Register*, 28 April 1864, p2g

129 Kinmont, 1951, p20

130 *SA Register*, 13 March 1856, p2f

131 *SA Register*, 6 June 1856, p2a

The distances that Randell was able to travel into the heart of the continent in the *Gemini* were extraordinary. These included voyages to Hay (on the Murrumbidgee in 1855) and Brewarrina (in North West New South Wales on the Barwon river in 1859 – about 2400 miles or getting close to 4000 kilometres from the Murray mouth). Sir Richard McDonnell, Governor of South Australia (following Henry Young) from 1855 to 1862, was a keen explorer and travelled up the Murray as far as Menindie with Cadell in 1859. On the way they encountered Randell in the *Gemini*, “a rather crazy and broken-winded steamer, which vastly amused the natives by its melancholy wheezing and puffing”. Describing the voyage in a lecture in Dublin in 1863, McDonnell said:¹³²

... [Randell had] proceeded to a distance which, after comparing notes with him on his return, and examining the maps, I could not make out to be less, if we included the extremely tortuous windings of the rivers, than 1,800 miles from the junction of the Darling with the Murray, and therefore 2,400 miles from the sea mouth of the latter. ... Thus in a country where drought and suffering from want of water are so common, Mr. Randell made a voyage of nearly double the length, possibly, of any European river.

The river trade was now firmly established with steamers now able to reach as far as Albury:¹³³

The knowledge of this fact has, caused a considerable impetus in the river traffic during the season just terminated. Not only have the entire fleet of the River Murray Navigation Company, consisting of the steamers Lady Augusta, Albury, Gundagai, and Melbourne, and six barges, together with Mr. Randell's steamer *Gemini*, been more actively employed than during the previous season, but three other steamers – the Moolgewanke, Leichardt, and Sturt – have entered the trade. Nor can there be any doubt that the very large amount of business now doing with the gold fields would, in consequence of the cheapness of the river transit, be immensely increased if greater facilities existed for the transport of goods from Adelaide to the Murray. During the past season it has not been unusual for more time to be occupied in conveying cargo from Adelaide to the Goolwa (not 200 miles) than from the Goolwa to Albury, a distance of nearly 2,000 miles ...

6.5 The *Bunyip* and a growing fleet

The twin hull design of the *Gemini* was clearly successful, especially after Randell added the watertight compartments, because he started to build a new steamer with similar construction:¹³⁴

The navigation of the River Murray in 1857 is likely to demonstrate a greatly increased appreciation of the capabilities of that noble stream and its numerous tributaries. Among the anticipated additions to the steam force on the river is the new twin steamer *Bunyip*, now in course of construction at Mannum, by Captain W. R. Randell, and expected to be ready for launching in six weeks. The *Bunyip* may be classed with the *Gemini*, but is much larger, the extreme length being 106 feet, and extreme breadth 36 feet. The new twin boats are each 100 feet long, with 12 feet beam, united and covered by one deck, with a central opening for a single paddle wheel of about 18 feet diameter and 6 feet breast, which will be operated upon by two direct-acting engines, each of 25 horse-power. On the deck is placed a large and secure cargo-house, with a flat roof, and capacity for the stowage of 603 bales of wool. The draft of water is not likely to exceed 3 feet with 80 tons of dead-weight cargo. Each of the hulls is divided into nine watertight compartments, but they are not intended for cargo. The rudder will be placed midway between the two stern posts, and the turning of the vessel will be occasionally assisted by a paddle apparatus invented by Captain Randell, and placed between the two sterns, at right angles therewith, which will be worked by a small engine of three horse power, intended also for other useful purposes, such as assisting in the discharge of cargo and various mechanical operations. It is scarcely necessary to intimate that the small engine will be applied to the displacement of the turning apparatus and otherwise in case of accident. On the roof of the cargo-house is a capacious saloon for passengers, who may be comfortably accommodated in considerable numbers below when the space is not occupied by bulky commodities. Between the cargo-house and the gunwales is a walk, protected by a continuous rail, which will enable those on board to perambulate the vessel

132 *Mount Barker Courier*, 5 October 1917, p4hi

133 *SA Register*, 22 December 1856, p2ef

134 *SA Register*, 30 April 1857, p3c

in safety, or to ascend from either side and obtain a more extensive view of the river scenery from the flat roof, two external staircases being among the conveniences provided. The model, which is now before us, presents a very judicious and spirited combination, and the principle of construction which has been found to answer so well in the *Gemini* is likely to prove still more successful and remunerative in the *Bunyip*.

River navigation wasn't all plain sailing and the vessels continued to get into trouble as they attempted to navigate a river full of bends and snags but often not all that full of water, as these reports in the *Register* in May 1859 demonstrate:¹³⁵

The *Gemini*.— Mr. Randell had succeeded on the 17th instant in getting all the water out of one of the boats composing this twin-vessel; and on receiving additional aid, which he was daily expecting, he had every hope of being equally successful with the other, The *Gemini* was lying on a bed of snags in the Darling, about two miles above the Junction.

The *Bunyip*.— Messrs. Randell's steamer *Bunyip* was on Saturday last lying near Hart's Station on the Murray, about 20 miles below Overland Corner. She was unable to proceed on her upward voyage on account of the rapid fall of the river, and will have to wait until a rise takes place.

The river traffic continued to grow and Randell grew with it, although not on the same scale as Cadell's River Murray Navigation Company: while Cadell's company was operating four steamers and six barges, Randell just had the *Gemini*.¹³⁶ The competition was vigorous as steamers raced each other up the river to be the first to secure a load: on one occasion, as Ian Mudie relates, Randell was running short of fuel for the *Gemini* so he ordered the crew to feed sides of bacon from the cargo into the boiler "until the reaches of the river smelt like a thousand over-cooked breakfasts".¹³⁷

After the *Bunyip* Randell began to build up his own fleet, purchasing or building other vessels:¹³⁸

... After some years this boat [the *Bunyip*] was altered, the twin boats being brought together and converted into one stern wheel boat. The steamer [Bogan] he bought of the River Murray Navigation Company. She had a small engine in her. He took this out and substituted heavier engines. The next steamer he had built was the *Ariel*. She was constructed at Goolwa by Mr. Graham. In 1875 he purchased the steamer *Corowa* from Mr. E. C. Randell [his younger brother Elliott], of Echuca, and in 1892 bought the steamer *Waradgery*, formerly owned by McCulloch and Co. To complete his intimate connection with the river trade, it may be added that he owned the *Mannum Dry Dock*— the only dry dock in the State.

The loss of the *Bunyip* in 1863 nearly cost Randell his life. The logs of his vessels were also lost in the fire which means that much of the early history of the navigation of the Murray was lost as well.

6.6 End of the *Mary Ann*

The last vestige of the *Mary Ann* was the original hull incorporated in the *Gemini* and, in 1863, the *Gemini* itself was coming to the end of its service life. According to Ian Mudie, one of its last passengers was a "Reverend Mr Christie", ostensibly a Presbyterian missionary but actually the bushranger Frank Gardiner, in disguise, making his escape from New South Wales down the Darling! After this trip the *Gemini* was skippered for a while by Randell's younger brother, Elliott:¹³⁹

... and then [it] was allowed to go out of commission. Two years later William Randell separated the two hulls of the old steamer. The one that had originally been the hull of the *Mary Ann* was past use. He lengthened the other to 111 feet and built it up into a barge, the *Nil Desperandum*, which, in 1869 or 1870, he converted to a steamer.

The *Nil Desperandum*, in turn, underwent a transformation when its timbers were used to build the *Alpha* in 1896. The hull that was once the *Mary Ann*, built in Gumeracha and hauled through the hills to the banks of the Murray, was left to become waterlogged and sink, gone but not entirely forgotten – at least not by its builder:¹⁴⁰

135 *SA Register*, 26 May 1859, p2a

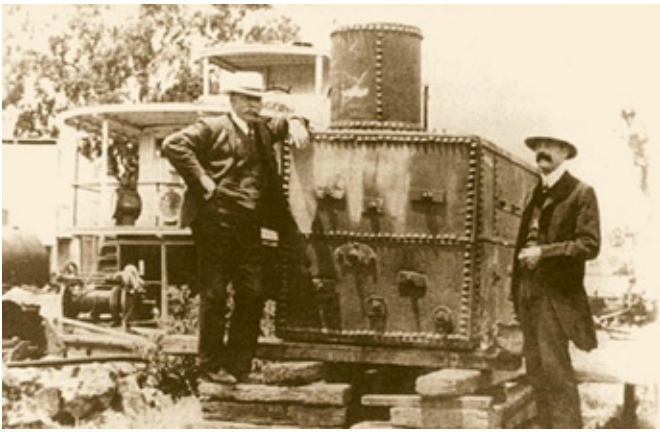
136 *SA Register*, 22 December 1856, p2ef

137 Mudie, 1961, pp30-31

138 *Register*, 6 March 1911, p7d

139 Ian Mudie, 1961, *Riverboats*, Rigby Limited, Adelaide, p84

140 Mudie, 1961, p85



Captain Arnold (left) and John Baseby, Town Clerk, with the Mary Ann boiler alongside the dry dock [Mannum Dock Museum]



Captain Randell with boiler which has now been moved near the Randell Street footpath [State Library of SA BRG 201/13/2/1]

... In William Randell's old age, his son, Skipper Murray Randell, saw him leaning out of a pram [a small flat-bottomed boat], half-way along the line of willows between Mannum dock and the punt, probing down into the mud of the river-bed with a long pole.

When he came ashore, Murray asked him what he had been looking for.

"The hull of the *Mary Ann*," the old man replied, "and my lost youth."

He hoped, he told Murray, to raise the hull so that it could be kept as a memorial of the early days on the rivers, along with the boiler of the *Mary Ann* which had recently been dragged out of the mud-hole near the dock where it had been lying for fifty years.

He failed to find it, and the hull of the first steamer ... lies there still ...

Rivermen say her timbers will still be good – embalmed in the mud of the river her old skipper loved so well.

6.7 Randell Memorial

The hull of the *Mary Ann* might have been hard to find but the old boiler was hard to miss. John Walker (an old Mannum identity whose father established Mannum's flour mill in 1875) drew attention to it in May 1892 when he wrote to the *Register* pointing out Randell's role as the pioneer navigator of the Murray:¹⁴¹

Her boiler can still be seen lying on the river bank here, and in these days of steel plates, Galloway tubes, Adam's joints, and other modern improvements, is well worth an inspection from those interested in such matters as a curiosity.

Sometime between then and December 1893, the old boiler was salvaged and put on display in Randell's premises. According to the Mannum Dock Museum website, it appears that Randell himself wasn't all that interested and it was the initiative of James Scott, the Mannum-based engineer who sometimes worked for Randell as well as in his own business. Randell told him, "if he wanted to pull the boiler out it would have to be in his own time".¹⁴² Remarks by Simpson Newland in 1914 also support the idea that Randell was not especially interested in the old boiler:¹⁴³

... I could grow sentimental over the worn-out old servant being cast out on the scrap-heap or into the mud-hole. Report says it was relegated for a time to each of these receptacles for old iron, to be ultimately, rescued through the remonstrances of friends and admirers of Captain Randell from a rapidly engulfing quagmire near the river bank. It was difficult to convince the practical old pioneer that such was not a fitting end for ugly, worn-out iron, even though it was the boiler of the first steamer that ever plied on the Murray waters. Happily, others thought otherwise, and it must have been with some quiet humor, characteristic of the man, and no little satisfaction that he saw the done-with tool,

141 "Honour to whom honour is due", letter to the editor, *SA Register*, 14 May 1892, p6h

142 "The boiler of the *Mary Ann* 1853", *Mannum Dock Museum* website, < www.psmarion.com/william-randell/> viewed 19 September 2013

143 *Advertiser*, 11 February 1914, p15b



(Left) The boiler of the *Mary Ann* displayed under cover at the foot of the Post Office Hill, 1912
[State Library of SA, B12137]

(Above) The boiler in the 1917 flood
[Mannum Dock Museum]

with which he attained the triumph of his life, taken from its mud bed and placed in so prominent a position of honor.

However, Scott went ahead and in December 1893 the *Mount Barker Courier* was able to report: “Lying at the dock is a curiosity in the shape of a small square boiler, which belonged to the first steamer on the Murray”.¹⁴⁴ The photograph (page 36, with Captain Arnold and John Baseby, the Mannum Town Clerk) shows the boiler in Randell’s yard, near the Dry Dock, raised up above the ground on some solid timbers. It soon became a local attraction and in 1903 was described as:¹⁴⁵

... a small, queer looking boiler, covered with rust, lies close to the footpath. There is nothing interesting in its appearance, but from an historical point of view it will be valued as long as the rivets hold its flimsy plates together. It is the boiler of the *Mary Ann*, the first steamer to navigate the Murray. ...

This could be the location shown in the photo (page 36, right) where the boiler has been turned parallel to the road. A few years later, Randell needed to move the boiler and in November 1909 Mannumites heard that the Chamber of Manufactures wanted to put it on display at their quinquennial (occurring every five years) “Exhibition of Manufactures, Arts and Industries” to be held in Adelaide from 24 March 1910:¹⁴⁶

For many years after it was taken out of the *Mary Ann* the old boiler lay half buried in the mud and sand by the river side, but some years ago it was dug up by the captain and is now proudly pointed out to visitors. The piece of land upon which it stands is required by the owner, and it is proposed that the boiler be removed to the foot of “Post Office Hill” as its permanent location. There is a rumor abroad that the Chamber of Manufactures are desirous of getting the boiler ... to exhibit in connection with their 1910 exhibition in Adelaide, but Mannum folk know what that would mean and are against the proposal. The boiler is certainly one of the most interesting relics on the river.

