



MARITIME HERITAGE ASSOCIATION JOURNAL

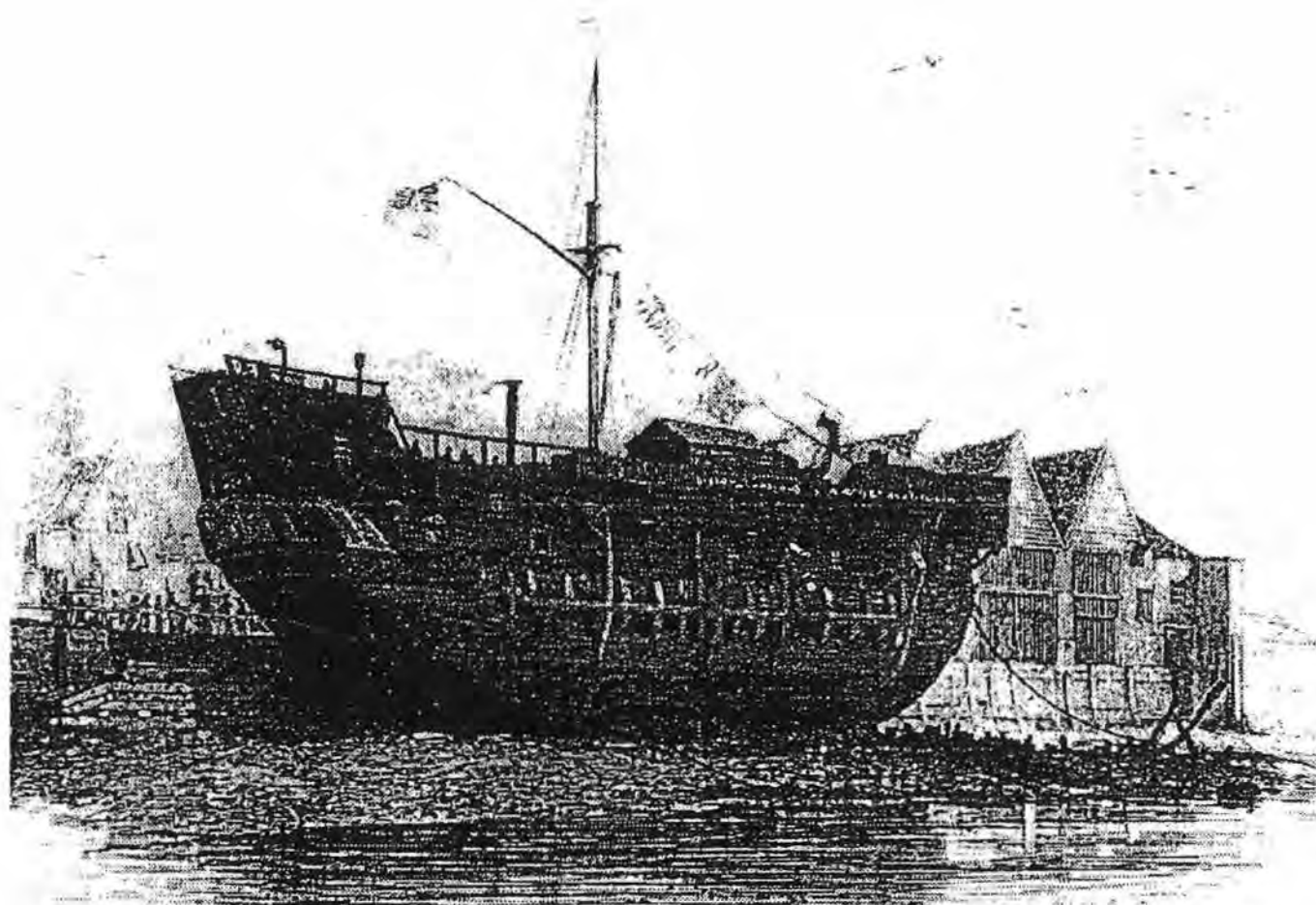
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The former Whitby collier *Discovery* which accompanied Captain James Cook on the *Resolution* on his third voyage of exploration to the Pacific. In this etching by Edward William Cooke (1811 – 1880) dated 1828 she is shown in her last role, as a convict hulk lying at Deptford.



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

This is the third edition of the Journal which I have produced. I am still learning and will, I hope, continue to improve. Chris Buhagir was a very hard act to follow. I would appreciate feedback, both positive and negative, from readers as to whether they approve of the slightly altered format. At the same time comment on the articles and suggest topics which could be included in future editions. I would like to expand this editorial to include letters to the editor.

Many of the people who subscribe to the Journal are undertaking research. This may be anything from producing a doctoral thesis to vaguely wishing to know how to rig the peak halyard on a yacht. Perhaps other readers may have information to assist, suggestions to make, photographs to contribute or just a cheery word of encouragement. This would be particularly valuable to those researchers living in more isolated areas. Please send your queries and requests to me and I will put them in future editions.

To get full value from your 45c stamp also slip in a couple of short items for the Ditty Bag!

In this Journal Nick Burningham has given a progress report on the Duyfken and I understand that she is to be launched just prior to Australia Day next year. This is a great project that should be supported by all members. If you have not recently been to see how far the building has progressed then now is the time to visit the Duyfken 1606 Replica.

Also in this edition, as promised, is Jill Worsley's second part of *A Short History Of Diving*.

It is with regret that we learned of the closure of *Porthole Prints*. Bill and Susanne Brown have been good friends and members of the Association for a number of years. We hope that they will be able to maintain their membership but unfortunately they are no longer in a position to house the MHA archives.

SOME OF THE MHA VIDEOS

Square Riggers of the 1930's 51 mins

Narrated by the late Alan Villiers, Master Mariner and former director of the Alands Sailing Museum. This video contains three programmes showing unique archive footage of ships of the famous Erikson Line taken at sea before World War II.

Yachting in the 1930's 30 mins

Captivating film of yachting between the wars. Amongst those featured are *Britania* and the first *Endeavour*, Sir Thomas Sopwith's first challenge for the America's Cup.

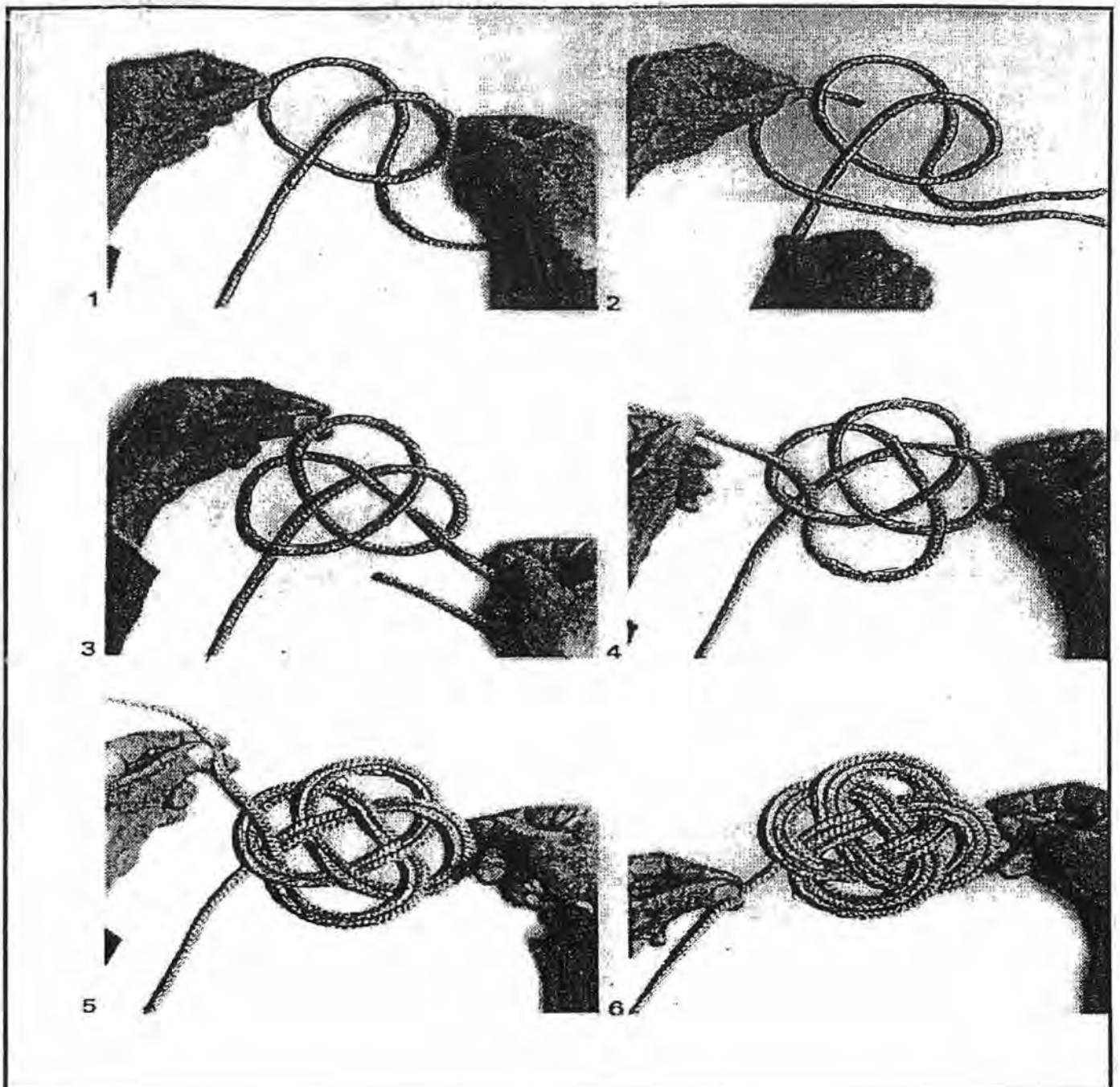
Let me end my days somewhere where the tide comes in and out, leaving its tribute, its riches, taking nothing, giving all the time - pieces of wood, pieces of eight, seaweed for the land, logs for the fire, seashells for pleasure, skeletons for sadness.

