

MARITIME HERITAGE ASSOCIATION JOURNAL

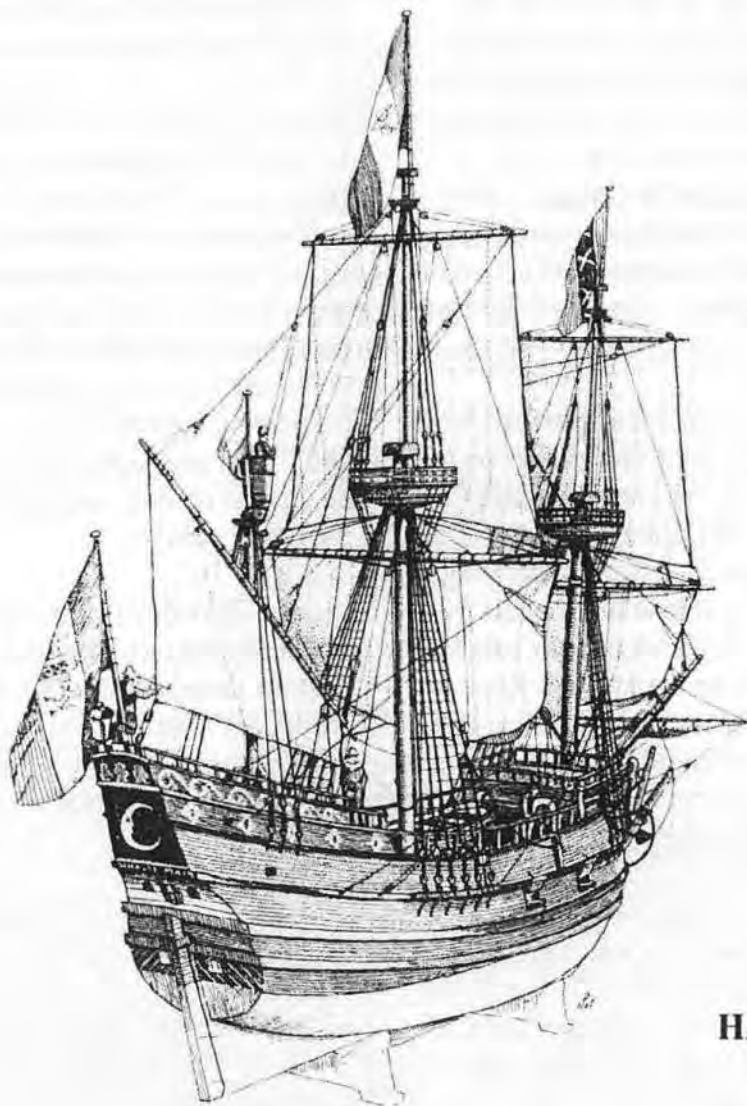
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HALVE MAEN
(Half Moon)



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

Once again Christmas and the end of the year are upon us. I would like to take this opportunity to wish all readers a merry Christmas and a safe and happy New Year for 2000.

And once again I am asking readers to put pen to paper and send in articles, big or small for the Journal. This is YOUR Journal and it can only function in its present form if all readers contribute items for publication. The four Journals of 1999 have covered a very wide range of topics from erudite contributions to the just plain silly. A very big thankyou is extended to the small band of people who have loyally supported the Journal through contributing articles. You know who you are!

This edition of the Journal includes two articles by Rod Dickson, one on his job and travels on the *SS Northwest Stormpetrel*. The second part of this story telling the history of Dajiema Island will be in the March 2000 edition. It is very interesting. The second article was written at my request for more information on his research, in particular that which culminated in his book 'They Kept This State Afloat'. Rod puts in an appeal at the end of that article for information. I would hope that anyone having any information that may be helpful to Rod will contact him.

Further to the above I would welcome the opportunity to publish any requests for information, pictures, help, etc. for anybody doing research. The membership of this association must, between us all, have a great deal of knowledge about mari-

time matters.

I presume everybody knows that the replica of the *Batavia* has arrived in Sydney. It was promptly offloaded from the ship on which it was travelling and, as it was never de-rigged, is dominating the Sydney waterfront. The *Batavia* is open for visitors and will be in Sydney until early 2001.

You will find in this Journal a new item which will hopefully appear in all future editions. It is a small quiz. There is no prize for guessing the correct answers (which will appear in the next edition). I do hope however that some of the questions will get you thinking and maybe looking up books in an endeavour to get the right answers. If you are knowledgeable enough to come up with the correct answers from your head, let me know and I'll try and make them a bit harder! It would be great if readers would contribute to this section for future editions.

During October and November the *Leeuwin II* was subject to the most comprehensive refit in her thirteen years afloat. Two new engines, shafts and propellers were fitted along with new generators. A great deal of sand-blasting, scraping, varnishing and painting took place and she is now in top class condition.

Once again Season's Greetings and may you and your families remain safe over the Christmas and

Cover Picture of Henry Hudson's *Halve Maen* is from 'Modelling The Brig-Of-War Irene' by E.W. Petrejus



ROANOKE

In 1894 the firm of Arthur Sewall & Co. of Bath, Maine, built the first American steel sailing vessel, the four-masted barque *Dirigo*. Because of the lack of experience in building steel ships and American law that only vessels built in America could be registered there she was actually prefabricated on the Clyde and the parts shipped across the Atlantic. A. Sewall & Co. were also responsible for the largest wooden square rigger built in an American yard, the four-masted barque *Roanoke* (launched 20 September 1892) whose keel was nearly 300 feet long. Some of her dimensions make interesting reading for those with a liking for figures.

L.O.A. 311.2' Beam 49.2' Draught 29.2'

Keel White oak, 16" square, doubled. Garboard strake 8" thick

Registered tonnage 3,400 tons net, although she could load 5,400 tons on a draught of 27'.

Diameter of lower masts 38" Height of foremast truck above deck 180' Length of main yard 95'

Her cost was about \$175,000 and she was luxuriously fitted out. The *Roanoke* was however not a lucky ship and went aground on her maiden voyage, but hauled off undamaged. On her third voyage, from New York to San Francisco, she lost three men through falls from aloft and many others injured in strong gales off the east coast of South America. Her captain made for Montevideo but could not fetch that port so kept on for Rio de Janeiro where sixteen of the crew were sent to hospital.

During her fourth voyage from New York to Yokohama then return via Honolulu and San Francisco she lost her captain who died after the ship left Honolulu and four crew, three of whom died from falls from aloft.

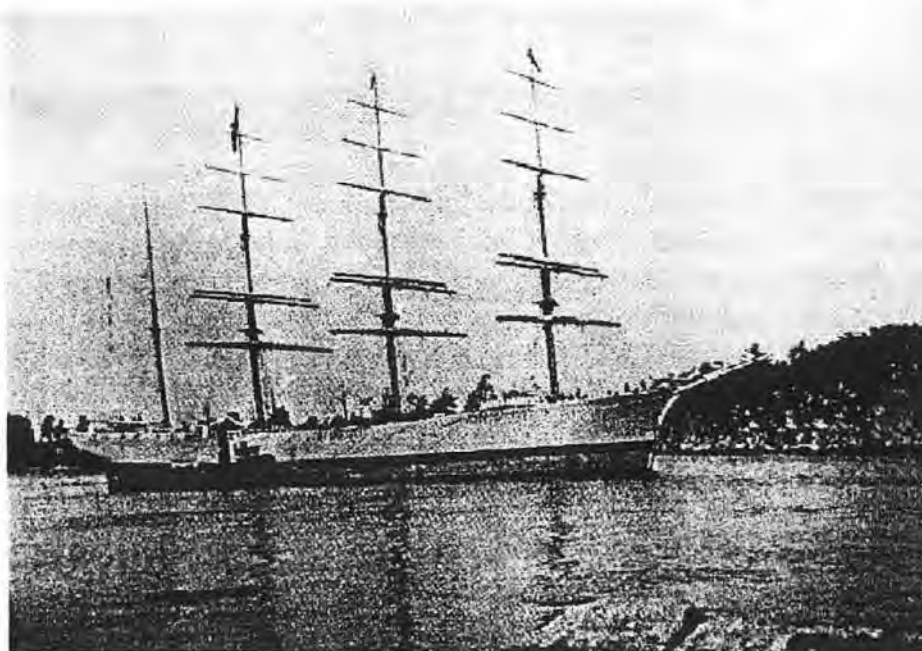
The *Roanoke* ran aground when leaving Baltimore with a cargo of coal during her fifth voyage and had to lighten a portion of the 4,800 tons until she got free. Trying to round the Horn she was twice driven back by heavy gales and eventually took 156 days to reach San Francisco from Baltimore.

