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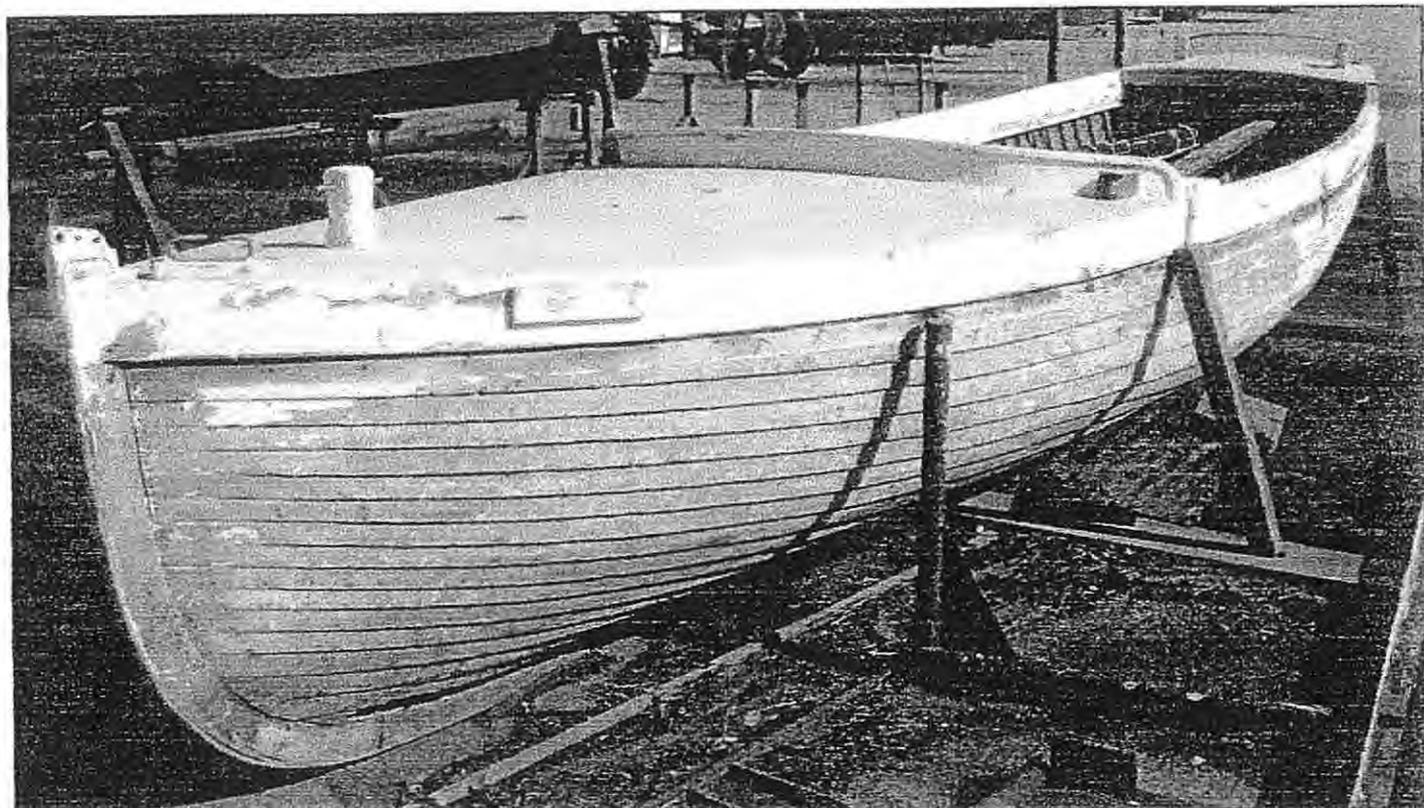
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*The Albatross at Wooden Boat Works prior to shifting  
Photo Ross Shardlow*

*See Report on Page 16*



The Maritime Heritage Association Journal is the official newsletter of the Maritime Heritage Association of Western Australia, Incorporated.

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(If you have an unwanted collection of magazines of a maritime nature, then perhaps its time to let others enjoy reading it. Contact the Association; we may be interested in archiving the collection.)

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## EDITORIAL

Members will regret to hear that Rod Dickson has resigned from the Presidency and the Committee of the Maritime Heritage Association. Rod has contributed a great deal to this Association, and to the recording of Western Australia's maritime heritage generally. His generosity with the material he has researched is well known. We wish him well in his future endeavours.

As reported in the last journal, in early July some MHA members, under the supervision of Ray Miller, inspected the cutter *Albatross*. An assessment was made and the full report by Ross Shardlow is published in this journal. Any comments would be welcomed by the editor for inclusion in future editions of the journal.

Further to the question I posed on page 3 of the last journal regarding who was Julia Percy, I have another vessel to add to the list. The firm of Winter, Brandt and Company of Geraldton had a 70 ton fishing boat named *Julia Percy*. This *Julia Percy*, together with another of their vessels, the *Cock O' the North*, were among the earliest fishing boats to be fitted with refrigeration plants – in about 1906. Because this early refrigerator froze too slowly it caused ice to form in the flesh of the fish and resulted in mushy fish when they were thawed. In the *Cock O' the North* at least the refrigeration plant was removed and replaced with

ice boxes as customers preferred fish off the ice. This still leaves the question unanswered – Who Was Julia Percy???

On 30 October a seminar was held at the home of the editor. Seventeen people were present to hear a fascinating talk by Ray Miller on spar-making and spar gauges. Ray's depth of knowledge is profound, and he brought along all the tools to properly illustrate his talk. In future issues of the journal we will publish the information from Ray's talk.



The stem of the *Albatross* showing size, number and date built



## Things They Would Have Rather Not said

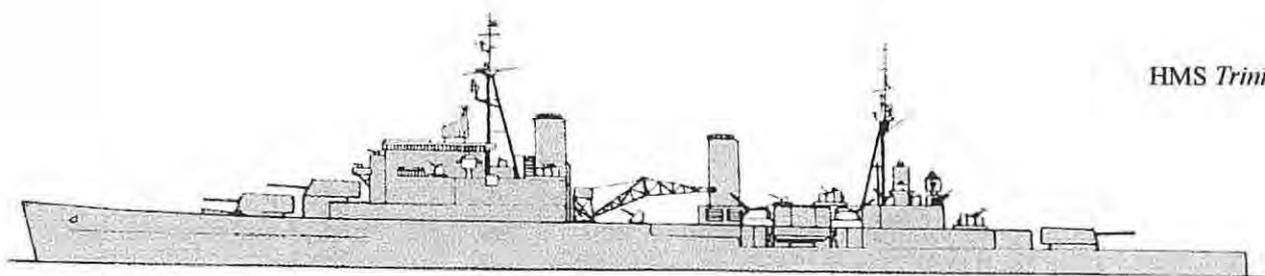
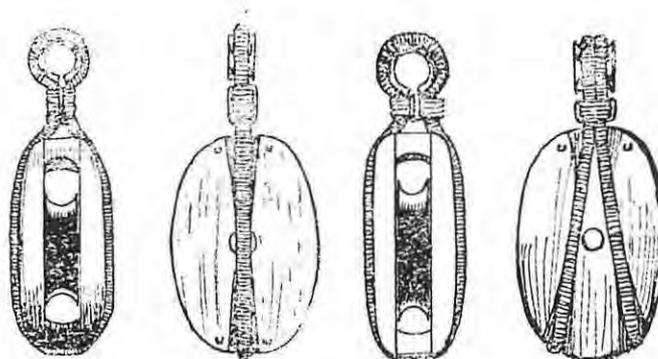
The submarine can only operate by day and in clear weather, and it is practically useless in misty weather.

Admiral Lord Charles Beresford (1846-1919).

The system of several ships sailing together in a convoy is not recommended in any area where submarine attack is a possibility.

An Admiralty Memorandum on Convoys, January 1917.

(At the insistence of Lloyd George a change of policy on this issue in mid-1917 reduced merchant shipping losses from submarine action from 30% in early 1917 to less than 1% in July and August of that year.)



HMS *Trinidad*

## Self Inflicted Wound? Part 2

**S** In the last journal there was a very short article on HMS *Trinidad* and the fact that she torpedoed herself on 29 March 1942, and only just made it to Murmansk for repairs. Further information to hand indicates that her struggles were in vain, as on 15 May 1942 she was sunk by German aircraft in the Barents Sea. She was leaving Murmansk after repairs, which consisted of a massive metal patch on her starboard side. The cruiser was steaming at 20 knots when one bomb blew the patch off while another caused a fire forward. *Trinidad* was abandoned after the crew failed to control the fire. Murmansk is at latitude 68° 58' north.