Randell had, indeed, said in September 1909 that he would give the boiler to the Chamber of Manufactures. In the light of his earlier remark to Scott, perhaps it wasn’t such a surprising move. In December 1909, the *Mount Barker Courier* said:¹⁴⁷

Recently extended reference was made to the steam boiler of the *Mary Ann*, which was the first used on the Murray, lying on the banks of the river at Mannum. It was stated that the

144 *Mount Barker Courier and Onkaparinga and Gumeracha Advertiser* [hereafter *Mount Barker Courier*], Friday 1 December 1893, p3g

145 “Mannum on the Murray”, *Advertiser*, 6 October 1903, p5b; *Chronicle*, 10 October 1903, p35bc

146 “First Boiler on the Murray”, *Mount Barker Courier*, 12 November 1909, p1ab; also *Register*, 24 November 1909, p6g

147 “The First Boiler on the Murray”, *Mount Barker Courier and Onkaparinga and Gumeracha Advertiser*, 10 December 1909, p2f

residents desired to obtain possession of it as a relic for the town, but the district council has been informed by the owner (Captain W. R. Randell, the pioneer navigator of the Murray) that he had previously promised it as a present to the S.A. Chamber of Manufactures. Seeing that the boiler is so closely identified with the history of Mannum the residents should approach the Chamber of Manufactures and ask that the interesting old relic be left in the town and be vested in the district council for protection and exhibition.

The boiler duly went on display in the Northern Annexe of the Exhibition alongside the first plough used in the Colony and the steam engine from John Ridley's flour mill. The latter was said to be still in working condition and is of particular interest because it might have been used as the model to construct the engine for the *Mary Ann* (see Section 8).¹⁴⁸

An interesting relic on view in the northern annexe at the exhibition is the original boiler of the *Mary Ann*, the first steamer to go on the Murray. The little vessel belonged to Capt. W. R. Randell, of Gumeracha, who ran the boat up the stream ahead of Capt. Cadell's *Lady Augusta*. The boiler is a square tank, and its navigator years afterwards said the voyage was somewhat exciting, as the sides of the boiler throbbed at every stroke of the piston, and the boiler itself had to be bound around with chains as a safeguard against bursting. For years it lay on the bank of the Murray at Mannum, and in September last [1909] Capt. Randell presented it to the Chamber of Manufactures, in view of the present exhibition. It is now held in company with two other historic mementoes, namely, the first plough used in South Australia and the first steam engine, which was formerly part of the equipment of Ridley's mill at Hindmarsh. The engine, which is still capable of work, is believed to be one of the earliest examples of a stationary engine in existence.

Shortly after the Exhibition opened, Randell – now aged 86 – left his home at Gumeracha to live in Adelaide. Perhaps this move had something to do with his decision to give away the boiler. He died the following year on 4 March 1911. In July, Mannum people, led by John Walker, began steps to create a memorial to the pioneering river captain,¹⁴⁹ starting with the return of the original boiler. At its Council meeting on 1 August 1911, the Chamber of Manufactures agreed to do so “on condition that the chamber may have it for exhibition purposes if desired”.¹⁵⁰

The boiler was returned and in June 1912 the Mannum Progress Committee was reported as “having a cement pedestal erected at the bottom of the Post Hill where the boiler will stand, and will be protected by a shelter shed”.¹⁵¹ The Post Hill or Post Office Hill is today's McLaren Street so the boiler could well have been returned to its original position as depicted in the cover photograph (see also page 36).

But the town was looking for something more and a public meeting was called in July “to decide what form the memorial, which it was decided to erect on the recreation grounds to perpetuate the memory of Captain Randell, shall take”.¹⁵² A Randell Memorial Fund was established with John Walker as secretary and in May 1913 he reported:¹⁵³

Although, this matter has been in abeyance for some time, the committees have now accepted a tender for the erection of a handsome rotunda, at a cost of approximately £250. The structure will be of ornamental cast-iron work, and will rest on a solid cement concrete foundation, The site selected for the rotunda is on the Mannum Recreation Ground, close to the river bank. The Secretary will be pleased to receive subscriptions from those who wish to assist in perpetuating the memory of the pioneer steam navigator on the River Murray.

The “rotunda” was actually octagonal and was built “locally”. The manufacturer was not named but the most likely supplier would have been Shearers who had opened a large new foundry in 1910.¹⁵⁴ It was erected by local contractor William Dahl. The official opening of the rotunda was performed on New Year's Day, 1914, by Simpson Newland who was accompanied by Sir Richard Butler, the Commissioner of Public Works. Newland cut a cord which had been tied across the entrance and also unveiled a memorial plaque affixed to the railings. The Memorial was described as “handsome and fitting” and was

148 “Historical Old Boiler”, *Register*, 31 March 1910, p6f

149 *Mount Barker Courier*, 16 June 1933, p1g

150 *Advertiser*, 4 August 1911, p8i; also *Register*, 3 August 1911, p5e

151 “An Historic Boiler”, *Daily Herald*, 15 June 1912, p8f

152 “The *Mary Ann* Boiler”, *Mount Barker Courier*, 28 June 1912, p4c

153 “Capt. Randell Memorial”, *Register*, 31 May 1913, p14i

154 *Register*, 20 August 1910, p15e



The Randell Memorial bandstand or rotunda was opened on 1 January 1914 and the plaque unveiled [Photos: Richard Venus]

The Randell Memorial cairn with a bronze model of the Mary Ann was unveiled on 1 January 1914 [Photos: Richard Venus]

expected to “stand the test of time and weather for many years to come”. It is still a splendid sight on the lawns of the Mary Ann Reserve (see page 39):¹⁵⁵

... with the rotunda at the south part of the town and the old Mary Ann’s boiler housed in the north end the name of the great River pioneer will be kept in the minds of the Mannumites throughout future generations.

On 17 January 1930, another large crowd gathered on the Reserve to witness the unveiling of the Sturt Centenary Memorial Cairn.¹⁵⁶ On top of the granite structure is a bronze model of a whaleboat – the vessel in which Sturt travelled the length of the Murray in 1830. A few months later, the boiler of the *Mary Ann* was relocated nearby in the Reserve along with an “old-type beam engine” which had been donated by J G Arnold, a Mannum-based wheat merchant and river boat captain who had taken over the operation of Randell’s dry dock.¹⁵⁷

In 1953, another granite cairn to match the Sturt Memorial – complete with bronze model of the vessel in question – was erected in the Reserve to mark the centenary of the *Mary Ann*’s first voyage. It was unveiled by the Governor, Sir Robert George, on Saturday 28 March.¹⁵⁸

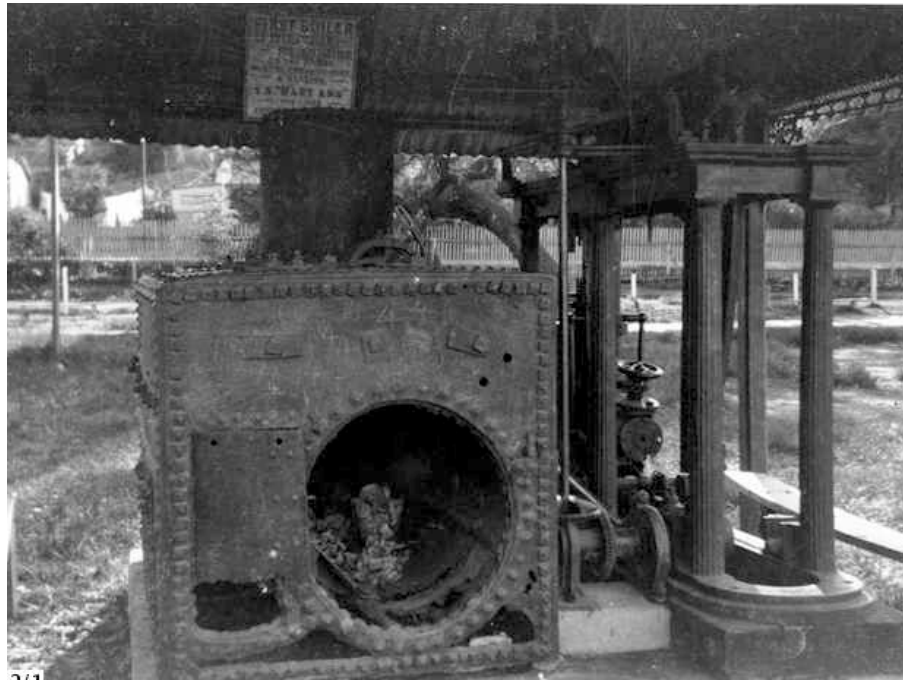
In 2001, a replica which faithfully reproduced the appearance of the boiler was made by Michael Prescott of Prescott Machining and placed in the Reserve under a new shelter. The original boiler was relocated to the Mannum Dock Museum of River History which was officially opened on 29 April 2001.

¹⁵⁵ *Mount Barker Courier*, 9 January 1914, 4gh

¹⁵⁶ “Sturt Centenary”, *Mount Barker Courier*, 24 January 1930, p1ab

¹⁵⁷ *Mount Barker Courier*, 7 July 1930, p1g

¹⁵⁸ *The Mail*, 28 March 1953, p54c



*In 1930, the original boiler of the Mary Ann (left) was shifted to the Mary Ann Reserve and an old beam engine, used at the Dry Dock, was displayed alongside it [State Library of SA, PRG 1258/2/864 and B69842/1]
The replica boiler (below) is now displayed in the Reserve [Photo: Richard Venus]*



6.8 Noa No Launch Area

William Beavis Randell established a cattle station on the banks of the Murray, almost due east from his home at Gumeracha. The lease consisted of 30 square miles, “of which the half part is worthless land”. He gave it an Aboriginal name, “Noa No”, and built a small station hut by the riverside.¹⁵⁹

It was on this station that William Richard Randell had his vision “of steamers plying up and down carrying goods and produce to isolated settlers upon its banks”.¹⁶⁰

It was also from here that Randell set out in the *Mary Ann* for his voyages upstream along the Murray and where he subsequently established a base for his shipping operations.

A cairn and plaque have been erected at the landing site. A precise date has yet to be determined but the stonework is similar to that of the cairn in the Mary Ann Reserve and it is possible that it was also placed in 1953, the centenary of Randell’s historic voyage upriver.

¹⁵⁹ Rod Williams. 2003, *Pioneering Pathways: 150 Years since the commencement of the River Trade, 1853-2003: Mannum’s 150th anniversary, 1854-2004*, Mannum Heritage Centre, Mannum, p14

¹⁶⁰ Kinmont, 1951, p8



[Above] Nameplate on the replica boiler [left] The Noa No landing area is now marked with a memorial cairn and plaque [Photos: Jenny Callender]

The idiosyncratic boiler of the *Mary Ann* has been well documented and is still preserved. For display purposes, the boiler was modified by closing the firebox and replacing plate that had corroded right through on the lower parts where it had been buried in the mud. It was taken away to Murray Bridge to be sandblasted and then painted before being displayed in its new home in the Mannum Dock Museum of River History in 2001.

But are there any other artefacts of the little steamer?

In August 1917, the *Advertiser* published an article which said the “hull of the *Mary Ann* is now in the possession of the Gem Navigation Company at Morgan”¹⁶¹ A week later the *Mount Barker Courier* picked up the story and interviewed John Walker “with reference to the accuracy of the above paragraph”. He said:¹⁶²

... It is not correct that the hull of the old *Mary Ann* is in possession of the Gem Navigation Company and now at Morgan. The hull has been for about 50 years lying fathoms deep at the bottom of the river at Mannum. Some years prior to his death the worthy old captain entertained serious thoughts of trying to raise it, but owing to his failing health nothing was done. What an interesting relic it would have been! The *Mary Ann*'s boiler is to be seen safely housed in a prominent position in the main street at Mannum, with a suitable inscription, and it well worthy of inspection by anyone interested in such matters. The last that the writer heard of the hull of Cadell's steamer *Lady Augusta* was that it was lying rotting on the bank, either at Echuca or Moama.

Presumably the hull is still there, preserved by the mud of the river. Some archaeological “geo-physics” might discover it one day. In the meantime, the boiler itself and its replica are the last remaining relics of this most significant little vessel and the man who had the vision and the determination to build it.

