

AUSTRALIAN
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**The Bulletin of the Australian Institute
for Maritime Archaeology**

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EDITORIAL

Once again this newsletter is off to a late start, this being partially my fault but also due to late dead-lines. By now, you will all have been circulated a subscription order for \$4 for this and the next Newsletter No.4, which I hope will be produced at the end of the year. I need some working capital to cover printing costs. As you may know, there was a problem with the last issue in which I have still an outstanding debt with the printers. By the time you read this, hopefully all will be sorted out. I am quite surprised how difficult it is to produce these Newsletters and I must apologise for the quality of this edition, which is partially due to these financial problems.

The next problem is, when sending material for inclusion in the Newsletter, please send original drawings : poor quality photocopies will not do. I can get some redrawing done in the department, (Myra Stanbury has helped with this) but the responsibility is yours. If you do send original drawings, please mark them so, and make sure they are sent in a roll or stiffened envelope. I can get them copied photographically and returned in the next post. Also, I note the dreaded feet and inches appearing in reports. Please try and stick to metrics : archaeologists have been doing so for years, and I get the feeling Australia has yet to metricate underwater.

As outlined in the last Newsletter, I do not intend to include any detailed information on the work of the Western Australian Maritime Archaeology Department. In this edition I have included an article on registration, which I think may be opportune. If you have any suggestions of other subject areas that may be helpful, let me know and I will try and produce something. Otherwise, there is a brief report on the work of our department, together with reports from Tasmania, Victoria, New South Wales and Western Australia. I hope in the next issue we will have reports on the Sydney Cove, the Zeewijk and the Ningaloo site. Unfortunately, I have not been able to obtain anything from the Department of Home Affairs. I understand that the recent changes in personnel have created problems; I have been informed that they are interested in this Newsletter and will contribute to the next one.

It has been suggested that we may consider another Maritime Archaeology Conference, in perhaps 1981, possibly in Canberra or Sydney. This will take some organization but I will look into the possibility.

As this Newsletter goes to press we have a major excavation in progress on the Ningaloo site. This is the second excavation season, and Graeme Henderson has organized for various people from different states to work on this project. Hopefully, by the time of the next Newsletter, we may be able to announce the final terms of the reward to be paid to the finders of this wreck. We hope this will be a major breakthrough in terms of reward payments under the Historic Shipwrecks Act, 1976.

In the meantime, I am shortly leaving with a small 4 man team to S.E. Thailand to work on the Koh Kradat wrecksite, where we are hoping to find Thai ceramics rather than Thai pirates.

JEREMY GREEN

MARITIME ARCHAEOLOGICAL ASSOCIATION OF WESTERN AUSTRALIATHE 1978 MOMBASA EXPEDITION

For some years a shipwreck of great historic interest has been known to exist in Mombasa Harbour on the coast of Kenya, East Africa. In the early 1960's a few pieces of pottery and porcelain were raised and given to the museum at Fort Jesus.

The Portuguese Vasco da Gama first came to Mombasa in 1498, but his relations with the townspeople deteriorated rapidly. After just one week, the Portuguese thought it prudent to sail on to friendly Malindi where they established their first East African base. However, Mombasa's natural harbour soon attracted foreign attention and a Turkish expedition built a fort there in 1589. Fearing for the security of their route back to Portugal, the Portuguese attacked and took Mombasa in 1593, and began at once to build a large fort to guard the harbour entrance. The Portuguese regarded themselves as the representatives of Christendom rather than of Portugal, and for this reason they sailed under the flag of the Order of Christ. Jesus was therefore an obvious name for the new fort.

Its angular form dictated by the rules of military defence and an Italian architect from Goa, the Fort now lies tranquilly in the sun. But it was not always so. Fort Jesus has suffered a history of murder, siege, starvation, bombardment and treachery that makes our modern world of hijacking and thuggery seem quite tame.

In 1696 the Fort was besieged by the Omani Arabs who bombarded the Fort but made only one unsuccessful attempt to take it by storm. The Arabs were aware of the possibility of relief and the batteries set up around the Fort were intended also to hinder the entrance of ships which might land supplies and reinforcements. The siege lasted for 33 months and it was only through plague and privation that the Fort finally fell.

During the long siege, the mixed garrison of Portuguese, Swahili and African defenders sent to Goa for assistance on several occasions. Their requests were finally answered and a squadron under General Luis de Melo de Lampais was sent to relieve the Fortress. The significant fact is that after a series of misadventures, one of the relieving ships, the 42 gun frigate Santo Antonio de Tanna, sank very close inshore below the seaward Fortress walls. Historical accounts place this event in 1697. It is understood that the sinking was not a sudden affair and that some salvage of stores and material was carried out by the Portuguese before she was abandoned.

In 1970, the curator of the Fort Jesus Museum, Dr. James Kirkman, with the assistance of the finders of the wreck, initiated a small excavation to try to establish the identity of the wreck. The work was brought to an abrupt halt when the boat carrying the air compressor was capsized. However, the results obtained suggested that the hull remains might be those of the Santo Antonio de Tanna.

In 1976 Hamo Sassoon, a subsequent Curator of the Fort Jesus Museum, arranged for Dr. D. Frey and Robin C. Piercy to assess the site for further study. They confirmed that the site was of considerable interest to the International Institute of Nautical Archaeology. The Institute was invited to undertake the direction of the project by the National Museum of Kenya who in turn invited Jeremy Green, Curator of the Fremantle Maritime Museum, to bring a team to participate in the 1978 season excavation. Two members of the Maritime Archaeology Association of Western Australia, George Green and Conrad Groen accompanied the Museum Group. The entire team thus consisted of four members of the Institute of Nautical Archaeology, Texas, U.S.A., eleven people from Western Australia, four members of the British Joint Services and Wendy Turner, Senior Conservation Officer from the National Museum of Wales, Cardiff.

We were all housed in Fahmy Hinawy's spacious house overlooking Mombasa Harbour. The house is within 100m of our diving platform, a 27m ammunition lighter. It was close enough to the shore for connection to mains electricity, water and phone. The open hold of the lighter was decked over and two companion ways to the lower deck were installed. The large upper deck was completely shaded. At the bow a 160 cfm low pressure compressor was mounted providing air for the four airlifts as well as for four divers on surface demand. Two small compressors for filling tanks were also located in this area. A 2 x 3m office was provided at the stern allowing for all excavation records to be compiled and kept there. Provisions were made for a draftsman to keep an ongoing plan of the excavation up-to-date. Around the outside of the office there was ample space for material recovered to be sorted, registered and receive conservation first. before being sent to shore.

To cope with diver orientation in bad visibility and to facilitate recording of material a metal grid of 2m squares was laid over areas to be excavated. This system, however, was little help to the author who had difficulty in even finding the well marked wreck site on several occasions. Much to the dismay of the dive master, I had to surface to orientate myself and then follow the various hoses from the lighter to the bottom

The wreck itself is 40m from the shore and lies diagonally across a 30 degree slope from 13m at the shallowest to 16m at the deepest point. About 0.25m above the keelson and over a layer of ballast lay a rough light wood floor. Some of the most interesting finds have come from this area strongly indicating the presence of a bos'n's store. Two circular wooden bowl compasses were found under a large coil of rope. Lying nearby was an octagonal lamp. Other items from the area include wooden bowls, a wooden plate, two small wooden single sheave blocks, barrels, porcelain, buttons, a sailmaker's palm, a dough paddle, and several wooden ink-wells.

To expose the ship's structure in the centre it was first necessary to remove over 50m³ of ballast, which was overlaid with a layer of crushed barrels and hardwood logs. The barrels which may have contained water for the ship's company, lay along the axis of the hull and sloped where the first stern partition began. Other finds included a brass measure, a bronze breech block or chamber, a swivel gun, a glass onion bottle, Portuguese glazed bowls, olive jars, and a two handled cooking pot in coars earthenware. The author found a bright gold coloured coin,

unfortunately it was a Kenyan brass shilling dated 1952.