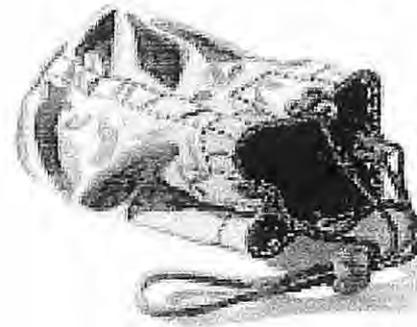
*Trinidad* was a Mauritius class cruiser of 8,500 tons with 12 6-inch and 8 4-inch guns, 6 torpedo tubes and a nominal speed of 31.5 knots. It carried two aircraft and was only very newly completed.



# The Ditty Bag

An occasional collection of nautical trivia to inform, astound, amuse and inspire.

(The inspiration could take the form of contributions to this page!)



The battleship HMS *Queen Elizabeth* and her sister ships *Warspite*, *Valiant*, *Barham* and *Malaya* were the first battleships in the world to have oil-fired boilers. They were laid down in 1912 and completed in 1915. Of 27,500 tons displacement, their main armament consisted of eight 15" guns and they were capable of a speed of 24 knots. The *Warspite* fought in both World wars, including being the first battleship to open the bombardment at Normandy on D-Day. After running aground in Cornwall while being towed to the breakers in 1947, she was finally completely broken up in 1956.

The German battleship *Bismark* was sighted on 26 May 1940 by a Catalina flying boat of the RAF. This sighting led to the subsequent battle in which the *Bismark* was sunk. Interestingly, the co-pilot of that Catalina was Ensign Leonard Smith, United States Navy. When the Consolidated PBV flying boats, named Catalina by the RAF, were sent from America to Britain, they were accompanied by a number of American instructors whose task was to teach the British how to fly the machines. These men were termed 'special observers'. America was neutral at the time that the Catalina sent the message:

"One battleship bearing 240° 5 miles, course 150°, my position 49° 33' north, 21° 47' west. Time of origin 1030/26."

By the time Horatio Nelson was 18½ years of age he had already sailed 45,000 miles. He joined the Royal Navy at the age of 12 and was sent immediately to the West Indies where he spent a year before returning to Chatham. He then went on an expedition to the Arctic, then to India, then the Persian Gulf and a voyage to Gibraltar. He was an acting lieutenant during this latter voyage, although he had not at that stage taken his lieutenant's examinations.

The United States Navy's battleship USS *New Jersey* was laid down in September 1940, launched December 1942 and completed May 1943. Her four steam turbines, fed by eight boilers, develop 212,000 shaft horsepower driving four propellers for a speed of 35 knots. Her 16 inch guns have a range of 23 miles and were used for shore bombardment of Vietnam in 1967. This Iowa class battleship and her three sister ships *Iowa*, *Missouri* and *Wisconsin* are the largest battleships ever built, with the exception of the two Japanese ships *Yamato* and *Musashi*.

**Metre stick.** On a ship this was a measure used in stowing the cargo in order to preserve proper levels. Does anyone know if it is still used?

The first ship of the Royal Australian Navy to be attacked from the air was HMAS *Sydney*. On 4 May 1917 she was attacked by the German Zeppelin *L43* in the North Sea. Accurate fire from *Sydney*'s guns prevented the bombing from doing any damage.

In August 1944 the frigate HMS *Loch Killin* depth charged the U-boat *U736* off the French coast. The successful attack resulted in the *U736* being blown to the surface and jammed across the *Loch Killin*'s stern. The crew of the *U736* stepped dry-shod to the frigate's deck to be taken prisoners. The submarine was then shaken free and sunk.

In the days of sail around the turn of the 19<sup>th</sup> century most provisions (with the exception of bread) were carried in casks. These were of various sizes but the biggest was called a leaguer. It was 4' 6" long (they were always carried on their side, bung up) with a maximum diameter of 3' and held 150 gallons. A leaguer was used only for water. Butts held 108 gallons.



# SHIPS OF THE STATE SHIPPING SERVICE

The fifth in the series by Jeff Thompson of the Fremantle Branch of the World Ship Society. The article is reprinted courtesy of Jeff and that Society.

## No.5 *Kangaroo* Official Number 25944

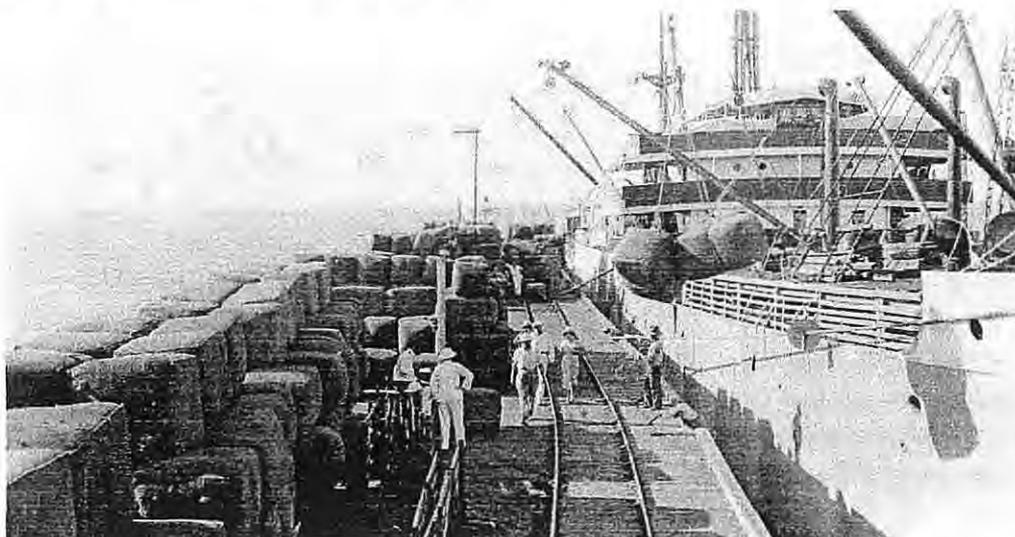
In September 1913, due to ill health, the first manager of the State Steamship Service was replaced by the Secretary of the Fremantle Harbour Trust, who still retained his old position. This appointment was controversial as it brought the fledgling shipping company under the control of the Fremantle Harbour Trust. The offices of the shipping service were then relocated to the Harbour Trust building at the northern end of Cliff Street.

A further, larger vessel was required for service to the North West and the search was on for a suitable ship and a vessel under construction was deemed as being suitable. The *Kangaroo* was originally ordered by the Danish owned East Asiatic Company of Copenhagen as the *Lalandia*, from Harland and Wolff, Glasgow, for service to the Far East. She was 4,348 gross registered tons, 3,912 deadweight tons, 111.39 metres overall, 15.23 metres breadth, with two Harland B & W diesel engines and two screws. She was unique at the time in having no funnel but two narrow engine uptakes, one being similar to a mast. The vessel was bought on 22 October 1915 by the Western Australian Government from the Board of Trade, London whilst under construction, to be the first large ship for service to the North West ports and having accommodation for 30 first class

passengers. The *Kangaroo* was the first Australian owned diesel motor ship and the second large British motor ship to be built.

On completion, the vessel operated overseas for the remainder of World War I. On 5 April 1917 whilst in the Mediterranean she repulsed an attack, and possibly sank an enemy submarine with her own guns. In 1921 at Southampton she underwent a re fit, including alterations to transport cattle, to commence normal commercial service to North West ports and voyages to Malaya. The *Kangaroo* serviced as a trade mission vessel to Far Eastern ports on several occasions and visited Colombo twice in 1931-1932 as well as Chinese ports once. Overall, the ship spent more time trading overseas than it did on coastal voyages. When the vessel was sold it was decided to concentrate on wholly local voyages rather than pursue overseas business.

In 1938 with the delivery of the new *Koolama*, the *Kangaroo* was sold on 9 August to the Shanghai shipping company Messrs Moller Bros and renamed *Norah Moller* for service in the Far East. On 1 February 1942 whilst in Banka Strait the *Norah Moller* was attacked by Japanese aircraft and set on fire. The 57 survivors being rescued by *HMAS Hobart*. On 3 February 1942 the ship was sunk by Japanese aircraft in Sunda Strait.



*The State Ship Kangaroo loading wool at Onslow*



## A Coil of Old Rope?

As promised here is the missing part of Ray Miller's autobiography.