It would be appropriate to let his granddaughter have the last words:¹⁶³

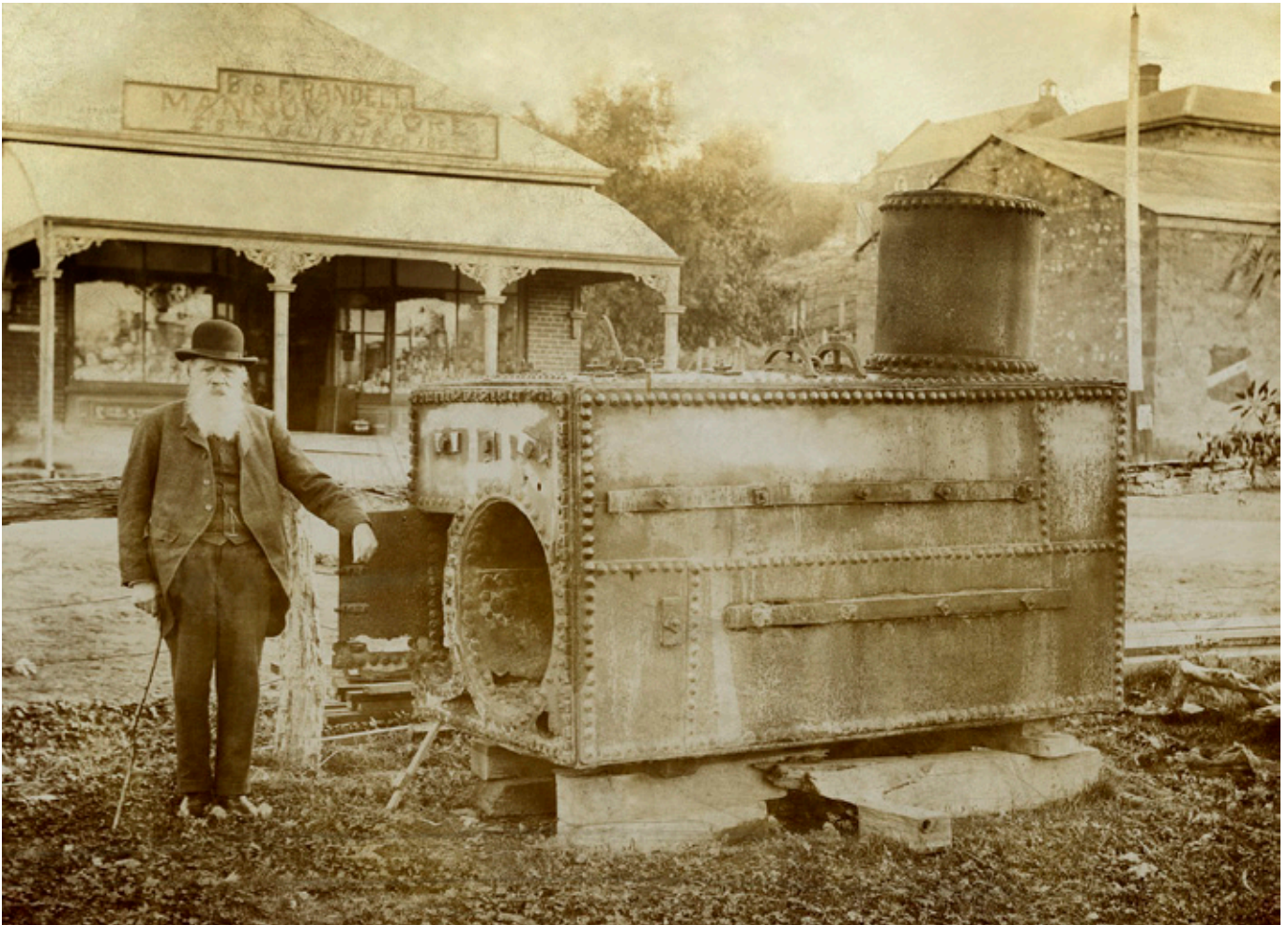
These voyages were full of adventure, and no small undertaking for an inexperienced navigator. However, before long Randell became one of the most intrepid and experienced men on the river. He loved the life, and his interest was bound up in the river and its trade until the very day of his death.

161 “First Murray Steamer” *Advertiser*, 18 August 1917, p8g

162 “Captain W R Randell's Exploit: Interesting Interview with Mr J W Walker”, *Mount Barker Courier*, 24 August 1917, p4hi

163 Kinmont, 1951, p18

7. The Boiler of the *Mary Ann*



*Captain William Randell poses with the original square boiler of the Mary Ann on Randell Street, Mannum
[State Library of SA BRG 201/13/2/1]*

Remarkably the original boiler of the *Mary Ann* has survived. Randell had few options at the time it was constructed: although wrought iron plates were available, there was no heavy equipment in the Colony then to roll them into a cylindrical shape and form the domed ends as was common practice for many boilers (see photo of a boiler at Randell's mill, next page). However, there was nothing untoward in the rectangular design. According to Commander Peter Rippon, author of *The Evolution of Engineering in the Royal Navy*, writing about early steam-powered paddleboats:¹⁶⁴

Boilers were of the tank, flue or tube type; they were either rectangular, cylindrical, global or without any geometrical shape at all; at such low pressures, shape was not that important.

The problem was not the shape but the thickness of the plates, as George Randell told the Legislative Council Select Committee in November 1853:¹⁶⁵

We could only procure at the time, $\frac{1}{4}$ inch iron, which is too weak for making a square boiler – consequently we could not put sufficient pressure on it to make the most of the power of our engine; twenty-five pounds per inch [sic] is the highest power that we have been able to place on the boiler; whereas had it been constructed of stronger material, we should have been able by the power of the engine to have worked up eighty pounds per square inch.

Reports suggest it bulged alarmingly under pressure, even after having been wrapped with heavy chains. Not surprisingly, it was soon replaced by a more conventional boiler after less than a year's service.

¹⁶⁴ Peter Rippon, 1988, *The Evolution of Engineering in the Royal Navy, Vol 1: 1827-1939*, Spellmount, p20

¹⁶⁵ *SAPP* No 102, November 1853, "Minutes of Evidence", p5

SOUTH AUSTRALIAN IRON and BRASS FOUNDRY, Blyth-street.—J. G. COULLS takes this opportunity of informing his old customers and friends, as well as the public generally, that his Foundry is now complete, and having engaged an experienced Moulder and Pattern Maker, he is quite prepared to execute Castings to any extent both in Brass and Iron.

Whatever might be said by others relative to their testimonials, &c., &c., J. G. C. begs to intimate that his is the only establishment in South Australia that has turned out Reaping-Machines from beginning to end, and the whole made on the premises; and he can produce, if required, testimonials out of number both as to workmanship and quality.

J. G. C. embraces this opportunity of informing his friends in the country, who may not be aware of his having commenced the Foundry business.

Just received from England direct, ex Rieni, Tiberias, Henry Woolley, and others, a large addition to his stock, consisting of Iron, Steel, Ash Plank, Ash Fellocks, Axes, &c., &c., for the Coach and Spring-Cart Trade.

N.B.—J. G. C. is open to take a few orders for Reaping-Machines for next year.

Ash and Gum Fellocks of all sizes, in large or small quantities.



[Left] An advertisement for Coulls' Adelaide foundry, SA Register, 12 March 1855, p1d
[Right] A cylindrical boiler at Randell's Gumeracha Mill [Photo: Bernard Arnold]

Randell's own account in the *Adelaide Observer* states that the original boiler was made by John Coulls in his Blyth Street (Adelaide) foundry and blacksmith's shop:¹⁶⁶

In those days," he tells us, "there were no boilers to be purchased in South Australia for love or money, neither could I meet with any engineering firm to undertake the building of a proper cylindrical boiler, but succeeded in having a square one made at the yards of John Green Coull's [sic], in Blyth street, who was subsequently succeeded in the business occupied by Messrs. Jones & Sons. Even this was only accomplished after considerable difficulty and expense, the men employed being little better than ordinary blacksmiths, and several of whom I had to pay at the rate of 20/ per day, besides pretty handsome tips whenever I visited the yards. The return tube was made of thin copper plate, which, after the boiler was placed in the boat collapsed the first time I attempted to get up steam – not above 10 lb., I think. I felt considerably discouraged by this mishap, but I was not inclined to be beaten, so I landed the boiler again, and consulted the best man I could find. This man, whose name I think was Evans, was a bit of a boilermaker, and it was decided to disconnect the front end of the boiler, which was fastened with bolts and nuts, and to which the firebox and damaged return tube was attached, and withdrew the whole lot. I then had a fresh return tube made of 5-16 in. plate, made of a shape to accommodate itself to the room available on the boiler, and after considerable difficulty and expense got it inserted in the shell and fastened again with bolts and nuts in the same manner as before. After this I succeeded in getting about 25 to 30 lb. of steam in her, but, still showing signs of weakness, I had to insert more stays in her where I could, beside wrapping lengths of chain round her, tightened with wedges between the chains and the boiler. When I managed to start on my first trip those wedges had to be tightened and driven up every day before getting up steam, as they always slackened after steam went down at night.

Mabel Kinmont also described the construction:¹⁶⁷

The boiler was made in the shape of an iron tank, square in section, with a single furnace passing through the middle. Side, bottom and top plates were flanged and riveted together, and the end plates were bolted to the shell thus formed, sheet lead being used to make the joints! When in use I have heard that this boiler used to assume the most alarming proportions, and as a safety measure chains had to be wrapped around its middle. Wooden wedges too were driven in between the chains and the sides. Even then when proceeding at maximum speed the sides and top were observed to swell in and out like a concertina!

Travelling on a small boat in close proximity of the bulging boiler must have been quite exciting, as highlighted by a story about Mannum "In the Old Days" which was published in the *Register* in 1925:¹⁶⁸

... The skippers of those days took risks from which present day commanders would shrink. The boiler of the *Mary Anne* was of the Watts type, a rectangular box held

166 "Murray Navigation in the Past", *Adelaide Observer*, 12 August 1905, p29a-c

167 Kinmont, 1951, p9

168 *Register*, 6 August 1925, p10e

together by chains passed around it athwart and lengthwise. When the fire had been started the engineer made a hasty retreat for the banks and from, the shelter of a huge gum waited till he could hear the beat of the piston, when he returned to his station.

The story was resurrected by the *Mount Barker Courier* in 1944 – the centenary of Charles Sturt’s expedition from Adelaide to Central Australia. In describing the memorials at Mannum, the *Courier* said:¹⁶⁹

Great difficulty and expense were experienced in the construction of the boiler, which was of the Watts type, bolted and held together by chains passed around and athwart it. Only ¼ inch iron was available at the time, which was too weak for a square boiler, and, consequently sufficient pressure could not be obtained to make the best of the engine. Engineers had to be paid 20/ per day plus their ‘keep.’ Story has it that when the furnace had been started, the engineer beat a hasty retreat for the bank and awaited until he could hear the beat of the piston before he would return to his station! Yet the ‘crazy little steamer’ and her captain were destined to make history.”

The somewhat problematical features of the boiler were viewed in a different, rather romantic light through the lens of history by Simpson Newland, a pioneer settler himself and a foundation member of the River Murray League, who wrote this account in 1914:¹⁷⁰

I am assured that in its working days it had all the energy and toughness characteristic of the human pioneer production. It refused to break down or burst whatever the overstrain or pressure. Indeed with all those innumerable bolts strengthening every weak place and supplemented by encircling bullock chains strained and wedged up tight, one wonders how it could. Its flexibility must have been marvellous. It simply swelled in defiance of bolts, chains, and wedges when requiring ease, and expansion under too high a pressure. Like the river itself this wonderful old boiler increased and decreased in size according to conditions, but unlike the river it never in its varying moods burst its legitimate bounds, and glancing at their thinness, not much stouter than the plates of an iron tank, that seems extraordinary. That Captain Randell wrung surprising results out of this diminutive crazy boiler, that certainly never could have passed the test of an examination by an engineer of these days, is amply demonstrated by the long voyages accomplished.

The boiler functioned for several voyages, but at the end of 1853 Randell ordered a new and presumably thicker-plated boiler for the *Mary Ann*. The original boiler was discarded and left to rust on the riverbank at Mannum for about 40 years. However, some later reports do not seem to be aware of this fact. In February 1914 the *Advertiser* published an article by Simpson Newland in which he states that the boiler continued to be used for some time:¹⁷¹

That Captain Randell wrung surprising results out of this diminutive crazy boiler, that certainly never could have passed the test of an examination by an engineer of these days, is amply demonstrated by the long voyages accomplished. To Maiden’s Punt on the Upper River and back. To Hay (Lang’s Crossing) on the Murrumbidgee and back, and Brewarrina (The Fisheries) on the Upper Darling and back), and many more inland river trips puffing and wheezing against adverse currents, snags and debris were doubtless related in the most unfortunately lost diary and log book in the burning of the steamer Bunyip.

(The voyages to Hay and Brewarrina were made in the *Gemini* which included the *Mary Ann* as one of its twin hulls so the report is not entirely incorrect.)