On the following voyage, her sixth, in 1901 her cargo of coal caught fire. The crew fought the fire valiantly but she only just made Honolulu. Here the coal was off-loaded except for 1,000 tons for ballast and she proceeded to San Francisco where she was repaired.

In 1904 the *Roanoke* left New York on her last voyage. She was making for Sydney. She was badly damaged in a collision with the British steamer *Llangibby* but managed to make Rio. She spent six months there getting repaired then went to Sydney. From there she went to New Caledonia to load Chrome ore, but while still loading was found to be on fire in the forward hold. The fire could not be controlled and all hands were forced to abandon ship and she burnt and sank on 10 August 1905.

Reference:

Matthews, Frederick C., *American Merchant Ships 1850 - 1900.*, Series I. *New York, 1987.*



ROANOKE being towed down the river from Bath, Maine.



HALVE MAEN – 1609

The famous English explorer Henry Hudson had a river, a strait and, of course, a very large bay, all in North America, named after him. His exploration of the Hudson River in 1609 was an endeavour to prove that the river provided a passage across America to the spice islands of the East Indies. Although he was English, for this voyage Hudson was an employee of the Dutch East India Company and the small ship he commanded was the *Halve Maen*, a vessel of only sixty tons. This is a similar size to the *Duyfken*.

Hudson had previously made two voyages into the high Arctic regions for the English Muscovy Company looking for the north-east passage to China across the top of what is now Russia. He had sailed further north than anyone previously, having to turn back less than 10 degrees south of the Pole. The voyage of 1609 was originally intended as another exploration for the north-east passage and the VOC had sought out Hudson because of the knowledge he had acquired on these two previous voyages. He told the VOC directors that he was convinced there was open sea at the North Pole and that he had seen with his own eyes lands covered in grass and wild flowers.

The Dutch were intrigued but sceptical as their own sailors had failed to find anything like this and questioned Hudson closely. The Dutch had sailed as high as 74 degrees latitude. His explanation was that they had not sailed to a high enough latitude and that if they had sailed to 83 degrees they would find that the great depth of water and the swell of the waves prevented ice from forming. He was confident that at this latitude one could turn east and sail to the East Indies.

The sceptical Dutch summoned Petrus Plancius, the great geographer and map maker, for his opinion on the matter. He agreed wholeheartedly with Hudson arguing that because the sun shines non-stop for five months of the year in that region, although very weak, it enabled permanent warmth to build up at the top of the world. To back his argument he pointed out that a small fire kept constantly alight would warm a room much more than a large fire which was repeatedly lit and then put out!

Eventually the VOC accepted the opinions of the two men and Hudson was given a contract to lead the expedition. The *Halve Maen* sailed from Texel in April 1609. After suffering some terrible storms in the Barents Sea, Hudson put a proposition to his near mutinous crew that they should give up the search for the north-east passage, and head to America to search for the westerly passage to the Pacific Ocean believed to start at 40 degrees latitude. This was the mouth of the Hudson River which had previously been discovered but not explored. He sailed 150 miles up the Hudson River until it became unnavigable to the little *Halve Maen* thus disproving his theory.

On his return Hudson put in at Dartmouth where he was forbidden by an Order in Council of the English Government to provide any more services to the Dutch. In fact they were so annoyed that they further forbade him to leave England. He subsequently led a further voyage of exploration looking for the north-west passage during which he sailed up Hudson Strait and found Hudson Bay. His mutinous crew set him adrift there in 1611 and he was never seen again.

References

Milton, G., *Nathaniel's Nutmeg*. Hodder & Stoughton, London, 1999.

Kemp, P. (Editor), *The Oxford Companion To Ships & The Sea*. Oxford University Press, London, 1976.

The Ditty Bag



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



HMS Warrior, the first major warship in the world built of iron, had iron plating 4½ inches thick. The central 210 feet of her 380 foot long hull was backed by 18 inches of teak. She was launched in 1860 and was initially designated a frigate as she had only one gundeck. She carried 40 guns (ten 110 – pound breech loaders, four 70 – pound breech loaders and twenty six 68 – pound muzzle loaders) and was therefore classed as fifth rate. *HMS Warrior's* crew numbered 707, that of a third rate ship. She was, however, more than a match for any first rate ship of the time!

HMS Warrior had a sister ship, *HMS Black Prince*.

HMS Victory, of Trafalgar fame, had a severe list to starboard when launched and required 38 tons more ballast on her port side than her starboard (593 and 555) to correct this.

France II was the largest sailing ship ever built. She was a five masted barque launched in 1911 and grossed 5806 tons. She was initially equipped with twin eight cylinder, single acting two-stroke auxiliary engines in an attempt to obviate any need for tugs. These did not prove successful and were later removed. *France II* also set the record for lifting the largest wool cargo carried in sail; 11,000 bales along with 6,000 casks of tallow. She was later wrecked near Noumea on 12 July 1922. Her best days run was 420 miles, but only after the removal of her engines and propellers.

Scurvy was the scourge of the crews of sailing ships until the last half of the eighteenth century.

Admiral George Anson's infamous voyage around the world from 1740 to 1744 in which he lost a large percentage of his men through scurvy resulted in Dr. James Lind carrying out controlled dietetic experiments. His "Treatise of the Scurvy", published in 1753, pointed out that oranges and lemons were both effective in preventing scurvy and as a cure. It was not until 1795 that lemon juice was made compulsory in the Royal Navy.

However in 1601 James Lancaster, the 'General' or Admiral in charge of the first expedition to the East Indies undertaken by the Honourable East India Company, was well aware of the anti-scurvy properties of lemons. On his flagship, the *Red Dragon* of 600 tons, the diarist on board noted that the crew were immune to scurvy which was rife in the other four ships of the expedition. He wrote "And the reason why the general's men stood in better health than the men of other ships was this; he brought to sea with him certain bottles of the juice of lemons, which he gave to each one, as long as it would last, three spoonfuls every morning, fasting; not suffering them to eat anything after it till noon... by this means the general cured many of his men and preserved the rest."

During the 1982 Falklands War Britain requisitioned and leased a total of thirty six merchant vessels including *Queen Elizabeth II* and fourteen tankers. Because of the depleted state of the British merchant service only twenty three were wholly British owned. By 1991 during the Gulf War when 112 merchant ships were chartered, only five were British registered. As can be guessed the charter rates were extremely high.



FIRST RATE !

The above is one of the many everyday expressions which have a nautical origin. It referred to one of the six divisions into which sailing warships of most countries were once grouped. The following is a brief summary of the system as used by the Royal Navy.

Admiral Lord Anson introduced the system to Britain while he was First Lord of the Admiralty in the period from 1751 to 1756. However since that time it has been used to conveniently describe warships prior to that period. There were six rates and these were based on the number of guns carried by each vessel and, to a much lesser extent, the number of crew and gundecks. All rated ships were ship rigged and commanded by officers who were full captains (post-captain). The original rating was as follows:-

RATE	GUNS
First	100 or more.
Second	84 to 100.
Third	70 to 84.
Fourth	50 to 70.
Fifth	32 to 50.
Sixth	Any number up to 32 as long as the ship was commanded by a post-captain.

In 1810 the rating criteria was changed to :-

RATE	GUNS
First	110 or more.
Second	90 to 110.
Third	80 to 90.
Fourth	60 to 80.
Fifth	32 to 60.
Sixth	No change.

The ships rated First, Second and Third were considered powerful enough to be in the Line of Battle. The lower rated ships included frigates which were fifth and sixth rated. Unrated vessels included sloops, brigs, bomb vessels (initially ketches but soon changed to ship rig because of the ketches unbalanced rig and consequent poor sailing qualities), cutters, schooners gunboats and yachts. These had a commander in command. Sloops were a very varied class and ranged from small single masted vessels to quite large three masted ship rigged sloops of over 400 tons carrying up to twenty two guns plus six carronades. It is interesting to note that it was not until 1817 that carronades were counted as part of a ship's armament for the purpose of rating.