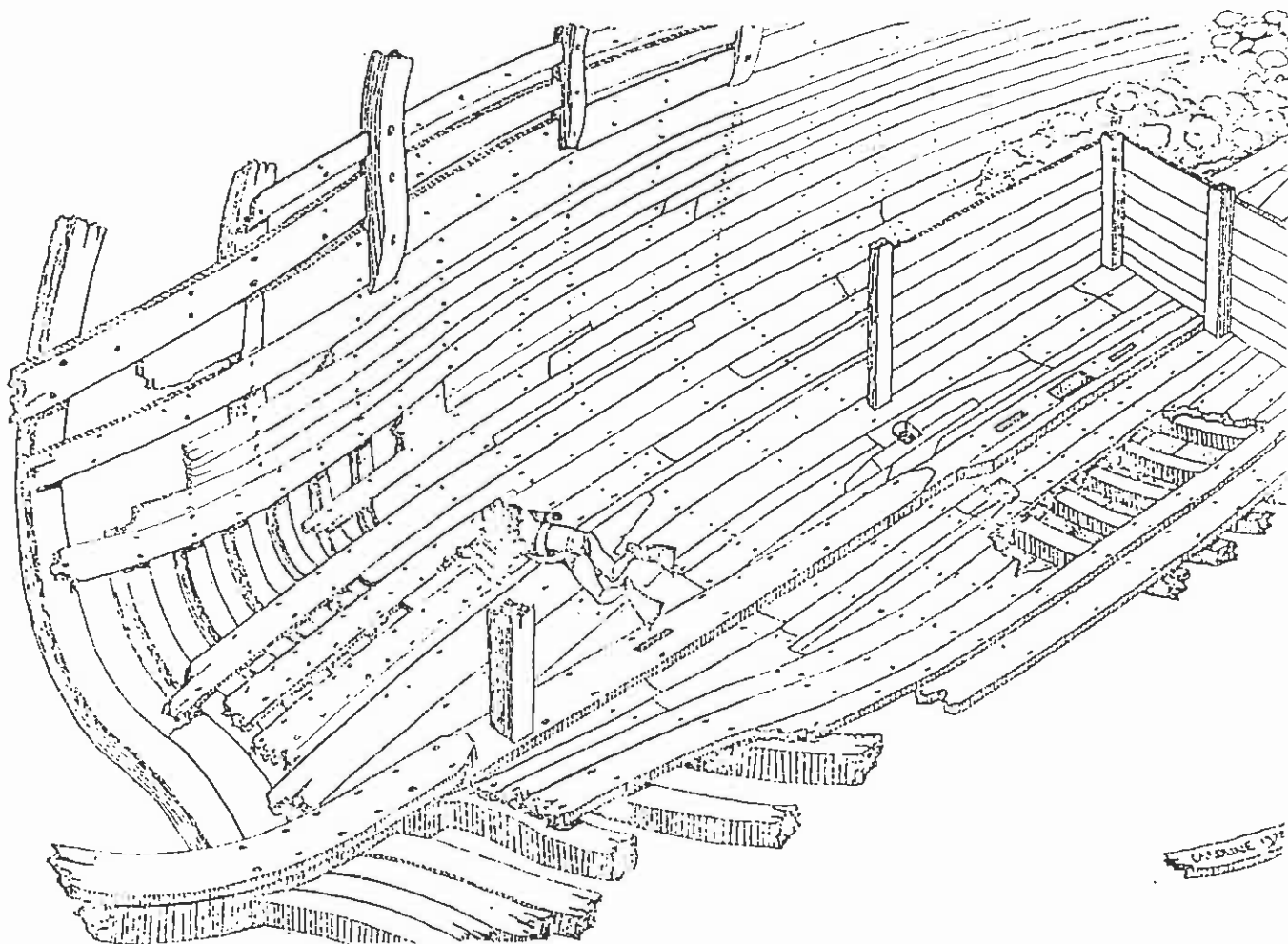
Because of the depth, most of us only made one dive per day. Most of the excavation was operated on a shift basis. The divers were divided into two teams : team A would dive in the morning and team B would dive in the afternoon. The following day, team B took the morning shift, allowing more time for divers to assist with photography, conservation and drawing, as well as seeing a bit of the ancient city of Mombasa.

I would like to thank Robin Piercy, leader of the excavation, for his hospitality in Mombasa and also for the details in this article which came from his Preliminary Report 1977, the International Journal of Nautical Archaeology and Underwater Exploration (1977) 6.4 : 331-347.

CONRAD GROEN 1978

Editors note:

This expedition was the Association's First Involvement in an International Project.



MARITIME ARCHAEOLOGY ASSOCIATION OF VICTORIAANNUAL REPORT 1979

Since its inauguration on 29th August, 1978, the Association has gone through the usual problems of a new organisation. From an initial interest of nearly fifty people, the Association has reduced to fifteen dedicated members, and is now developing a direction under President Dave Carroll.

The initial interest shown by the greater majority of divers in the M.A.A.V. seemed to stem from the idea that if they didn't join, they would miss out on "good wreck dives". These divers soon learnt that the organisation was not simply dedicated to having a good time on a new wreck each weekend. The first exercise was a dive at the anchorage off Williamstown - in five feet of water. The idea was to learn underwater and surface surveying, and to develop a procedure for recording any artifacts that were collected - even 'insignificant' items such as broken bottle tops, clay pipe and pottery fragments. The exercise (there were three sessions over several weekends) however, had a much more beneficial effect - it weeded out those divers who were not really interested in learning even the basic techniques associated with maritime archaeology. Those that saw the value of such basic instruction stayed on.

In many respects, the Williamstown exercise and the subsequent exercise on the Hurricane and the City of Melbourne were a case of the blind leading the blind as no qualified or experienced maritime archaeologist was available in Victoria to assist or guide the Association. President Dave Carroll had worked on the initial discovery team and first survey team of the Sydney Cove, and what experience he gained there was put to good use.

After the Williamstown exercise, membership reduced to 24. During 1979 meetings were held on the average of once every two months, with one practical exercise once per month. The Hurricane was chosen as a survey wreck but because of access, and the fact that items are still recoverable, it was difficult to organise effectively. Many of the early divers still had the notion that they were on a scavenge hunt. The City of Melbourne is not one of your pleasant weekend dives, and served the purpose admirably. The ship was burnt, exploded and is spread over a wide area in little more than ten feet. This gave the Association a good practical working wreck in which to practice methods of underwater survey and recording. One exercise on this wreck was held during the latter part of 1979 - a further exercise will be held in January.

The major problems that the Association encountered during its first full year of operation are included here for the interest of any new group that may be inaugurated in other states or locations.

1. The initial problem was the objectives of the Association. "Just what do we do?" was the question asked by most people. Because Victoria does not have a Batavia, a Pandora or a Sydney Cove, it took some convincing that there was still a need for a responsible 'wreck diving group' to put it basically. Once it was established that there was a very great difference between an amateur wreck diver and an amateur maritime archaeologist, the direction of the Association toward education in the first instance was established.

2. Because of the great number of initial members, the Association was concerned about the diving capability of each member. This has sorted itself out because of the reduced number of people now involved and has ceased to be a problem. The Williamstown project was ideal for the 'unknown' diver for if he got into difficulties he could simply stand up. We now realise that the problem of diver experience was not so critical as any initial work we were to do was only in shallow water. With new members, it is quite easy to determine their experience - this however, is usually known even before the member joins.

3. Victorian wreck divers are notorious scavengers - but this is probably no different than any other state. The major problem in Victoria is the great number of divers who visit the one-hundred-odd accessible wrecks within easy reach of Melbourne. Unlike many of the controlled sites in Western Australia, or the inaccessible sites (generally) of the Sydney Cove and the Pandora, it is impractical to leave any item on the site and expect it to be there the next week. This even applies to any markings, star-pickets etc. Therefore, all projects must be completed in daily stages.

4. Following on from the above point, if a diver comes across something of interest, he is obliged to raise it as it will no doubt disappear onto the mantlepiece of the diver right behind him. This means that conservation procedures and recording procedures need to be established immediately. Unfortunately, Victoria has very little in the way of conservation facilities although Flagstaff Hill Maritime Museum is basically adequate and Polly Woodside Museum is establishing a conservation Laboratory.

5. Dive and meeting locations was a problem, particularly considering the great number of divers in the Geelong area, more than sixty kilometres from Melbourne. Consideration is being given to a 'branch' in the Geelong area - the problem being the possibility of becoming too fragmented.

6. The sheep problem was predominant - most divers prefer being led rather than show some initiative themselves. Many ask "whats on next" rather than make any suggestion or contributions. This problem is partially over, now that member numbers are less. During 1979, the initiative and leadership of Dave Carroll and one or two other members was the only think keeping the group going.

These problems are now hopefully in the past, and the Association can look forward to a much more productive and rewarding year in 1980.

Activities and involvement for 1979 included:

1. Practical exercises at Williamstown and the wrecks of the Hurricane and City of Melbourne; objective of gaining experience in underwater survey and recording.
2. Raising of anchor from Loch Ard for the Loch Ard Centenary on request of the Victorian Government. (The anchor is now at Flagstaff Hill undergoing conservation prior to mounting at Port Campbell).
3. Saving a cast and wrought iron ships wheel from the Will O the Wisp from deterioration by obtaining its release from the finders, and storing it in fresh running water until conservation procedures could be determined. The wheel is now with the Polly Woodside Museum.

These activities and achievements are basic but have helped in establishing the Association.

The Association has liaison with the Flagstaff Hill Maritime Village and the Polly Woodside Museum. It will assist the latter to establish a particular 'wreck and diving' section of the museum. Subject to confirmation, the Association will be holding its monthly meetings at the Museum during 1980. This will give the Association a greater link with the Museum.

Objectives for 1980 are to continue to gain experience in specific techniques, and to commence a major research project for all members. The establishment of a Register of Relics has been encouraged by the Polly Woodside Museum.

Office bearers of the M.A.A.V. for 1980 :

President	:	David Carroll
Secretary	:	Peter Stone, 45 Albert Street, Upper Ferntree Gully, Victoria, 3156
Treasurer	:	John Goulding.

The Association is affiliated with the Scuba Divers Federation of Victoria and has co-operated with the Federation on projects of mutual interest, e.g. The Wreck Diving Seminar.

MARITIME ARCHAEOLOGICAL ASSOCIATION OF NEW SOUTH WALES

HISTORIC SHIPWRECKS ACT 1976 : This Act was declared in N.S.W. on April 12th, 1979. The Wreck of the Ballina was declared on the same date.

P.S. BALLINA PROJECT :

Approval was received from the Federal Minister for Home Affairs for Project Leader, Mike Richards to lead a Survey and Recording Expedition on the Ballina. This Expedition visited Port Macquarie between October 19th and 23rd, 1979 and has subsequently received a letter of commendation from the Minister for the high standard of the first report and relevant drawings.

As well as drawings of the wreck-site a total of seven recommendations on further action were placed before the Minister for Home Affairs and it seems certain that these will shortly be adopted. This will allow an on-going programme entailing further expeditions and some recovery of artifacts. Proper conservation is likely to be under the auspices of the Museum of Applied Arts and Sciences. The existing drawings will allow searches of specific areas with greater possibility of location of significant items.