As for the original boiler, it is variously described as being in the mud or a mud-hole. In 1892, John Walker said, “Her boiler can still be seen lying on the river bank here”.¹⁷² Simpson Newland said it had been “cast out on the scrap-heap or into the mud-hole”¹⁷³ while the *Mount Barker Courier* described the old boiler as having been lying “half buried in the mud and sand by the river side”.¹⁷⁴

169 *Mount Barker Courier*, Thursday 24 August 1944, p1c

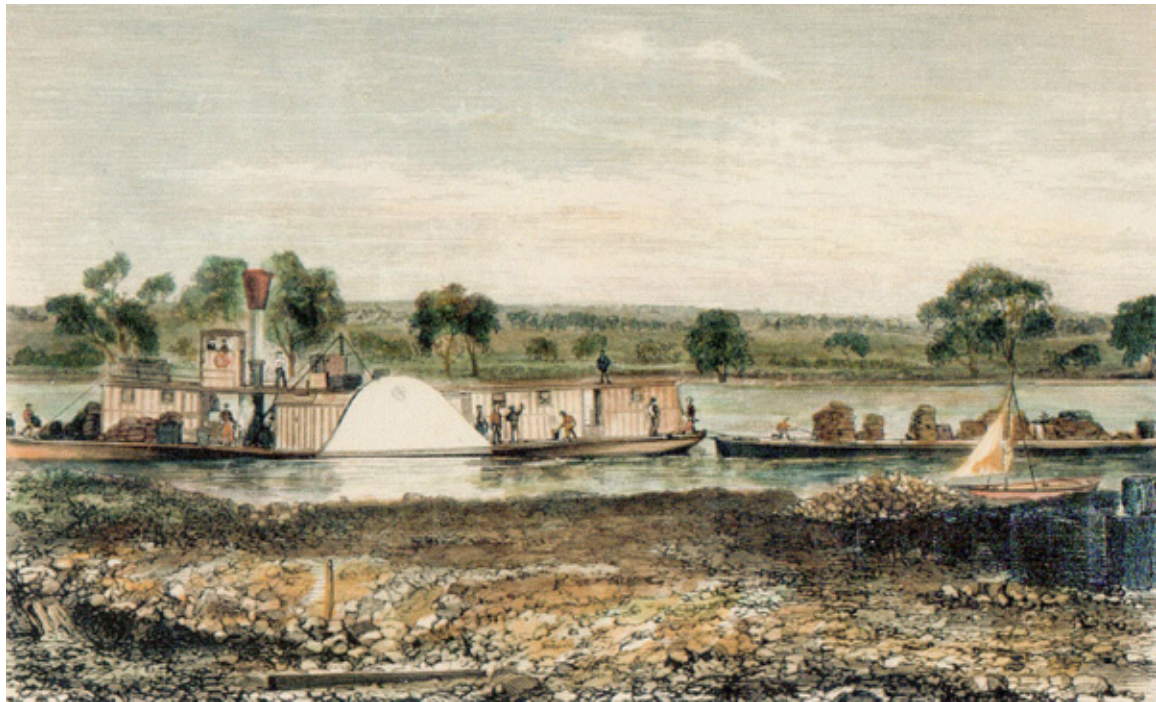
170 “An Extremely Valuable Historical Record”, *Mount Barker Courier*, 27 February 1914, p4gh

171 “The River Murray. | Captain Randell’s First Steam Boiler”, *Advertiser*, 11 February 1914, p15b; also *Mount Barker Courier*, 27 February 1914, p4g-i

172 “Honour to whom honour is due”, letter to the editor, *SA Register*, 14 May 1892, p6h

173

174



*This drawing, based on a 1878 photograph, shows what could be the Mary Ann's discarded boiler on the muddy river bank, lower right
[Image: Dave Dowley]*

The *Mary Ann* had to be at the river's edge or even pulled up on the bank for the boiler to be changed and it would be reasonable to assume that that's where the old one was left. A photograph taken in 1878 shows what appears to be the boiler and it's hard to imagine it would have been shifted any great distance. In 1914, Simpson Newland imagined how the old boiler might tell its own story:¹⁷⁵

Puff, puff. I've just woke up to assert myself a bit. Yes, I inspired that pen to write about me, and it has not been done as well as it could have been, so I am going to say something in my own words: nor was there any need to make remarks about my ugliness. I was made on symmetrical lines, and of good stuff, and at one time considered a beauty, and there are remains of it still, as any judge of machinery can tell you. In my opinion that pen might have been a little more complimentary without trenching on the verge, of truth. Anyhow, mine was the inspiration, and that is not so wonderful as you think, for it's not the first time by many that a less important, piece of machinery has inspired more surprising literary results. Besides, the pen and I were made of the same metal, so there was a sort of fellow feeling between us. It does not matter where I first drew the breath of life. What does matter is when and where I became a pulsating instrument of power. That was when I was put by Captain Randell on the *Mary Ann*, and became the motive power of the pioneer steamer of the Murray, Murrumbidgee, and Darling. As soon as I came in contact with Captain Randell I felt I had found a man and a master to be proud of. He had a way of stimulating all parts of the machinery with some of his own energy and perseverance. Of course I, as supplying the motive power for the whole concern was responsible for its success. If I broke down in that first voyage up the Murray to Swan Hill or any of those pioneer voyages up the Murrumbidgee to Hay, or up the Darling to Brewarrina, what would have been Captain Randell's feelings to see boats pass him? Would he be as famous now? No sentiment in iron and inanimate things, indeed. I tell you I swelled with pride as we passed bend after bend in the river, and was so hot as I struggled and puffed that without frequent drinks of water I would have burst. But Captain Randell took good care I had plenty of water. Was I very proud when I got a position on the *Mary Ann*? Yes, but it was a very hard one for a boiler of my capacity. The strain on me was terrible, but I never gave in. I can confidently claim I did my work under tremendous pressure to the very best of my ability. Captain Randell knew the difficulties and dangers I labored under and was very anxious about me. He wrapped me round with

¹⁷⁵ *Advertiser*, 11 February 1914, p15b

Was it safe?

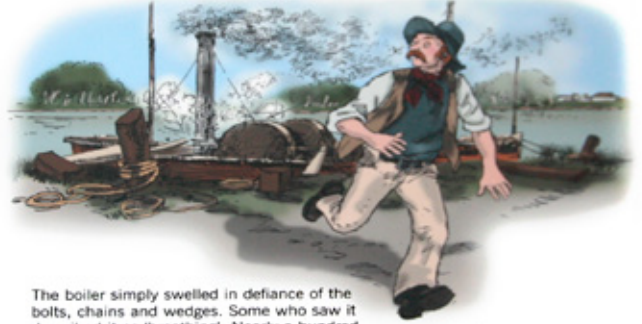
According to Mabel Kimmont, Randell's grand-daughter, it seemed that when the boiler was fired up it expanded almost beyond belief and made enough noise to frighten even the most intrepid supporter of steam power.



It was so weak that the pressure of steam made it swell almost to the shape of a football. The Randells studded bolts into the weak places in the plates in the hope of strengthening them. Next they wrapped bullock chains around the boiler, and after that they drove wooden wedges under the chains to tighten them.

The first firing of the boiler

Despite their reinforcements, the Randells had little faith in the success of their repairs. When they got up steam even Elliot Randell, who was acting as engineer, went and lay down in the bush some distance away, afraid that the boiler would blow up.



The boiler simply swelled in defiance of the bolts, chains and wedges. Some who saw it described it as 'breathing'. Nearly a hundred years later river-hands, who had heard about it from old hands along the Murray, referred to it as 'the concertina boiler'.

Imaginative ways have been found to tell the story of the Mary Ann's boiler at the Mannum Dock Museum

great chains, and screwed and wedged me up to help me bear the pressure. Ah! he was a real good kind master and knew when he had a faithful servant. Of course there were the usual croakers who said I'd burst and blow up the steamer and all on board. Burst and hurt Captain Randell, indeed, was that likely? I knew better what was due to myself and those who trusted me. Captain Randell used to smile, give me a friendly pat with his hand and say, "There is nothing like an old dog for a hard road." But the time did come when the old had to make way for the new, the weak for the strong, and the scrap heap was before me. I was taken from the Mary Ann and put by the river side, where I would soon have been sunk in the mud had not a few of my admirers interested themselves, and now I am comfortably placed here on a high place for everyone to see, an honor to which few old boilers attain.

8. The Steam Engine of the *Mary Ann*

The following paper was prepared by Bernard Arnold in October 1996 for the Mannum Dock Museum in connection with a proposal to build a replica of the paddle steamer *Mary Ann*.

No picture or description of the steam engine of the historic paddle-steamer *Mary Ann* has been found. To reconstruct an engine suitable for a replica, one has to look to the common practice of the day together with what few clues exist.

The most authoritative clues are to be found in the minutes of evidence of the “Select Committee of the Legislative Council of South Australia to Ascertain the Particulars of the Navigation of the Murray by the Messrs Randell” where it is stated that:

- the engine was about 7 horsepower
- the engine had a ten inch cylinder
- “we could not put sufficient pressure on it [the boiler] to make the most of the power of our engine”
- “25 pounds per square inch was the highest we have been able to place on the boiler”
- the iron riverboat which the Randells had ordered and then cancelled was to have had two high-pressure oscillating engines

The original boiler survives. It appears to have been built without consideration for any boiler-making practice of the time. No box-like boilers can be found in any treatise on the subject. Reports on how it bulged under pressure, even after having been wrapped with chains, certainly supports a low operating pressure, probably no more than 20 psi. How it held together for those initial voyages is something to wonder at and it is not surprising that it was soon replaced by a more conventionally-built boiler.

After talking to the crew of the *Mary Ann* at Swan Hill, James Allen, who took part in the first voyage of the *Lady Augusta* up the Murray, wrote that after trouble with leaks in the boiler early in its voyage the boiler was kept below operating pressure for the first two weeks. Randell then put on “full pressure” which from the above statement was 25 psi. Allen said the engine was 6 horsepower. The varying power stated for one and the same engine at that time was due to the formula used to express engine power.

William Templeton’s *Practical Examiner on Steam and the Steam Engine* (1858) gives the following:

From the pressure in lbs. on each circular inch of the boiler deduct 4 lbs.; multiply the remainder by the square of the cylinder’s diameter in inches, and by the velocity of the piston in feet per minute; divide the product by 33,000, and the quotient will be the force of the engine expressed in horses’ power.

Thus the number of revolutions per minute and boiler pressure applied determined the power stated.

Engines at that time were not usually operated with high pressure steam, the pressure used commonly being less than 40 psi.

In his diary on 6 October 1852, William Randell states: “Elliott gone to Murray with a steam engine.” This was at the time when the boat was being built. The inference here is that the engine was an assembled unit and thus reasonably portable.

The *Adelaide Times*¹⁷⁶ reports that “her engine is of eight horse-power. ... The cylinder is from the hands of a German engineer, Mr Ghelkin [Claus Gehlken, machinist, of Hindmarsh], and is considered an excellent piece of workmanship.”

The only image of the *Mary Ann* which has been found is an etching based on a sketch by James Allen in 1853. This shows a tall chimney but no obvious machinery protruding above the paddle boxes. The most popular form of steam engine of the time was the oscillating¹⁷⁷ beam engine. A less common but still

¹⁷⁶ *Adelaide Times*, 25 February 1853, p3a

¹⁷⁷ The term ‘oscillating’ as applied to steam engines of the period could have signified ‘oscillating cylinder’ or ‘oscillating beam’. I believe the latter was the case here as oscillating cylinders had a problem with steam leakage at the cylinder/steam port interface whilst the oscillating beam had a reputation of reliability.

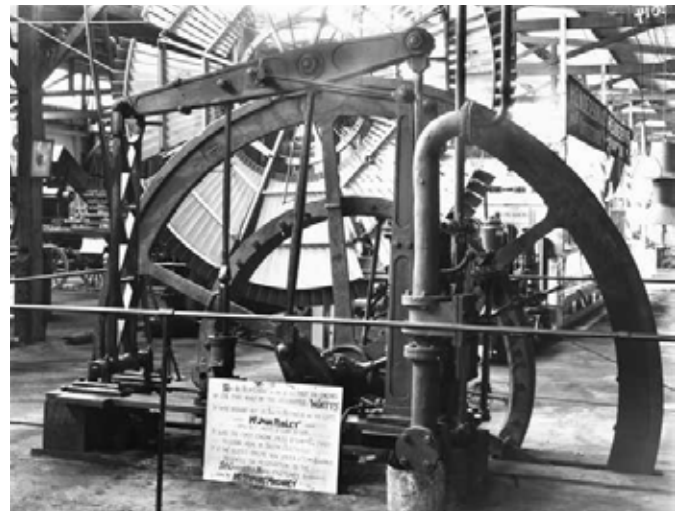


Lady Augusta and Mary Ann at Swan Hill, 1853 [State Library of SA, B6852]

popular alternative, especially in smaller horsepower engines, was the grasshopper or half-beam design. It was much lighter and more compact than the oscillating beam engine. This meant savings in materials and ease of transport. The fact that there is no beam visible above the paddle boxes in the etching tends to support the idea that the engine was a grasshopper.

Both Ridley's flour mill at Hindmarsh and Kent's at Kent Town had grasshopper engines. Gehlken, a machinist living at Hindmarsh, was no doubt acquainted with the engine at Ridley's. Indeed, William Richard Randell was also familiar with that engine as is evident in a letter from him to Ridley dated 11 November 1882.