References:

- Kemp, P. (editor), *The Oxford Companion To Ships & The Sea*, London, 1976.
Lavery, B., *Nelson's Navy. The Ships, Men and Organisation 1793 - 1815*, London, 1992.
Petrejus, E.W., *Modelling The Brig-Of-War "Irene"*, Hengelo, 1970.
Whipple, A. B. C., *Fighting Sail*, Amsterdam, 1979.



BUILDING THE *ROCKINGHAM*

For the September 1999 issue of the journal Rod MacKay wrote an article on the building of his model of *H.M.S. Success*. I found this article very interesting and wrote to Rod asking if he would contribute further material on his hobby. The article below is Rod's description of his first attempt at model ship building.

One day I decided I would like to build a scale model sailing ship. Living in Safety Bay I decided the ship *Rockingham* would be relevant. So in 1985 I took the bull by the horns and started researching and after three months of devouring any information I could lay my hands on I eventually thought I had enough information to make a start. I had the basic hull shape, the period she was built, some dimensions and a magic formula that enabled me to work out almost every measurement of the ship. Some unbelievable fractions had to be calculated but by working to full size measurements and later scaling them down to 1/4" - 1' I was able to get a reasonable starting point. Although I was surprised at the number of contradictions by some authors telling the story of the *Rockingham* I was confident enough to carry on. As the saying goes 'fools rush in'.

I framed up the hull and planked it with plywood veneer that I cut off to scale using a scalpel. This was time consuming as the scalpel would follow the grain more often than not making it necessary to inspect every bit I cut to find pieces that were straight for 6" (24 ft) as that was the maximum length I could use to keep to scale. When it was strong enough to handle I lifted it to eye level to admire my handiwork and gloat a little. But something was wrong. I thought to myself aren't the waves supposed to be on the sea? Do I start again or patch this mess up? Too much time and effort had gone into it at this stage so I opted for the easy way. I mixed up some epoxy body filler and faired the hull to an acceptable shape. When it at last looked like originally intended I planked it again over the top of the lot. At last I felt like carrying on again.

Coppering came next while I could work on the bottom without doing damage to upper-works. I bought some copper foil and cut it up to the sizes required. Using a dress-maker's star wheel I simulated the nails in the sheets and applied the sheets following the correct lay and overlaps. This was a drawn out job also as I stuck the sheets on with Tarzan's Grip and spent a lot of time sitting watching TV with as many fingers as possible holding sheets on as the glue dried. I now use Super Glue which is great but I've become allergic to it so will have to find an alternative.

I then did the head with its little grating at the bottom and it looks so good you don't notice that it is not framed up correctly. Then came the cat heads, anchors, etc. These all worked out well except the way the anchor cables are attached to the bitts (may change them one day).

My deck planking is not to scale as I was unable to cope with cutting strips less than 1/4". I painted the edges with black marking pen to give the appearance of pitch and joggled the planks where needed. The caboose is tied to the deck just behind the main mast and tucked under the forward gallows. Directly behind the caboose is the chicken coop then the main hatch with a long-boat lashed over it. This boat and the two on davits are bought ones and a bit small so I may build new ones later.

Access to below decks is by hatches (refer diary Jane Dodds). The diary of Jane Dodds makes reference to her, her husband and children sharing a cabin 6 ft by 6 ft and a 17 year old youth they were escorting who slept on the floor by the door. They considered themselves fortunate because their cabin had a bullseye which let light in during the day. This suggested that there were galleries which was confirmed by



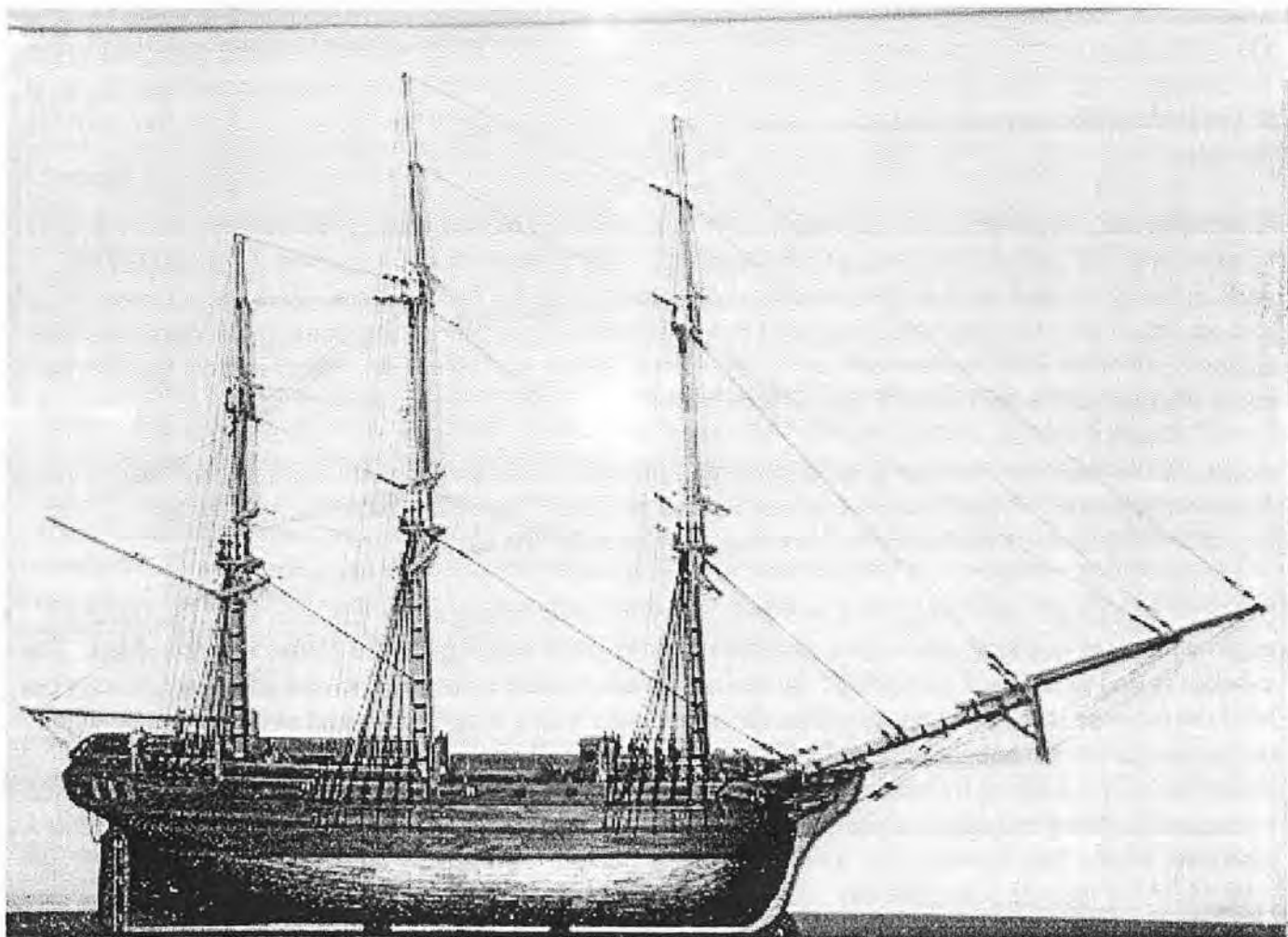
Ross Shardlow who was in England doing some research when he found a ship's log and one entry recorded the carpenter fixing a leaking gallery window. I was almost finished at this stage, when I received a telegram from Ross telling me to stop everything as she was a much grander ship than we had imagined. This was a mixed blessing for while it gave me more accurate information on rig, etc. it also meant dismantling a lot including rebuilding the masts. Alas I took the easy way and left them standing. I didn't really want to know! But Ross did give me the inspiration to keep going although I still get a bit edgy if he hands me an envelope with my name on it.

There is a windlass forward of the mainmast and a capstan forward of the mizzen that has staves in a rack against the poop. I have rigged it without sails as I think sails spoil the average model. The rigging was tedious but certainly put the finishing touches to the model. The standing rigging is all black and the running rigging natural. The only paint I used is white doubling on the masts, black real and false gunport lids and matt varnish over everything else. I've been on a very steep learning curve ever since I started and now eight ships later still learning. I very strongly believe if you think you know everything you don't know anything!