Nicholas Monserrat



THE MARITIME HERITAGE ASSOCIATION LOGO

Have you ever wondered what the MHA logo is? It is called a Carrick Mat and is a piece of the sailor's rope art which was used, amongst other things, as a thump mat to prevent blocks on the deck from getting damaged and damaging the deck. It is made by laying up two bights as in Fig. 1. The left hand part remains static while the right hand end is brought around, over this part to the top left hand corner, Fig. 2, and reeved through as in Fig. 3. Return the end to the start, Fig. 4, then make the first "follow around" as in Fig. 5. Follow around again as shown in Fig. 6. The ends are sewn underneath where they are out of sight.





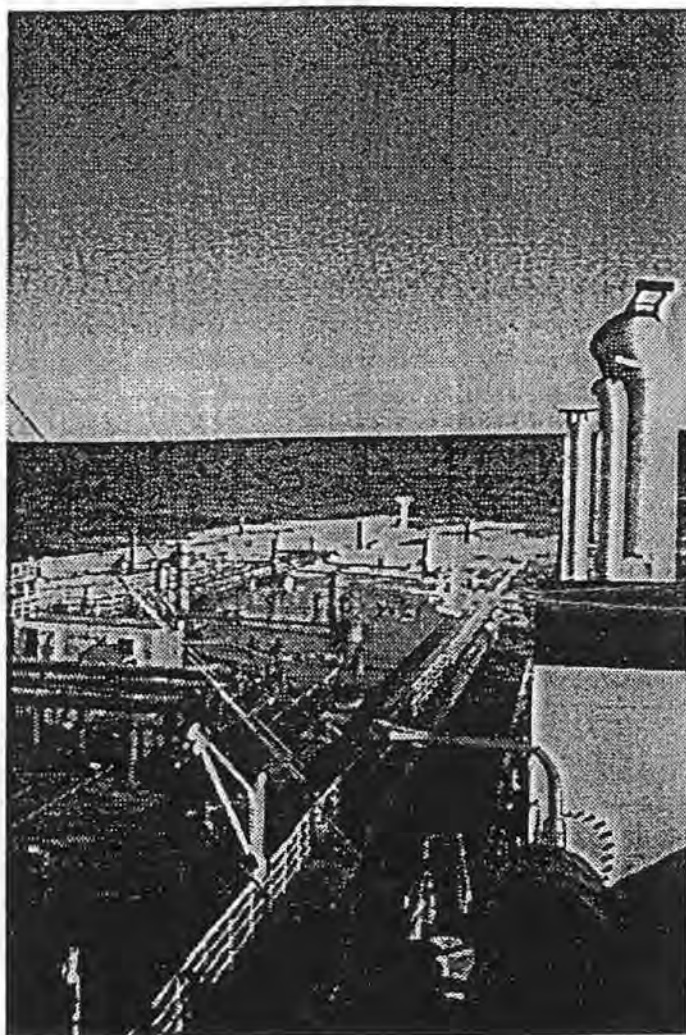
KIRKI

Here is the second part of Pat Davies diary kept during the drama with the badly damaged Greek tanker *Kirki* in 1991.

Thursday 1.8.91

0700 standing by with tow wire ready down our aft deck while the *Kirki* readies the tow connections on her aft deck - another all hands on deck job for her. The steam winches appear to be working up there at least. Backed in at 1000 hrs they threw a heaving line to us on the second try then we pulled a heavier wire on board with our capstan and connected the end to the end of 90ft of rig chain, 65mm diameter, which was connected to our tow wire, a 56mm dia wire and quite heavy to lift. Then the *Kirki* slowly pulled the chain up to her aft deck which was towering over us by about 25 to 30 metres due to her heavy trim by the bow. Also the swell was still four to five metres so you can see what a fine job our master Graham Anderson did in keeping the *Pacific Chieftain* in position. Also the top of the *Kirki*'s rudder was in and out of the water in the swells about 20 metres away, not very nice at all. And we were all glad when the *Kirki* announced tow chain all fast and we could steam slowly away from the *Kirki*'s stern, paying out our tow wire as we went.

By the time the *Pacific Chieftain* has run out 800 metres of her tow wire we were almost along side the *Lady Elizabeth*, 0.05 of a mile off of her starboard side and slightly astern. The *Lady Elizabeth* was lead tow vessel and as such did the navigation and decides what course to steer in conjunction with the tow master on the *Kirki*. Our role on the *Pacific Chieftain* was secondary tow vessel. Of course we keep a close eye on the navigation too but our main task was to help increase the rate of the tow and get the *Kirki* to calmer waters as soon as possible. With both vessels slowly increasing power to about 60% pitch on the propellers the towing speed increased to about 5 knots. At that time we still thought we were heading to Glomar Shoal near the *Aqua Blu* mooring, 60 miles north of Dampier. The *Chieftain* needed constant slight changes of course to maintain the same distance off the *Lady Elizabeth*. Thanks to the colour radar which can easily be seen in daylight, we just set the distance marker to 0.05 off the *Lady Elizabeth* and steered by that.



The *Kirki* was still yawing 15 degrees either side of

Pacific Chieftain tied up to *Kirki*'s starboard side to unload deck cargo.

the course but we could not steer the most direct line to the north as this caused the southerly swells to press up the *Kirki*'s breached forward tanks and thus put more strain on her already weakened bulkheads.

Friday 2.8.91

We should be near Singapore by now! Instead we continue to tow the *Kirki* northwards at 5 knots to the now secret destination X. The salvage crew with the *Franmarine* divers are trying to set the *Kirki* for cross deck transfer of some of the oil cargo to the after tanks which are sound but not completely full. All stability data is being recalculated for the *Kirki* by one of the surveyors on board her. We are greasing the stern roller and freshening the nip on the tow wire regularly to minimise wear on the wire strands, a broken tow is the last thing we need right now. No smoking out on our deck due to possible fire hazard as the wind is right astern of us at the moment. No



BBQ allowed for the same reason. So we continue four hours on and eight off round the clock steering as we are with constant course corrections four hours on is quite enough. Shades of steering on the seismic survey vessels, four hours steering is plenty. At least we can relax a little before going to sleep in our eight hours off. Not like when we work six on six off, sleep is even more precious then.

Saturday 3.8.91

0800 continuing on a northerly heading at 4.8 knots. The southerly sea and swell are still making life interesting. Progress is reported by the Kirki's radio officer, Danny, in that some oil is now being transferred to the slack after tanks with the aid of the salvage pumps. No sign of the bow coming up out of the water yet, we shall have to wait a while to see any affect in her trim I think. The weather seems to be clearing now we are up near the N.W. Cape with light winds and some sunshine at last but the southerly 4 metre swell persists.

Sunday 4.8.91

At dawn the Kirki is seen to be leaking the waxy yellow crude oil again. Just when it looked like things were under control too.

Both tugs alter course to try to ease wave pressure on her bulkheads. Cross deck oil transfer continues unabated but with some tank top valves being still under water even the divers need calmer weather to be able to reach them. Some flying fish about now so we must be getting to north west waters. The prawn trawler men at Exmouth Gulf must be relieved now we are to the north of them, even though we are well off the coast. Due to winds and currents the coast could still be threatened if the Kirki goes down.

Monday 5.8.91

Continue slow tow towards destination X. Federal and State politicians are now in on the act, the bottom line is no-one wants a leaking oil tanker in their back yard. As someone said on the radio, "now we know what it feels like to have Aids". 1320 hrs Kirki reports a continuing loss of oil cargo and as a result buoyancy. Things do not look good. The Pacific Chieftain has already made preparations to slip all her tow wire if the worst happens and the tanker sinks. At 1340 hrs the decision is made to cut us free from the tow and put us in full rescue mode. All our crew work together to prepare scramble nets and the high speed rescue boat. The tow chain is cut up on the Kirki's aft deck and we

on the Pacific Chieftain start to haul in the towing gear. At the same time we use our crane to launch the rescue boat, a risky undertaking in the 4 to 5 metre swells, but at least it is still daylight for a few more hours. With two of us in the rescue boat we head over to the pilot ladder, heading in to the seas as much as possible. Eighteen people have to come off the Kirki which will leave 8 die hards on there over night. Due to weather conditions we can only carry 6 passengers at a time and even then we must slow right down to avoid flooding the boat. The Pilot ladder is 18 metres long so the evacuees scramble down as best they can in their life jackets, then their bags are lowered down. Everything is wet.

Graham, the Chieftains master, is giving us the best lee he can and back alongside the passengers scramble up the net onto the Pacific Chieftain's deck. Three times we go back under the heaving side of the Kirki until all the passengers are safely off. Thanks to top work by all the crews no one is hurt and finally the rescue is over for the time being. We stay ready to launch our boat at a moments notice through the night in case the Kirki finally gives up the struggle to stay afloat. The divers are still trying to get to the valves which are under water and close them, however it seems it is just too dangerous and they are almost swept off their feet in the attempt.