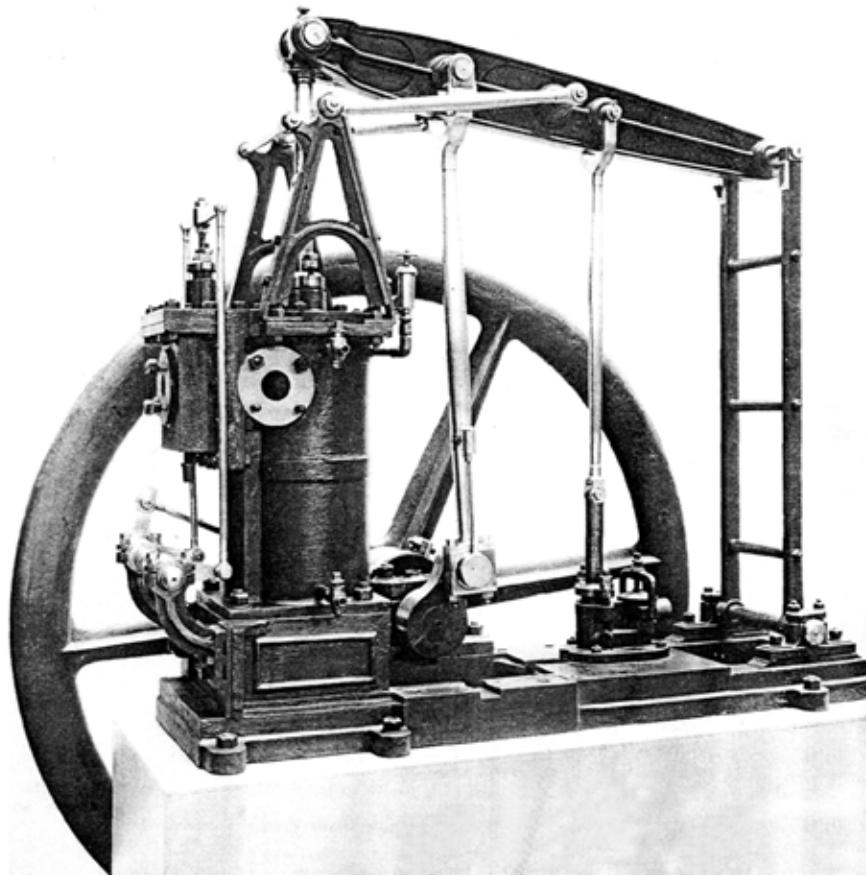
From designs of the period, a cylinder of 10 inches diameter would have a corresponding stroke of about 16 inches. Using Templeton's formula the horsepower for a cylinder 10" x 16" at 20 pounds pressure and 60 rpm would be 7.75. Increased pressure and lower rpm could give the same results while it is unlikely that operating speed would have been much greater than 60 rpm.



John Ridley's grasshopper engine photographed in 1915 [State Library of SA, B7567]

Elder & Co of Adelaide among others, imported many steam engines and Easton & Amos was a very popular make. Besides the flywheel and the bed-plate, the cylinder was the largest component. These engines therefore lent themselves readily to colonial manufacture. Foundries existed in Adelaide at the time with the capacity to produce the necessary castings (eg, Baumbach, Wyatt, Horwood, Pybus). Gehlken, with access to a medium-sized lathe and a milling machine, could have done the rest.

The photograph [on page 49] is from T E Crowley's 1982 book, *The Beam Engine: a massive chapter in the history of steam*. From the information available, I believe it represents closely the *Mary Ann's* engine.



An Easton & Amos grasshopper-style beam engine, c1855 [Science Museum, London]

Owen Peake takes up the story in an article (unpublished at the time of writing), for the Bulletin of the International Stationary Steam Engine Society:

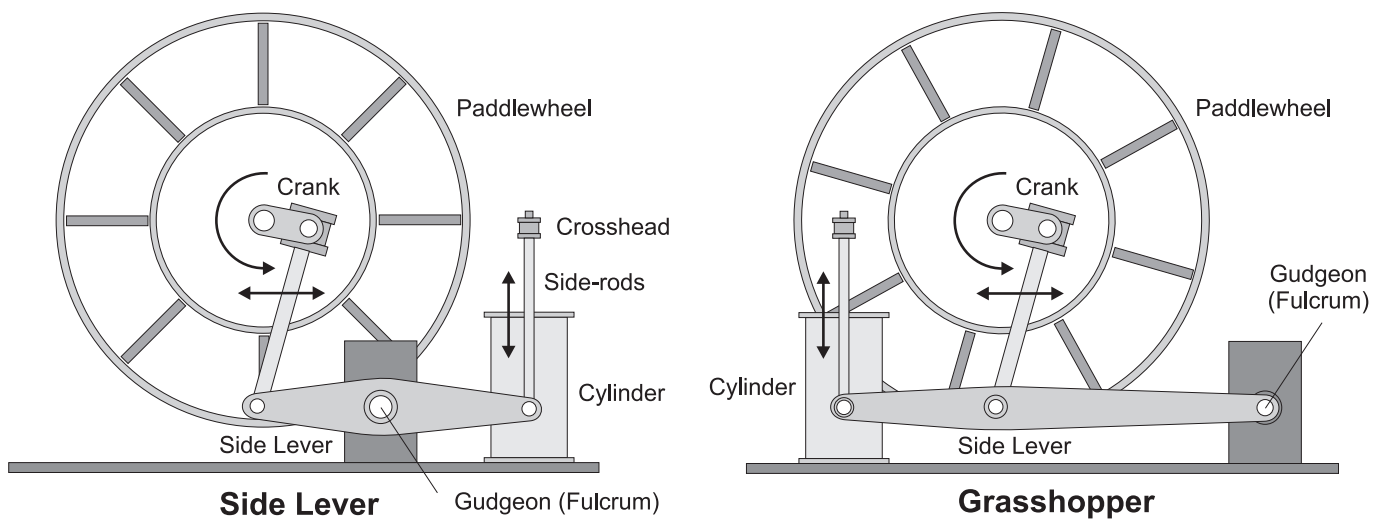
Bernard Arnold is of the opinion that the *Mary Ann* engine was a grasshopper engine. In fact he postulates that the engine might have been similar to the Albert Hall Grasshopper Engine in the Science Museum, London collection from 1921. Bernard points out that the firm Elder & Co imported steam engines from Easton & Amos and that these engines were very popular. In the colonies at that time nobody seemed to have any compunction about copying almost any machinery imported from overseas.

It may be worth considering the machinery of another paddle steamer, which was also in Adelaide for much of its life and was of similar vintage to the *Mary Ann*, having also been built in 1853. The *SS Young Australian* was built at Blackwall on the Thames and at 90 tons and 31 metres was somewhat larger than the *Mary Ann*. The *Young Australian* came to fame when she was used as a tug on the Roper River in the Northern Territory during the construction of the Overland Telegraph Line. She was wrecked in the winding lower reaches of the Roper and her bones remain in the river. She was powered by a 40 nominal horsepower single cylinder vertical “grasshopper” side lever steam engine. (See *ISSES Bulletin* 34.1, pp 36-41*). Could the engine of the *Mary Ann* have been of similar design? Such engines were very low profile and would be consistent with the absence of visible machinery shown in the etching [see page 48].

While we are at it I should note another similarity between the *Mary Ann* and the *Young Australian* – they were both powered by “box” boilers. The boiler of the *Young Australian* remain clearly above water level at low tide for all to see: however, take great care – the wreck is guarded by the Top Predator of the Top End, *Crocodylus Porosus*, the fearsome Salt-water Crocodile.

*The steam engine which powered the *Young Australian* was a “grasshopper” side lever engine. That is the ends of the side levers were attached to the hull aft of the engine. The side lever engine was popular in the early days of steam ships as it placed the centre of gravity of the engine low in the hull yet the output shaft was high on the engine, at a suitable height for direct coupling to the paddle wheels.¹⁷⁸

178 Owen Peake, 2013, “The *SS Young Australian*”, *ISSES Bulletin* Vol 34 No 1, International Stationary Steam Engine Society, p41



Basic principle of a side-lever engine driving a paddle wheel: the grasshopper variation uses a second class lever in which the mechanical advantage is always greater than 1

8.1. Side-lever Engines

Steam engines were first installed in boats in the early 1800s at a time when the only effective means of mechanical propulsion was the paddle wheel. Marine engineer Dr Denis Griffiths notes:¹⁷⁹

This period saw the evolution of an engine type which was to become standard for most paddle steamers for many years, namely the side-lever engine. This was based upon the Watt beam engine but positioning the beam above the cylinder resulted in a tall engine which was unsuitable for all but the smallest of vessels. It is not known who originally had the idea of placing two levers low down on either side of the cylinder instead of a single beam above but what is certain is that once the idea evolved it was rapidly taken up by many engine builders. ...

Griffiths also provides the following description of its operation:¹⁸⁰

The basic side-lever engine had a single, vertical cylinder containing a double-acting piston, the top end of the piston rod being attached to a crosshead; two side rods, passing on either side of the cylinder, connected the crosshead with the side levers positioned on each side of the engine. These side-levers were pivoted at about mid-length and were connected at their other end by a crosstail, to the centre of which was attached a connecting rod. The connecting rod attached to the crank-pin on the paddle shaft which was supported on columns or an elaborate structure of cast Gothic arches depending upon the artistic ideas of the designer. As the piston reciprocated through the action of steam, the side rods would cause the side levers to rock and these in turn would bring about the rotation of the paddle shaft through the connecting rod. Steam supply to and exhaust from the cylinder were regulated by means of a slide valve actuated from the paddle shaft through an eccentric-driven system of linkages.

The “grasshopper” or half-lever variations placed the fulcrum at one end of the lever with the cylinder acting on the other. The design was first used in the *SS Comet* which was built in Port Glasgow in 1812. This was the first steam vessel to operate commercially and was so successful that, within a few years, steam boats were operating between every large port in Britain. According to Commander Peter Rippon, author of *The Evolution of Engineering in the Royal Navy*, the grasshopper engine “established the specification upon which most paddle engines were to be designed for the next half century”:¹⁸¹

Low boiler pressure, high vacuum, a single vertical cylinder driving the paddle shaft through a pair of side levers, and reversing by means of a single loose eccentric.

By 1852, when Randell was planning his boat, it would almost be a foregone conclusion that he would want a grasshopper engine to power his paddle steamer. Adelaide machinists certainly had the capacity to

¹⁷⁹ Denis Griffiths, 1997, *Steam at sea: Two centuries of steam-powered ships*, Conway Maritime Press, London, p7

¹⁸⁰ *Op cit*, p11

¹⁸¹ Rippon, 1988, pp19-20

build such an engine. John Wyatt had established his engineering business in 1841¹⁸² and advertised one of the city's first foundries in 1843.¹⁸³ In September that year, his son George built a four horsepower steam engine which they called "Cyclops" (probably a reference to the appearance of the flywheel – see photos on pages 48 and 49). It was constructed "on the marine principle" which, from the previous discussion, suggests a grasshopper configuration.¹⁸⁴

By February 1845, Wyatt had built two more engines including one "somewhat above two-horse power" for Randell's mill at Gumeracha.¹⁸⁵ He was also advertising the manufacture of steam engines as a major line of business (see advertisement at right). The workshop was well equipped: a visitor in 1846 remarked on the "boring lathe, hollowing out the cylinders for a six-horse steam engine".¹⁸⁶

With Wyatt's experience and capability, coupled with the long-standing relationship between the two families,¹⁸⁷ it is curious that Randell didn't ask him to build the engine for the *Mary Ann*; instead, he turned to Claus Gehlken:¹⁸⁸

... The cylinder is an excellent piece of workmanship, made in Adelaide, under the superintendence of Mr. Ghelkin, a German engineer. ...

However, the key words in this report are "under the superintendence of", suggesting that Gehlken was managing the making and not necessarily using his own foundry or workshop. Indeed, it is possible that he was actually working for Wyatt.

In an era in which the minutiae of every day life were published in the papers, it is also curious that there is no other mention of the man – he only reappears in retrospective reports of the building of the little steamer, commencing in June 1912.¹⁸⁹

In the 1850s, Hindmarsh was a small community and it would be obvious that Gehlken knew John Ridley and might even have done work for him. This would have given Gehlken ample opportunity to study the construction and operation of Ridley's grasshopper engine (see photo, page 48). However, given the lack of any other reports on his work, it is unlikely that Gehlken had his own machine shop, let alone a foundry capable of producing a cylinder described as "an excellent piece of workmanship".¹⁹⁰

In any event, when the *Mary Ann* was cannibalised to create the *Gemini*, Randell ordered the new engine – and boiler (round, no doubt) – from George Wyatt:¹⁹¹

... A new engine of 20 horse-power, with its boiler, made expressly to order by Messrs.

Wyatt of this city, will be fixed upon deck, the extreme breadth of which will be 27 feet. ...

A D E L A I D E
Iron and Brass Foundry
(FIRST ESTABLISHED IN THE COLONY),
AND
STEAM ENGINE MANUFACTORY.

J. WYATT begs to return his sincere thanks for the support he has received since his commencement in business, and hopes to merit the same by punctuality and strict attention to all orders which he may be favoured with. Engines from one to eight horse power; iron and brass castings of every description. J. W. has a variety of patterns of bevel and spur wheels, and pinions, for thrashing machines, &c.

Drawings and specifications of engine and mill work made.

Greenfell-street, April 17, 1845.