References

Rockingham Ship's log.
Diary of Jane Dodds, a passenger.
Davis, C., Ship Model Builder's Assistant.
Davis, C., The Built Up Ship Model.
Mondfeld, Historic Ship Models.
Lloyds Register.

*Rod Mackay's model of the
Rockingham*





Continuing Nick Burningham's occasional series:
Profiles of MHA Members

Bill Brown

The MHA has an abundance of members who contribute significantly to the maritime heritage of Western Australia. Our membership includes living national treasure Barry Hicks and World renowned maritime artist Ross Shardlow, but in this series I have chosen to look at members whose importance to maritime heritage is less well-known.

Bill Brown's Clydeside origins automatically qualify him as a man of maritime background, and it is a background that he has embraced wholeheartedly. I met Bill many years ago when I first went to sea, on one of Everard's coastal colliers, SEREALITY. When I joined the ship she was taking a summer break from her normal coal-slogging routine. SEREALITY had been chartered to take a cargo of condemned, Second World War, powdered egg to Yugoslavia. The holds were swept nearly clean and egg powder loaded from army trucks at the Navy base in Gillingham on the Medway. The powder had been stored in sacks, but the sacks were largely rotted away, so the grey powder and remains of the sacks were loaded together by tipping them down shoots into the holds.

Bill experimented with the stuff, trying to make a saleable bootleg *Advocaat* by mixing it with industrial alcohol and sugar, but very few of the local publicans were taken in by the horrible grey sludge that he produced.

Our voyage down Channel, across the Bay of Biscay, around the Iberian Peninsula, through the Straits and up the Med. and the Adriatic were without real incident, though for me, at sea for the first time, they were full of magic.

To some extent that magic was spoiled by the hardcases in the crew. Luckily Bill took me under his wing and showed me the better side of crew — except for the morose, cross-eyed, bosun from Essex who simply had no good side.

Our arrival at Dubrovnik (Bill insists it was Split or Rijeka) was mind boggling. I had grown up with the patriotic idea that England was the centre of all history and scenic beauty. The Dalmatian mountains tumbling to the sea, the terraced vineyards, the huge castle dominating the ancient harbour, and the town of stylish villas, were a revelation.

The industrial docks where we berthed to unload were not quite so aesthetic, and the clamorous chaos of Mediterranean stevedoring that I had been told to expect were nowhere in evidence.

Unloading did proceed very slowly; then a group of men in very impressive military uniforms came to investigate the cargo, and unloading stopped completely for two days. It also took a day or two before we could get permission to go ashore.

On a Saturday night, I finally got shore leave and went to see the old town with my mentor Bill, who knew the town well, he said.

We wandered the winding cobbled streets and soon slipped into a bar, called the *Gostilna*, that Bill thought he remembered. There we tried the local beer and some sort of spirits. The drinks cost little more than they would have in a sleazy pub in England, but Bill knew we were being overcharged and so we set off to find a cheaper hostelry.

The place we went to was almost back at the docks and was a rough seaman's drinking hole. But we were most warmly welcomed — much back-slapping and loud ho-ho-ing, and obvious appreciation of our duty-free

Rothman's King Sized. This was the real Yugoslavia, Bill assured me, and we settled in for a number of drinks. I stuck to sipping the local beer while Bill chased each beer with a large tumbler of the ferocious local spirits.

We stayed for a couple of hours and were well lit-up when finally we left.

"Reet," said Bill, clapping his hands together, "we're well set for all the action the town can offer us." And we strode away with more confidence than coordination back towards the city centre again.

The central piazza was brightly lit and full of elegantly dressed people who were milling towards what appeared to be the town hall. Bill insisted we should join them. We were wearing our best shore-going clobber, but we were dressed in the hideous mod-style then in vogue in London. Most of the men were wearing dinner jackets and white ties, or smart military uniforms, and impressive decorations; while the women were in beautiful long dresses, some of them with tiaras and jewelled stomachers (and this was Communist Yugoslavia!?).

Somehow Bill talked our way in, smiling at the doorman and speaking in his broadest, most incomprehensible, Glaswegian. Drinks on trays were being circulated, and we were starting to congratulate ourselves on getting "invited" (though we had not actually managed to snaffle any drinkies) when the speeches started. They were endless, and for Bill, all the more unendurable, he groaned, because he had spotted an unaccompanied lady of peerless beauty standing across the hall in a red dress.

At last, the orchestra struck up a gay tune, and the besotted Bill Brown staggered across to ask the lady if she would do him the honour of a dance. I watched in horror.

The request was not well received. The lady drew herself up to her full, impressive, height and said, with a strong accent, but very clearly and loudly in a commanding *basso-profundo* voice:

"I shall not dance with you for four reasons. First, this is not a dance, it is the Yugoslav Federation's National Anthem; second you are drunk; most importantly, you have made a terrible mistake — I am the Cardinal Archbishop of Belgrade; and lastly, you will be under arrest."

We were both under arrest.

We were not particularly badly treated by the police, indeed some of them were obviously amused by the incident, though less amused by Bill's very vocal protestations. We were far worse treated by the huge, gruff, bear of a captain, a native of Hamburg, back on the SEREALITY and we got no more shore leave.

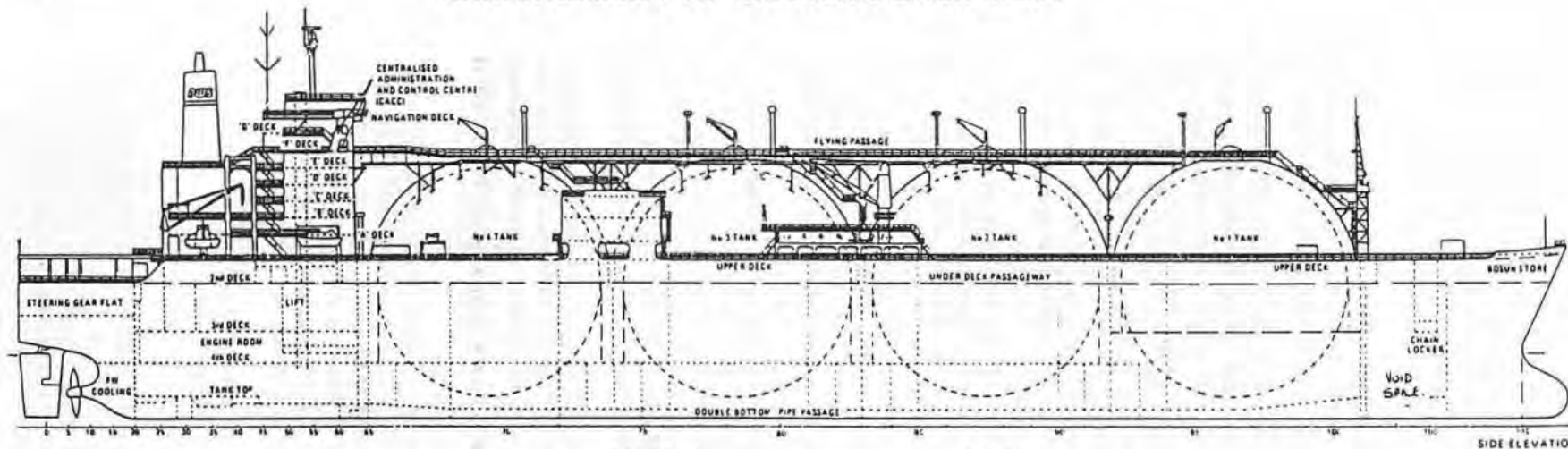
Back in England, Bill paid off and joined a passenger liner. It was many years before I saw him again in Perth, and in those intervening years, Bill seems to have forgotten the entire incident.

The historical importance of our voyage and cargo have also been forgotten, but it was largely because of mistakenly using that powdered egg as cement powder that the communist regimes of Eastern Europe crumbled under their own weight in the late 1980s.

(Previous articles in this series have included Jamie Munro: *MHA Journal* 7(2) 1996).