P.S. PHOENIX PROJECT : (Project Leader - Paul Soares)

This vessel, built in 1846 by Thos. Chowne in Sydney, was fitted with the machinery salvaged from the Sophia Jane when that vessel was broken up.

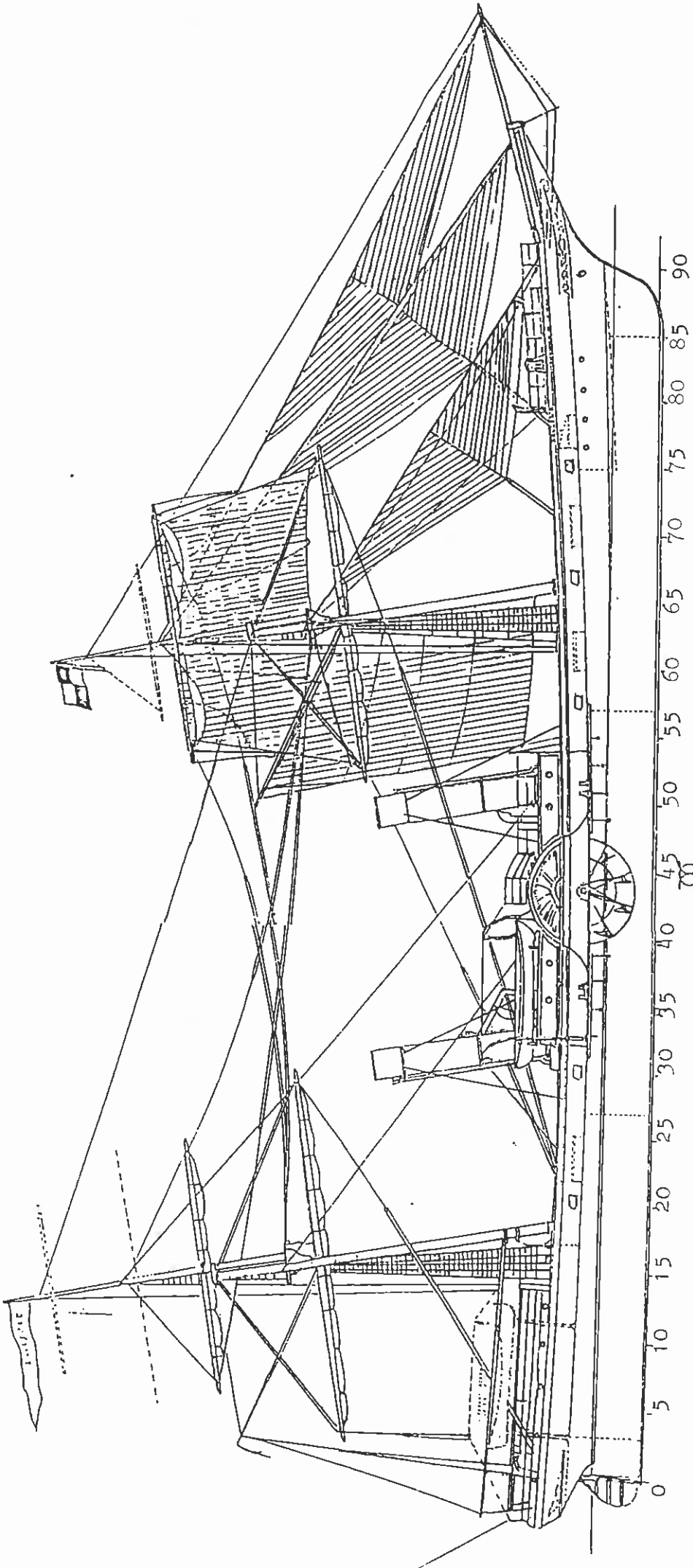
The Phoenix was wrecked on April 14th, 1852 on the Clarence River bar and research is already underway to discover the present location of the wreck.

If the wreck-site can be found and correctly identified then it is thought that action to recover and conserve the engines would be rewarding. The engines are unique in that they were the first marine engines in Australian waters.

S.S. HILDA PROJECT : (Project Leader - K. Stoeger)

Various newspaper reports early in 1979 referred to a "newly discovered" wreck in Botany Bay thought to be the S.S. Woniora. It is now thought that the wreck is more likely that of the S.S. Hilda, however, to date nothing to positively identify the vessel has been found. The confusion exists because of the similarity of the two vessels seen in the comparison below :

<u>VESSEL</u>	<u>S.S. WONIROA</u>	<u>S.S. HILDA</u>
Type :	Collier	Collier
Built:	Newcastle, 1863	Glasgow, 1878
Sunk:	1882	1893
Engine:	Single stage 2 cyliner	Compounded 2 cyliner
H.P.:	90	55
Condenser:	Jet or Spray	Surface Type



Scale in Feet
 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90

RIGGING PLAN (AS BUILT) OF
THE CLARENCE AND RICHMOND RIVERS STEAM NAVIGATION COMPANY'S
PADDLE STEAMER "BALLINA" Off. No. 52707

Built 1865 on the Tyne. 299 G.R.T. 80 N.H.P.

LEP 179.4' B.M. 24.0' D.M. 9.6'

Total wreck 14.2.1879 at Port Macquarie New.

Drawn: M.P. Richards 2.12.1979

<u>VESSEL</u>	<u>S.S. WONIROA</u>	<u>S.S. HILDA</u>
Dimension:	141' 20' 10'	125'2" 21'2" 10'7'
Tonnage	226 G 160 N	222 G 135 N

Since December 1979 six dives have been made on the wreck with the assistance of John Sumner and Henry Roda. There is an enormous amount of growth around the engine, making it a very time consuming job to identify anything. A layout of the wreck-site is being prepared but unfortunately dirty water has so far prevented a photographic record. The stern section is lying closest to shore by evidence of the rudder post and propeller shaft. The engine appears to be laying on its star-board side and remains alongside the boiler and winch machinery.

Items recovered, conserved and photographed are:

1. Three gauges : Photographs of these with the serial numbers have been sent to :
 - (a) Marine Engine Manufacturers Association
 - (b) Ship and Boat Builders National Federation
 - (c) Maritime Trust, U.K.

It is hoped that identification of the vessel will thus result.

2. Strainer box 10 $\frac{1}{2}$ " x 10 $\frac{1}{2}$ " x 6" high., $\frac{1}{4}$ " thick, 35lbs weight. Perforated - made of lead.
3. Square lid for Strainer box - not perforated, made of lead.
4. Brass piece 10" with 5" diameter box. Shaft cap believed to have had a pressure release valve.
5. Small bilge pump, taps, valves, bearings and two bearing blocks marked F5 and F6.

THE "ROYAL SHEPHERD" 1853-1979

In the year 1853 Messrs. Blackwood and Groden, at Paisley on the firth of Clyde in Scotland, built two ships for the Launceston and Melbourne Steam Navigation Co., for operations in Bass Strait. One of these was O/No: 31714, "Royal Shepherd", the other being O/No: 32181 "Black Swan". (The "Black Swan" is mentioned because she was a similar but no identical vessel to the "Royal Shepherd") both steamers were also engined by the builders, apparently from designs by Messrs. John Penn and Son, of Greenwich, who held patents for the design (P.92 of "The Great Britain" by Rowland).

Little is known about the day to day operations of the Royal Shepherd in her youth but some references are extant; (p.55) she was known to take up to 48 hours between Melbourne and Launceston although the Black Swan - also 60 hp - had made the trip occasionally in seventeen hours.

At 9.30 p.m. on the 1st September 1858, near Port Phillip Heads the Royal Shepherd was in collision with the 824 ton ship Formose off the upper light vessel in the west channel. The Shepherd was struck on the Starboard side just abaft the fore rigging, causing damage to one plate, and breaking her fore topmast short off at the cap. The Formose was outbound for Hong Kong but the Shepherd's destination was not mentioned (Shipwrecks at Port Phillip Heads - by Williams, p.21).

In 1865 the Tasmanian S.N. Co. entered the Melbourne trade, later taking over the L & M S.N. Co., together with its ships. These included the Royal Shepherd and Black Swan. The Black Swan was sold in 1868 to the A.S.N. Co., and about this time the Shepherd probably ran for the T.S.N. Co. later she was sold to a syndicate of nine, trading to Spencer's Gulf (p.6 "Fitted for the voyage" - M. Page) the three vessels in their fleet provided a regular and convenient service for passengers - the Shepherd could carry 50 - and freight. They were steered from aft in the time honoured way and their winches were also hand operated: only the main engines were steam.

In 1876 the syndicate became formalised as the Spencer's Gulf Steamship Co., Ltd. which remained autonomous until 15th December 1882 when it amalgamated with the Adelaide Steamship Co., and the fleet which included the Royal Shepherd came under that Company's flag. It soon became evident that they could not keep every ship in full employment, and at various times in 1884 and 1885 they instructed Eldred, the Sydney Shipbroker to sell the Royal Shepherd for £2800 and five other ships for much more. As it turned out, Eldred was only able to sell the Shepherd, and it took him a year to unload her; she realised only £800, which displeased the Adelaide S.S. Co. greatly.

Before her sale, the Shepherd figured in an early claim for worker's compensation when a seaman, George Bezique lost his foot in a berthing accident at Wallaroo: Captain McCoy described the event as "due to the man's own carelessness" and when the hospital claimed for their treatment the Company disclaimed liability, saying that the man had been paid off. Later they relented, bought him a cork foot and hired him as a watchman. (p. 53 "Fitted for the Voyage").