Tuesday 6.8.91

0600 hrs the Kirki is still afloat but would seem to be down even more by the bow. The salvors report that after a worrying night they think the tanker is not losing any more buoyancy so after breakfast we take some of our overnight passengers back to the Kirki. One of them slips while climbing the ladder, luckily he falls back into the rescue boat and is only shaken. The Chieftain stays in close proximity to the Kirki but we have to go up nearly alongside the Lady Elizabeth to give her 100 tonnes of drinking water. Of course she is still towing the casualty at three knots so we are glad to complete that task without getting the four inch reinforced hose in any ones propellers, especially as the Lady Elizabeth has open propellers which seem to like ropes and wires and hoses to get tangled in them. We should be up near the latitude of the Monte Bello Islands tomorrow where if sea conditions permit, the divers will try to get the first close up look at the Kirki's broken bow section.



Seaphone calls to shore are free at the moment due to an industrial dispute at OTC, of course the queue for calls is hours long and finally we give up the long wait to place a call in disgust.

Thursday 8.8.91

0800 Chieftain tied up along side Kirki on her starboard side as close to the bow as is prudent in the 25 knot winds. The Franmarine divers come on to the Chieftains deck and set up their gear, some of which is till wet from the trip on the Wambiri. After much CRC and drying everything is working and Peter makes the first dive with air hose and video camera which is recorded on tape for future reference. He reports the keel is still in place but the holes are so large he can hardly see both sides of them at once. Finally he runs out of air hose length and has to return on to our deck. The water is so clear with no sign of oil leaking any more. The video pictures are top quality and some will be seen on Channel 7 News tomorrow night. Apparently there is a Kirki spot every night on TV.

The divers have been working all hours on the Kirki. They have risked their lives a few times too, and they tell us they are only on a day rate as far as their pay is concerned. They deserve every dollar they get. We have one of the divers in our hospital at the moment, he cut his leg the other day on the Kirki and is supposed to be resting. The diver medics patched him up with butterfly plasters to hold the cut together.

We have only changed the dressing and told him to rest. However he wants to help his mates with the diving and he will have to go ashore by chopper to be checked at Karratha Hospital just to make sure the cut is healing okay. The media reported 'Diver seriously hurt, Medivaced to hospital.' The divers wives were not impressed by that at all and worried themselves for no reason. I wonder what else the media is reporting wrongly in their quest for the sensational headline.

Friday 9.8.91

At dawn we saw the first sign that the Kirki is slowly lifting her bow. Her aft draft is now 4 metres and we should see that slowly increase as the stern goes deeper in the water. The plan now is for the Pacific Chieftain to go alongside the Kirki again and use her bulk product air system to pres-

surise her forward tank and see if that will help increase her freeboard at the bow. When the bulk air hoses were connected we pumped for 90 minutes, however it would seem that there is an air leak somewhere else as there is no increase in air pressure in that tank and it is decided to stop the air pumps until further investigation of the tank is possible. The injured diver, Jerry, returns from hospital check up by the second helicopter of the day. More experts arrive too though really they need more indians and less chiefs to share the work load on the Kirki. The men are getting very tired, we can hear it in their voices on the small VHF hand held radios they all carry. The divers can now make a dive from the Kirki's forward deck to investigate the port side of the Kirki's bow. We use our crane to offload their gear. The crane has been so useful, especially as it can lift 2.5 tons and more importantly has a good reach; invaluable when you need to reach over to another vessels deck to lift and lower cargo. At 1900 hrs we are released to Dampier as some of the crew will be crew-changing tomorrow. We arrive in King Bay in time to see the Eagles play Geelong on the TV (a pleasant change from violent movies on video). The Eagles win of course.

Saturday 10.8.91

0830 hrs we dock at the M.O.F. wharf in Dampier. Hans Skidzun and George the Chief Engineer go home but they may be back in four or five days. The main items of cargo we load are the 2.5 ton Yokohama fenders. There are six large ones and two small ones, only 1.0 tonne. They are giant and four of them fills up the width of our deck. Plus there is more salvage gear, flexible offloading pipes and of course more !!!! kitty litter, 50 large sacks to be precise. We now have a video camera man on board. He works for United Salvage so all our endeavours will be on video. Hope we can get a copy sometime. He has been out in the chopper a few times to get aerial shots. Now he needs the sweat and tears close ups, or so he says. His name is John Davies (no relation). Eventually he wants to go on the Kirki's deck, that's if David Hancocks will let him. Full of drinking water we depart at 1600 hrs back on the old 6 and 6 as we have lost our extra mate, Hans. E.T.A. Kirki 2000 hrs.

Sunday 11.8.91

Alongside port side of Kirki at dawn. She is still under tow north of the agreed boundary line.



South east winds are set in for a few days by the look of things, but the Lady Elizabeth alters course to give us the best lee while we unload all the deck cargo. We pulled the Yokohama fenders off with our tigger winch. Luckily the two decks are not too far apart and with a bit of pushing and hauling we manage to get them off our deck over the stern roller. They only had old mooring ropes to tie up the fenders. Usually chain or wire is used, especially in view of the heavy stress the fenders will come under when the tow tankers are alongside each other.

We then go round to the other side of the Kirki and use our crane to offload the rest of the deck cargo. Its all finished by early afternoon so we let go and resume our close standby role, also we have to keep other nosey vessels away, not that we have seen many so far.

To be continued.

However, that's all they have, the old rope, so let's hope it holds out for the six days the operation to transfer the oil will take. The video man is busy recording all the action up on the Kirki; he says he has 6 hours worth of film already, "it's bigger than Ben Hur! !"



An engraving by Frans Huys after Pieter Bruegel, 1565, of a forerunner of the Dutch fluit. The fluit or fluyt was a cargo carrier which had a longer length to beam ratio than the usual vessel of the time. They therefore were good sailers while retaining the ability to carry a good deal of cargo on a reasonably shallow draft.



THE DUYFKEN PROJECT AS EXPERIMENTAL ARCHAEOLOGY a Progress Report.

Nick Burningham

The designing and building of a ship in DUYFKEN's time were one and the same thing. To authenticate our replica's design we set out to build the replica in the same way as the original — plank-first, with no frames to pre-determine the shape. This would let the construction process determine the shape to some extent. And it was a huge leap in the dark for shipwrights trained in the frame-first tradition.

DUYFKEN's keel was laid in January 1997. It was May 1997 before the experiment of plank-first construction and bending planks to shape over open fires began. Three months later the diary that I've been keeping records a mood of frustration and growing crisis — planking was progressing very slowly and the learning curve seemed to be very flat. Some things were being learned. It was important to get a plank with a lot of bend or twist in place while it was still hot, and it was best to cut the plank approximately to shape before bending because sometimes when cutting the scarf the plank straightened. The shipwrights were undoubtedly working with more concern for precision and symmetry of the hull than would have been the case four-hundred years ago.

The first optimistic note in my diary appeared on 10th August:

Nick Truelove agrees that plank bending is going much better now. He ascribes it partly to having someone (Steven Edwards) who is dedicated full-time to the fire bending. Rather than running backwards and forwards from other jobs, when planks are being bent Steven stays with them. Result is better bends, less burning of the planks.

There was more to it than that. Steven was more careful in keeping the fires burning evenly with uniformly chopped firewood and he had the patience to let the planks heat until they bent reasonably easily rather than forcing them to bend using levers and pulleys, and then trying to set the bend by applying heat. Simpler was better.

Meanwhile huge piles of twisted tree limbs were being slabbed by Rick and Jules Martin to provide the frame timbers that would strengthen the slowly developing plank shell. There were some fifty pieces that had been selected as suitable for making the "floors" — the frame timbers that stretch right across the bottom of the hull — each has a particular shape ranging from a shallow V midships to an acute Y in the bow and stern. In the old days a shipwright would probably take a timber from the top of the pile, eye it up to decide approximately where in the ship it might fit, rough it out to the finished shape and trial fit it. After a bit of fairing off it would be fitted into the plank shell. The end result of that haphazard approach can be seen in the shipwreck archaeology: the floors were not evenly spaced and some of them were not quite square to the keel. A more ordered approach was wanted by our shipwrights but it required more searching through piles of heavy timbers and making plywood templates to determine the shapes required at each position.

By the time the ship was planked out to the turn of the bilge and some of the floors were fitted the shipwrights were more confident of the process and could see that it

was working, but we were building a shape of ship that they had never seen before so it was necessary to make a set of temporary moulds (templates of the cross-section shape). These were never used to actually shape the planking — they were too flimsy — just to visualise where the planking was going, and they were never left in place.

In September planking was really going well and the shipwrights were enjoying the creative process. However, it was time to concentrate on getting all the floors fitted and the keelson laid over the top of them. The keelson which forms a girder with the keel is the most massive timber in the ship and traditionally needed to be lifted into the hull before the planking had progressed too high.

On September 5th I noted:

We have the International Congress of Maritime Museum's conference here these last three days. The delegates are amazed by the speed of progress — "It's like it's growing organically" one of them said. And it is. Planking is finally going extremely well, and, I hope, fitting the floors is speeding up too.

The beauty of the shape is generally agreed on.

A month later the planking was complete right through the turn of the bilge and some first futtocks (the curving timbers that take the framing through the turn of the bilge) were being fitted. At that stage in the Dutch tradition the critical underwater shape of the hull is complete and construction switches to frame first with the futtocks developing the shape ahead of the planking.

The next great challenge in the construction was shaping the first wale. Wales are more than double thickness planks that strengthen and protect the hull at certain important points. The first wale runs from bow to stern at the widest point of the hull, near the waterline. The shipwrights had become good at bending the 60mm planking but we were all anxious to find out about bending 150mm thick wales through the tight curve at the bow. Adriaan de Jong had shown me a historical document that complains about planks being burnt "to a shame" in the bending process. What we learned was that some pieces of wood will bend and others will not, even if they are burned to a shame. There were a couple of failures in bending the wales but in the end it was done. The DUYFKEN replica team faced a difficulty that the original shipwrights would have thought most extraordinary. It was near mid-summer when the wales were fitted and some days the temperature in the shade was around 40°C making Steven's job tending the fire very unpleasant.