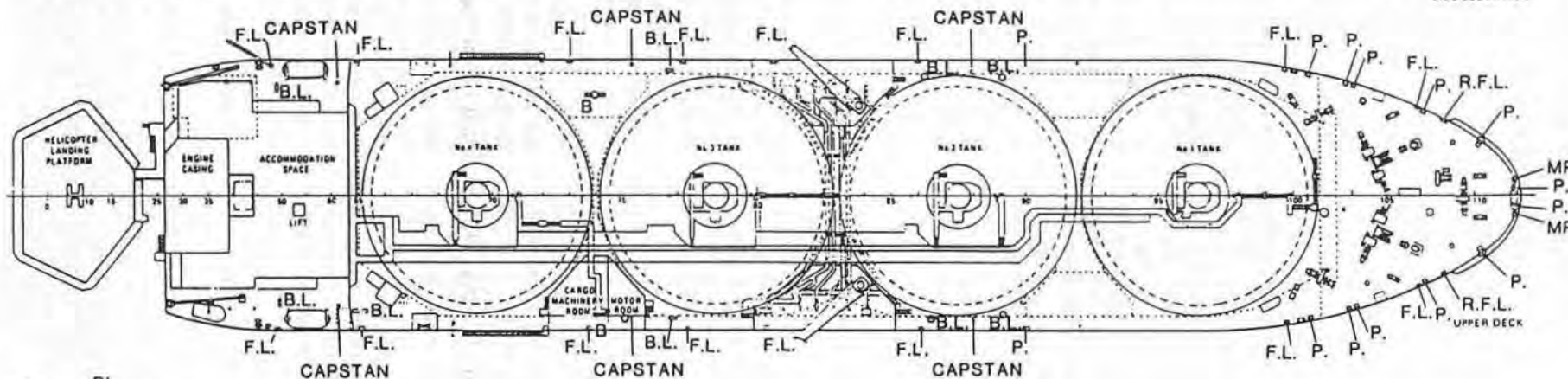
ARRANGEMENT OF MOORING EQUIPMENT

Contingency Manual - Issue 2



SIDE ELEVATION

Appendix II-13

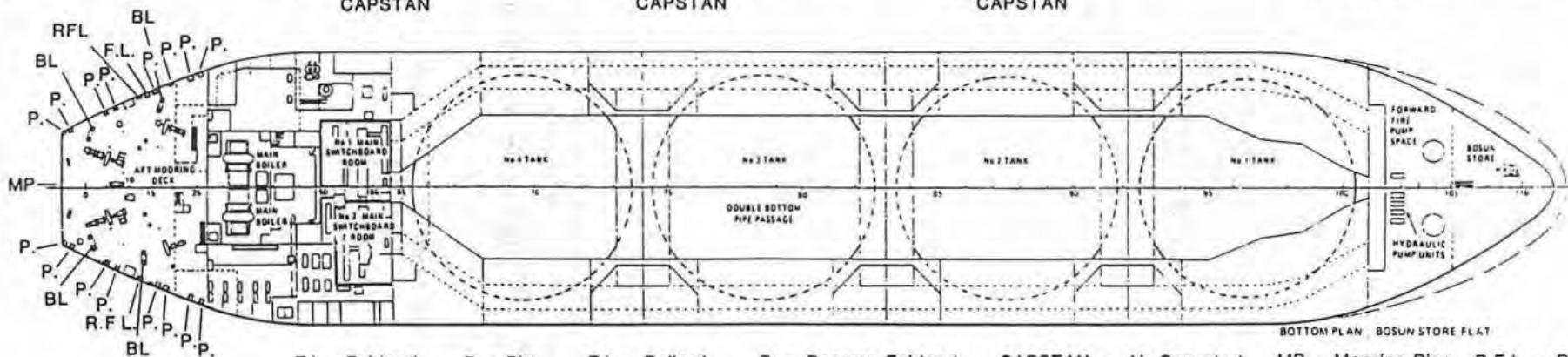


CAPSTAN

CAPSTAN

CAPSTAN

June, 1994



BOTTOM PLAN BOSUN STORE FLAT

F.L. - Fairlead B - Bitt B.L. - Bollard P. - Panama Fairlead CAPSTAN - Air Operated MP - Mooring Pipe R.F.L. - Roller Fairlead



For the last five years Rod Dickson has served aboard the *S.S. Northwest Stormpetrel*, a \$375,000,000 L.N.G. tanker operating between the northwest of Western Australia and Japan. The following article was written aboard ship one day north of the Halmhera Islands enroute to Himeji, in Japan. I hope that readers enjoy reading this as much as I did and I look forward to the next episode.

“ANSETT FLIGHT 326, PERTH TO KARRATHA IS NOW READY FOR BOARDING THROUGH GATEWAY No. 1.”

S'd said my farewells and now it was back to work. North to Karratha and rejoin my floating home of the past five years, the *S.S. NORTHWEST STORMPETREL*, an L.N.G. tanker. Riding in the bus along with my fellow shipmates we crested the hill on the Burrup Peninsula and there she was, just finishing tying up at the loading jetty. The familiar sight of the accommodation block aft of the four large domes brought groans and moans from the rejoining crew. We were back !!

The vessel, all \$375,000,000 of her, was built expressly for the carriage of liquid natural gas from the northwest shelf project to any one of thirteen terminals in Japan, where the gas is used for mainly power consumption. To give the readers an idea of her size and carrying capacity, here are some of her statistics :

LENGTH OVERALL, 272 metres.	GROSS TONNAGE, 105,010.
BREADTH, MOULDED, 47.2 metres.	NET TONNAGE, 31,503.
DEPTH, MOULDED, 26.5 metres.	DEADWEIGHT, 66,875
DRAUGHT, LOADED, 11.374 metres.	DOUBLE HULL CONSTRUCTION.

CARGO CAPACITY, 127,596 cubic metres @ -163 degrees Celsius

MAIN ENGINE :- Mitsubishi, impulse, 2 cylinder, cross compound marine steam turbine with articulated reduction gear. The output is 17,140 kW @ 76 R.P.M. and this provides the ship with a service speed of 18.5 knots.

The Master asked me to also record that the anchor weighs 17.94 tonnes and when dropped doesn't bounce !!!

The accommodation block caters for a total complement of thirty five, however due to economics and international pressure we man this vessel with a crew of twenty one !!! The four domes that are visible are only covers for the spherical cargo tanks, which are the equivalent of giant thermos flasks. Because of the intense cold temperatures none of these can actually touch any steel work and so they are suspended on equatorial rings, similar to gimbals. The tanks are 39.46 metres in diameter and are covered with a 215mm layer of specialized insulation and during a ten day voyage the temperature differential between loading and discharging is a minimal half a degree.

The methane gas in its liquid form is 1/600th of its vaporous state and during the voyage there is a natural boil off. Instead of letting the gas vent directly to the air it is piped to the engine room and into the boilers and so the ship is powered by clean and green gas propulsion. We do carry heavy fuel oil but this is just for emergencies and proceeding into and out of dry-dock.

0500. The gangway is lifted clear and three tugs are stationed alongside. At the pilot's command the sixteen mooring lines are released from fore and aft and we let go. The tugs take the weight and we smoothly depart from the berth. Tugs away and we are on our own. Two hours out from Withnell Bay the vessel is slowed, pointed into the wind and the helicopter lands on the flight deck aft to collect the pilot. As the helicopter soars into the sky it is full ahead, full away for Himeji, a port on the inland sea. One of the features of this trade is that at any time during the year we know just where we will be at any given date and time. All the courses and distances are pre-planned and the vessel must keep to her schedule. Occasionally bad weather, such as cyclones and, in the Pacific, typhoons upset and slow our



progress, but this is taken into account by going flat out during the first part of the voyage and then, when nearing our destination, reducing speed to judge our arrival to that laid down in standing orders. For example, during this present voyage it is laid down that we are to take 9.9 days at 14.81 knots pilot station to pilot station and at present we are averaging just over sixteen knots.

As can be imagined, with such a volatile cargo, safety is of paramount importance and everybody on board takes it very seriously. We have safety drills quite often and the mate, or whoever is chosen to run the drill, chooses his own scenario and tries to make it as realistic as possible and in that way we all get to familiarize ourselves with the equipment.