The Royal Shepherd was first registered in Sydney in 1885, owned by one J. Mitchell, but this sale may not have been finalised as we have seen that Eldred did not sell the ship on behalf of the A.S.S.Co., until 1886. In June of that year the registered owner became H.J. Cattnach, trading as the Carranach Chemical Co. A Sydney newspaper report at the time of her loss stated ".... is said to have been employed in the cattle trade for a shile. Eventually, she was laid-up and was subsequently bought by the Cattnach Chemical Co..." This could have been a charter while awaiting sale, possibly for Mitchell, the report goes on: ".....and was used for the conveyance of refuse and sewage from the city (to) outside the heads. Circumstances led to her changing hands, and she was bought (by C.G. Warburton in October 1889) at an Auction sale held at the Cattnach Chemical Works at Johnsons Bay. Messrs. Warburton & Co. bought her and at once put her in the coal trade". She was insured for £800 so apparently held her value. Three months later, in January 1890, she was registered to W.A. Firth, but she was still under the management if not ownership of Warburton at the time of her loss on July 14, 1890.

The Royal Shepherd was out-bound from Sydney towards South Bulli and Bellambi to load coal, and had to schooner "Countess of Errol" in tow for Wollongong. The master of the Shepherd Thomas Hunter, reported thus:

"It was a fine night, comparatively smooth sea, and clear starlight overhead. We reached the heads about 11 o'clock and soon after, when we were between the Gap and the inner light the steamer Hesketh ran into us on our Port side, cutting us right down halfway into the midships of the vessel. She struck us two or three feet abaft our red light. The Royal Shepherd had a long hurricane (or upper) deck and besides the smoke stack there was a donkey engine funnel amidships. This funnel was knocked down by the stem of the Hesketh, showing the terrible cut she made in the vessel's side when she struck her. The boat hanging in the davits was carried away by Hesketh brushing alongside..... The wind was light to fresh W.N.W. at the time, and the distance off shore about half a mile..... The accident took place too close inshore to be seen from the signal station. The Royal Shepherd sank in between five and ten minutes, after the Hesketh crashed into her". Not un-naturally, the evidence from the Hesketh did not entirely agree with the above.

ASSESSMENT OF THE VESSEL :

The Royal Shepherd was a two masted topsail schooner with a single raked funnel - a vessel of conventional appearance for the period. Her iron hull would have been clincher built on ordinary angle iron framing arranged "frame and reverse" i.e., two angles rivetted together back to back as in the letter Z. The deck beams would have been ordinary angle irons with laid wood decking, similar to that on the tug Waratah.

Machinery - to the design of John Penn - was very similar to that fitted to the great iron ship Great Britain during her re-build of 1850-1852. These engines do not appear to have been technically advanced for this period, representing instead, tried and proven practise. They were neither 'efficient' nor economical and the type they represented was shortly to be rendered obsolescent by the use of higher pressures allowing the utilisation of the expansive properties of steam in compound and, later, triple expansion types of engine.

Of special interest is the fact that, when the vessel was built, the principle of the stern tube had not yet been invented, and thus the means employed to keep water out of the vessel will prove of much interest to many. Similarly the means of transmitting the propellor thrust to the hull at this period is but little understood, as the multi collar type thrust block that served later ships is not in evidence: possibly it, too, awaited invention in 1853.

Summing up, the Royal Shepherd was a fairly typical small iron passenger coaster, not spectacular in design, build or performance. She reliably served many owners in diverse places and trades for nearly forty years, descending the social scale progressively from passenger and general cargo to tramping, cattle boat, and garbage scow. Her last employment at least was a promotion to collier: a familiar story to ageing ships overtaken by technology. In an age of rapid technological progress, she preserves for us a time capsule of a little understood era when old fashioned and worn records followed suit as "rubbish". As a screw steamer

from the middle of last century she alone survives, and the Ballina complements her as a paddler.

M.P. RICHARDS.

The presence of a wreck in 90 feet near South Head, Port Jackson, was revealed to the M.A.A.N.S.W. in February 1979. Since then the Association has visited the site several times with teams of up to 20 divers.

The wreck, The Royal Shepherd sunk after a collision in July 1890. The first visits were familiarisation and to obtain photographs and measurements to produce a drawing to record the site. Photography has been a problem throughout the year, reduced light at 90 feet, dirty water and stirred up sediment limiting results to close-ups of details on the engine and pump. Measurements taken were used to produce a general arrangement drawing which is used to brief divers and save time orienting themselves in the poor diving conditions. The drawing of the engines was produced over a number of dives to record it in case of damage and to locate the position of close-up photos taken of the fittings on the engine. Further work on the site has included experimenting with on air-lift to move sand from around the boiler. The site is used to familiarise new members with wreck sites.

The site being close to Sydney Heads has the advantage of easy access but suffers from low visibility and is not diveable in southerly weather. The depth of 90 feet poses problems to divers

The Royal Shepherd will continue to take up a major part of the Association's time and further work on the site will include probing forward of the boiler to locate the bow section under the sand. Further air-lifting and photography.

DESCRIPTION OF WRECK SITE :

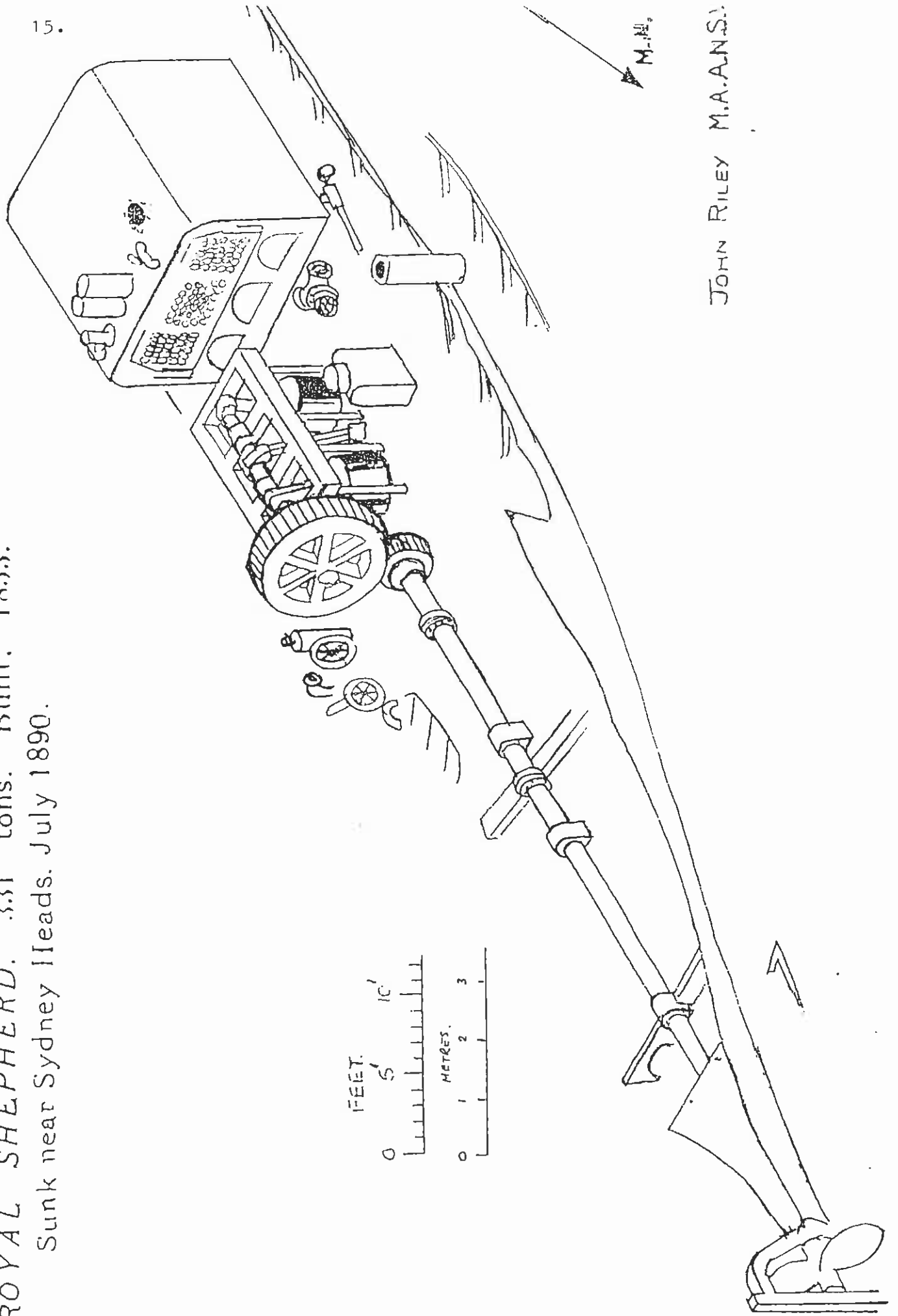
The Royal Shepherd lies on flat sand at almost an even keel in 90 feet. A box type boiler being the most forward visible part of the wreck except a winch 40 feet further forward.

A twin cylinder oscillating engine with its reduction gear is intact with its fittings. The propellor shaft is complete and leads through three plummer blocks to the stern tube and propellor which has the stern and rudder post around it. The remains of the hull can be seen from the stern to the boiler. A pump lies to the port of the engine. A hot well and large steam valve lie to the starboard of the engine.

JOHN RILEY

S.S. ROYAL SHEPHERD. 331 tons. Built, 1853.
Sunk near Sydney Heads. July 1890.