At about 9.30 p.m., Jack took me down to the water-front where the coastal lighter *Nicoll Bay* lay along-side the end of the long Derby jetty. The skipper was an old seaman named Harold Mathieson. He was about to leave on the turning tide so that he would have its assistance as it flowed out of King Sound. The passengers, some new-comers to the area, (like Ray Miller) sat or lay on the hatch covers staring wide-eyed at the crystal-clear night sky. Those who had done this trip before, of course, had seen it all and went to sleep where they lay! I was fascinated and plied old Harold with endless questions. He seemed to be glad to have someone to talk to, as he steered his lumbering diesel-driven vessel into the starlit darkness. I noticed he fortified himself by drinking large mugs of black coffee in chain succession. He seemed to have only the engineer and one deck-hand, doing much of the deck-work himself. He pointed out, in response to my questions, the chain of lights, to starboard, by which he navigated his way north: Black Rock (Point Torment), Long Island, High Island, Tanner Island and Cockatoo Island, which we reached almost at daybreak. We anchored off for a while, waiting for the tide, so we could come alongside the 'Town Wharf'. Harold did not normally do this run, but on this occasion he and his vessel were standing-in for the *Yampi Lass* which was away for servicing at the time. We were, not long after coming along-side the wharf, met by the Mission Lugger *Watt Leggatt*. This was a 48-foot Ketch-rigged vessel, running under bare poles, driven by a 14 HP 2-cylinder Ruston-Hornsby auxilliary diesel engine. This was the lugger I had been appointed to repair. From this first viewing, she seemed to be fairly sound, and the motor was running quite sweetly. It was not till I saw her high and dry that I understood why she needed a lot of work done on her. She was pretty nail-sick and there were quite a few sprung planks low down. In fact, nearly all the urgent work needing to be done, was low down. Fortunately, I soon was to learn that Australian Iron and Steel Pty. Ltd. At Cockatoo island, had an excellent slipway and were only too glad to let us use it. However, my appointment was for three

years initially, but there was a lot more to be done than to repair the *Watt Leggatt*.

My other tasks included dismantling buildings at the old Mission site at Kunmunya, and re-erecting them at Wotjulum. This also meant teaching the men, and the boys who had finished school and were now in the workforce, what we were doing and how to do it, in a tradesman-like way. I found they loved to learn the skills and the reasoning behind them.

They had all been taught to speak good English by the earlier Missionaries during the period of forty years that the Mission had been established. They liked to know the proper names for everything, and why it was so called. Together with their natural courtesy, manual aptitude and terrific sense of fun and good humour, it really was a delight to work with these unspoilt full-blood Aborigines.

This particular mission had from its earliest beginnings in 1911, maintained a policy of 'no paternalism', whereby any Aborigine who did any job of work asked of him, or her, by the missionary, or the missionary staff, would earn for himself and family, some food from the mission store. The rule was simply: "No work, no food." Later, when they were taught the use of money, or Kaiugu, (stones in their Worora language) they soon learned to exchange money for food (and all manner of other things too). They were always encouraged to keep up their hunting, fishing and gathering skills and there was no work on Saturdays or Sundays. Nearly everyone except the sick, lame or indigent went 'walk-about' on those days, many returning to the Mission in time for a Church Service, in Worora, on Sunday afternoon, if they wished to. This mission was there for the people and not the other way round. The Mission's concern was for the education, health and well-being of all the people who came to it. That was estimated, around 1930, to be about 300 Worora, and their sister tribes, the Wunambal to the north, and the Ngaringin to the south-east.



Beside the rebuilding of old buildings, a new Mission house was purchased pre-cut from Perth and delivered to us by 'State Ships'. You would not believe, but it had been ordered with no overhangs to the roof! - no overhangs or shade to the walls! - in this climate!? It certainly had some overhang and a fair bit of extra material by the time we had finished!! It would have looked like a house from Tuscany, a style so popular today; but no shade on the walls of a timber-framed, asbestos clad house in that climate? - unbelievable!

Then beside the mission house and the people's houses, there was a workshop with buzzer and sawbench to be built, in order to prepare bush timber for building work. There were about 50 forty-four-gallon drums to fill every second or third day to all the houses, from the water truck, all of which had to be pumped up out of the Wotjulum River a mile away and delivered door-to-door. We had no electricity supply, and only kerosene fridges and pressure lamps. All drilling was by brace and bit or hand drill, all long sawing was either by pit-saw or cross-cut, all squaring was by adze and broad-axe and our radio to the Flying Doctor was pedal-radio. The buzzer and sawbench came in about our third year, to be driven by an ancient Macdonald Diesel Stationary Engine which used to drive a lighting plant in Kunmunya days. We were quite used to doing everything by hand and it seemed perfectly normal to us.

By the time I had nearly completed my third year at Wotjulum I was asked to do another year, to which I agreed. Then twelve months later when they had still not found a replacement for me, I agreed to a further year's term. Early in 1954, it was very obvious that toredo, (ship worms) were overtaking our best efforts to keep the *Watt Leggatt* water-tight, so it was decided that we should design a suitable replacement; not a sailing boat like the lugger, nor as big, but a purpose-designed motor-launch of about 36 feet, with a high speed Diesel engine.

The Acting Superintendent from early 1952 was a man of many parts and much experience, in many fields of activity. He was Lindsay Macmillan, fourth son of Thomas Macmillan the

Medical Missionary in the New Hebrides who had served 40 years at White Sands. Lindsay was educated at Scotch College in Geelong. He was a good scholar with an orientation towards sport and outdoor activities, with a particular interest in ornithology. After a course in agriculture, he returned to the Islands; operated mission vessels between mission stations; collected specimens, skinned and identified bird species for the American Museum of Natural History in New York; worked for the Aneityum Logging Company, establishing logging roads with native labour. I must confess I am uncertain about the chronological order of these events, but after marrying and having three children, he was operating pilot launches on Sydney Harbour for the Maritime Services Board, after doing a course of Diesel Engineering for that purpose. It was at this time, 1950, that he was sought after by the Australian Presbyterian Board of Missions based in Sydney. He was asked to deliver a very old international KB3 truck, overland from Adelaide to the Kimberley and to help in the move of the Mission from Kunmunya to Wotjulum. In all this he was accompanied by his wife, Joy and their five year old daughter Phyl. Their two boys, Jock and David, became boarders at Albury Grammar, it was hoped for a period of three years. 'Mac' and Joy had arrived early in 1951 and they were there to meet me when I arrived later in September.

In any consideration of designing a replacement for the *Watt Leggatt*, we had an ideal guide on diesel-driven vessels in Lindsay Mac. After listing all the topographical features of the area in which the launch was to operate, we were able to set all the design parameters like length, beam, draught, and drag (slope of keel) to suit the nature of the sea bottom where she was to sit between tides. Also the desired load she was to carry, in the conditions in which she was to operate, was an important consideration; for when medical patients had to be transferred to Derby Hospital or Leprosarium, thought had to be given as to how they were to be accommodated during the trip - and for how long? So with all these factors brought into the equation we came up with the lines, specifications and a cardboard half model (no



suitable timber being at hand) of what was to become the *Watt Leggatt II* (more in memory of her predecessor, than in memory of the benefactor who had ordered the first vessel to be built in 1928).

So the *Watt Leggatt II* built by Halvorsens in Sydney, was completed on 21st July 1954 and back-loaded from Sydney to Cockatoo Island on the *Iron Yampi* as deck cargo. She was escorted up the twelve miles of the Coppermine Estuary to the Wotjulum Landing by the old faithful 'Number One', on 16th October 1954. She was immediately put to work, and proved to be everything we had hoped for, with a Gardiner 36 hp, 3 cylinder diesel engine, running at 1700 r.p.m. She was quite fast, economical, and with a good load carrying capacity. With only two needed to crew her, (unless there was much cargo to be man-handled) she was cheaper to run wages-wise than the lugger with her crew of four to six.

As it turned out we had advertised the old *Watt Leggatt I* as being for sale and an option was given to a pearler/beach-comber Dean Brown, of Derby. He was keen to buy her when we had finished with her, which was early in 1957. She officially, changed owners on 10th July 1957. Her registration certificate was closed on 9th October 1958, after she was totally destroyed by fire in August that year. This happened in Broome, while waiting to go on the slip for repairs. She had done wonderful service during her 30-year life, and I felt it was almost a personal loss when I learned of it. I was not there when it happened in fact, because my four and a half years of continuous working for the Mission ended in April 1956. Mac, Joy and their daughter had left after five year's service, late in 1955. A new Superintendent and Technical Assistant and their wives, plus two other 'TA's took over, a week before I left.