By early February the whole shape of the hull up to the height of the rail was defined by top timbers or top futtocks (the uppermost pieces of frame timber), and Gerard Russell commenced cutting the camber (curve) of the main deck beams. The layout of the decks had been the subject of much discussion. On the one hand there was an argument that an armed ship of the late 16th century necessarily had two decks since the guns would be positioned below decks. But that arrangement either gave a gun deck too close to the waterline or a ship too high sided. We had tentatively designed DUYFKEN with one deck, been laughed



at, and changed to two decks. Then the discovery of Dutch painting of a small yacht like DUYFKEN with a single deck layout (in the collection of the Swedish National Maritime Museum) caused us to look at the question again. Just before cutting the deck beams started we decided to revert to a single deck design. Since then the evidence of three contracts for construction of small armed ships in 1594 has shown that the single-deck is the most likely arrangement.

During the framing the top timbers were fastened to the planking with coach screws where the 16th century shipwrights would have used a few iron spikes. The majority of the fastenings are trunnels or treenails (large oak dowels with wedges driven into the ends so they would grip like rivets). There are thousands of trunnels in the hull. It has taken Jim Lucas, a former Colonel of the US Marines, six months to drill the 25mm holes and drive all the trunnels. It takes a steady hand with the maul (shipwright's sledge hammer) to drive those tight fitting trunnels.

The visit by maritime historian Ab Hoving from the Rijksmuseum to the DUYFKEN in April 1998 provided reassurance that we were doing it right, even some aspects that I was diffident about. The top timbers were being made from grown oak limbs of approximately suitable shape, quite a number of them had to be built up to the required profile with fillers and chocks. Ab was delighted: "Just what you see and read about in the old shipyards." he said. More importantly he was very impressed by the courageous way Bill Leonard (master shipwright) and his team were prepared to try the ancient techniques of building and designing a ship. Ab's comments seemed to strengthen Bill's commitment to the traditional ways. A week later I noted:

In a short discussion with Bill we eliminated the most forward deck beam, which is too close to the breasthook to do much, and added some foremast partner structure. This is good traditional designing where the master shipwright works it out simply from basic principles and prior experience.

By mid-May 98 all the main deck beams were in place and it was clear that not all of the large hanging knees that bracket the beams to the inside of the hull could be got from the oak pieces shipped from Latvia. Those right-angled knees are usually sawn from the root boles of trees where the main roots branch from the trunk. The Latvian suppliers had done their best but the heavy earth moving equipment necessary to grub out root boles was simply not available deep in the oak forests. I had wondered whether they could be dug out by hand, but my first short walk on the snow-covered frozen soil of a Latvian forest had persuaded me to keep that suggestion to myself.

Fortunately there are a number of Western Austral-

ian species that provide excellent timber hanging knees and large mature trees quite often have to be felled around the suburbs of Perth. Cutting out those massive knees is an interesting experience for the shipwrights and apprentices and adds to ones respect for the shipwrights of old who did it all with axes and pit saws rather than chain saws.

At this stage (November) the hull with the forecastle and aftercastle is built. Work remains to be done laying the decks, and preparing the masts, spars and rigging. The hull

is impressively solid and very beautiful. Even encased in the shed of the Lotteries Duyfken Village Shipyard and encumbered with staging she looks keen to sail. As expected, the shape of the ship as built is different from the original lines plan that we drafted. Some of the ideas we proposed about the sequence and logic of plank-first construction have proved impractical but the basic technique works well and even today might be a particularly efficient way of building a single ship because relatively little infrastructure and heavy lifting gear is necessary.

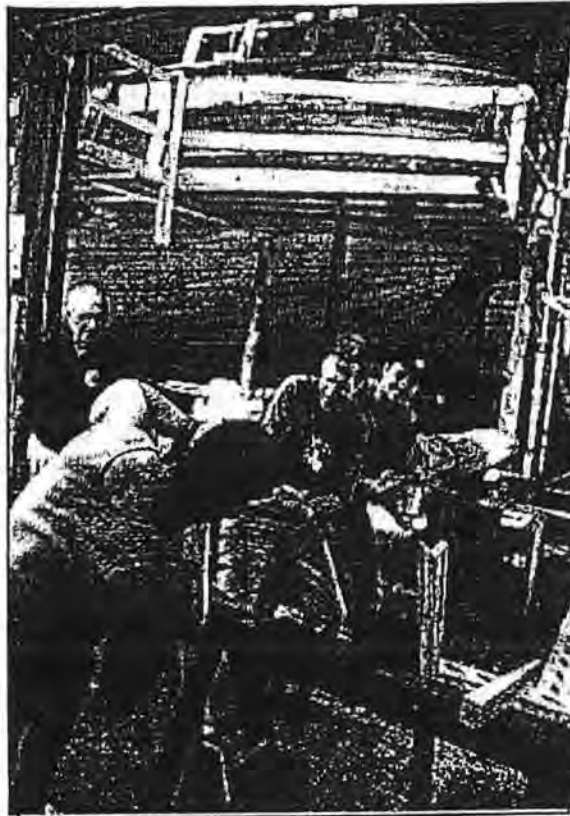
There are limits to the efficacy of "experimental archaeology". You can never completely recreate the past. Late 20th-century shipwrights working under the public gaze on high-profile projects like Duyfken cannot be expected to have the same ethos as late 16th-century shipwrights knocking out another a little yacht every six months. Greater authenticity in the detail of construction could have been insisted on — no coach screws for instance — but it is important not to have an acrimonious conflict between the

research and the shipbuilding team. There will always be an element of "them and us" — from the ship builders' point of view "us practical shipwrights and them boffins with their computers". As long as the relationship remains cordial, workable compromises can be reached through good will on both sides.

Building replicas or reconstructions of ancient ships is a spectacular form of experimental archaeology and it is popular with the public. One of the reasons that it can work well is that shipwrights are so clever at interpreting and adapting to different designs and construction techniques. Wooden ship building in almost any tradition involves a great deal of problem solving. Other experimental archaeology projects (such as attempting to recreate northern European neolithic villages) depend on the practicality, skill and ingenuity of the participating academics which may be less finely honed.

See the Duyfken

The MHA Committee met at Philimore's Hotel in November, and in the absence of our treasurer decided to spend the Association's funds on a Christmas do at the Duyfken Shipyard on 15th December, 6:00pm.



Hand boring the elm tree pump barrel



A Short History of Diving

Part 2

This is the second part of Jill Worsley's brief history of diving, the first part having been in the June 1998 edition of the Journal.

There was a fire in an English farm barn, and it looked as though the horses inside were going to be burnt alive. No-one could get close because of the smoke, and the only available fire-fighting equipment was a hose and an ineffectual old pump which was making no headway against the blaze. John Deane, a young teenager and the son of a Deptford shipbuilder (also a descendant of Pepy's Sir Anthony Deane, leading naval architect of the mid 1600s) was watching the fire when he had a brainwave. He got the helmet from an ancient suit of armour in the farmhouse, took the ineffectual pump out of the water supply, pushed the end of the hose into the helmet, had the pump re-started but now pushing fresh air not water. So equipped he entered the barn and safely brought out the horses one by one and thus was taken one of the most important steps in the history of modern diving.

In 1823 John and his older brother Charles Anthony Deane (John was now 18 years old) patented the rights to an "apparatus to be worn by Persons Entering Rooms filled with Smoke, &c." Being innovative lads, they were soon experimenting with this gear underwater, making cautious progress and setting up a business retrieving lost anchors, cannons and treasure from wrecks. They found themselves a partner who owned a work boat, the small sloop *Mary*, fitted with a pump powerful enough to supply air to a depth of over 90 feet.

They took out another patent in 1828, this time for a "Diving Dress" consisting of a leaded helmet with viewing ports, which rested on the shoulders. It was customarily worn over woollen undies, a patented Mackintosh rubber waterproof suit and

heavy calico trousers and jacket. The helmet was connected by hose to a pump on the surface, in their case on board *Mary*. They headed for Portsmouth.

1832 found them in business salvaging guns for scrap metal from the *Royal George* which had sunk in 1782 with 900 men, women and children on board. Between 1832 and 16 June 1836 they brought up thirty cannon from this wreck. In a letter of 12 May 1835 Charles mentions firing one of the recovered guns in salutes at "Brighton, Ramsgate, etc" as he was on his way to deliver it to the Ordinance Board based at Greenwich. This particular gun is now at Southsea Castle.

Near where *Mary* was anchored, five local fishermen snagged their gear. They came across to suggest that Charles and John leave the *Royal George* for a while to free the snagged nets, the fishermen to go half-shares with the Deanes if the "fastener" should prove to be of value. John descended, cleared the nets caught on an old timber, then cautiously examined his surroundings. Several cannon were visible and John arranged for one of them to be raised. To their surprise the Deanes read the inscription HENRICUS VIII ANGLIE FRANCIE ET HIBERN MDXXXII. Though he didn't know it at the time, John Deane had found the *Mary Rose*.

The Deanes recovered stave-built iron guns, large cast bronze guns, yew bows, pottery, cloth and human remains. Intending to publish a book at a later stage, they commissioned a series of meticulous water colour paintings of their finds before dispersal. This included a sale of artefacts by public auction at Portsmouth Point. Bows sold between 10/- and 15/-, while 15 feet of the main mast brought in £30. For the bronze cannon found on 16 June they received full scrap metal price of £220.19.0. They were paid £20 for another iron gun delivered to the Tower complete on its wooden bed.