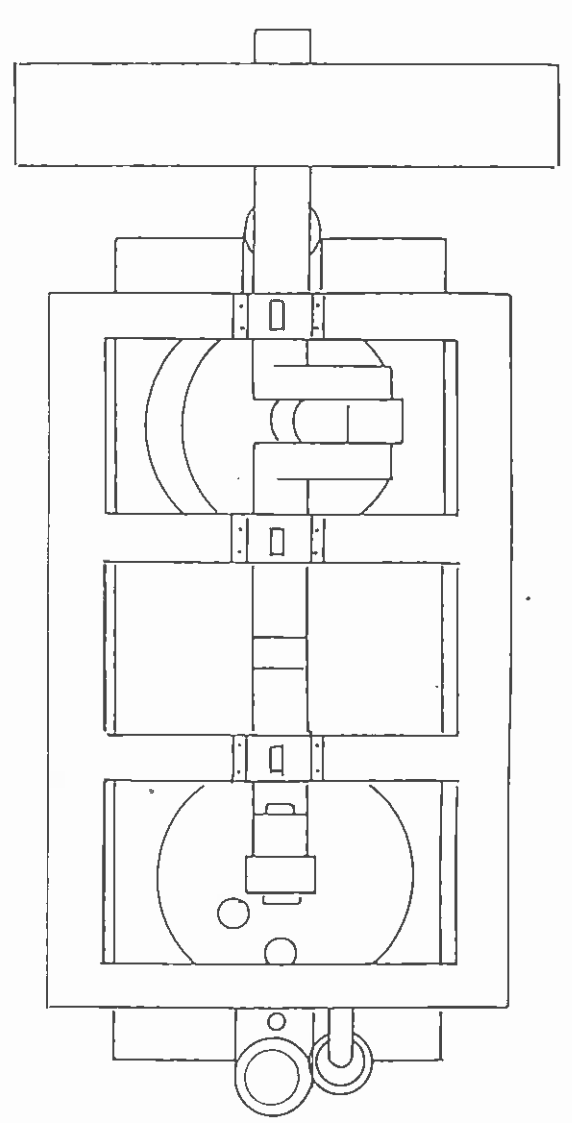
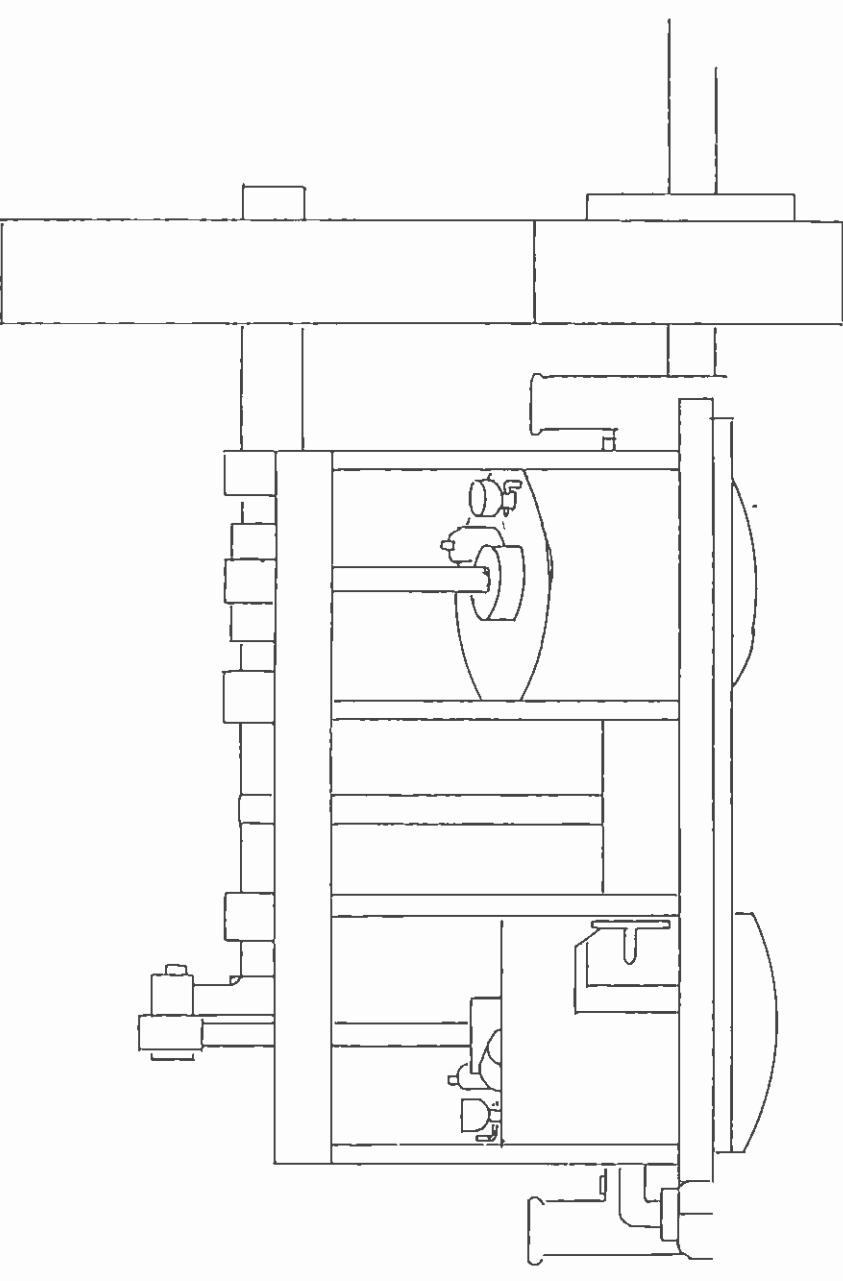
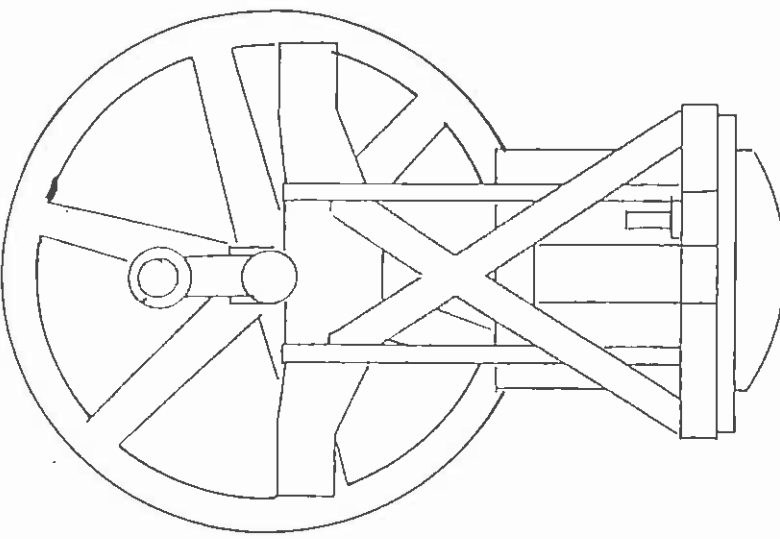
15.



JOHN RILEY M.A.A.N.S.

JOHN RILEY M.A.N.S.W.

ENGINE. SITE No 7965.
ROYAL SHEPHERD.



MARITIME ARCHAEOLOGICAL ASSOCIATION OF TASMANIAREPORT ON UNDERWATER ARCHAEOLOGICAL POTENTIAL OF
MASONS COVE AND WATERS ADJACENT TO THE ISLE OF
THE DEADINTRODUCTION :

Stewarts Harbour was first surveyed in January 1828, and was recommended as a suitable site for a penal settlement. Captain J. Welsh and the surveyor, Mr. R.A. Roberts, suggested the name "Port Arthur" in respect of the then Governor, Sir George Arthur.

Settlement began in September 1830; Port Arthur eventually replaced Macquarie Harbour, Maria Island and Norfolk Island as the main convict settlement. Upwards of 30,000 convicts passed through the peninsula during the 47 year occupation. The settlement finally closed in September 1877.

AIMS OF INVESTIGATION :

Day 1. : To ascertain if any relics remain below waters adjacent to the Isle of the Dead. In particular, to examine the suggested landing site on the island and the areas adjacent to the grave digger's house in order to establish if any historical material is present.

Day 2. : To determine if any relics are present in waters adjacent to the Port Arthur slipway. It was considered an area of high potential due to the ship construction procedure of launching vessels when the hull was completed, and fitting the ship out while at anchor.

The area to be examined was also in the proximity of what was probably the main anchorage for vessels visiting the port.

PERSONNEL AND EQUIPMENT :

There were 18 persons who attended, 12 of whom were divers :

Equipment consisted of :
 1 sixteen foot runabout
 1 twelve foot dinghy
 1 site plan of Port Arthur
 1 hydrographic chart no. Aus 174
 divers supplied their own diving equip.

DIARY :

Day 1. : Saturday, 12th May, 1979

All persons assembled between 9 and 10 a.m. Twelve divers and six non-divers attended. Ferried to the Isle of the Dead. Dinghy was moored exhibiting international code flag A. The suggested landing being a section of flat rock on the north east point was very carefully examined underwater. A line search from the north east point south to the boat jetty was undertaken. A sweep search was then started from the north east point around to the jetty. Opposite the location of the grave digger's hut, the area was searched thoroughly.

All diving was collaborated with Mr. Lord, the historian on the Isle of the Dead. Weather was windy and cold. Visibility underwater was good.