Wyatt's ad in the South Australian [25 April 1845 p2a] made the claim that his was the first foundry established in the Colony; he also advertised the manufacture of steam engines as a major line of business

182 Geoffrey Needham and Daryl Thomson, 1998, *Men of Metal* (2nd ed), self-published, Adelaide, p5

183 *Southern Australian*, 7 April 1843, p1d; 11 April, p3e

184 *SA Register*, 9 September 1843, p3a

185 *SA Register*, 10 February 1845, p3a

186 *SA Register*, 25 July 1846, p2c

187 John Wyatt inspected the machinery at the South Australian Company's flour mill at Hackney [Southern Australian, 17 September 1841, p2b; 24 September, p1d], the construction of which had been managed by W B Randell, himself an experienced miller [SA Register, 14 March 1840, p3d-4a]

188 "Commencement of Steam Navigation on the Murray", *SA Register*, 22 February 1853, p3a

189 "The Murray's First Navigator", *Mount Barker Courier*, 28 June 1912, p4d

190 *SA Register*, 22 February 1853, p3a

191 "Navigation of the Murray", *SA Register*, 20 April 1855, p2g

9. Interpretation Plan

The key to the interpretation proposed for the *Mary Ann* is the presence of the Mannum Dock Museum of River Museum and a number of memorials and interpretive signs which have been placed in the Mary Ann Reserve over a number of years. In 2009, the [then] SA Department for Environment and Heritage placed a series of 18 interpretive panels along the Murray from Goolwa to the customs house on the eastern state border to recognise built and maritime heritage places (see Appendix 5, page 59).

Taken together, they all provide a detailed picture of the exploration of the river and the development of both the Murray-Darling river trade and the river port town of Mannum. The Engineering Heritage panel will complement the existing information.

9.1 Interpretation Themes

Being the first steam-powered vessel on the Murray-Darling system, the *Mary Ann* is of undoubted national significance in the history of the three colonies of New South Wales, Victoria, and South Australia. The *Mary Ann* was the first vessel to trade along the Murray and made the first voyage as far as Maiden's Punt (present day Moama).

All the more extraordinary is the fact that the *Mary Ann* was built and successfully operated by a man who had no experience in either boat building or navigation, only a vision of trading along the river and the determination to succeed.

1. First steam powered boat on the Murray-Darling
2. Unique construction of the *Mary Ann*'s original boiler
3. More of the river boat story in the Mannum Dock Museum
4. Pioneer river boat captain – William Richard Randell

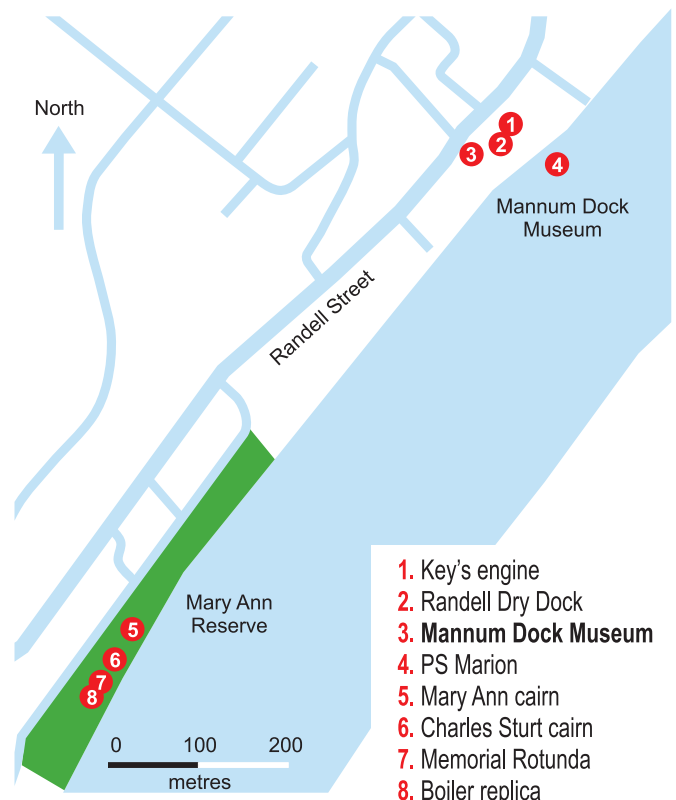
9.2 Location

By some miracle of history, the original and highly idiosyncratic boiler has been preserved and is on display in the Mannum Dock Museum. A replica has been placed in a prominent public area, the Mary Ann Reserve. This is the proposed location for the interpretation panel **8**.

The panel would also show the location of other memorials in the Mary Ann Reserve and encourage the public to visit the Museum (pointing out that an admission charge applies).

The Marker would be placed at the entrance to the Museum **3** where it would ultimately be used to mark the location of:

1. PS *Mary Ann* – first steam powered vessel on the Murray-Darling
2. Randell Dry Dock – only facility of its kind on the Murray-Darling
3. PS Marion – one of the oldest paddle steamers of its type in the world still operating



Paddle Steamer Mary Ann

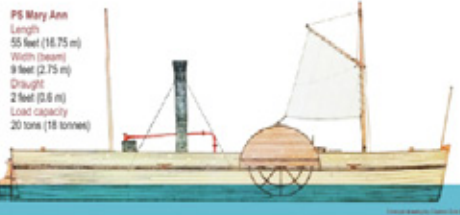


First Steamer on the Murray-Darling, 1853

The **PS Mary Ann** was launched in 1853. Despite its small size, it was able to travel 3000 miles (4800 kilometres) along the Murray, from Goolwa to Moama/Echuca. Visit the **Mannum Dock Museum** to see the original boiler of the **Mary Ann** and learn more about the river trade. You can also board the **PS Marion**, launched in 1897. Admission charges apply.



PS Mary Ann
 Length: 55 feet (16.75 m)
 Width (beam): 9 feet (2.75 m)
 Draught: 2 feet (0.6 m)
 Load capacity: 20 tons (18 tonnes)



Captain William Richard Randell (1824 - 1911)

William Richard Randell was only 13 when he came to South Australia with his family in 1837. Despite his lack of experience, he soon became one of the best-known river boat captains. Starting with the **Mary Ann**, he built up a fleet of boats, erected the first building in Mannum (the Wool Store), and established a dry dock. The No 1 Weir and Lock at Blanchetown is named after him.

Building the Mary Ann

The **Mary Ann** was designed and built by William Randell and his brothers. Incredibly Randell had never built or sailed a boat before. The frame was made at their flour mill in Gumeracha and hauled to the river where it was completed in February 1853. The boiler and engine were made by local engineers in Adelaide.

In 1855 the **Mary Ann** was lengthened and then became half of the twin-hulled **Gemini** which travelled up the Murrumbidgee in 1858.

The Concertina Boiler

The **Mary Ann's** first boiler was square – just about the worst shape for a vessel full of steam under pressure. William Randell had to wrap it with heavy chains to keep it safe but it worked. Under pressure, the sides of the boiler flexed and Randell called it his "concertina" boiler. Towards the end of 1853, Randell replaced the boiler and the old one was dumped.

Nearly 40 years later it was salvaged and put on display in Mannum's main street. In June 1912 it was put on a concrete base under a protective roof and in 1930 it was moved to the **Mary Ann Reserve**. In 2001, the old boiler was moved to the **Mannum Dock Museum** and a locally-made replica put in its place.



The River Trade

The **Mary Ann** was the first steamer on the Murray-Darling but was too small to earn a bonus from the Government. This went to Captain Francis Cadell's **Lady Augusta**. But both boats proved that the river was suitable for navigation.

Within 10 years, there were 20 steamers working – delivering stores to stations and towns along the river and returning loaded down with bales of wool. Within 20 years, there were hundreds. Later, passengers were carried, opening the river to tourism.



Captain Randell in 1851, aged 27



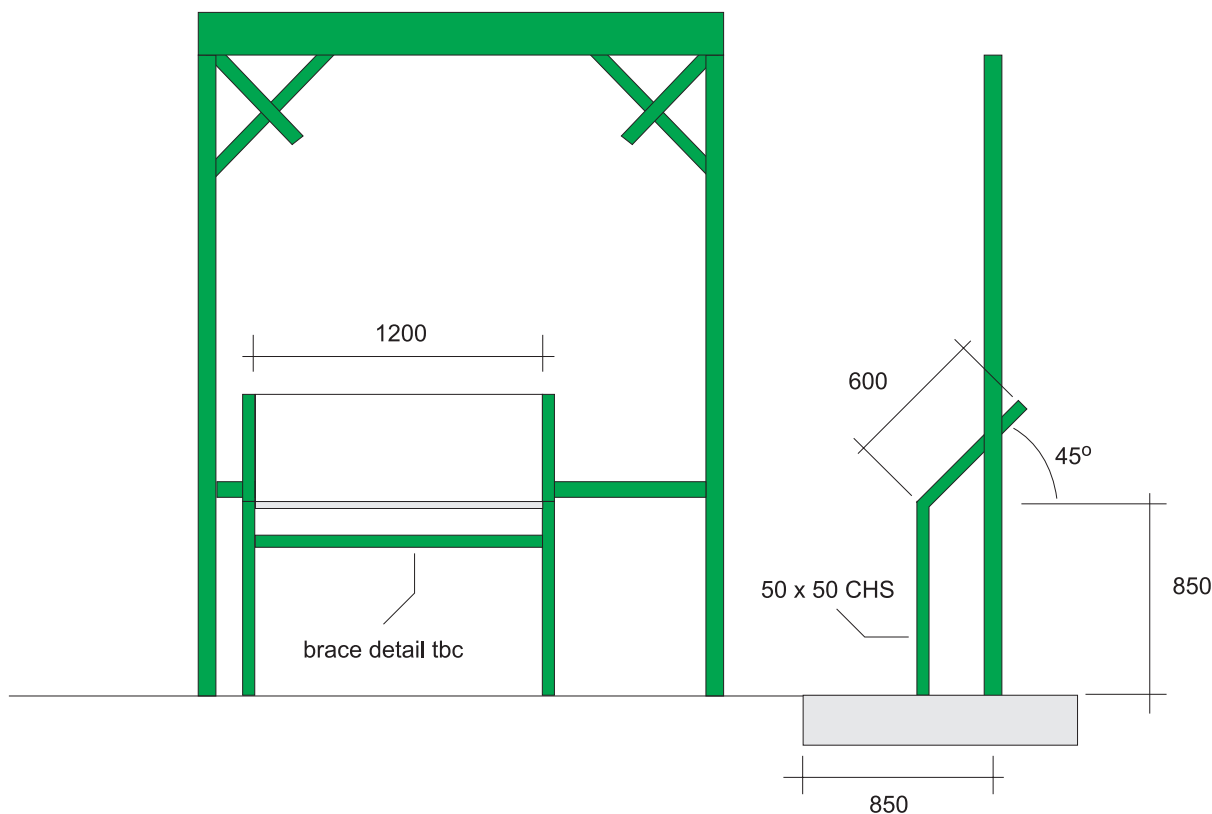
Engineering Heritage National Marker placed on 28 November 2014
 Engineers Australia
 Mannum Dock Museum
 Mid Murray Council



Draft interpretation panel



Mary Ann Reserve placement concept



Panel stand concept sketch (actual position to be determined)

The Mannum Dock Museum has a comprehensive display of river history including:

- the original boiler of the *Mary Ann*
- the arrangement of boiler and engine
- the Randell dry dock, including the Key pumping engine
- the operating Paddle Steamer *Marion*

9.3 Interpretation Panel

The panel stand will be fabricated in the Mannum Dock Museum's workshop from round hollow section to harmonise with the structure of the shelter. Final placement and details are to be agreed with the Mannum Dock Museum and Mid Murray Council.

The panel will be a 1200 x 600 vitreous enamel sign produced by Glass Metal Industries. The colour palette will include the EA colours of black and red (PMS 485) and maroon (PMS 195) from the Mannum Dock Museum logo.

9.4 Dedication of the Marker and Interpretation Panel

The proposal is to dedicate the Marker and unveil the interpretation panel prior to the Annual General Meeting of the Mannum Dock Museum's volunteers on Sunday 30 November 2014. This will be held in the Mannum Rowing Club, adjacent the Mary Ann Reserve. An announcement will be made at the "All Steamed Up at Mannum" Engine, Blacksmith & Boat Festival which will be held on the weekend of 15 and 16 November 2014.

Descendants of William Randell will be invited to attend and witness the ceremony.

10. People

10.1 William Richard Randell (1824–1911)

William Richard Randell was born in Devon on 2 May 1824, the eldest son of William Beavis Randell and Mary Ann Randell. The family arrived in South Australia in October 1837, travelling on the *Hartley*.¹⁹²

William Snr had been appointed General Stock Manager for the South Australian Company.¹⁹³ In 1839 he bought land along the Torrens Valley to the north-east of Adelaide where he built the family home “Kenton Park”. He also laid out the township of Gumeracha where he built a flour mill in 1848. William Jnr and his brothers rented and managed the flour mill until William realised his dream of having a steamer on the Murray and was transformed into *Captain* Randell.

Once he had proved – with the *Mary Ann* – that the Murray could be navigated, Randell set out to build his transport capacity starting with the twin-hulled *Gemini*. In this vessel, he travelled a significant distance up the Murrumbidgee to Lang’s Crossing (Hay) where he established a trading store.¹⁹⁴ In 1859 he travelled up the Darling as far as Brewarrina and, on another trip when the river was higher, reached Walgett.¹⁹⁵

Randell lived for a while at Wentworth and then returned to Mannum where he built a new home, Bleak House, on the ridge overlooking the town he had founded.