The basic gear invented by the Deanes was further refined in 1837 when Augustus Siebe developed it into a closed (as opposed to an open) suit, which was so superior that it soon came into common use around the world

Charles and John Deane worked spasmodically on the *Mary Rose* until 1840, by which time they had cleared all they could find on the surface. They obtained permission to dig holes and use six small charges of gunpowder in order to expose more material, but while the underwater explosion was successful little more came to light and the Deanes moved on to other business ventures.

On the other side of the Atlantic, a different approach was being taken to the problem of working underwater. About 1831, Charles Condert of Brooklyn was using self-contained diving gear he had invented to work in the East River. He stored compressed air in a six inch/15 cm diameter copper pipe closed at both ends and bent to circle his waist. He wore a closed dress, with a small hose connecting it to the air cylinder. A tiny hole in the top of the suit allowed a continuous venting of small amounts of air. He made many solo working dives using this apparatus so apparently it worked – until the day the cylinder burst and Condert drowned.

By 1865 another significant advance had been made, this time by the French. Rouquayrol and Denayrouze used the basic helmet-hose suit invented by the Deanes, but added double chambered air tanks to their backs. Compressed air was pumped down from the surface and a hose and mouthpiece delivered air from the reservoir tanks to the divers. Most importantly, the airlines included demand valves so that divers could now work freely and in comfort at the right air pressure. Five years later Jules Verne was to write 'Twenty Thousand Leagues Under The Sea', using imaginary characters but much of the technology developed by Rouquayrol and Denayrouze.

Back to England, and in 1868 Henry Fleuss patented a fully self-contained apparatus that supplied pure compressed oxygen. Carbon dioxide was removed in a chamber of caustic potash, and the same oxygen was re-breathed for up to an hour. Fortunately for Fleuss, he only worked in shallow water and it was several years before the dangers of oxygen toxicity at greater depth was understood

Nine years later a new patent was taken out, this time by Buchanan and Gordon. They persuaded the Siebe Gorman Company to manufacture a dress where the copper helmet descended in a solid piece to the waist and weighed 250 lbs. The accompanying suit weighed 500 lbs. It was equipped with both air hose and telephone to the surface, and was used in the pearl fisheries in Australia. Buchanan-Gordon diving dress shown below.



While compressed air divers could work to 200 feet the loss of the gold-bearing ship *I:gypt* in deeper waters off Brest in 1921 necessitated the use of articulated armour such as had been developed in Germany prior to World War I. The German model was a bulbous monster with jointed arms and legs and fitted with mechanical claws. This basic design was modified and simplified, and *I:gypt*'s gold recovered from 70 fathoms of water.

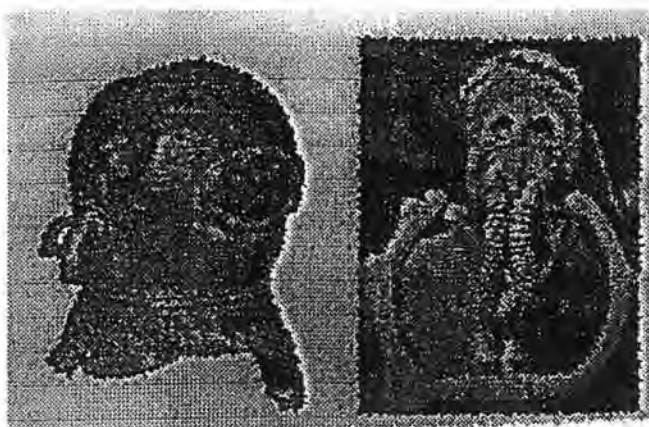
Salvors however reverted to using a modern version of the old fashioned diving bell when recovering gold from another deep wreck in 1940. The *Niagara* had sunk off Whangaroa NZ carrying nearly eight tons of gold from South Africa enroute to America and it was very important that this should be recovered. Despite chilling adventures with German mines in the area, salvage was successful using a bell manufactured in Melbourne.

World War II caused another return to the earlier principles of operation. Because the fully self-contained apparatus devised by Henry Fleuss leaves no tell-tale bubbles, it was successfully used by "frogmen" setting limpet mines on enemy ships and by "charioteers" riding torpedoes to the destruction of Axis shipping



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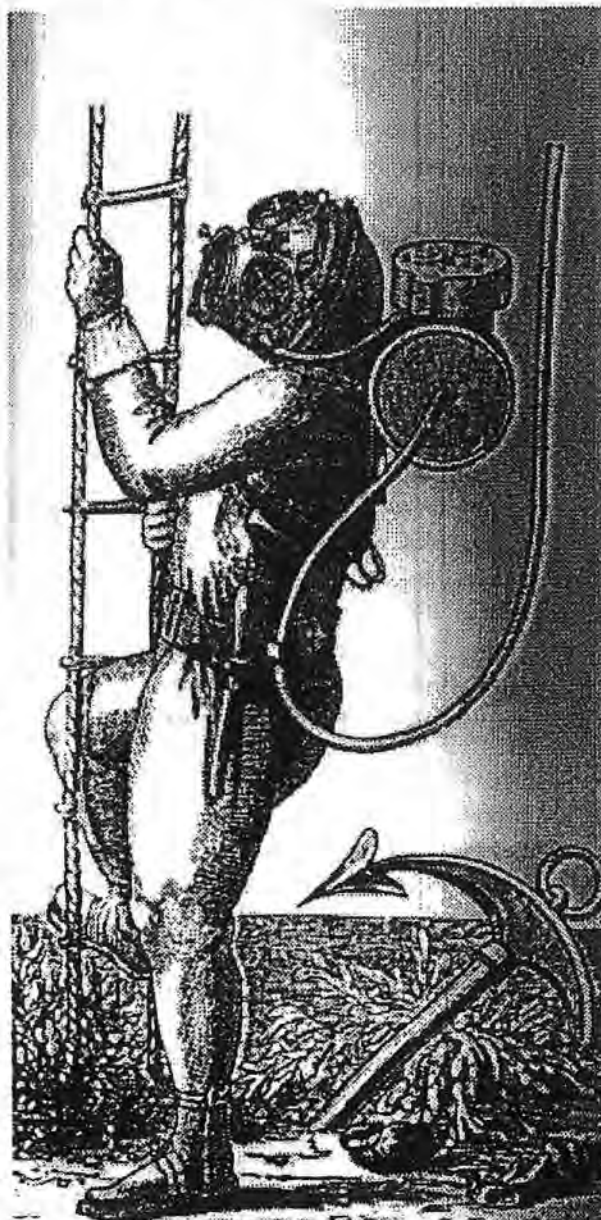
Siebe Gorman 1837

Henry Fleuss 1878

Over the latter years of the eighteenth century there had been much going on underwater only indirectly connected with diving, such as the development of underwater photography and the refinement of submarines. The more I look into the History of Diving the more fascinating stories I discover. During the 1920s and 30s developments were being made in the area of free diving which would eventually lead to the use of SCUBA which is of itself another story.



Auguste Denayrouze's fully independent compressed air lung of 1875.



Rouquayrol patented the first demand regulator in 1866.



IT'LL NEVER FLOAT!

Concrete yachts, what ever your opinion of them, are a fairly common sight these days. You may not realise how old the concept of a concrete vessel is. The first deep sea concrete vessel dates back to 1886-87.

In 1886 the American 2,800 ton ship *Santa Anna* was struck by lightning in the southern Indian Ocean, seven days out from the Cape of Good Hope. She caught fire and the twenty seven crew were unable to combat the flames. The captain ran the ship ashore in a narrow inlet on Hog Island, the most westerly of the Crozet Islands. The crew saved some supplies, sails, masts and yards, tools and running gear before the ship broke up in the surf. Two passing ships failed to acknowledge their distress signals so they realised that their only hope lay in getting to Possession Island, 65 miles to leeward. Here there was a food dump and hut for shipwrecked mariners. They did not, however, have tools to cut planks from the spars they had saved nor were there any trees on Hog Island.

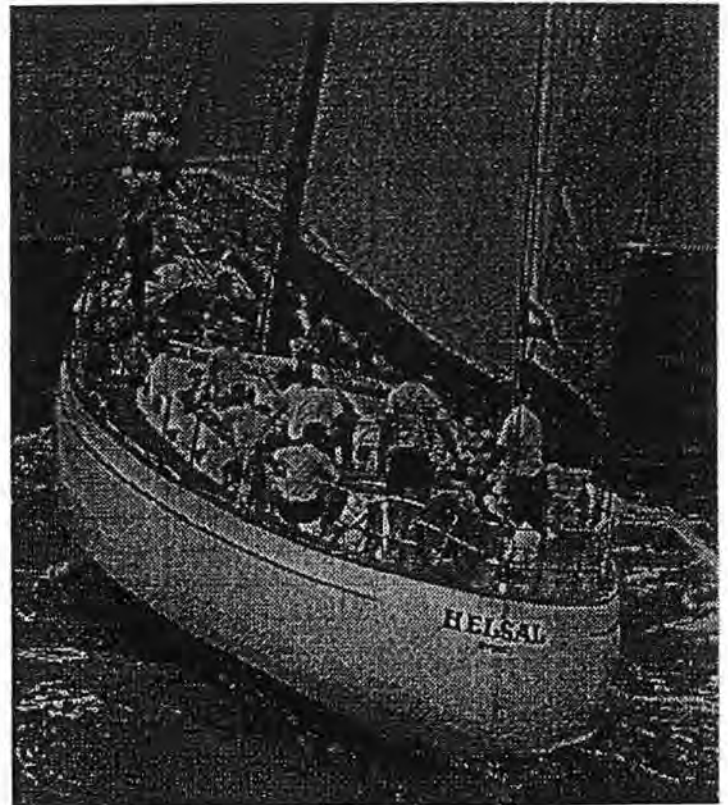
Captain Strong died and the first mate, John Kenlon, decided to build a vessel of concrete to take them to Possession Island. He had the crew crush limestone which was then burnt, added to sand, gravel and some 'broken stones of appropriate size'. Firstly he made a mould in the shape of a tub or firkin, lined this with the concrete, waited four days for it to set then broke it out of its mould. When filled with water the experiment proved successful, no water leaked through.