Day 2. : Sunday, 13th May, 1979

Rendezvous was between 9 and 10 a.m. Four divers and six non-divers attended. Divers operated from boat and shore, and commenced individual search patterns. Dinghy was moored exhibiting international code flag A. Relics were recovered and are located on the site plan (see Appendix ii), provided by K. Trebilco. Non-divers were employed on research of the slipyards area of "Lithend". Although visibility underwater was good, the weather was very cold and wet. This prevented any measurements from being taken. To this end the site plan should only be considered as approximate.

FINDINGS :

Day 1. No objects of archaeological significance were found.

Day 2. The shipbuilding area at "Lithend" is still visible as evident by the remains of the slipway. Log sleepers and log slips are visible with two lengths of railway iron attached.

Rocks that lie along the foreshore have been cleared directly in front of the slipway. It is evident that rocks have also been cleared underwater between the shoreline and to a depth of approximately 2 metres, extending about 10-15 metres seawards. A rocky slope with no weed extends a further 20 metres and to a depth of 6 metres. Within this area, artifacts were discovered; they consisted of stoneware bottles, glass bottles, pulley sheaves, broken bottles, bricks, iron and crockery. A silty sand bottom with weed and scattered rock extended a further 10 metres and to a depth of 8-9 metres. In this area, more bottles were found along with another pulley sheave, a copper nail (unused) and an iron structure with copper sheets enclosed, each sheet measure approximately 600mm x 600mm.

CONCLUSIONS :

Day 1. : Although no relics were found on this occasion, it was still a worthwhile project for the Association. The dive has determined that there are no obvious relics lying in the water adjacent to the Isle of the Dead.

Day 2. : From the small sample of artifacts raised to provide an example of the potential of the area adjacent to the slipway, the area's potential to provide an excellent collection of ship building materials and general artifacts is obvious. The finding of artifacts such as the pulley sheaves and the 'copper sheeting' indicated that the ships when launched were fitted out while at anchor in this area. With only two divers hours being logged on this day, the area has potential for any items of historical value.

RECOMMENDATIONS :

It is recommended that:

1. The waters around Port Arthur historic sites need to be

further investigated for their archaeological potential. It is suggested that areas of prime interest would be :

- (a) Jettys such as those at Long Bay, Opossum Bay, Carnarvon Bay and Masons Cove.
 - (b) Slipways
 - (c) Landings
 - (d) Anchorages
 - (e) Refuse dumping areas.
2. Background historical research is undertaken to establish areas of potential.
 3. Waters adjacent to the historical areas of Port Arthur be afforded the same protection as are the historic ruins of the settlement itself.

ACKNOWLEDGEMENTS :

We wish to thank the National Parks and Wildlife Service and in particular Mr. D. Mifsud, Senior Ranger at Port Arthur, for their assistance and the use of facilities.

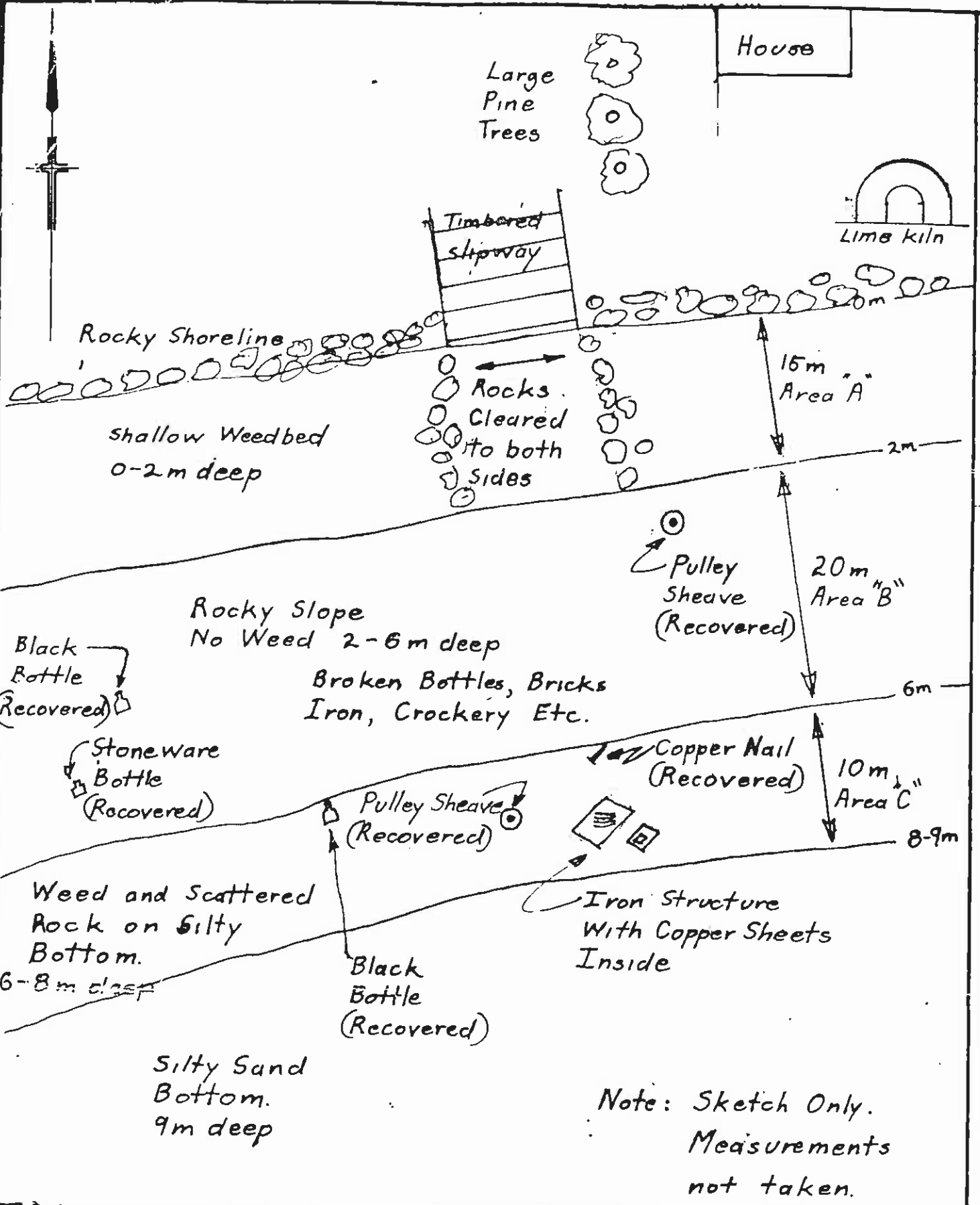
APPENDIX i - Objects recovered

<u>CODE</u>	<u>DESCRIPTION</u>	<u>LOCATION</u>
Slipyards 1	Copper spike with broad arrow mark	Area C
Slipyards 2	Half copper spike	Area C
Slipyards 3	Section of copper sheeting	Area C
Slipyards 4	Glass bottle	Area C
Slipyards 5	Glass bottle	Area B
Slipyards 6	Glass bottle	Area B
Slipyards 7	Stoneware bottle	Area B
Slipyards 8	Stoneware bottle	Area C
Slipyards 9	Stoneware bottle	Area B
Slipyards 10	Pully sheave	Area B
Slipyards 11	Pully sheave	Area C
Slipyards 12	Copper pully	Area C

Refer appendix ii

We have left any artifacts that we cannot readily conserve in situ. Artifacts recovered are being kept at Port Arthur. They are being stored in freshwater to prevent further deterioration awaiting conservation.

Consideration should be made to asking the Curator of Conservation at the Queen Victoria Museum and Art Gallery to either have the Museum conserve the items raised, or to obtain advice on how they can be conserved.



PORT ARTHUR SLIPWAY
 INVESTIGATION
 MAY 1979

MARITIME ARCHAEOLOGICAL
 ASSOCIATION OF TASMANIA

Scale	1 : 500 approx
Drawn	K.T.

CATALOGUES AND REGISTERS

The problem with any system of cataloguing is that it nearly always gets bigger as time goes on. In the end, if the catalogue is not carefully thought out, it gets bogged down in a morass of data, from which it is impossible to extract information. Therefore, when a system of collecting information starts, a great deal of thought must go into the organisation of this information.

In Maritime Archaeology, there will be a number of areas where catalogues or registers will need to be established. These range from artifact registers to slide collections. The basic group dealt with here are:-

1. Artifact catalogue
2. Wrecksite catalogue
3. Photographic collections (black and white)
4. Photographic collections (colour)

ARTIFACT REGISTRATION AND CATALOGUES

Every artifact that is recovered from a wrecksite must, in some way, be registered. If this is not done, valuable information will be lost.

It is almost inevitable, that in the early days of a maritime archaeological project, this tends not to be done, or it is not done properly. As a result, untold confusion will occur in the future. Often, at a later date, one is faced with a box containing a completely unknown object, which is unregistered. This is worse than useless, since if one does not know its provenance, it may as well be discarded.

Registration should take place immediately an object is brought to the surface. If a dive is planned on a wrecksite, it is important, in case material has to be raised, to have made adequate preparations for registration. Depending on the circumstances, a field notebook of some sort should be on hand, with some form of labelling: Dymo or prepared PVC tags, a water-proof felt topped pen, monal wire or nylon fishing line can be used. The object of the operation is to stop the process of throwing the bag of artifacts down in the bottom of the boat and forgetting about them. Information is soon forgotten if the divers are not debriefed and the artifacts registered. It may be a matter of simply giving numbers 1-100 to objects and putting them in numbered polythene bags. The data is then entered in the record book, noting particularly where on site an artifact was found. Location here is the essential information. Thus, at the first level, we record where an object comes from on the site; this is the hardest to implement in practice.