The story of events at Wotjulum, as it happened, took an unexpected turn, just after I had left. A change of policy in Government Departments brought about this drastic change for the Aboriginal people all over Australia. The policy of 'Assimilation' was in force up till this time, whereby it was thought the Aborigines would be

absorbed into the white population on the assumption that they would eventually die out. This was not happening as expected, instead, they were on the increase. So in future, a policy of 'Integration' would take effect. This meant that from here on all school age children of Indigenous people must attend State or Education Department Schools. In many cases this meant that aboriginal children on missions or cattle stations, would have to be moved into the nearest towns where there were such schools, or at least be bussed in, if they lived close enough. The final outcome for the Wotjulum people was that they would have to abandon all that they had built up, and with which they were very happy, and move, lock, stock and barrel' into Derby. They were not happy with this prospect but could not bear the thought of the only other alternative; being separated from their children. And in any case where would they live or board? There were no such facilities in Derby. The people decided for themselves, they would all move to Derby. And that was exactly what happened later that year, 1956.

The new members of staff soon found themselves busy not only with the day-to-day running of the Mission, and its many chores, but also planning and carrying out the massive task of moving. Everything, including buildings, equipment and people, over two hundred and fifty of them, were to be moved by lugger and launch to a site about six miles beyond Derby, near the airport. The distance from Wotjulum to Derby was 75 miles as the crow flies, but by boat it was more like 90 sea miles. With truck and barge at Wotjulum and tractor and trailer at the Derby end for connections, the journey was more like 110 miles. The really heavy items like tractor and trailer, and the truck and stationary engines, were all loaded from a 100-ton barge onto SS *Daylesford* for Derby. All in one go!

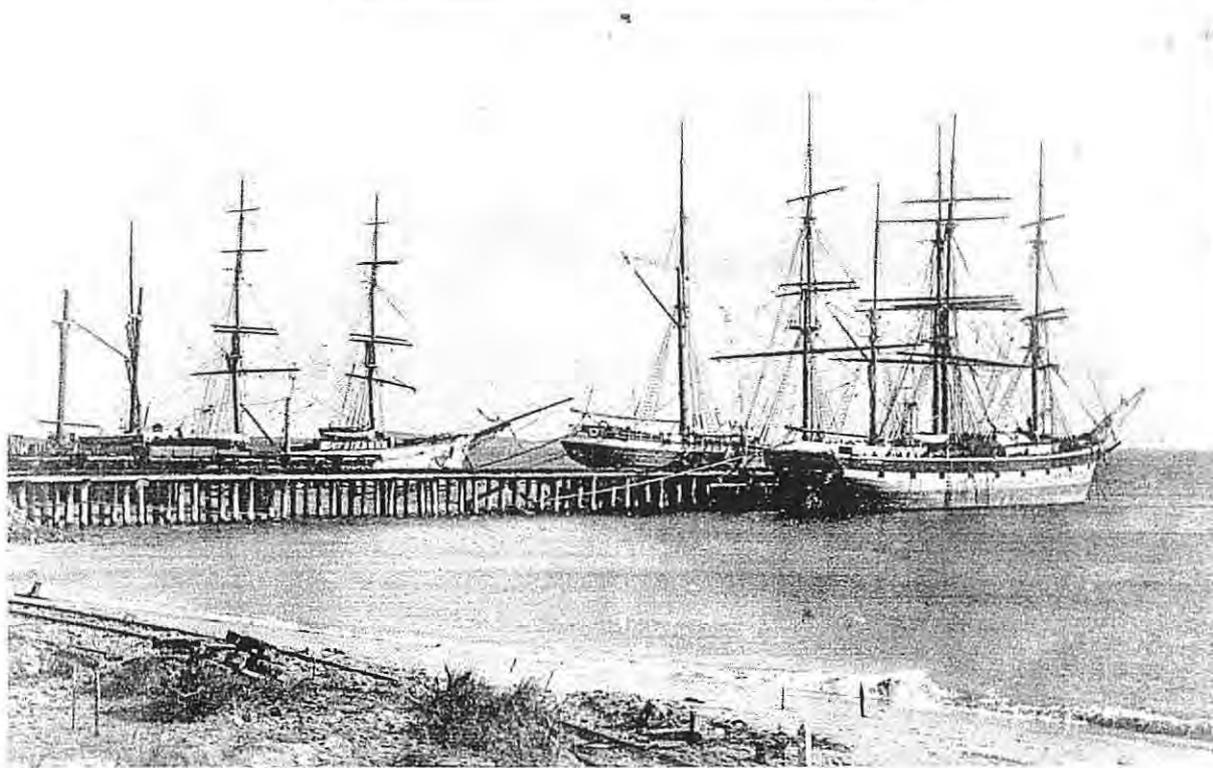
With the best possible planning and co-operation from all concerned, as well as a lot of physical effort, the move was accomplished between the beginning of September and mid-November, 1956. There was still much to do, of course, after they arrived. But there was nothing left at Wotjulum, to show for the five years of settlement there. It had all been moved to Derby.



The people themselves named the new site  
“Mowanjum” – a Worora word which means  
“Settled at last”, with overtones of suggesting:

“Try moving us again and see what happens!”  
But Wotjulum? Well, it had been a Half-Way  
House!

Be the wind ‘twixt west and north  
‘Tis better not to sally forth.  
When it blows ‘twixt north and east  
The sea’s not fit for man or beast.  
Should it come ‘twixt east and south  
Remain within the harbour mouth.  
And anywhere ‘twixt south and west  
Delay departure – home is best.  
But should there be no wind at all  
Tie up your ship against the wall.



## Do You Know?

The above photo of the Rockingham jetty appeared in the September 2004 MHA journal with the names of the vessels as *La Guerida* (left), *Sepia* (right) and *Charlotte Padbury* (on the other side of the jetty).

I have since found another copy of this photo on the cover of a Forests Department publication (date unknown, but probably late 1970s) entitled *Western Australia’s Wonderful Timbers*. This publication however, states the names of the vessels as *Suzanne*, *Rollo* and *Medbor*. Does any reader know which of these names (if any) are correct?

In both cases the date for the photograph is given as 1895.



# The Borobudur Ship: recreating the first trans-ocean voyaging

Nick Burningham

## *Indonesia is the cradle of trans-oceanic voyaging*

The people of Indonesia are nearly all representatives of a large linguistic group called Austronesians or Malayo-polynesians. A maritime people, they moved out of mainland south China about 6,000 years ago, spreading southwards from Taiwan, through the Philippines into Indonesia, and from there they spread over seas and oceans to populate more of the world's surface than any other people in pre-modern times. The Maori of New Zealand, the Polynesians, Melanesians and Micronesians spread over the vastness of the Pacific Ocean – they all speak related languages and have related maritime technologies. It used to be assumed that the spread across the Pacific had occurred through accidental drift voyages, driven by storms, but the initial spread was to the east-south-east, against the southeast trade winds, and it was rapid. It was a deliberate exploration by prudent mariners who preferred to explore upwind so that they could reliably return home whether or not they found new islands. The cross wind exploration to Hawaii happened later, and the downwind expedition to New Zealand was the last major episode. Meanwhile, the populations that remained in the archipelagos of Southeast Asia developed increasingly sophisticated watercraft and engaged in trade around the Indian Ocean and the South China Sea.

Early Medieval shipwrecks from the region, such as the Intan wreck off Bangka Island, show ships of over 30m length and considerable capacity. Contemporary Chinese records of the Southeast Asian ships trading to China describe even larger, multi-masted vessels, centuries before Europeans developed similar technology.

Starting about 2000 years ago, mariners from Indonesia regularly made the trans-Indian-Ocean voyage to Madagascar off the East African coast, and it seems very likely that they sailed a direct route, perhaps calling at the southern end of the Maldives chain, rather than coasting via India and Arabia, though they were also voyaging to those regions.

The Malagasi people, descendants of the first population on Madagascar speak a language closely related to certain languages of southern Borneo, but with nau-

tical terms probably derived from the language of the Bajau – the so-called Sea-Gypsies of Southeast Asia.

The current theory about the Indonesian colonisation of Madagascar is that they went there for iron ore mining and smelting. Whatever the reason for their voyaging, there is no doubt that they reached Madagascar and undertook the first regular, purposeful, trans-oceanic voyaging. Direct contact between Indonesia and Madagascar continued for about 1000 years.

More controversially, some researchers have pointed to evidence from linguistics, musicology, metallurgy and archaeology suggesting that Indonesians established some sort of culture in equatorial west Africa by rounding the Cape of Good Hope.