Kenlon then turned to constructing a vessel. It took three weeks to construct to the turn of the bilge. Instead of the steel reinforcing used in modern day concrete vessels they used rope. The 32 ft x 8 ft 6 in (9.75m x 2.59m) gaff sloop was finished by Christmas 1886, 5½ months after they were wrecked. She was ballasted with four canvas bags filled with sand weighing 250 lbs each. A three hour trial sail was a success. She was christened *Comet of New York*. The survivors (about 20) then sailed to Possession Island in seven hours. Here they found food, clothing, shelter and, best of all, a sextant, compass, watch and navigation tables. So successful had been the sail and with these navigational necessities to hand they decided to sail to Fremantle. They thought this would take three weeks.

After five day's rest they left the Crozet Islands. They had covered the first 1600 miles in just 10 days when a light was seen astern. This turned out to be the British full-rigged ship, *Lough E*. They boarded her next morning but are quoted as being not entirely happy with their rescue. Some wanted to remain on the *Comet of New York* and carry on sailing to Fremantle. They had done so well to date on their own initiative.

The British captain was asked to either tow their small vessel or lift it onto the deck. He would not agree to either so she was reluctantly cast adrift. So ended the voyage of the first deep sea concrete vessel.

Kenlon, after 14 years at sea, joined the New York Fire Department (he was originally from Ireland, naturalised American) and eventually became that city's Fire Chief.



The 72 foot sloop *Helsal* was constructed of ferrocement. Nicknamed the "Floating Footpath" she broke the Sydney - Hobart race record in 1973. She also broke the Sydney-Mooloolaba record and the Brisbane - Gladstone record in 1976.

The Ditty Bag



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



From 1793 to 1815 the Royal Navy lost the following men:

- By disease and individual accident 70-80,000.
- By shipwreck and fire 13,000.
- By enemy action 6,500.

Wreck: the hull of a ship which has become a total loss through stress of weather, stranding, collision or any other cause, whether it lies on the bottom of the sea or on the shore. In maritime law, a vessel which is driven ashore is not a wreck if any man or domestic animal escapes death in her and is still alive on board when she strands.

Lightning conductors for ships were invented by William Snow Harris, FRS, about 1830. They consisted of copper vanes on the trucks of the masts connected to copper strips on the aft side of the masts. They passed down through the deck and were finally connected to the copper sheathing of the ship's bottom. Harris was knighted for his invention. It should be noted that this form of lightning conductor was fitted to HMS Beagle which, despite being struck several times by lightning, was saved from damage.

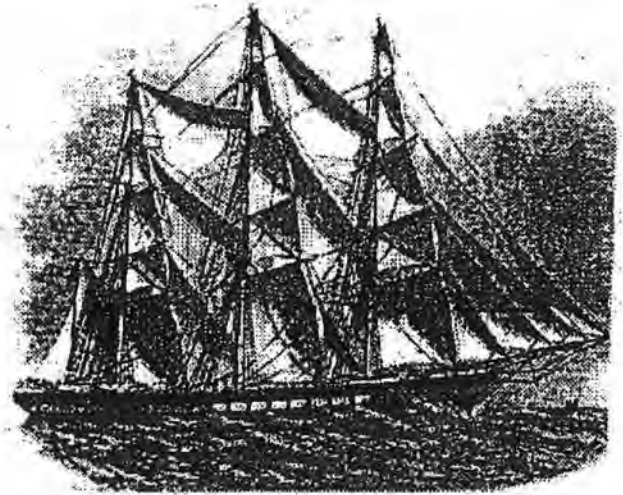
It is common knowledge that on many sailing ships the food given to the crew was often barely adequate in quantity and quality. Basil Lubbock refers to this often in his book "Round The Horn Before The Mast" in which he tells of a voyage as crew on the *Royalshire* in 1899. However all ship-board food did not necessarily consist of salt meat and pea soup. This is the menu for Christmas dinner 1890 on the *Sobraon*, a mixed cargo passenger enroute London to Sydney.

Mock turtle soup.
Mutton cutlets "a la Reform."
Stewed oysters, curried prawns.
Oxford sausages, jugged hare and jelly.
Cutlets "a la Prince de Galles."
Curried eggs, stuffed roast duck.
Boiled ham and sauce piquant.
Roast haunch of mutton and jelly.
Corned leg of pork and peas pudding.
Green peas, French beans, mashed and baked potato.
Plum pudding, mince pies, gooseberry meringue.
Trifles and jellies.

This menu was made possible because the *Sobraon* had an icebox capable of holding 10 tons of ice for perishable foods and carried the following livestock:-
3 milk cows, 3 bullocks, 90 sheep, 50 pigs and 300 geese, ducks, turkeys and chickens.

Sobraon was a composite built full rigged ship of 2131 tons,

launched in 1866, with a tween deck for carrying passengers and a lower hold capable of carrying 3200 tons of cargo.

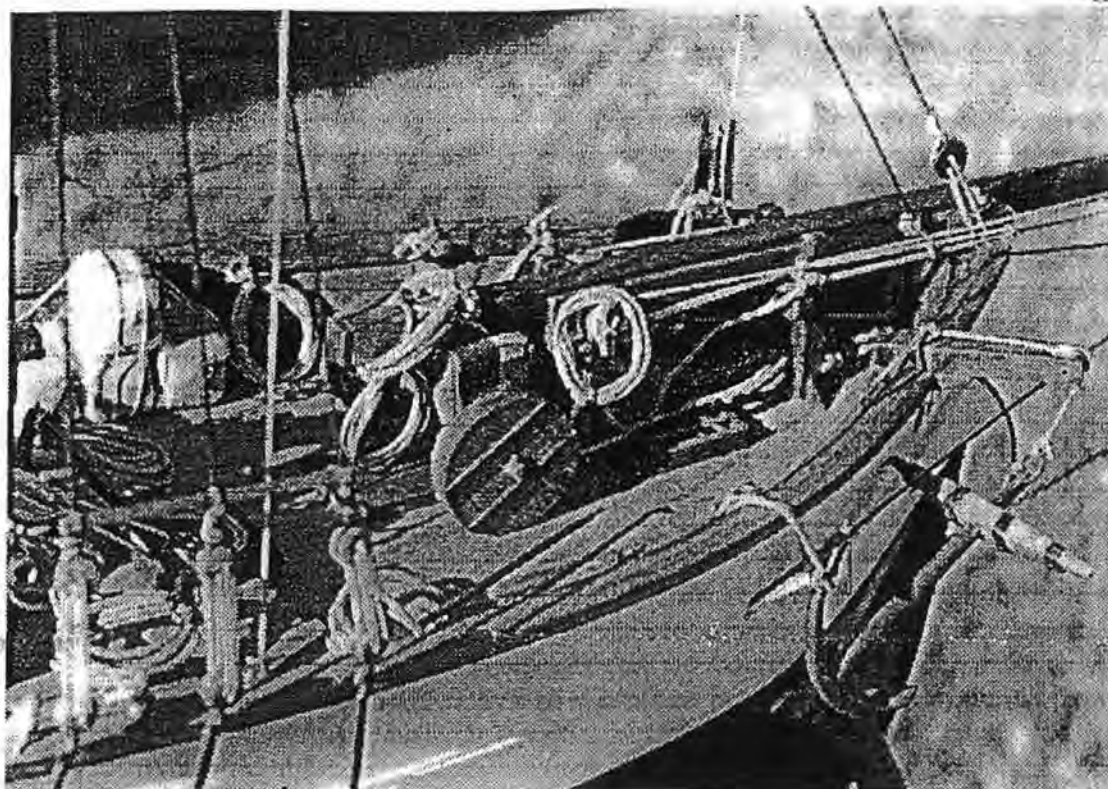


An engraving of the *Sabraon*

Kentledge. Permanent pig-iron ballast, usually stowed next to keel.

Charles W Morgan. In the last edition of this Journal, in the article on whaleships, I wrote that I was not aware whether this whaler had ever called at any ports in W.A. I have since found out that she called at Two Peoples Bay in late 1849. She stayed a number of days taking aboard 100 barrels of water and giving the ship a "light painting on the outside." She then went around the southern coast of Tasmania heading for the whaling grounds off New Zealand. This information comes from a narrative of the voyage by a harpooner aboard named Nelson Cole Haley.





In the last Journal there was an article by Brian Lemon on the building of the model of the Oriol. In this article Brian tells of his model of the cutter Gem which sank off Rottneest in 1876.

Gem 1876

by Brian Lemon

A couple of years ago my large-scale modelling programme had to be put aside since the spare bedroom (my workroom) was required for its originally intended use. Coincidentally, an article appeared in my 'local' paper about a small ship which had foundered off the West Coast of Australia in 1876, an event which was surrounded by a certain amount of mystery and which led to some controversy at the time. Accompanying the article was an excellent sketch made of a contemporary model of this vessel in the Port Adelaide Museum (the model, I regret to say, has since been stolen). Although it was apparent that the sketch had been made by an artist and not a model-maker, its size meant that a lot of the fine detail of the deck and rigging was missing; nevertheless the basic detail was all there.

It struck me that a static 1/48 ($\frac{1}{4}$ in = 1 ft) scale model of this vessel could be built which, at the end of an evening's work, could be put aside in such a way that it would not cause too much of a domestic upset! The seed was sown.