In 1892 he retired from active river work and returned to live in the family home at Kenton Park. He was first elected to Parliament as a representative for the District of Gumeracha in 1893 and served until 1899. In April 1910 he left Kenton Park and went to live at North Adelaide where he died on 4 March 1911, aged 86.¹⁹⁶

It is with the River Murray trade, however, that Capt. Randell’s name will always be chiefly associated, for by his far seeing enterprise he did more probably than any other man to open up the Nile of Australia to navigation, and to establish the immense trade which has found its way along that stream from the interior to the sea.¹⁹⁷



William Richard Randell, c1880
[State Library of SA, B9439]

192 Barry Leadbeater, *South Australian Passenger Lists*, <www.familyhistorysa.info/shipping/passengerlists.html>, viewed 7 October 2014

193 Mabel Kinmont, 1951, *Family Portrait of William Richard Randell: First steam navigator of the River Murray and its tributaries*, self published, Adelaide, p4

194 John Tolley, 1976, “Randell, William Richard (1824-1911)”, *Australian Dictionary of Biography*, <adb.anu.edu.au/biography/randell-william-richard-4450>, viewed 7 October 2014

195 “The Navigation of the Murray”, *SA Weekly Chronicle*, 24 November 1883, p11fg

196 *Register*, 6 March 1911, p7de

197 “A Murray Pioneer”, *Register*, 6 March 1911, p7de

10.2 John Green Coulls (c1812–1881)

Coulls was one of Adelaide's early foundrymen, leasing part of Town Acre 13 on Blyth Street between Hindley Street and North Terrace – Adelaide's metal casting precinct – from March 1850.¹⁹⁸ (However, Needham & Thomson note that he signed the lease document in 1847 and Coulls himself said that he established his business in Blyth Street in 1843. It was here that he made the beaters and comb for a reaping machine built to the design of John Wrathall Bull.¹⁹⁹)

He arrived in South Australia in February 1840, travelling on the *Java* from Portsmouth with his wife, Ann née Pappin, and two children.²⁰⁰

In 1851, he was one of a number of Adelaide businessmen who offered an incentive to any person who could find a gold resource in South Australia comparable to that recently discovered in New South Wales: Coulls subscribed five pounds. (Little did they know that an even more significant discovery in Victoria was just around the corner!)

Coulls had two lines of business: the South Australian Coach Manufactory and "his old-established business of Blacksmith, Wheelwright, and Engineering in all its various branches".²⁰¹ In 1853 he installed "a powerful lathe, capable of cutting screws of any size; also turning and boring cylinders and shafting of any dimensions":²⁰² this was said to be the first of its kind in the Colony.²⁰³

In 1855, Coulls opened the South Australian Iron and Brass Foundry, announcing that "having engaged an experienced Moulder and Pattern Maker, he is quite prepared to execute Castings to any extent both in Brass and Iron". He also stated that his was the only workshop capable of making "Reaping-Machines from beginning to end, and the whole made on the premises".²⁰⁴ A few months later, in August, he sold the business²⁰⁵ and devoted his energy to his property at Athelstone where he had established an orchard and vineyard on 18 acres of fertile ground. He also made wine on the premises using a wine-press "operated upon by a powerful leverage contrived and rigged by himself".²⁰⁶

The engineering, millwrighting and foundry business was bought by Joseph Pappin and Andrew Jones who leased the premises for 12 years.²⁰⁷ Coulls continued to own the property and carried out substantial

198 Needham & Thomson, 1998, p8

199 "Who invented the Reaping Machine?", Letter to the Editor, *SA Advertiser*, 22 March 1876, p5d

200 Barry Leadbeater, *South Australian Passenger Lists*, <www.familyhistorysa.info/shipping/passengerlists.html>, viewed 7 October 2014

201 *SA Register*, 13 August 1853, p4f

202 *Ibid*

203 *SA Register*, 22 July 1893, p6d; however, the Wyatts had a boring lathe installed by 1846 (see page 51)

204 *SA Register*, 12 March 1855, p1d

205 *SA Register*, 17 August 1855, p1d

206 "Our Vineyards and Orchards. No. XX.", *SA Advertiser*, 5 April 1862, p2de

207 Needham & Thomson, 1998, p9

SOUTH AUSTRALIAN COACH MANUFACTORY.

A SUPERIOR light and neat **MELVERN** DOG-CART, English built, for Sale; also, an elegant Brougham and a variety of other vehicles To be seen at **J. G. COULLS'S**, Coachbuilder, Hindley and Blyth-streets, Adelaide.
Two sets of very superior Gig Harness, one with silver-plated furniture on German silver.

J. G. C. embraces this opportunity of informing the public that he is still prepared, under able superintendence and experienced workmen, to execute every description of Coach Building in all its branches, and that he has provided himself with a large stock of suitable and well-seasoned materials for the purpose.

J. G. C. would also intimate to the public generally that his old-established business of Blacksmith, Wheelwright, and Engineering in all its various branches, is still carried on with undiminished energy, and that he has provided himself with a powerful lathe, capable of cutting screws of any size; also turning and boring cylinders and shafting of any dimensions.

J. G. C. can confidently assure his friends and the public generally that the Shoeing department is still carried on by able and experienced workmen.

N.B.—Patent Chaff-cutting Machines made to order on the shortest notice.

5th August, 1853.

SA Register, 13 August 1853, p4f

February 8, 1855.

39c

SOUTH AUSTRALIAN IRON and BRASS FOUNDRY, Blyth-street.—**J. G. COULLS** takes this opportunity of informing his old customers and friends, as well as the public generally, that his Foundry is now complete, and having engaged an experienced Moulder and Pattern Maker, he is quite prepared to execute Castings to any extent both in Brass and Iron.

Whatever might be said by others relative to their testimonials, &c., &c., J. G. C. begs to intimate that his is the only establishment in South Australia that has turned out Reaping-Machines from beginning to end, and the whole made on the premises; and he can produce, if required, testimonials out of number both as to workmanship and quality.

J. G. C. embraces this opportunity of informing his friends in the country, who may not be aware of his having commenced the Foundry business.

Just received from England direct, ex Rienzi, Tiberias, Henry Woolley, and others, a large addition to his stock, consisting of Iron, Steel, Ash Plank, Ash Fellocs, Axles, &c., &c., for the Coach and Spring-Cart Trade.

N.B.—J. G. C. is open to take a few orders for Reaping-Machines for next year.

Ash and Gum Fellocs of all sizes, in large or small quantities.

6982vj

SA Register, 12 March 1855, p1d

works in 1869, building large workshops and a showroom: “The walls are of Glen Osmond stone, 18 inches thick, with hammer-dressed quoins, and altogether the work is of a thoroughly substantial kind.”²⁰⁸ Jones continued in business in Blyth Street until 1878 when he bought the Adelaide Foundry on the corner of North Terrace and Victoria Street from the estate of George Wyatt. A Jones & Sons continued to trade here until 1912.²⁰⁹

The coachbuilding and wheelwright business was first sold to Samuel Carvosso who found himself in the insolvency court in 1866.²¹⁰ After Coulls’ death in September 1881,²¹¹ his brother-in-law John Ledan bought the business and continued to “carry on under the Style and Firm of J. G. COULLS & CO”.²¹² The business was taken over in 1887 by John Jenkin who had been “the foreman for the past twenty years”.²¹³

10.3 Claus Gehlken (c1801–?)

Gehlken’s sole contribution to South Australian history appears to have been the building of the *Mary Ann*’s engine: no other record of his work has been found indicating that he did not conduct a business in his own right but was employed by others. Vern Butler suggests that he might even have worked for George Wyatt where he supervised the casting of the cylinder and the construction of the engine.²¹⁴

According to the *Biographical Index of South Australians*, Gehlken was born in Gnadenbach, Prussia, in 1801 and came to South Australia on the *George Washington* from Bremen, arriving in Port Adelaide on 22 January 1846 with his wife Louisa Caroline and four children.²¹⁵ Louisa died in June 1847 and Claus married Catherine Elisabeth Blessner, another immigrant on the *George Washington*, in January 1848.



Blyth Street, 1899
[State Library SA, B5415]

208 “Building Improvements in 1869”, *SA Register*, 4 January 1870, supp p4b

209 Needham & Thomson, 1998, p9

210 *SA Advertiser*, 23 October 1866, p3c

211 *SA Register*, 12 September 1881, p5c

212 *SA Register*, 6 November 1882, p2d

213 *SA Advertiser*, 25 October 1887, p1g

214 Personal communication, 6 October 2014

215 *SA Register*, 24 January 1846, p2a: Gehlken’s name is spelt “Geelken” which gives a clue to its pronunciation

Appendix 1: Acknowledgements

Bernard Arnold who prepared the original nomination

Deb Alexander, Bob Bowring, Jenny Callender, Veronica Jones-Ingram, Dave Prescott, and Dave Dowley from the Mannum Dock Museum

Captain Dick Bromhead for permission to use his concept drawing and his insights into the construction of the *Mary Ann*

Owen Peake, Chair Engineering Heritage Victoria and Australian representative of the International Stationary Steam Engine Society

Vern Butler, for assistance with genealogical research

Leo Noicos, Deputy Chair Engineering Heritage SA

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Appendix 3: Chronology of Early River Murray Navigation

- 1830 Charles Sturt voyaged down the Murrumbidgee River and the Murray in a whaleboat, reaching its mouth on 10 February.
- 1841 35-ft sailing cutter *Waterwitch* under Captain Pullen sailed from the mouth to Moorundie.
- 1848 2 August: South Australian Governor, Sir Henry Edward Fox Young appointed. He is keen to promote the navigation of the Murray.
- 1850 6 June: South Australian Government undertakes to grant a bonus of £2000 each for the first two steamers on the River Murray having a minimum power of 40 horsepower, maximum draft of two feet, and of iron construction, to reach (at least) the junction of the River Darling.
- 1850 12 August: Publication of the Notice of the bonus in local papers.
- 1850 September/October: Governor Young voyaged from the junction of the Rufus to the junction of the Darling (about 830 km from the mouth) down the Murray to Goolwa in a boat rowed by six Wellington aborigines. He took soundings of the depth of the river at various points.
- 1851 May: Richard Gerstacker examined the navigability of the Murray from Albury to Moorundie and reported favourably.
- 1852 August: Captain Francis Cadell reconnoitred the Murray in a canvas dinghy from Tyntyndyer Station to Goolwa. He visited stations along the way to make arrangements for river transport of their wool and other produce.
- 1853 19 February: First voyage of William Randell's wooden steamboat *Mary Ann*. Mannum to Wall Station and back, c38 km.
- 1853 15 August: *Mary Ann* departed Noa-No on her successful voyage upriver to Moama (Moamma).
- 1853 16 August: Captain Cadell's iron steamboat *Lady Augusta* entered the Murray River.
- 1853 20 August: *Lady Augusta* departed Goolwa on her voyage upriver with the Governor on board.
- 1853 17 September: Both boats arrive at Swan Hill.
- 1853 21 September: *Lady Augusta* reaches Gunbower Station (1520 km) and turns around.
- 1853 24 September: *Mary Ann* reaches Moama (1710 km).
- 1853 30 November: Select Committee of the Legislative Council reports on the achievements of the Randell brothers (“perseverance and energy displayed”).

Appendix 4: Murray Navigation – A Romantic History

THE REGISTER, ADELAIDE, MONDAY, JANUARY 16, 1911.

<p>CONQUEROR. RAY'S EASY WIN. LONDON, January 15. Reunion of play between Gray at Liverpool on Friday night stood thus:—The Australian with an unfinished break of 57; opponent's figures were 3,814. Sessions saw the conclusion of and a hollow victory it proved. Gray completed with the help of breaks of 694. The English professional scored</p>	<p>MURRAY NAVIGATION. A Romantic History. From 1853 to 1911. [By our Special Reporter.]</p>	<p>with a minimum of expense, which obviously tends to the advantage of the producer. Whether the river be high or low a steamer can be put into service which will navigate the channel. Owing to the very nature of the volume of water in the Darling and the Murray, the service could not be carried on regularly with one type of vessel. When the rivers are in flood it is necessary to run a steamer of deep draught, and some dip into the water as much as 6 ft. 6 in., while others draw only 1 ft. 9 in. When the river is high and there is a strong current the latter boats cannot be safely utilized, and equally when the rivers are mostly shallow the craft with a deeper draught have to be laid up. Probably never before were the river settlers so adequately served as they are at present. One company alone has in commission over 40 vessels, representing a capital outlay of about £80,000, and other owners being the total fleet up to 70 or 80. The craft now on the river are capable of handling between 7,000 and 8,000 tons of cargo at one time. With the rapid development of the Murray country they are occasionally kept going at</p>	<p>THE PAS LIFE'S LIG L — Arrest. Walking into th of the London G Bank on Wednes particularly prep for a blank chequ her, and she filled payable to "Emu it in the same in count at the bank Williams, and that that the cheque u the cashier handle After she had gone more closely, and was not that of t. going into the st- driving part in a low the subject is</p>
<p>COMMERCE AND FINANCE. LONDON, January 14, 4 p.m. The Government is prepared as a last resource to undertake itself the construction of locks, but it claims that the sister States should do their share. The holding of this conference presents an opportunity to make a rapid review of what has been done in years gone by in connection with navigation on Australia's big river.</p>			

This week a conference of Premiers is to be held in Melbourne, at which, one more attempt will be made by South Australia to arrange a basis for the equitable use of the waters of that, noble stream, the Murray, for navigation and irrigation. South Australia has for years, attempted to secure from New South Wales and Victoria an assurance that sufficient water would be allowed to come down the Murray ; for steamers to ply on that mighty river for the trade of the settlers on the country on either side of it. Our own Government is prepared as a last resource to undertake itself the construction of locks, but it claims that the sister States should do their share. The holding of this conference presents an opportunity to make a rapid review of what has been done in years gone by in connection with navigation on Australia's big river.