With the pilot away we swing into our sea routine and the planned maintenance schedules for the week. It may be chipping and painting, stripping and reassembling equipment, checking valves and any one of the myriad of tasks that are needed to be done to keep the ship operational at all times.

One of the integrated ratings, (the new name for ex seamen and greasers) is assigned to the engineroom each day and after his morning rounds would be found assisting the engineers in whatever tasks they have on at the time. The engineroom on this vessel is designated as unmanned. In other words, during normal working hours, all the engineers and the duty I.R. are in attendance working wherever, but after hours no one is there. All components that can go wrong are monitored through computer terminals and the duty engineer has the terminal switched to his cabin so that if an alarm goes off in the middle of the night he only has to glance at the screen to know exactly where to go and generally what to do to rectify the problem.

Day 2 and we are approaching Roti Island. We pass to the west of the island and there ahead is Timor. This trip we stay well away from the land, because of the trouble there, and stick to the northern side of the straits close to Alor Island. Rounding the eastern end of Alor we head north through the Banda Sea and pass to the west of Buru Island. As this is an Indonesian prison island no vessel is allowed any closer than five miles to the coast as laid down on the charts. After Buru we pass Kep Sula and then head due north and pass along the western side of Halmahera Island. This island is majestic with its myriad volcanoes rearing in near perfect cones. We have all wished at one time or another that we could just break the voyage for a few days and go ashore on these fabulous spice islands.

Off the northern end of Halmahera lies the island of Morotai where the Australian Navy had a base towards the end of the Second World War. This is the last land we shall see for the next five days, unless something goes drastically wrong, until we reach the shores of Japan. There is even a dearth of ships to look at and the Pacific Ocean is devoid of anything except us and our surroundings. The odd whale is sometimes spotted cavorting on the surface as are dolphins in large schools.

In our leisure time some write, some watch videos, some play cards or chess and others read. One of the weird things that seamen do to alleviate the boredom of long voyages is to invent new games and one of these, we are proud to say, originated on this vessel. It is the ancient and noble art of cheese bowling. It is played just the same as lawn bowls, the difference being we use an Edam cheese for the bowl. It is round and has a natural bias and because of the natural camber of the deck in the lounge one has to adjust the style and speed when we change ends. It is good fun for all except the Chief Stupid, who continuously moans about us ruining his budget. The cheese supplier in Perth, when he heard of this very serious sport donated a special trophy to the vessel and this is played for every three weeks. Of course, the crew all have nicknames on board and there is Maurie the Moronic Mariner, Sunbeam Talbot, Sir Rodney the Rotten, the Smiting Assassin, Mortgage, Cellulite, the Chief Crook, Truck, Mr. Bean, Phul and others. The time taken to load the cargo is approximately 12 hours and the same time to discharge at our terminal port therefore there is usually no time to get ashore. Due to the safety requirements there is a minimal manning scale and this precludes heading up the road, so mostly we on board for the three round trips that we have to do before we can go on leave again.



However this voyage, after discharging at Himeji, we are proceeding to dry-dock at Nagasaki and will be there for approximately three weeks. This occurs every two and a half years and is a highlight of our calendar. At the last dry-dock at the Mitsubishi yard we made so many friends that they did their best to kill us with kindness. Nagasaki is a spectacular and very historic town on the west coast of Kyushu Island. It was the first port in Japan to have open trade with the westerners, the Dutch had a trading station on Dajima Island and in my next report I will be giving a full history of the island and its place in history.

To arrive at Himeji, we pick up the pilot at Kii Suido and we proceed up Osaka Bay as far as Kobe where we turn to port and pass under the Akashii bridge, the world's newest suspension bridge and it is massive. About another hours steaming brings us to Himeji, a lovely city with an historic and much photographed castle. After discharge we have to go to the gasfreeing area to prepare for Nagasaki and dry-dock which we will be entering on the 9th of November.

I hope this is of interest to all the readers of the M.H.A. Journal.

Readers may be interested in a comparison between two of the greatest and best known clipper ships. The *Cutty Sark* was built as an answer to the challenge of the *Thermopylae*.

	THERMOPYLAE	CUTTY SARK
Date launched	18 August 1868	22 November 1869
Designer	Bernard Waymouth	Hercules Linton
Builder	Walter Hood, Aberdeen	Linton & Scott and Wil- & Bros. Dumbarton
Construction	Composite	Composite
Hull colour	Bottle green	Black
Tonnage (registered)	947	921
Tonnage (gross)	991	963
Length overall	212 feet	212.5 feet
Beam	36 feet	36 feet
Registered depth	20.9 feet	21 feet
Coefficient of under deck tonnage	0.58	0.55
Keel	Rock elm	Rock elm
Keelson, frames & floors	Iron	Iron
Stem & stern posts	Teak	Teak
Planking (garboard & bottom)	Rock elm	Rock elm
Planking (topsides)	Teak	Teak
Deck (main)	Yellow pine	Teak
Raised quarter deck (length)	81 feet	45 feet
Deck (raised quarter deck)	Kauri	Teak
Rudder	English oak	English oak
Bulwarks	Teak	Iron
Topgallant rail	Brass	Teak
Mainmast height	145 feet	145 feet 9 inches
Mainyard length	81 feet	78 feet
Lower masts (fore & main, painted white)	Iron	Iron
Lower mast (mizzen, painted white)	Wood	Wood
Upper masts (varnished)	Wood	Wood
Yards (lower, painted white)	Iron	Iron
Yards (upper, varnished)	Wood	Wood



This article is by David Totty of Mandurah and appeared some years ago in the magazine 'Underwater Geographic'. It tells a little of the wreck of the *James Service* and, although now possibly dated by new information, is still of interest.

On the wintry morning of July 23rd 1878, Mandurah resident William Eacott strode down to the beach. During the night he had heard what he thought was cannon fire during the height of the storm that was only now starting to abate. As the cannon shots could have been a distress signal he no doubt thought it worth a look. To his amazement, through the wind and rain he could just make out a sailing ship held fast on the southern tip of Murray Reef, south of Fremantle, Western Australia.

Mr Eacott immediately sent an Aboriginal stockman into Mandurah to report the stranding to local policeman Robert Holmes. Constable Holmes climbed Halls Head Hill and from this vantage point with the aid of a telescope he could see the three masted barque JAMES SERVICE stuck fast on the reef with breakers lashing the ship's hull.

A native assistant was sent to inform the authorities in Perth and Fremantle. Holmes and local store-keeper Charles Tuckey crossed the Murray River and searched the north beach for survivors. They found luggage, clothing, some books and some torn pages from the ship's log. After travelling three miles north along the beach they found a long boat with the name JAMES SERVICE, Melbourne, written on it. During the first days search no survivors were found, by late afternoon the huge Indian Ocean swells had dismasted the stranded vessel.

NO SURVIVORS

Two days after the initial beach search the first body was washed ashore. The body was that of a partly clothed woman. Marked on the waistband of her petticoat was the name J. Towers. Later in Fremantle her body was positively identified by people who knew her from a previous visit to the colony.

The following three weeks saw bodies being washed up on the coast from Point Peron in the north, to the head of Lake Preston south of the wreck. The beach along the Mandurah coast was strewn with cases of castor oil, deck fittings, and a whole inventory of shipboard life.

Some of the personal trunks washed ashore were marked with the owners names like, Miss Bessie Edwards, Royal Theatre, Calcutta, Freemason Richard Huffman, J.W. Ruddle and H. Williams. As the bodies were being recovered the story of the lives of those who perished started to unfold. A body was found fully clothed in the uniform of a ships officer with brass buttons embossed with anchors on his vest, it was presumed that this was the vessels mate Mr Foreman. In the vest pocket was part of the verses of a song called "Cheer up Anne Darling" written in pencil.

From Adelaide came a listing of seven passengers all of whom were part of a theatrical troupe en-route to Melbourne for their next engagement. J.W. Kelly was their manager, Mr & Mrs Cowdery, (Mrs Cowdery's stage name was Miss Bessie Edwards mentioned earlier), Mr & Miss Williams, Mr P.B. Smith, and W.F. Phillips.

Most of the bodies were decomposed to such an extent that it was difficult to identify them. While some were buried in Rockingham, others were buried in the small churchyard in Mandurah's town centre. Seven males, three believed to be Malay crew, were buried in the sand hills near where they were washed ashore.