The vessel was the *Gem*, a small cutter of about 52 tons built in 1835, and about 66 ft in length. Her construction appeared to be fairly conventional, and generally similar to the small naval cutters of the early nineteenth century. She had a single mast, large mainsail, large foresail or jib, but appeared to have no main topsail. She was used for carrying small cargoes, generally in Australian coastal waters. As a result of looking methodically through all the back numbers of this journal, I came up with a very good cross section of information about these little ships. A further study of the sketch showed a number of differences between *Gem* and the Naval cutters. The main hatch was longer than usual, she was fitted with stern davits for the ship's boat, and there were, of course, no gunports. The bowsprit was fitted off-centre to port, in the usual way, and given mobility by the fitting of a pair of 'wagon' wheels. The cat-heads were fairly standard, as was the sliding cover to the companion to the crew's quarters. Noticeable



essential items which were missing were bilge pumps, galley stove funnel, and some form of small winch. The sketch was too small to show items such as belaying pins, bollards, deck rings, and so on.

History

Gem was originally a yacht, built at Cowes, Isle of Wight in 1835. She measured 65 ft x 14.6 ft x 8.1 ft, and 52 tons. She was carvel-built of English oak, and copper fastened throughout. Some years later she arrived in Australia and was registered at Melbourne. Thereafter she traded along the Australian coast. On the morning of 18 May 1876, whilst on a voyage to Fremantle with a cargo of 500 bags of wheat, she sank very quickly in fair weather conditions close to Rottnest Island and about ten nautical miles from Fremantle. All ten persons on board, the captain, five crew members and four passengers, were lost without trace. For various reasons there was considerable speculation as to the cause of her loss, and the fact that no survivors and no bodies were ever found. Recently the remains of the wreck of the Gem have been found and investigated by members of the Maritime Archaeological Association of Western Australia. From the evidence which they have collected it appears that the cutter struck the tip of Kingston Reef just off Rottnest Island, tearing the bottom out of her, and causing her to founder very rapidly. *[Those who wish to know more about the loss of the Gem, and of the curious facts which have recently come to light concerning the contemporary reports about her loss, are referred to a paper The Loss of the Gem (1876), Rottnest Island, Western Australia by Neville Passmore, Roger Lethbridge and Ronnie Hansen, which was published in 1984 in Volume 8 Number 1 of The Bulletin of the Australian Institute for Maritime Archaeology (c/o Dept of Maritime Archaeology, Western Australian Maritime Museum, Cliff Street, Fremantle, Western Australia 6160). Editor]*

One of the issues of *Model Shipwright* had plans of one of these vessels. These gave me a good basis for making a start i.e., keel, bulkheads, etc., but I made some alterations round the lower bow area of the keel, the transom, and shape of the rudder. Another article provided me with much useful information about standing rigging, as well as mast and spar dimensions almost identical to those I had decided upon. At 1/48 scale the hull came out at around 18in in length, and I decided to show the model with standing rigging only, as in the sketch.

The Model

The building of *Gem* basically was done in the same way as for my other models, but simplified in as much as the bulkheads could remain solid. The keel was cut from $\frac{1}{4}$ in ply, as were the frames, which were set up and glued in place on the keel. The first part of the transom, which was integral with the sternpost, was also fitted and glued in place. A selected number of stringers were positioned and glued on each side from stem to stern, to provide strength and also surfaces to take the wood with which the hull was going to be 'skinned'. Although the full-size vessel would have been planked in the usual way, I could see no advantage in doing this, since the model was going to be a museum piece, i.e. clean, smooth, painted and permanently mounted. Consequently I 'skinned' the hull with varying pieces of 0.5 mm ply, carrying this up to within approximately $\frac{1}{2}$ in of the deck line. Before doing this, however, I laid the deck with planks of pine wood 5 mm wide and about 3 mm thick. Starting from the centre, and measuring accurately, the decking was laid and shaped to the outer edge of the hull. By leaving the $\frac{1}{2}$ in gap at the top of the hull I had a good surface to which to glue the bulwark which ran round the hull. The bulwark was $\frac{3}{4}$ in high above the line of deck. I cut that to length for each side and $1\frac{1}{4}$ in deep, and cut out the freeing ports. The final piece of the transom was shaped and glued in position after which the bulwarks were fitted and glued to the stem, hull sides and transom. When dry the stanchions and top rail were fitted and glued in place, and the rubbing strakes attached.

The next step was to make and fit items of deck equipment. These were quite straightforward, being made up with the help of information in the articles and from that shown on the sketch. As the model was built entirely on the kitchen table (yes! it really was) using only hand tools, a number of commercial items had to be obtained. These included belaying pins, anchors, metal sheaves for the catheads, some parts for the bilge pumps, fine brass rings, blocks and deadeyes. The rudder and tiller were hand-made, but the gudgeons and pintles were bought. The mast, spars and bowsprit followed, with the 'wagon

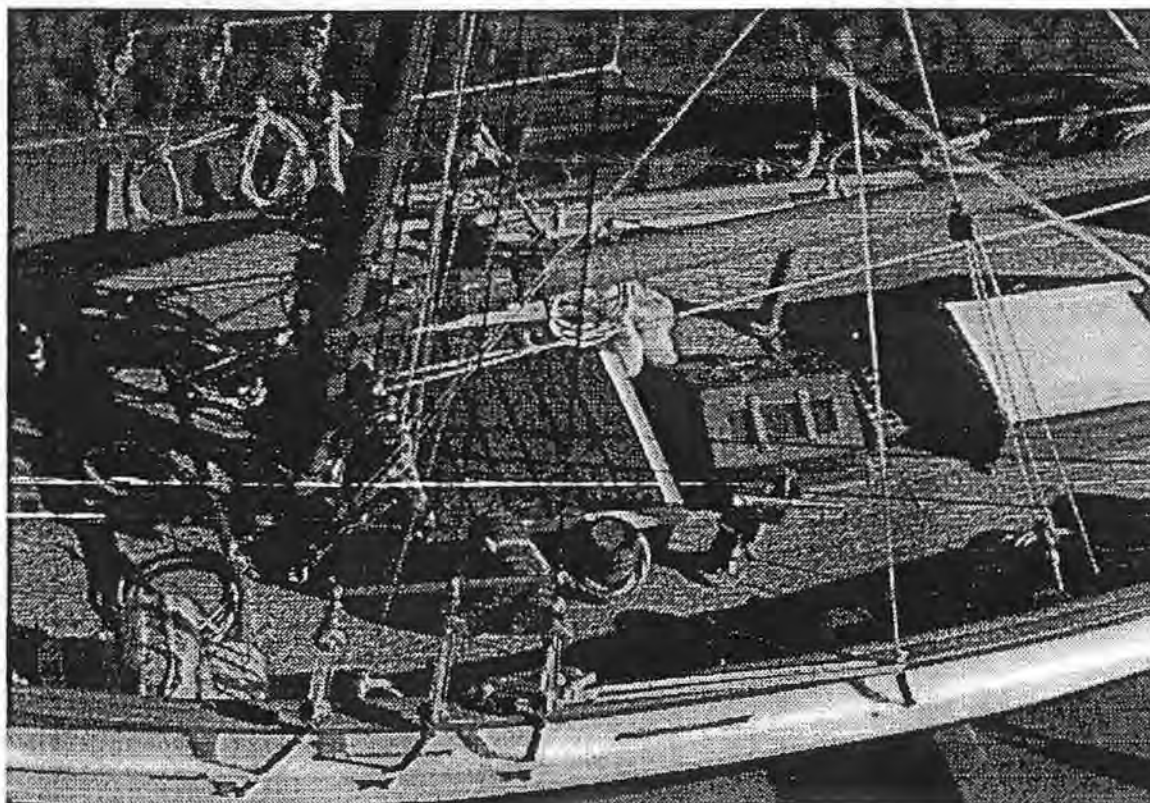


wheels' of the bowsprit being made as in full-size practice and secured to the axle with fine tapered wedge pieces. Then the rigging was tackled. I used five different thicknesses of cordage, as well as some very fine thread for binding secured ends of cordage where necessary. The shrouds and ratlines I made up on a specially prepared frame or jig, using two sizes of black thread. With the three shrouds set up on the board, the ratlines were knotted in place on each one, the knots being doubly secured with a touch of matt varnish. When dry each assembly was removed from the frame, attached to the mast and made fast to deadeyes.

On the sketch stern davits were shown but no ship's boat. However, in one of the official reports about the wreck it was noted that 'the ship's boat was partially submerged, still adhering to the stern'. There was no indication anywhere of its size, so after more looking through back copies of the journal I decided that a 15 ft clinker-built boat would be about right. At this scale it was going to be pretty small, but by using a combination of thin card and 0.4 mm wood, I eventually managed to produce *Gem's* boat, clinker style, and complete with four rowlocks, oars, working rudder complete with tiller. It was hung from the davits by the usual tackles.

The hull colour scheme is, I admit, only an educated guess, for there was simply no information about it. The hull is black from the keel to waterline, with a narrow dark brown line at the waterline, and then white to the top rail. The rail itself is light oak colour. Several colours of wood varnish were used on the fittings, masts, etc., each being finished with a coat of clear matt varnish, to give a true wood appearance. The ship's boat was painted matt grey inside, matt black outside, with the tiller teak varnished.

I wanted to get away from the customary way of mounting the model on a couple of turned supports on a polished base. In the end I decided to set it on a contemporary slipway. This would hold the model very securely whilst it was on display, but at the same time allow it to be removed from the stand whenever necessary. I acquire a fine piece of an old Jarrah plank about 18 in long x 6 in x 2 in thick, with a slight grain split in one end. The keel of the model was set in a groove cut in each of two pieces of Jarrah, 3½ in long x ½ in square, glued across the base about 3 in from either end. The model was supported along each side by three timber shores, which held it upright and also, because of the way the forward and after ones were set at an angle, prevented any fore and aft movement. At the same time it can be lifted straight up out of the stand. The stand was finished with a light stain, followed by a coat of clear matt varnish.