British adventurer Philip Beale, a former RN officer who once sailed on EYE OF THE WIND, had an abiding fascination with that little known aspect of Indonesian maritime history and conceived a project to recreate the voyaging to Madagascar and onwards around The Cape to west Africa. In 2002 he asked me to design and supervise construction of a replica watercraft for the expedition.

The only known depictions of Southeast Asian ships of the early Medieval period are five bas-relief carvings at the 8<sup>th</sup> century temple Borobudur, in central Java. All five depictions are of ships very similar in design, but with variation in the styling and detail.



There can be no doubt that they are accurate depictions of real ships, but to say they are unusual understates the case – they approach Sci-fi weird.

There are reasons to believe that the ships depicted are war galleys, used to carry nobles and religious leaders. They have defensive screens at bow and stern,

covered galleries for oarsmen, and outriggers that probably served as platforms for men wielding paddles and as anti-boarding barriers. I suggested building a different type of vessel with a design based on the archaeological evidence (which only shows us the bottoms of hulls) and backward inference from later designs. Philip chose to order a replica of the Borobudur ship for which there is solid evidence, and which, he argued, was a more identifiable and marketable concept than a vague reconstruction of a generic merchant ship.

Previous attempts to replicate the Borobudur ship have been distinctly unsuccessful. A Japanese version capsized on launching (but then a Columbus ship replica achieved the same disconfirmation of its design) and another was condemned when it reached Singapore. Eric Pedersen published his reconstruction and then built a scale model which ... capsized on launching.

The problem is the outriggers. Outriggers are a great invention, particularly if you have access to giant bamboo (*Gigantochloa aspera*) which grows well in Indonesia and can have diameter of 250mm or more. But outriggers work well on sailing vessels within a limited size range. Typically the outriggers of a sailing vessel are longer than the long, narrow hull in order to provide sufficient buoyancy and thereby provide stability. Giant bamboo grows very big, but it doesn't grow big enough to provide outriggers for vessels over about 10m hull length. The number of oarsmen and the minimum space necessary for an oarsman to operate makes it possible to calculate that the larger Borobudur ships were 15m or more in length. The Borobudur ships' outriggers are short, much shorter than the hulls.

Clearly our Borobudur ship had to be designed to derive stability from its hull form. In traditional design, where you don't employ tricky devices with a lump of lead on the bottom, stability comes largely from beam. I didn't want to give our ship too much beam. The original could be propelled by oars or sail, and galleys are usually relatively sharp, narrow designs. More worryingly, a beamy, stable design, when rolling in a big ocean seas would roll the outriggers in and out of the water with very considerable leverage. The outriggers would almost certainly break up.



In December 2002, Philip and I took a scale model of my proposed design to Indonesia, looking for a master shipwright to undertake the construction. We went to the little coral islets lying to the east of the Kangean group, where, I hoped, a mix of Javanese, Sulawesi and Bajau maritime cultures would provide the cultural background best suited to interpret my design. After a couple of days in a muddy, mosquito-infested bay where no one really seemed to have the enterprise or expertise we were looking for, we were rescued by Pak Asad from the lovely, pristine, white sand and coconut glade island of Pagerungan Kecil.

Asad was confident, almost brazenly so, and definitely knew what he was talking about. He undertook to build our ship within six months. The hull planking would be *bungur* (*Lagerstroemia speciosa*) the keel *kesambi* (*Schleichera oleosa*), the frames could be any suitable timber, the big outrigger booms would be *ulin* (*Eusideroxylon zwagerii*) the toughest iron-wood, and decks would be teak.

We made a small down-payment so that Asad could start buying timber (which he did within the hour) and it was agreed that construction would start when I returned early in the New Year.

I returned, as appointed, to find three massive pieces of *kesambi* scarfed, ready to be joined in a keel laying ceremony almost a soon as I'd put some film in my camera. But Asad had an indulgence to ask first. The design was for a hull 17m in length, but he preferred 19m and had made the keel accordingly. I was concerned about the size of the rig implied by the increase in length, but it

was too generous an undertaking to be refused.

The keel was huge. In reality it was a keel and the garboard strakes all in one – a vestigial dugout canoe. The lower planks were 7 and 8 cm thick and very long.

The ship was built in the traditional Indonesian manner – plank first, with all the planks edge-dowelled together by ironwood dowels at about 120mm between centres. The Pagerungan shipwrights were absolute masters of that difficult technique: the best I have ever seen. To make things more difficult, and to conform with archaeological evidence, the ship was built without stem and sternpost. Instead the ends were carved from big baulks of timber, termed *salureh*, with the hood ends of two or three strakes stepped onto each



one. Lifting the *salureh* into place for trial fitting was always achieved without any lifting gear, by those small muscular, wiry men, balanced on precarious staging, always bare footed. There was no accident at any time during construction, not even a crushed finger and yet construction was incredibly rapid. Pak Asad had promised completion within six months, but he said he'd try for launching within three months, and, in fact, the ship was ready for launching eleven weeks after the keel was laid. The lines were beautiful. Sharp as a tea clipper, with hollow deadrise and a firm turn to the bilge. But there was a lot of superstructure including those rowing galleries and I was a little concerned about stability when she was launched without ballast. With 800 men hauling on hawsers, she went into the water like a train. A fast launch, for technical reasons, increases the risk of capsize, but she rode the water upright and proud as a lioness, notwithstanding the scores of men climbing up onto the galleries.



*On Jakarta bay with the small sails but still making an excellent speed*

Over the following month we fitted the outriggers and spars, and also the heavy five-metre long rudders carried on each quarter. We were unable to get sufficient supplies of cloth made from *kororo* palm leaf for traditional sail making and ended up making one set of cotton sails, one set of polyweave sails, and one set of kororo-colour tetron sails which were cut a couple of metres short for the anticipated strong southeast trades on the Indian Ocean in August.

The rig, for which we have no name in English except "tilted rectangular sail", is a form crab-claw sail; the type of sail shown in wind tunnel experiments to be the most efficient of all (I'm not joking). It has significant advantages and disadvantages. It really does pull like nothing else, and it pulls in the right direction. As the wind gets up you can ease the sheets. Hard on the wind, with the vang hauled taut, you can ease the sheets till they hang in a bight but the sail won't luff.

The leach will flutter but the forward part of the sail keeps drawing and most of the aft part of the sail pulls nearly straight upwards. Downwind it is like being dragged along by a giant kite. Changing tack and furling are fraught operations, not for the faint-hearted or the uninitiated. You always wear round to change tack, shifting the whole sail and its spars around the mast-head as you go. To demonstrate the manoeuvre, we'll wear round from port tack to starboard tack (with the mizzen furled to make things simple). Since we've been running with the sail set square, the first thing is to move the tack back to its belaying position on the ship's centre-line, in the bow. Then we put the helm up to bring her square before the wind. The vang are eased out and the sheet is taken right off the cleat where it was belayed on the starboard side. With the sheet slack, the sheet hand carries the sheet forward and eventually right around the bow to bring it around with the sail to the port side. On the foredeck two or three strong and agile men haul down on the line from the heel of the yard trying to bring it vertical. It's important that the hand on the vang keeps control and doesn't let the top end of the yard go too far forward, because if he does the heel will fetch up against the mast or worse, crush someone against the mast. The heel has to be hauled down and then swung across to the starboard side which will bring the top end of the yard to port and therefore to leeward on the new tack.



As soon as that's achieved, the vang hand hauls in as hard and fast as he can while the sheet is belayed and trimmed. Reasonably simple except when it's blowing a gale and so dark you can hardly see that there is a sail.

Furling is a very much more terrible undertaking. The tack is loosed and a big wooden bar inserted in the heel of the boom, the yard is hauled vertical, and with the sail flogging, the boom is rotated to roll up the sail. Very neat in theory, and fine on a small vessel, but with a boom some 15m long and a big sail fighting to get away, it takes three strong men to rotate that boom, and

if it should get away from them, the spinning bar could cause serious injury.

We had some big westerners in the crew, but only the wiry little men from Pagerungan could furl the sail in a blow.



*Dear old Bapak Bul in a new T-shirt and hat*

On initial sailing trials, and during voyaging to Bali and up the length of Java we were fortunate to have in the crew Pak Bul from Pagerungan – the only man who remembered sailing with *lama tanja*, as he called the rig. Most of the islanders are fairly slender but of Bul it was fairly said “tinggal hanya tulang dan kulit” (remains but skin and bones). It was literally true, when his foot got cut in fight with the main yard there was so little flesh that no blood came out! Yet, Bul was the strongest and bravest man on board whenever there was a sail to furl or tack. He was also one of the funniest, most anarchistic and kindest men I’ve ever met.