FOSSLIZED SKULL

Ninety five years later, on Christmas eve 1973, a holidaymaker taking a leisurely stroll along the beach at Mandurah, was confronted with a fossilized human skull. Inspection by Western Australian Museum



staff identified it as Caucasian, definitely not Aboriginal. It is thought that this was from one of the men buried all those years ago in the sand hills.

This skull was tangible evidence of the end result of an incredible voyage which started out from the overcrowded Indian city of Calcutta on the 27th April 1878. Her cargo, besides passengers already mentioned, was a 1000 bales of sacks, 3000 cases of castor oil and 600 bales of jute. The JAMES SERVICE was bound for Melbourne under the command of Captain Young. On the voyage with Captain Young was a retiring Captain, David Foreman, who agreed to sign on as mate for his last voyage.

No sooner had she set sail on her last voyage than the JAMES SERVICE was becalmed in the Bay of Bengal. It was here that Captain Young suffered severe sun-stroke which brought on fever, dysentery and delirium. Captain Young got worse before he got better and was eventually held under restraint on board until they reached Penang.

As a result of an inquiry held in Penang, Captain Young was charged with imperilling the vessel off the Nicobar Islands and being incompetent as a seaman. Captain Young eventually made it to Melbourne while the new master of the JAMES SERVICE, Captain Sievwright, settled in for the voyage to Australia accompanied by his wife.

The events leading up to the grounding of the JAMES SERVICE can only be surmised as nobody lived to tell the tale. The only clues we have are the words of a local stockman who said he saw a vessel which looked like a three masted ship which had lost its mizzen mast, and was trying to beat northward against a heavy sea. However, the main clues to this sea tragedy came from one of the passengers on board. A diary was found washed up on the shore. One entry, dated July 20th, written in a woman's script said the vessel had encountered severe boisterous weather for sometime coming down the Western Australian coast. At one stage the wind had been so strong that the ship was put on her beam ends with the yards touching the water.

Certainly the weather in July 1878 was bad, there were reports of north easterly gales lasting two weeks raging along the south west coast. Roofs were ripped off houses in Fremantle, and vessels at anchor in Gage Roads, (Fremantle's outer harbour), were damaged.

With the loss of her mizzen mast, the gale force winds and the fact that the vessel had been put on her beam ends it is easy to see why Captain Sievwright decided to turn back to Fremantle for repairs. The reefs between Mandurah and Fremantle are notorious, being just below the surface in otherwise deep water approximately four to six kilometres off the coast. All this, with winter storms and reduced visibility, it is not surprising she ran aground where she did.

On the night she grounded eight to ten cannon shots were heard from five o'clock onwards at regular intervals. As there was some activity on board it is a mystery why someone did not make it ashore despite the heavy seas.

SPECIFICATIONS

The JAMES SERVICE was built by Dobie and Co. of Scotland in 1869. She was an iron hulled three masted barque of 455 gross tonnage. Built to Lloyds highest class she was 153 feet in length, a beam of 28 feet and a draft of 15 feet. Owned by the James Service Company of Melbourne, she was consigned to Messrs Boyd and Currie for the India to Australia trade.

THE JAMES SERVICE WRECK TODAY

It is the remains of this Lloyds Class A1 barque that nestles in the reef on the southern end of Murray Reef. When she was first discovered in 1962 her stem was almost complete, sitting upright in the sand in twelve metres of water. Today the stern has gone the way of the rest of the ship, completely collapsed with only the steering quadrant left above the sand.

Continued on the back page.



A little while ago I asked Rod Dickson to tell me a little about the writing of his book "They Kept this State Afloat" for publishing in the journal. Here is Rod's reply including some information on the *Empress* mentioned in both the March and September 1999 editions of the journal.

Firstly, Ross Shardlow, once I'd told him of the existence of the model, went to see the half model of the **EMPRESS**, and was fortunate enough to be allowed to take it home with him to take off the hull lines and do a preliminary investigation into the vessel. Some interesting facts emerged from this. The original paint from when the model was built in 1846 was still on it and confirmation of the hull colour scheme came from my own research papers. In two of the documents concerning the vessel are accounts for paint, which match the colours on the model. Ross has drawn the preliminary plans of the hull, rigging and sail plan, and with further research we are certain that it would be possible to build an exact replica. Ross is quite happy to supply you with drawings to go into your next issue and we both hope that it will evoke discussion and debate and lead to something positive. Ross has at the moment all my papers regarding the vessel and from these we can virtually trace her every movement, including the two times she was blown aground in South Bay, Fremantle, during heavy weather, and all the cargoes that she carried hither and yon.

During 1998 Hesperian Press published my book, **THEY KEPT THIS STATE AFLOAT**. It is the history of 318 boat and ship builders that operated in Western Australia between the years 1829 - 1929. This was a project that began as part of another job I was doing for the Fremantle Maritime Museum. I acquired a list of about 50 boat builders that were working in and around Fremantle at the turn of the century, and when I showed it to Mike McCarthy he said, "Well there's your next paper." From that comment the book began. Originally it was planned that I would do the biography of each of them and enumerate the vessels that they had built adding in any anecdotes that may happen along the way. As so often happens this was just the beginning as more and more boat builders began to appear in my research, find one and two more appear !! After four and a half years of research, in between going to sea, I called it a day and put the book to bed. Finished. I was lucky to find a publisher who specializes in W.A. history who took it on board and finally it went to print in a limited edition.

Being a seaman, I'm now in my 43rd year at sea, it was a bit more difficult doing the research as I would have to try and cram library time, home time, time off time, and every other type of time into my leave from the ship, which never seems to be long enough. In the beginning my manuscripts were done in longhand, but then I invested in an electric typewriter and didn't that cause the proverbial to hit the fan. There I'd be in my cabin typing away and the rest of the crew would be going off their bloody trees at the clickety clacking coming along the alleyways. Clickety, clack, zing, clickety clack, zing !!

I took some extra leave about 1991 and did a secretarial course at night school because my two finger typing was bloody woeful. I passed and became a bloody woeful two handed typist, but I'm getting better. Eventually I graduated to a laptop computer and haven't looked back. These days I take it to sea with me each voyage and I try to do a couple of hours typing a day in my off duty time. By the way, I am an Integrated Rating on a 115,000 ton Liquid Natural Gas carrier running from Withnell Bay, in the northwest to any one of ten different ports in Japan. We have to do three round voyages to Japan and back before we are allowed home on leave.

For those that don't have a clue what an integrated rating is, neither do I. We, apparently are a combination of ex A.B., ex greaser and ex every other bloody thing that the powers that be can think of. It is called the new world order and is an excuse for reducing crew numbers and increasing the work load. One of the things that I find most enjoyable about research are the odd things that turn up unexpectedly, some comical, some serious and some really weird. One of the items that turned up recently in the Colonial Secretary's records was a letter that being a seaman I can relate to. The letter was written by one William Miles, coxswain of the water



police during 1875. It reads :

*Fremantle, April 20, 1875. Sir, I have to state that I received the letter attached and went on board the **STRANGER** to make enquiries. Thomas Condor, 2nd mate proves that a few days out from Melbourne the Captain ordered him to open the hatch and get up a case of brandy, which he did, taking the case into the Captain's cabin. The Captain then sent the 2nd mate for a hammer and chisel which he brought and the Captain opened the case in the presence of Condor the 2nd mate. On two subsequent occasions during the passage from Melbourne Condor got up cases of brandy, taking them into the Captain's cabin and there leaving them. On Wednesday the 14th inst., and while the pilot was on board coming into harbour, the Captain ordered Condor, the 2nd mate to put the empty bottles back into the cases; to put the bottles into the straw envelopes and then break them with a hammer, also to be careful and put the nails back into the same holes. The cases were nailed up and put back into the hold again by Louis Kirby, cabin boy by the Captain's orders.*

Then came witness statements, followed by :

I have seen the bill of lading and there is no saving clause for the Captain using any of the brandy during the passage, neither has the Captain notified the customs or consignees that he had used for the ship's use any brandy whatever, signed William Miles, cox, water police.

Three cases of brandy, 36 bottles in a fifteen day voyage, not a bad way to inure yourself against the cold and hardship of battling the westerlies.