—Early Days.—

South Australia is entitled to the credit of having opened the Murray and Darling to navigation. Attempts were made in the forties to utilize the river, but all efforts to secure Government assistance failed until 1851, when a premium of £4,000 was offered to the first steamboat which should succeed in navigating the Murray from Goolwa to its junction with the Darling. In 1853 Capt. Francis Cadell embarked in a canvas boat at Swan Hill in Victoria and came down stream, advertising his project on the way, and telling the farmers to get their produce ready for the first steamer. In the meantime the steamer Lady Augusta had been brought around from Sydney for him, and in July, 1853, was taken through the Murray Mouth by Capt. Cadell. While he had been waiting for the Lady Augusta he had had a barge built at Goolwa, and in August, 1853, the Lady Augusta left for upstream, towing the barge Eureka — the pioneer of a trade which in its essential features has not been changed since this intrepid undertaking, thus showing the remarkable sagacity of Capt. Cadell in planning what was required to move cargo down the stream to the sea, The Lady Augusta, with the barge in tow, reached Swan Hill on September 17, and four hours later Capt William Randell whose name will ever be associated with the Australian navigation of the Murray, arrived in charge of the Mary Ann. He was merely on a voyage to prove the navigability of the Murray, and was not so far ahead in his plans as Cadell, for he had made no provision in the shape of a barge to carry cargo. The first cargo loaded on the Eureka consisted of 220 bales of wool, which was put on board at Poon Boon on September 27, and over champagne in the cabin of the Lady Augusta "success to the commerce of the Murray" was toasted. An interested passenger on the Lady Augusta throughout the whole of this first history-making voyage was Sir Henry Young (Governor of South Australia), and he made the journey the subject of a special message to the Legislative Council. The Council in honour of the event ordered three medals to be struck, one for the Governor, a second for Capt. Cadell, and the third to be preserved in the official archives of South Australia. Capt. Cadell received a bonus of £4,000, and a subsequent special bonus of £300 was voted to Capt. Randell for having launched the first steamer on the Murray and navigated it for 1,800 miles.

—Trade on the River.—

The successful pioneer in any venture may be sure of having numberless imitators. No sooner had Capt. Cadell and Capt. Randell proved that the Murray was navigable than other enterprising spirits followed in their footsteps. Capt. King was the first, and he was closely associated with the river trade until quite recently, when he retired. He and Capt. Randell are still alive. Other early navigators of the Murray were Capt. Tait, the late Capt. John White, Messrs. E. Rich & Co., the late Mr. John Egge, the River Murray Navigation Company, Capt. M. Patten, and Capt. Brown. There were many others who in a larger or smaller way, some with, fleets and others with only one or two steamers, competed for the trade of the Murray. It was an expensive business to run a steamer, as most of the traders found to their cost.

—Fascination for the Trader.—

The Murray and the Darling have always possessed a magnetic fascination for enterprising traders. Many thousands of pounds have been embarked in steamers and barges designed to move the produce from the country contiguous to the rivers to the seaboard. It is unfortunately significant that much of this plant now lies rusting at various places on the banks of the stream. The competition of railways was in a measure accountable for the failure of some of the owners of river steamers, but the more potent factor still was the competition between themselves. Their cut-throat antagonism sometimes led to the presence of too many steamers when there was cargo to be shifted, and the subsequent failure consequent upon the inability to carry on traffic at a loss led to the absence of vessels when the settlers had produce waiting to be shipped. The losses were brought about largely by competitive cutting of freights, and often settlers were in a sorry plight, left without steamers to get their wool and their wheat to the sea board. The owners of steamers at the ridiculously low rates that were charged did not make enough to justify them in keeping them going, and in the end many found it cheaper to tie up their vessels than to carry on a losing business.

—A Better Order of Things —

Latterly the river trade has been put on a sounder footing, owing to the pluck and energy of certain individuals who, so to speak, have gathered together all the loose ends. They have aggregated in one management large and small steamers and numerous barges, so that they are able to maintain a regular and rapid service. There is such a variety of limits available that it is possible to handle all the traffic with a minimum of expense, which obviously tends to the advantage of the producer. Whether the river be high or low a steamer can be put into service which will navigate the channel. Owing to the very nature of the volume of water in the Darling and the Murray, the service could not be carried on regularly with one type of vessel. When the rivers are in flood it is necessary to run a steamer of deep draught, and some dip into the water as much as 6 ft. 6 in., while others draw only 1 ft. 9 in. When the river is high and there is a strong current the latter boats cannot be safely utilized, and equally when the rivers are mostly shallow the craft with a deeper draught have to be laid up. Probably never before were the river settlers so adequately served as they are at present. One company alone has in commission over 40 vessels, representing a capital outlay of about £80,000, and other owners bring the total fleet up to 70 or 80. The craft now on the river are capable of handling between 7,000 and 8,000 tons of cargo at one time. With the rapid development of the Murray country they are occasionally kept going at full pressure, but there are often times of slackness. Arrangements are, however, so complete that the man on the river can rely on his boat service, for the steamers run between the terminal points according to a fixed schedule. Not only the cargo is moved rapidly and with certainty, but the provision for passengers is better than ever before. This has contributed to the popularity of the river trip for excursionists, and the Tourist Bureau has not been slow to take advantage of the opportunity thus presented, and to encourage seekers after rest and holiday to make the trip along the majestic River Murray. The Parliamentary party which recently went up the river to meet the Scottish Commissioners, and the visitors themselves, were all struck by the arrangements made for their comfort on the steamers. It was in deed luxurious travelling.

—Problem of the Past.—

Practically all the steamers engaged on the Murray are of the side paddle type, and it may be taken for granted that after 50 years' experience of men like Capt. Randell and Capt. King, this is the most suitable for use on the river. There is no doubt that vessels which are suitable for an open stream would be useless

on a river like the Murray, where tie banks are lined with heavy overhanging timber, as a steamer with too much top hamper is apt to be damaged by projecting boughs. The type of vessel is indeed limited by the nature of the stream. So far as length, width, draft, and top hamper are concerned experience has demonstrated the utility of the boats now in use.

The Chaffey Brothers a few years ago after they had opened up Mildura and Renmark thought otherwise. They had an idea that the proper type of steamer for use on the Murray was a sternwheeler, and spent over £12,000 in building the Pearl. She, however, proved, to be; the dearest boat ever built put on the river, although she was of a type in use in other parts of the world, and of very shallow draught. It was found she was absolutely unsuitable for the requirements. She would not act owing to the treacherous and shifting nature of the channel, and in shallow waters proved almost valueless. It was emphasized that it was difficult to get a sternwheeler alongside the banks, on account of their sloping nature, while hidden snags and projections were a constant source of worry and expenditure in repairs. The Pearl proved a ghastly failure, and her owners were so convinced that she was the wrong type that they took the machinery out, and she is now doing service as a hulk. She is useful only because of her deck covering for the carriage of machinery. Other sternwheelers have been tried, but only one is now in service, and ere long she will be depleted of her machinery and turned into a barge when other boats, which are now being remodelled, are ready for use.

—Present and Coming Problems.—

One of the problems of the Murray trade is that it has to be done in spurts. In the wheat and wool seasons — principally the former — there is a large quantity of produce to be handled, and most of the vessels in commission have a busy time. It so happens that generally a rush comes on a full river, and to see the numerous steamers hurrying down stream with their heavily freighted barges at the rate of ten knots an hour would be apt to give a casual visitor a false impression of the volume of trade. The settlers on the Murray, particularly those who have recently opened up new country have cause to be thankful that there is a splendidly organized service available to carry their goods to market. Without the Murray vessels thousands of acres of country could never have been profitably tilled. The large fleet which is required in the busy season is not used in duller times, and the fact that duller periods do occur makes the financial problem a difficult one for those who have the management of the river service. The difficulty of obtaining fuel under satisfactory conditions is another important consideration. To run a steamer from Morgan to Mildura and back means the consumption of 80 tons of wood. Most of the timber which was handily available has been removed, and the settlers are so prosperous that just as city folk find that the price of firewood has been raised so managers of river steamers have experienced more difficulty in obtaining their supplies. All attempts to instal mechanical contrivances for the loading of logs into the steamers have failed to prove economical, and owners have to rely on hand labour to get their firewood on board. Their experience has taught them that it is possible to do this only at comparatively short intervals in the journeys up and down stream. The increased wages have also proved another disturbing factor to owners of vessels, for within the past three years they have increased by 25 to 30 per cent.

—Private Enterprise.—

In concluding this brief summary of what has been done in connection with the navigation of the river, it is worth noting that the whole of it has been accomplished by private enterprise since Capt. Cadell received his first bonus. Governments have always been averse to giving any subsidy to the river steamers, and, as the Premier (Mr. Verran) said the other day, his Government adheres to that policy.

[*The Register*, 16 January 1911, p8de]

Appendix 5: River Boat Trail Signage

RIVER BOAT TRAIL

THIS INTERPRETIVE TRAIL TELLS THE STORIES OF THE PEOPLE AND BOATS THAT MADE THE RIVER MURRAY A BUSY INLAND HIGHWAY DURING THE LATTER NINETEENTH AND EARLY TWENTIETH CENTURIES



PORT OF MANNUM

Birthplace of steam navigation on the Murray

On 19 February 1853, at Nos No Landing north of Mannum, William Randell launched the *Mary Ann*, the first paddle steamer on the River Murray. He later moved his operations to the present site of Mannum, which soon became a centre for shipbuilding and river transport.

Randell built a wharf, goods sheds and fleet of river boats. By the 1850s and 60s, up to 20,000 bales of wool per season were unloaded at Mannum, to be transported overland to Port Adelaide. In the 1870s Randell installed a dry dock (now a feature of the Mannum Dock Museum) to assist with shipbuilding and repair.

As Mannum thrived, businesses were attracted by the transport network the river provided. Benjamin Walker built a flour mill in 1857 and a year later David and John Shearer established a blacksmith and implement business in the town. Both industries used the river system to market their products.

The Gowrie brothers built their own wharf and made good use of river steamers to expand their sheepskin business in South Australia as well as Victoria and New South Wales.

Another colourful river captain, J.D. Arnold, also began his fleet of paddle steamers in Mannum. He built the large paddle steamer *Mannum* and the *Cam* and *Marion*, which ran until 1947.

The River Murray is a public asset. It is managed by the Murray-Darling Basin Authority. For more information about the River Boat Trail visit www.murray-darling.gov.au/riverboat. Photo taken at Mannum in 1938. Photo courtesy of the Mannum Dock Museum. Photo taken at Mannum in 1938. Photo courtesy of the Mannum Dock Museum.

The *Mary Ann* Story

William Randell and his brothers were four millers who recognised the benefits of trading along the river. Although they had never seen a paddle steamer, they constructed a hull and a boiler and carried them across the hills from Gumeracha.

The brothers assembled the vessel on the riverbank at their father's Nos No Station and installed an engine made in Adelaide. The end result was the 55-foot steamer *Mary Ann*, which was named for their mother.

The boiler was rectangular with a furnace through the middle. When it was first tested it bulged as the steam built up and Randell wrapped bullock chains, tightened with wooden wedges, around the outside.

FIRST VOYAGES

William Randell skippered the *Mary Ann* on a successful trial run on 19 February 1853, thus marking the appearance of the first steamer on the River Murray.

He then planned a trading voyage and had twenty-one tons of cargo carted from Gumeracha. As there was no customs officer at Nos No, William had to first steam downriver to Gookoolwa to clear his cargo.

The *Mary Ann* set off from Nos No on 25 March laden with a cargo of flour, sugar, tea, tobacco and sundries.

Unfortunately it was a drought year and this was the middle of the low-water season. The vessel travelled only 200 kms before it needed to turn back.

Encouraged by this voyage, Randell set out again on 15 August once the water levels had improved. Just past the Mumumbidgee junction the *Mary Ann* was overtaken by another steamer, much to the crew's surprise. This was Francis Cade's *Lady Augusta* that had left Gookoolwa on 25 August.

The *Mary Ann* eventually reached Swan Hill on 17 September 1853 and proceeded upriver as far as present-day Moama – a journey of over 1700 kilometres from Gookoolwa.

THE MARY ANN'S FATE

In 1855 William Randell used the hull of the *Mary Ann* to build the twin-hull paddle steamer *Geminu*. Later, the *Geminu*'s newer hull was rebuilt as the *NF Desperanzouh* and the older hull (the former *Mary Ann*) was abandoned near Mannum's old ferry crossing. The *Mary Ann*'s unique boiler spent many years on display at the public reserve but is now housed at the Mannum Dock Museum. A replica boiler has replaced it at the reserve.

Nos No Landing, the launch site of the *Mary Ann* in 1853, is a significant State Heritage Place protected by the Heritage Places Act 1983.

ANOTHER 'RIVER BOAT TRAIL' SIGN IS LOCATED AT THE MANNUM DOCK MUSEUM IN RANDELL STREET

River Boat Trail signage in the Mary Ann Reserve
[Photos: Leo Noicos]