For the Indian Ocean, the Cape and South Atlantic there were just three Pagerungan islanders in the crew. Sulhan who I had originally rejected as too old, and too long a skipper, but who was always the first man aloft when that was necessary, Muhamad who doubled as engineer because we replaced the oarsmen for manoeuvring in confined waters with two longshaft eggbeaters mounted in the galleries; and young Dirman who always had a grin, no matter what, and was our onboard shipwright. They were tough but gentle men, polite and deferential except at chess where they thrashed all comers without ever seeming to take the game seriously.

I sailed as far as the Seychelles, at least notionally as sailing master. Alan Campbell was master, and Captain Putu from the Indonesian navy represented the Indonesian government’s interest in the project, but in truth the Pagerungan men carried us all as passengers.

We had a good crossing of the Indian Ocean to the Seychelles, averaging 133 n.m. per day despite some headwinds and calms. Our best day’s run was 187

miles and we made 177 on two or three days. At times we were running before very stiff trade winds with big and fairly steep seas piling up. Steering with the quarter rudders (sometimes erroneously termed steering oars) was never a problem. It did call for timing. There was no point in trying to shift a rudder while running down the face of the wave. You did it in the lull at the top or bottom of a wave.



*Niken Maharani looking confident on the helm despite big seas on the quarter and making better than eight knots*

Those outriggers did roll on and out of the water, making a lot of noise and splash, creating quite a lot of drag, and causing the ship to slew slightly – not enough to be a danger but irritating to the helmsperson. Whether she would have rolled more without outriggers, I can’t say, but she would certainly have been faster without them. In smooth water they were no problem, they flew clear of the water. On a beam reach the lee outrigger didn’t touch the water till there was some 15 knots of wind, and then the ship would be making six to seven knots.

We never fitted the high screens in the bow and stern. They could have been made fairly easily from timber battens and the woven bamboo lathe sheets called *deg* or *bedeg*, but we would have contravened the regulations concerning watch-keeping at sea – indeed it would have been like driving with a screen on your windscreen.

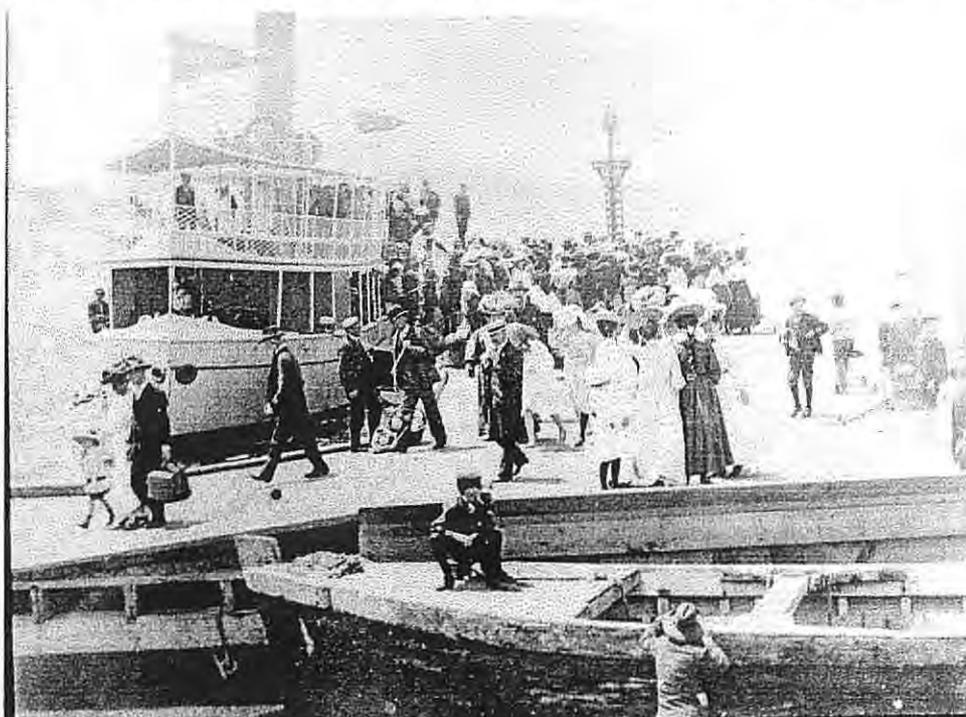
From the Seychelles, the Borobudur ship had a light wind passage down to Madagascar. After Madagascar she met some severe weather in the Mozambique channel and carried away a suit of sails. She rounded The Cape in good style under a tarpaulin storm sail. And from Cape Town sailed up to St Helena and on to her final destination in Ghana. She sailed well: “never put a foot wrong” as Philip wrote in his final journal entry. She has been shipped back to Indonesia to become a museum exhibit at Borobudur. Meanwhile, Pak Asad is building a larger version for the regional government of Banyuwangi, East Java.



## Early Swan River Yachts

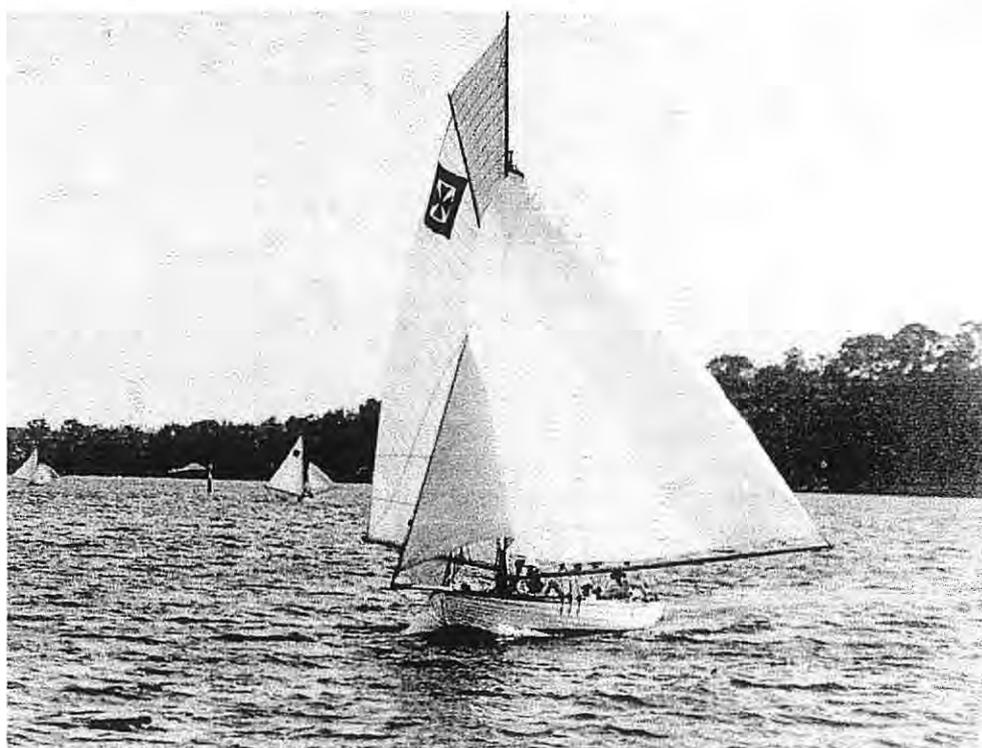
Some years ago, when I was living in Geraldton, an elderly resident of that town lent me a photograph album with photos of early yachting on the Swan River. With his permission I copied most of the photos. I don't know whether he took all the photos himself, but many of them date to around 1900-1910, judging by the dress of some of the people. Others may be a little more recent. Here are some of the photos with the titles (in many cases that was the name of the yacht) which were written below the original photos. There will be more photos in future journals.

I would be very interested if readers can give any further information on the people or vessels in the photos. How close am I to judging the date on which they were taken?