Another of the interesting letters that came to light was one written by a shipwright, who was given the job of stripping out the fittings from a female emigrant ship. It may not be realized by all that the mode of transporting the emigrants meant fitting out the 'tween decks of the vessels with partitions that resembled horse stalls. One stall per family or in the case of single persons, four per stall. These were ranged along the hull, whilst down the centreline of the vessel were long tables and bench seats. Primitive by today's standards but adequate for the times. On arrival at the vessels destination this partitioning was stripped out to return her to her cargo carrying role and it was this job that Thomas William Howe was contracted to do in June 1862. His letter reads :

*The information of Thomas William Howe taken on oath this 18/ 10/ 1862 before the undersigned, one of Her majesty's Justices of the Peace, in, and for the said Colony, saith I am a ship's carpenter by profession and was hired on the 30th of June last by the Master of the emigrant ship **MARY HARRISON** to remove the fittings. On Wednesday the 2nd of July while I was employed pulling down the fittings in the single girls compartment I found concealed between the skin and the planking for the bunks, on the starboard side and nearly right aft, an infant rolled up in a dirty sheet, with other dirty linen. The infant had been dead for some time and was quite putrid. I immediately left the infant on the deck and went up and reported the circumstances to the Surgeon Superintendent, S.W. Walls, Esq., the Master at that time being on shore. The surgeon replied that I might find two or three more. I then asked him what I was to do with the one that I had found. He said put it out the stern port, and I did so.*

There was more but this excerpt shows the indifference to life and the hardships of the early days of this Colony.

The thing that I find most rewarding about my research, which is an ongoing part of my life, is the meeting and interviewing of descendants of these pioneers, hearing their stories and then hopefully putting the results down on paper for all to read and enjoy. The cream on the cake is the discovery of previous unpublished family held photographs and documents to do with our maritime history and which generally, and thankfully, I am allowed to borrow and copy for my records. My current project is the life of Mr. Charles Hunter, Chief Engineer, with Adelaide Steamship Co. until 1901 when he came to the West as Chief on the **PENGUIN**, lighthouse vessel. From 1913 until his retirement he was in charge of building the lighthouses along the coast from Eclipse Island to East Vernon in the Northern Territory. If any of the readers of this journal have any information on the early days of the lighthouse service could they please contact me at 239 Manning Road, Waterford, Western Australia, 6152.



BOOK REVIEW

The Great Ship

By Erle Bradford

'During its long reign, from the sixteenth to the mid-twentieth century, the great ship was the most powerful individual weapon of war in the world.' This statement by Bradford in the forward to his book, *The Great Ship*, sets the scene for a history of the large naval vessels that dominated the seas for so long.

The book commences with the battle of Preveza in 1538, a battle which for possibly the first time in history 'gun power and the strength of an all-sail vessel showed that the days of the galley were numbered.' It was the *Galleon of Venice*, heavily built and heavily gunned that triumphed. She was plated below the water and although becalmed she fought off successive waves of galleys, sinking many with her broadsides but suffering little damage herself. The battle of Preveza was lost by the combined fleets of Venice, Genoa and the Pope; the Turkish galleys triumphed but their days were numbered.

The second chapter deals with Henry VIII and the building of some of the earliest ships of war as distinct from converted merchantmen which his father, Henry VII, had used. One of the first real warships ordered was the *Henry Grace a Dieu* or *Great Harry* as she was more commonly known. Launched in 1514 she was originally fitted with 184 guns. She was entirely rebuilt in 1540 and the number of guns carried reduced considerably due to the increased size and weight of the new cannons then being made. She of course was preceded by the *Mary Rose* whose keel was laid in 1509.

This book goes on to give a very readable and authoritative history of the larger warships up to the Second World War. Although there were battles between large ships in the Mediterranean, there were only two occasions where battleships engaged each other in the Pacific. These were at Matapan and Leyte Gulf.

Bradford knows his subject well. He was an officer on board destroyers in the Mediterranean during the Second World War and was a noted historian, particularly on naval matters. His books include *The Story Of The Mary Rose*, *Three Centuries Of Sailing*, *The Mighty Hood*, *Ulysses Found* and many books about the ancient and medieval world.

The Great Ship is a very well written book and contains within its 170 something pages (including six pages of bibliography) a great deal of information. No one book could ever cover such a large and long history in one volume but this book certainly gives a concise and precise outline. Published in 1986 by Hamish Hamilton, London. Bradford died in 1986 shortly after finishing this book.

QUIZ

1. What are catharpins ?
2. What rig is on the *STS Leeuwin II* ?
3. What is the difference between a spanker and a spencer ?

Answers in the next edition.

Congratulations to
Peter Manthorpe

who takes over as captain of the
DUYFKEN on 20 January 2000.
His experience and enthusiasm
should stand him in good stead in
this new and very prestigious
position.



MARITIME HERITAGE ASSOCIATION

Our History

The Maritime Heritage Association was formed in 1989 to promote a living and working record of Western Australian maritime heritage, and to foster national and international interest in our maritime heritage for the benefit of the local community and visitors.

Aims

- ◆ To promote, encourage and support the preservation, restoration and knowledge of Western Australian maritime heritage by providing resources and facilities for employment, education and training in all aspects of maritime heritage.
- ◆ To invite and encourage public participation in all these activities.

Membership Entitlements

Ordinary Member

- open to anyone
- one vote on Annual General Meeting resolutions
- open to stand for election to Committee
- receive quarterly newsletters

Family Member

- open to any two adults and dependent children under 18 years of age
- one vote for each adult on Annual General Meeting resolutions
- adults open to stand for election to Committee
- receive quarterly newsletters

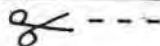
Institutional Member

- open to any institution
- one vote on Annual General Meeting resolutions
- one representative open to stand for election to the committee
- receive quarterly news letters

Associate Member

- open to pensioners, students, children under 18, or unemployed persons
- are not entitled to vote on Annual General Meeting resolutions
- receive quarterly news letters

YOUR YEAR 2000 MEMBERSHIP IS NOW DUE



Maritime Heritage Association Inc. Membership Application Form

Tick the appropriate box

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INSTITUTIONAL	\$100 <input type="checkbox"/>	\$275 <input type="checkbox"/>	\$440 <input type="checkbox"/>	NAME.....
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ORDINARY	\$30 <input type="checkbox"/>	\$83 <input type="checkbox"/>	\$130 <input type="checkbox"/>	POSTCODE.....
ASSOCIATE (pensioners, students, children under 18, unemployed)	\$10 <input type="checkbox"/>	\$28 <input type="checkbox"/>	\$40 <input type="checkbox"/>	TELEPHONE (W).....(H).....

Please forward remittance to:-
Bob Johnson (Treasurer)
4 Cunningham Street
APPLECROSS WA 6153



Continued from page 15.

The major part of the wreck is lying on top of the reef in six metres of water, her bow pointing to the north west. On the south side of the site lie numerous sections of mast, while on the north side is a conglomerate of iron which was once the ship's side. The main body of the wreck, the keel and bottom frames stretch for a distance of some 60 metres.

In 1974 the Western Australian Maritime Museum inspected the wreck and it is now protected under the 1976 Shipwrecks Act. In 1985 retired farmer, Eric Syred, and I completed a preliminary survey of the site. The idea of this was to see what is on the site and plot down where all the bits and pieces are in relation to each other.

During the survey several interesting finds were made and a more complete survey and weed cropping operation will be carried out by the Maritime Archaeology Association of Western Australia in the summer of 1987.

Diving on the JAMES SERVICE wreck-site, which is known locally as the James Service Reef, is a very pleasurable experience. Fine weather with little or no swell are the main conditions you need to get on the wreck, with easterly winds to flatten out the sea. Once on the wrecksite you will soon run out of time before you have fully explored the wreck and the reef it sits on. Besides the wreck to look at there is a magnificent wall of sponges and fans to photograph just to the north. To the west of the wreck there are ledges and caves to explore and under the hull side plates crayfish can enhance your table when in season.

There is an abundance and variety of fish on this reef that is not seen close inshore, and on the odd occasion you may see a seal flying around watching what you're up to. There are many good dive locations on the Murray Reef system but the JAMES SERVICE wreck gives this dive site that air of discovery that all divers look for.

My thanks to David Totty for permission to reprint this article.