The second level is the main registration. This is done in the laboratory or office situation. At the end of an expedition, the material is brought in with the field notes and registered. The registration consists of a number to identify the object and a prefix to identify the site. Thus we use BAT for Batavia, GT (for some unknown reason) for Vergulde Draeck etc. The prefix, then, can be used to identify the site. It is also helpful to sub-divide objects into material groups. This may not seem

essential at first, but with large or growing collections, it is extremely helpful to have a simple obvious classification system. In our system, the first figure of the registration number refers to the material type. The types include : ferrous, non-ferrous, ceramic, wood, stone, coin, and miscellaneous. The coin is included as in this system, when they occur in large numbers, they completely bog the non-ferrous section down.

The Registration book has following entries :

1. Registration number
2. Date collected
3. Description of object
4. Photograph numbers
5. Field collection number
6. Location on site.

It is often merely necessary to register groups. Thus, 5879 musket balls, coming from one particular area can be given one registration number. Obviously, 5879 musket balls coming from, say 10 different areas can better be registered with 10 registration numbers, giving grid square locations of groups. In this way, one could look for patterns in distribution of say, size of balls. Possibly large ones came from one grid square, thus indicating something about packing. Hence, registration has to be a compromise between the practicality of registering 5879 musket balls, and saving unrealised information. Ideally, the registration number should eventually be written in ink on the object. However, where conservation takes place, it is better to give the object a tag and keep it in a bag until the work is finished. The biggest problems with registration are the following : firstly, ensuring that registration is carried out as soon as artifacts arrive in the process area. On big expeditions this is done in the field; whereas on mobile expeditions, the problem is to ensure that on arrival home the registration is done as soon as possible. Secondly, systems of registration compatible with conservation techniques have to be thought out; thus, mesh bags with loose ceramic sherds, say 50, given one registration number can be treated far more easily than 50 mesh bags or bagged individual sherds. Thirdly, big things often get forgotten; the number of unregistered cannon and anchors we had was surprising, until we started to sort them out. After conservation, final registration is carried out. The object is checked against master register and field register to ensure it is really the same object. Tags often get confused or put on the wrong thing. Additional details can be filled in such as photographs of objects before and after conservation, drawing photograph, any information that has appeared or disappeared from the object. The registration number should then be inked in on the object, in a discreet but obvious position, in small neat writing. The surface may have to be prepared to take ink, and the ink should be varnished over. Indian ink (obviously) should be used (white or black). We have been experimenting with Pelikan-Rotring etching ink for marking objects before conservation. Ordinary Pelikan TT ink is not waterproof on most objects, particularly ceramics, and the etching ink has produced encouraging results. However, beware - it dissolves rapidograph pens, and should only be used with mapping pens. Finally, the object goes into a box, with a dymo tag with the registration number, and this hopefully should be th

end of your problems. However, in display situations, try and arrange to display registration numbers on the display labels. Often it wastes days of maddening work, trying to find out the registration number of an object in a display case.

In general for research purposes, where you want to work on information, one does not use the register, as this acts as a master reference system; here cards are really useful. We devised a multipurpose card, which is ideal for our work. Note also, the location of the object can be recorded on this.

The cards act as a research tool, and a reference on a day to day basis. The registration books are more a master or archival source. It is well worth getting the books and cards printed so that your registers can be standardised.

WRECK CATALOGUES

Anyone carrying out archival research on wrecksites, comes across from time to time, references to wrecksites. It will be really handy to have a system of recording these wrecksites and their references. Graeme Henderson has built up a card index within the department which includes over 1000 wrecksites. Essentially, this has become one of the most important research tools of the department, serving the wreck report and wreck inspection programme. Essentially, most of these wrecksites are undiscovered and once discovered another system is introduced.

In the card index, various types of information is listed: the ship's details: the name of ship, date of loss, type of ship, tonnage, cargo, master, owners: the location; usually vague, but approximate position, latitude and longitude, relevant admiralty charts of area; the references; the source or sources of information.

This catalogue is then used in conjunction with the charts marking wrecksites in known geographical areas. Again, the use of this system is enhanced by systematic recording, and ensuring that the work is kept up to date.

PHOTOGRAPHIC CATALOGUES

Photographs become useful only when one can relocate the negatives. My household situation is probably not much different from some. We have about 100 colour negatives, and there are negatives everywhere, and it is complete chaos. I neither know what has been taken or where to find the negative if I did. In contrast, I can say that the 36000 individual black-and-white negatives in the Maritime Archaeology department are highly organized, and very easy to locate. The negatives are kept in standard SAGA neg files; these are compact and robust neg holders. Unlike the Patterson sheet holders, these can be carried around individually without risk of damage. On the outside of each neg file is the file number, the date and subject matter. The neg files are stored in groups of 100 in a metal drawer cabinet, in numerical order. The negatives are also contact printed and pasted into a binder book, roughly 200 sheets to a book. This then, acts as our reference system. A person

wanting a particular photograph, can browse through the contact sheet book, locate the photograph or photographs, nominate the film and frame number and then go directly to the negative storage cabinet. Again, it is important to ensure that the photographs are properly described. Thus, on the page opposite the contact sheet, it is really worthwhile noting what the frames show. Whilst it is possible that today, or in a few months time, you may be able to remember what the photograph is all about, will you in ten years time, be able to remember? what happens when you leave?

The beauty of this system is of course, the negatives are stored in proper conditions in a central area. One can have a master contact sheet book, and then, a particular person could have his own collection of films contacted for a small sub-group contact book.

We are looking at present into the computerization of this collection as a starting point, as it is already very difficult to locate a particular photograph one is searching for. Thus, the careful recording of what a particular frame is all about now, will help to prepare for this situation in the future. Also, another extremely important point, when one is taking an object photograph, almost as important as a scale in the photograph, is the registration number. It is easy to rig up the registration number to appear in the photograph. This can be a dymo label or lettraset cards, with numbers, or a proper peg-board shop window display board where the number can be stuck into the holes, (dymo is not so good as it is shiny). This number can be put to the edge of the frame so it can be cropped from the photograph if necessary. This helps no end in identifying objects in photographs. It is worth ensuring that numbers are reasonable size in relation to object so that they can be seen in the contact sheets.

JEREMY GREEN

Front and Rear of Artifact Registration Card,
showing typical data.

B	A	T	2	1				2	9	9	3			ARTIFACT REGISTRATI CARD INDEX MARITIME ARCHAEOLO W.A. MUSEUM					
WRECK			MATERIAL			SUB DIVISION MATERIAL			REGISTRATION NUMBER			SUFFIX							
DESCRIPTION			STONEWARE JUG - NO MASK OR MEDALLION PART OF HANDLE MISSING																
LOCATION			036 210 UNDER SOUTH FLUTE OF ANCHOR NO. 1.																
MATERIAL			STONEWARE									FINDER W.A.M.							
DATE RECOVERED			0	1	0	1	8	0	NOTES										
DATE REGISTERED			0	1	0	1	8	0	Height	:	120mm								
DATE IN CONSERVATION			0	5	0	1	8	0	Base diam	:	65mm								
DATE OUT CONSERVATION			1	8	0	4	8	0	Waist diam	:	100mm								
CONSERVATION			Routine washing in de-ironized water					Fabric					:	Coarse grey					
CONSERVATION								Glaze					:	Salt glaze. Light bro mottle, cobalt blue splashes					
ANALYSIS			PRESENT LOCATION									On display, Fremantle Museum							
PHOTOGRAPHY			BLACK AND WHITE						COLOUR			NOTES							
IN SITU			MA 620/1-3						BTA 796-800										
PRIOR CONS			MA 621/6-8						BTB 640-642										
DURING CONS			MA 625/11-16																
AFTER CONS			MA 629/21-30						BTC 21-25										
PARALLELS																			
DRAWINGS			Yes. 1:1																
ADDITIONAL																			

ADDITIONAL INFORMATION Partially concreted to anchor. Base of handle slightly damaged during removal from concretion, jug otherwise in good condition.

CONTACT
PRINT OF
OBJECT.

Wrecksite Action Card showing typical data

site/relic known as THE PLYMPTON
 nearest locality FREMANTLE HARBOUR
 ENTRANCE

lat. 32°3'

file ref. 1/80
 long 115° 46'

23

reported: 8th APRIL, 1980 (date) by: B. MCKENZIE
 address: 2 SWAN AVENUE, FREMANTLE
 phone:

site inspected 15th APRIL, 1980 (date) by: MIKE MCCARTHY/B. MCKENZIE
 determination. IDENTITY CONFIRMED TO
 recommendation. TO BE GAZETTED
 committee action (rewards, etc.): GAZETTAL. \$400 REWARD
 date: 20/4/1980
 trustees approval (date):

MAAC Ref.
 Res. no.

if site/relic considered not to be of historic interest:

- finder informed by post: (date): by telephone (date)
- relic retrieved by finder (date): or:
- relic returned to finder (date)
- relic discarded (date)

		initial	date
X	notification or inquiry received	MM	8th April, 1980
X	notice of finding form sent to finder/s	MM	9th April, 1980
X	copy of Act enclosed	MM	9th April, 1980
X	form received and filed	sufficient information	MM 12th April, 1980
		yes X	
		no	
	receipt of claim acknowledged by	phone	
		post	
X	site inspected		
X	report of inspection filed		
X	action by M.A.A.C.		
	action by trustees		
	finder notified by post		
	site gazetted		

NEWS (1)WESTERN AUSTRALIAN INSTITUTE OF TECHNOLOGYGRADUATE DIPLOMA IN MARITIME ARCHAEOLOGY

This new graduate diploma course is to start at the Institute of Technology in July 1980. The course is designed as a full-time programme requiring two semesters of study and a summer field trip. The course may be taken on a part-time basis extending over four to six semesters. Students wishing to enroll for this course should possess a Bachelor degree or equivalent in the field of science or the humanities. The course structure provides for some bridging units in science and history depending on the student's previous degree. The candidate will also have to possess, (or obtain as soon as possible after enrolment) a third class diving certificate or equivalent of a recognised diving federation (A.U.F., C.M.A.S., B.S.A.C., S.D.F.A. etc). The course is designed to provide specialist graduate training in maritime archaeology, and leads to an award at the PGI Level of the Australian Council on Awards in Advanced Education. The course will provide training and experience in all the major activities associated with planning and carrying out a maritime archaeological programme. Emphasis will be given to the relationship between maritime archaeology and historical studies and some opportunity is provided for elective studies. The course involves staff and facilities of the Institute of Technology and the Western Australian Museum, together with specialist staff from Murdoch University and the University of Western Australia.