Landing at Applecross  
Arrival of *Decoy* at Applecross  
V.E. Gray

*Alexandra* 1906  
M. D'Olivero  
Alexander W... of Sandover  
Claremont 1906





## 32' Navy Cutter

**Brian lemon tells of building a model of a navy cutter like the *Albatross* mentioned in the last Journal and presently being worked on by Barry Hicks.**

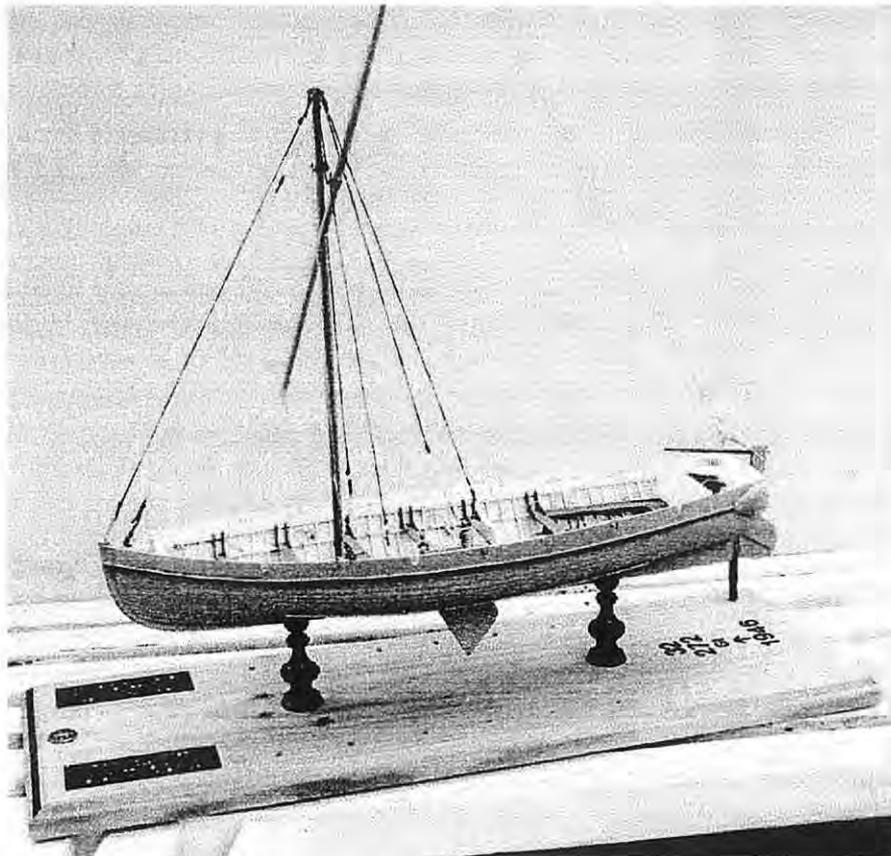
It was a foregone conclusion that I would make a model of the 32' navy cutter that the Maritime heritage Association had acquired. I decided on a scale of 1:24 in preference to 1:12, as the smaller scale ( $\frac{1}{2}$ " – 1') makes it easier to cut the 17 planks each side on my kitchen table (workshop).

The keel, stem and stern were cut in one piece to the final inside size, but leaving an extra  $\frac{1}{2}$ " surplus on the outside for clamping, holding, etc. This would be cut off to the final size later. The rebate was cur next along the keel and stem post. I then filed six grooves at specific positions along the inside of the keel for six false frames, which

formed the basic shape of the hull.

Starting with the garboard strake each side the clinker planking was commenced, gluing to each other on the pre-marked overlap, but not to the false frames. When that was finished up to and including the gunwale the false frames were cut off the keel grooves and literally fell out. The rest was straight forward working from plans and drawings of these boats.

One of the drawings was a sail and spar plan, so I made this and rigged the model. These boats were both sailed and rowed, six oars per side.



*Brian's model inside the hull of the Albatross*



## Assessment of the 32-foot, Naval Cutter, *Albatross II*

Prepared by Ross Shardlow 7 July 2005

### Introduction:

Following the passing of Mr Graham Lahiff, late proprietor of Wooden Boat Works, Mr Geoff Brown {acting CEO} wishes to dispose of *Albatross II* as the vessel is taking up too much commercial floor-space.

Mr Brown approached the MHA seeking assistance to find previous owners of *Albatross* (with a view of returning the boat to them); or finding new owners who would be prepared to remove the vessel from Wooden Boat Works.

Various interest groups have been approached including the WA Maritime Museum and Royal Australia Navy: as none were forthcoming, Wooden Boat Works are faced with having *Albatross* broken up.

### Provenance:

The cutter was built in 1946 at the Garden Island Dockyard, NSW, as a Royal and Commonwealth Navy, 32-foot, pulling and sailing boat.

At the end of World War II, she was held at the Minesweeping Stores, Fremantle. The 1<sup>st</sup> East Fremantle Sea Scout Troop purchased the vessel from the RAN in 1957. During this service as a training vessel she acquired the name *Albatross*, received a covered foredeck and had a Ford motor installed.

In 1998, proving too expensive to maintain and no longer meeting the requirements of a training vessel, *Albatross* was abandoned at Swandocks, Fremantle. An interest group persuaded the navy to transport *Albatross* to HMAS Stirling to have her placed under cover for safekeeping. She was, however, left on the hard-standing, exposed to the elements.

In 2004 Graham Lahiff of Wooden Boat Works, offered to accept the vessel as a restoration project. She was transported to the premises of Wooden Boat Works in Slip Street, Fremantle, and placed under cover.

At the time of Mr Lahiff's death in May 2005, no work had been done on the vessel.

### Assessment:

On 7<sup>th</sup> July 2005, ten members of the MHA, under the supervision of Mr Ray Miller, met at the premises of Boat Works, Slip Street, Fremantle, to assess the vessel.

*Albatross* was located inside the Wooden Boat Works shed, securely chocked and braced. Mast, spars, rudder, and other accessories, were lying with the vessel.

Initial observations indicated a slightly hogged but predominantly intact vessel with certain non-original structures and fittings. Closer examination revealed predictable deterioration:

|              |         |   |
|--------------|---------|---|
| Apron        | extant  | generally firm but contaminated with rot.       |
| Backboard    | missing |   |
| Benches      | missing |   |
| Bilge Rails  | missing | no evidence of ever being fitted                |
| Breast Hooks | extant  | upper breast hook not observed under foredeck . |
| Centre-board | missing |   |



|                    |          |  |
|--------------------|----------|--|
| Centre-board winch | extant   | corroded solid   |
| Centre-case        | extant   |  |
| Chainplates        | extant   | bronze, broken   |
| Deadwood (fore)    | extant   | generally firm but contaminated with rot   |
| Dickies            | missing  |  |
| Grapnel winch      | extant   | serviceable,   |
| Gudgeons           | extant   | bronze, serviceable - two gudgeons fitted to transom instead of gudgeon and pintle.  |
| Gunnel             | extant   | appears serviceable in part but could not be examined under wash boards.   |
| Head sheets        | missing  |  |
| Hog                | extant   | rotten, soft and spongy.   |
| Horse              | extant   | serviceable.   |
| Jackstaff          | missing  |  |
| Keel               | extant   | jarrah, three piece, full-length keel; some hogging evident. Considerable rot, patched and scrappy - no evidence of a post- 1920s cut-away keel.                                 |
| Keelson board      | extant   | fore section only, rotten.   |
| Knees              | extant   | four sets of thwart knees missing, one bronze knee missing.  |
| Mast               | extant   | sprung, much worn  |
| Mast clamp         | missing  |  |
| Mast step          | missing  |  |
| Mast traveler      | extant   | serviceable  |
| Number             | extant   | 272 clearly carved in starboard side of stem; inboard side of transom not examined.  |
| Oars               | missing  |  |
| Pillars            | missing  |  |
| Pintles            | extant   | much worn and corroded. missing  |
| Poppets            | missing  |  |
| Quarter Badges     | missing  |  |
| Quarter Knees      | extant   | rotten   |
| Ringbolts          | extant   | transom ringbolt not observed  |
| Rising             | extant   | extensive rot  |
| Rigging            | missing  |  |
| Rowlocks           | extant   | replacement washboards have covered the rowlocks; removing a section of the washboard revealed a rowlock notch beneath the covering board - no brass rowlock sheathing observed. |
| Rubbers            | missing  |  |
| Rudder             | extant   | modified - much worn and rotten.   |
| Sails              | missing  | sails appear in 2004 photo.  |
| Scotchman          | missing? | unable to examine under modified washboard, fairlead still evident.  |
| Stem               | extant   | unidentified hardwood, generally sound but soft along the rabbet due to rot – unserviceable  |
| Stern Sheets       | missing  |  |
| Strakes            | extant   | NZ kauri - many damaged and effected by rot - soft on the lands, port garboards (forward), badly compromised.  |
| Stretchers         | extant   | two off only.  |
| Tiller             | extant   | iron- worn and corroded but serviceable,   |



|                    |                   |   |
|--------------------|-------------------|---|
| Timbers (ribs)     | extant            | many rotten doubled and/or cracked- none reusable.  |
| Towing Bollard     | missing           |   |
| Towing Strongback  | extant?           | Not examined, under foredeck  |
| Transom & doubling | extant            | fibreglassed over in part; random examination beneath fibreglass revealed transom timbers incapable of holding nails for the plank hood ends.     |
| Transom Knee       | extant<br>missing | generally firm but fibreglassed over in part - suspect. Washboard replaced with makeshift doubling without rowlock notches and fibreglassed over. |
| Yard               | extant            | not examined.   |

**Modifications:**

|                          |                              |
|--------------------------|------------------------------|
| Afterdeck                | aligns with backboard.       |
| Engine bearers & floors  | motor previously removed,    |
| Foredeck and coaming     | aligned with mast thwart.    |
| Fuel tank                | under foredeck               |
| Floors                   | to raise bottom boards.      |
| Navigation lights        | on foredeck coaming          |
| Quarter mooring bollards | in afterdeck                 |
| Rudder                   | much worn                    |
| Sampson post             | in foredeck                  |
| Scew apperture (keel)    | screw missing                |
| Shaft lag (inboard)      | shaft extant                 |
| Tabernacle               | attached at foredeck coaming |
| Washboard                | covers original rowlocks     |

**Heritage Assessment:**

Research conducted by Mr Geoff Vickridge, concludes that *Albatross* is the only Australian built, 32-foot, World War II naval cutter - in existence. The only other known cutter in Australia is a 36-foot, motorised cutter, held at the Nowra Aviation Museum in NSW.