Captain James Cook's Ships

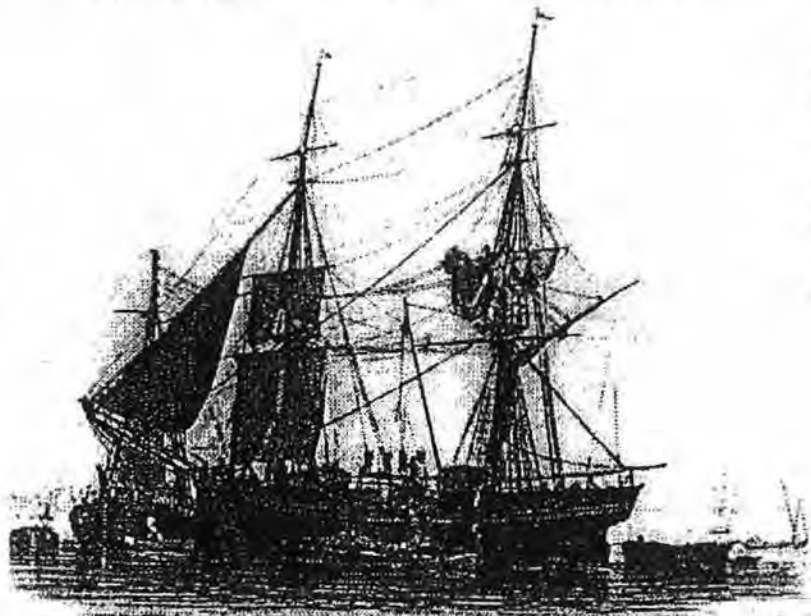
He has been called "England's greatest explorer", "the supreme navigator and explorer of the Pacific", "quite possibly the most remarkable figure in the whole of British naval history" and "the greatest combination of seaman, explorer, navigator and cartographer that the world has known. As is well known Cook grew up serving on Whitby collier, also called cats (the Navy Board suggested a 'cat-built vessel' be purchased for Cook's first Pacific voyage). His initial apprenticeship was on the collier *Freelove* before transferring to the *Three Brothers*. A couple of years later he became mate of the *Friendship* but when offered command of her after three years he declined and joined the Royal Navy as an able seaman. His first ship was the sixty-gun *Eagle*. He became master's mate after only one month. After a little over two years on the *Eagle* he became master on the sixty four-gun *Pembroke*. He then became master of the *Northumberland*. Most of this initial naval service was in Canada around Quebec and the St Lawrence River. The position of master was that of a non-commissioned officer but despite this Cook's reputation as a navigator and producer of accurate charts had been formed. He was given command of the surveying schooner *Grenville*. He was belatedly promoted to lieutenant against the norms of the time which were that no ex Merchant Navy seaman who had sailed before the mast in the Navy and whose origins were obscure could be elevated to any officer rank.

His next command was that of the *Endeavour* on its famous voyage in which he claimed the east coast of Australia. On his return he was promoted to commander and given command of the *Scorpion*. He never actually sailed in her, it being a holding appointment from the Admiralty so that Cook could remain on full pay while preparing for his next expedition.

His second Pacific voyage was carried out in the *Resolution* with the *Adventure* accompanying with Cook in overall command. After this voyage he was promoted to post-captain and given command of the seventy four-gun *Kent*. His third, and last, Pacific voyage was again in the *Resolution*, which was his favourite ship. "I do now, and ever did think her the most proper Ship for this service I ever saw, and that from the knowledge and experience I have had of these Vessels I shall always be of the opinion that only such are proper to be sent on Discoveries to very distant parts." He was accompanied this time by the *Discovery*.

The *Endeavour*, *Resolution*, *Adventure* and *Discovery* were all Whitby colliers, the first three named having been built by Thomas Fishburn in that port in 1764. The *Endeavour* had been originally named the *Earl of Pembroke* before the Navy bought her for £2307. 5s. 6d and renamed her *Endeavour Bark*, although never called anything except *Endeavour*. Although ship rigged she was called a bark because Cook was only a lieutenant and could not command a ship; that was for captains. The *Resolution* and *Adventure* were originally the *Marquis of Granby* and the *Marquis of Rockingham* respectively before purchase by the Navy.

It is believed that her days on a reef America in 1795. prison hulk for pened to the other is not known. readers may know Peter Worsley.



Collier discharging
By E.W. Cooke 1811 -
1880.

the *Endeavour* finished off Rhode Island in *Discovery* became a convicts, but what happened to the other vessels he commanded. Possibly one of the of their ultimate fate.



BOOK REVIEW

“Whale Hunt”

by Nelson Cole Haley

Subtitled “The Narrative of a Voyage by Nelson Cole Haley Harpooner in the Ship Charles W. Morgan 1849 – 1853” this book is a fascinating first hand account of a four year trip by the author in the heyday of the sailing whaler.

Haley was born on 7 March 1832 at New Bedford, Massachusetts, the centre of American whaling at the time. He ran away from home at the age of 12 years and went to sea on the whaling ship *John*. He returned home after a four year voyage and attended school for about 12 months before the call of the sea once more gripped him. He signed on as boat steerer on the whale ship *Charles W. Morgan* in June 1849. Although he was only 17 years of age the *Morgan's* captain, John D Sampson must have thought he had promise as the position of boat steerer or harpooner was a very vital one if the ship was to make a profit for captain, crew and owners.

The ship left New Bedford in early June 1849 and, as was common, picked up further crew at the Azores and Cape Verde Islands. The *Charles W. Morgan's* first whale for this trip was taken 16° south of the equator in the South Atlantic. They stopped briefly at Tristan de Cunha for fresh supplies then a short stop at lonely St. Paul Island to catch a quantity of fish, most of which was salted down and placed in barrels. The next stop was at Two People's Bay on Western Australia's south coast where 100 barrels of water was collected and the ship given a light painting. From here it was a fast trip around southern Tasmania and up to the whaling grounds off the north coast of New Zealand.

The ship cruised off North Cape and Three Islands for two weeks before sighting whales. Haley was boat steerer in the lead boat and put two harpoons in his first ever whale. He was still only 17 years old and there can have been few harpooners of that age. “He made about 85 barrels of oil. His jaw was seventeen feet long; his teeth would average in weight about two pounds each.”

The narrative is very readable, full of interesting observations regarding the islands of Pacific Ocean and their inhabitants. Most of all it is a tale of whaling and is full of first hand descriptions of the life aboard a whaler. There are details not only of the whaling, flensing and trying but also of the daily work of sailing the ship, anchoring, etc. I found the book far more readable than 'Moby Dick' which was written about whaling during this same period and is now a classic. 'Whale Hunt' is illustrated with sixteen sketches of whaling by Robert E. Weir, a contemporary of Haley, who drew them as decoration for his own narrative of a whaling voyage on the barque *Clara Bell* of New Bedford in the same decade.

The *Charles W. Morgan* returned to New Bedford after 49 months away with only eleven hundred and fifty barrels of oil, a very poor voyage. Haley's share was \$400. “It had cost me, for my outfit and what I had drawn on the voyage about \$200; so I had about \$200 to show for my four years' work. Such is Fortune.” He shipped out on other voyages to both the Pacific and Arctic waters, in time becoming mate then, later, captain of whalers. Haley died of pneumonia in 1900 in Alaska where he had been selling food and equipment to the miners of the 1897 gold rush. Peter Worsley.

Publisher : The Travel Book Club, London, 1951.



A Never to be Repeated Offer
The MHA Christmas Celebration

Sumptuous Food
Premium Quality Wines and Ales
A Chance to See the Duyfken Replica

Free!!!! to MHA Members

(Associate Members \$10, Guests \$20)

At the Lotteries Duyfken shipyard, Fremantle
Tuesday 15th December
6:00 pm.



RSVP is Essential
Please advise us of your attendance by 12 December
B/H 9336 1606
A/H 9430 6457

MHA MARINA PROPOSAL

The Maritime Heritage Association's submission commenting on the Draft Masterplan for the Fremantle Waterfront has proposed the addition of a marina on the seaward side of the new Maritime Museum. We believe this would have very important benefits for the museum, for the public, the development of the waterfront area, potentially for Leeuwin, and even for the Fremantle Port Authority whose pilot boats could be based much closer to the harbour entrance.

For maritime museums it has long been seen as desirable to integrate with "real-world" maritime activities.

The new museum ought to have facilities to host vintage watercraft, visiting yachts of particular note, replica watercraft (notably *DUYFKEN*), and to operate some of its own collection. The whole environment of the museum and surrounds would be greatly enhanced by the presence of privately owned and maintained vintage watercraft, but to attract these vessels the museum or the authority in control of the area, would have to be able to offer safe, all-weather,

marina facilities at favourable rates. Ideally wooden boat repair and maintenance facilities would also be located nearby.

Such an arrangement helps to break down the problem of museums increasingly accessed only by tourists, not by residents who, as tax payers, are effectively the funders and owners of museums. Museums need to interact with the communities that host them, and to interact not only at the rarefied level of curatorial interpretation.

Visiting yachts such as the Whitbread racers could be berthed in the marina. They would be more accessible than at Fremantle Sailing Club. Such events would help to create the buzz of activity that is essential for the West End to work as a popular place to visit.

The marina could provide, for a fee, over-night berths for pleasure craft bound to and from Rottnest Island. It would provide the opportunity for private boat owners and tourist ferries to visit the museum. It would be a splendid venue for the Classic and Wooden Boat Show.