The course is divided into several specialist subjects: Maritime Archaeology; Material Science; Marine Science; Geometronics; Experimental methods; Maritime Archaeological Conservation; Field Project and an Elective.

The course is designed to cater for students with either a Science or Humanities background.

For further information please contact:

Dr. J. Penrose,
Dept. of Physics,
Western Australian Institute of Technology,
Hayman Road,
BENTLEY, W.A. 6102

BOOK REVIEWS

(1)

W.J. de Burgh and Graeme Henderson

The Last Voyage of the 'James Matthews' : Perth : Western Australian Museum, 1979; 35pp soft cover, \$2.00 - Australia.

This short publication provides a very readable and vivid account of the last voyage of the snow brig James Matthews, which sank in a violent storm on July 22nd 1841 on the north side of Woodman's Point in Cockburn Sound, Western Australia.

Until the discovery of the wreck in July 1973 by divers of the Underwater Explorers' Club of W.A., little was known about the ship. Subsequent archival research and the transcript of a diary kept by Henry de Burgh (who, with his younger brother Robert, was a passenger on the vessel), have helped to recreate the fascinating history of this shipwreck and its context in the development of the Colony of Western Australia.

Following a brief resumé of the ship's origin and structure; her participation in the slave trade under the name Don Francisco and subsequent capture as a "prize to H.M. brig Griffon"; and her re-registration as a general trader with the name James Matthews, the reader is led into the main body of the booklet.

This centres on the story of the de Burgh family of Oldtown in County Kildare, Ireland and the migration of Henry (24 yrs) and Robert (18 yrs) to the new Swan River Colony.

Henry's detailed account of the voyage is tinged with cynical humour, which doubtless enabled him to endure the obvious hardships of the voyage, the substantial loss of property incurred in the shipwreck and the difficulties of early colonial life.

Although Henry subsequently returned to Ireland in 1846 Robert remained in Western Australia and became a well-known public figure.

The concluding section of the booklet deals with the four seasons of archaeological survey and excavation of the wrecksite by the W.A. Museum. With the aim of accurately recording the well-preserved hull structure in order to reconstruct the shape of the ship, methods and techniques were designed accordingly.

Although these are described briefly and will doubtless fail to satisfy those readers with a deeper involvement in the practice of maritime archaeology, the outline given serves to inform general readers of the processes of underwater archaeology.

MYRA STANBURY

(2)

J. Barto Arnold III and Robert S. Weddle

The Nautical Archaeology of Padre Island : The Spanish Shipwrecks of 1554.

Texas Antiquities Committee Publication Number 7.
New York: Academic Press 1978.

Hard cover, 462pp. illus. ;31.56

In 1554 three ships of a small Spanish fleet laden with silver, gold and other produce of the Indies, were wrecked off what is now known as Padre Island, off the Texas Gulf Coast. This volume describes the excavation of one of these wrecks in 1972-1975 by the Texas Antiquities Committee.

The book is divided into two main sections - History and Archaeology - both of which complement each other. The former, presented by Robert S. Weddle, deals with the story of the three ships in the context of the period - its politics, economics, and implications of European maritime activities for the future of New World discovery, exploration and settlement.

The archaeological research is well documented by J. Barto Arnold III. Underwater archaeological techniques are discussed and the findings clearly illustrated with drawn maps and plans. The artifact collection is described in detail, illustrated with photographs and line drawings and set in context with the aid of documentary material gleaned from the Spanish Archives. The origins, uses, and design of various types of ship's fittings, ordnance and other artifacts are discussed and compared with similar archaeological finds from other wrecksites.

The book provides a broad, comprehensive bibliography and several appendices by other authors dealing with supplementary topics, such as registered cargo, artifact inventories conservation methods, and fossil cockroaches!

MYRA STANBURY

JOURNAL REVIEWS:

INTERNATIONAL JOURNAL OF NAUTICAL ARCHAEOLOGY

VOLUME 8, NUMBER 3, AUGUST 1979

Editorial: dealing with the United Kingdom legislation recently enacted and called the Ancient Monuments and Archaeological Areas Act 1979. This Act does not effect the provisions of Part IX of the Merchant Shipping Act 1894, requiring all items of wreck salvaged to be delivered to the receiver of Wreck and requiring the receiver to dispose of the items by sale. The Act, however, enables wrecks to be scheduled as Ancient Monuments and extends to include territorial waters, if the wreck is of national importance.

ARTICLES:

'The Bronze Age site of Moor Sand, Near Salcombe, Devon'.
K. Muckelroy and P. Baker

Report deals with the investigations near Salcombe to locate further Bronze Age swords from an area where the initial discoveries had been made.

'The Shipwreck of the galleon Sacramento - 1668 off Brazil'.
U.P. de Mello

Report deals with partial excavation of an extremely interesting Portuguese ship. Cannon recovered from the vessel cover a wide time range and were manufactured in England, Netherlands and Portugal. Finds include astrolabes, navigational instruments, ceramics, medallions, candlesticks.

'James Matthews excavation, a second interim report'.
P. Baker and G. Henderson.

Report deals with the major excavation seasons of 1975-6 and 1976-7 and describes in detail the excavation and recording techniques, including the grid recording system, and the photographic techniques.

NOTES AND NEWS

Note on Moving wreck of the Day Dawn.

The Hamilton - Scourge project, describing magnetometer survey.

Px11 Fanog wreck Menai Straits, North Wales.

A survey of a slate wreck, an excavation trench being cut across site.

Mystic seaport Museum.

Book review and a very useful periodical notes.

INTERNATIONAL JOURNAL OF NAUTICAL ARCHAEOLOGY

VOLUME 8, NUMBER 4, NOVEMBER 1979

N. Chittick: 'Early ports in the Horn of Africa'

Colin J.M. Martin: 'Spanish Armada pottery'

An article about pottery, mainly from the Trinidad Valencera. These include olive jars, earthenware plates, time glazed earthenware, Merida-type ware, glazed red earthenware, Majolica.

Robin C.M. Piercy: 'Mombasa wreck excavation - Third preliminary report, 1979'

A brief description of the 3rd excavation season on the Santo Antonio de Tanna, where the whole of the internal hull was finally excavated.

Richard Price & Keith Muckelroy: 'The Kennemerland site - the fifth season, 1978: An interim report'

The continuation of excavation work on 17th century East Indiaman in Shetlands.

Carol Olsen: 'Stylistic developments of ship figureheads of the United States East Coast'.

Charles Mazel &
Warren Riess:

'An inexpensive method for real-time,
accurate navigational control of marine
surveys':

The system described uses transits, walkie
talkies and a small programmable calculator
for locating position at sea. Quite cheap
and very useful.

NOTES AND NEWS

The Porticello Shipwreck

An 18th Century Wreck in Quebec Canada

Notes, Reviews and Periodical Notes

THE GREAT CIRCLEVOLUME 1 NUMBER 2 OCTOBER 1979ARTICLES:

- C.R. Boxer, "War and Trade in the Indian Ocean and South China Sea, 1650"
- E.B. Martin, "The Geography of Present-Day Smuggling in the Western Indian Ocean: The Case of the Dhow"
- D. Alexander, "Objectives and Methodologies of the Atlantic Canada Shipping Project"
- C. Wesley, "A Survey of the W.L. Crowther Library, State Library of Tasmania"

BOOK REVIEWS:

- V. Evans, "The Library of Australian History" (incl. reviews of G.B. Worgan, Journal of a First Fleet Surgeon; An Authentic and Interesting Narrative of the Late Expedition to Botany Bay; Wm. Noah, Voyage to Sydney in the Ship Hillsborough 1798-1799 and a Description of the Colony)
- Lower J.A., Ocean of Destiny. A Concise History of the North Pacific 1500-1978 (by Barry M. Gough)
- Lees, James, The Mastng and Rigging of English Ships of War 1625-1860 (by K. Hobbs)
- Edwards, H., Australian & New Zealand Shipwrecks and Sea Tragedies (by Jack Loney)
- Martin, G., ed., The Founding of Australia (by John Bach)
- Bateson, Charles, Dire Strait. A History of Bass Strait (by Murray-Smith)
- Johnson, Les, Albany and the Whalers (by Graeme Henderson)
- Toghill, Jeff, The James Craig (by Vin Darroch)
- Darroch, Vin, Barque "Polly Woodside" ("Roma") (by Jack Chruhouse)
- McKinlay, W.L., Karluk: the great untold story of Arctic exploration (by Andrew Jackson)
- Martin, S., Sea Wanderers to Australia (by John Bach)
- George, G.W.P., ed., Australia's Offshore Resources: of the 200-mile Zone (by Edgar Gold)