Heritage rating - 'significant':

|                 |   |
|-----------------|---|
| Historical      | 60 year old wooden vessel demonstrating the development of the boat and the skill of the boatbuilder.<br>Her preservation, restoration and maintenance plays a role in preserving skills.   |
| Uniqueness      | reported to be the only one of her kind in existence,   |
| Naval heritage  | the role of the ship's boat in service and training, assigned to cruisers and aircraft carriers,<br>the role and development of the cutter in naval service over 300 years,<br>the role of the cutter in WA history               |
| World War II    | a vessel from wartime service.  |
| WA heritage     | wartime service vessel in Western Australia.<br>50 years as a Sea Scout training vessel   |
| Sea Scouts      | history and development of the Sea Scout movement in Western Australia.   |
| Social heritage | youth training and development with Sea Scout movement  |
| Future role     | interpretive boatbuilding, World War II, RAN and Sea Scout display in the proposed Fremantle Slipway Heritage Precinct, Fremantle:<br><i>Albatross</i> has an ongoing association with Slip Street and the slipways of Fremantle. |



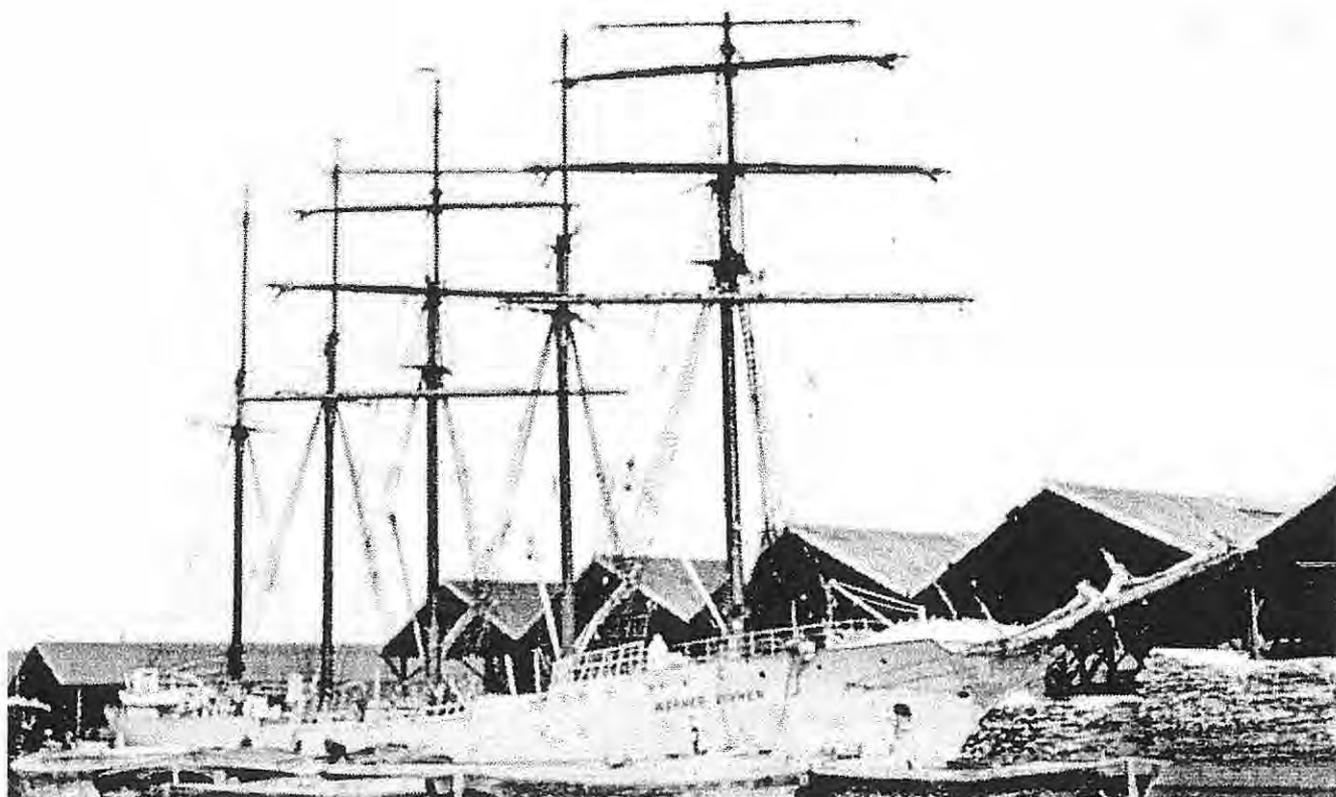
## Summary

The purpose of the assessment was to examine the condition and integrity of *Albatross* to determine the feasibility of a practical (to sailing condition) restoration. Given the poor condition of the interior of the vessel, resulting from exposure to rainwater and sunlight, costs and time will prove insurmountable.

Whether for replacement or repair, virtually all the timber components need some work on them: a practical restoration, therefore, requires replacement of the entire structure - a full restoration of this vessel is not recommended.

As *Albatross* has a significant heritage value, it may be feasible to preserve the vessel as a static monument; provided she can be relocated to a site where she can be worked on as a volunteer project,

Maritime Heritage Association  
July 2005



## *Werner Vinnen*

Krupp built this steel-hulled sailing vessel in Kiel during 1922 as a result of the shortage of shipping in Germany after World War I. 261.5' in length, with a beam of 44.4' and a gross tonnage of 1,859, she was schooner-rigged with five masts. The unusual aspect of this vessel was that she set four square sails on both the fore and mizzen masts. The five masts were named fore, main, mizzen, spanker and jigger, so the square sails were on the first and third masts. The schooner had a 4-cylinder S.A 4 stroke Krupp diesel installed. This engine had been designed as one of a pair to be used in German submarines.



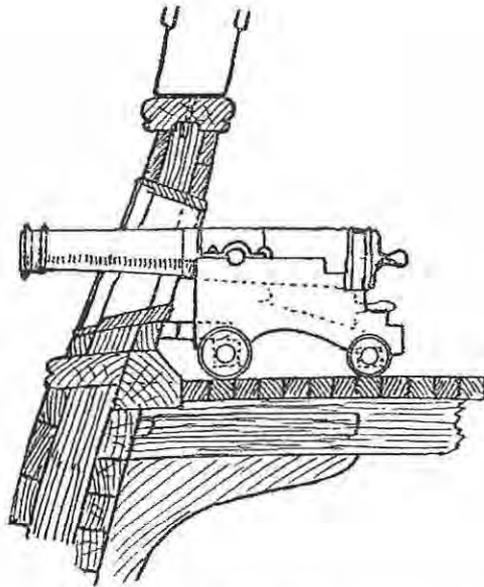
# QUIZ

## Answers to September 2005

1. A fife rail is a rail either inside a bulwark or waist high around a mast in a U shape, which has a row of holes for belaying pins.
2. A taffrail is the rail at the top of the bulwark across the stern, or the handrail if the ship has rails instead of bulwarks.
3. James Stirling named Gage Roads in March 1827. He named it after Rear-Admiral Gage, Commander-in-Chief of the East India Station.

## Questions

1. Whereabouts on the Western Australian coast Morning Reef, Noon Reef and Evening Reef?
2. A cable is a measure of distance used at sea. How long in yards or metres is a cable?
3. When discussing masts and rigging on a sailing vessel, what are cheeks?



PERTH M...  
AULTH...