

AUSTRALIAN  
MARITIME  
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NEWSLETTER

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## EDITORIAL

This newsletter brings a number of sad tidings: firstly, it is with great regret that we heard of the death of Keith Muckelroy. Recently appointed as a diving archaeologist at the National Maritime Museum, Greenwich, Keith was a most industrious worker in the field. His recent books included *Maritime Archaeology* which was reviewed two newsletters ago, and his new publication, released a few days after his tragic death in a few feet of water in a Scottish Loch. This is the second archaeological death this year, a student diver on the *Mary Rose* project having drowned earlier in the year.

Secondly, it is with great regret that we heard the announcement that Joan du Plat Taylor, the editor of the IJNA, was to retire. Joan's contribution to maritime archaeology has been immense; there can be no doubt that without the Journal, we would not be where we are today, and without Joan there would not have been a Journal. Being the editor of such a small, somewhat motly publication as this one, I am aware that the editor's input is directly proportional to the quality of the production. Thus, I am in awe of the work IJNA must entail and know I must try harder for this Newsletter. The new editor will be Ian Morrison, c/- Department of Archaeology, 19-20 Gordon Square, The University, Edinburgh, Scotland. Please may I remind all Associations that there is a need for your input into the Journal, it should be financial, through the Council for Nautical Archaeology as a subscriber at £5, students £3. This is really excellent value, please subscribe as the survival of the Journal, its viability and existence depend on its subscribers. The CNA is a Trust established to aid the furtherance of research into nautical archaeology and the publication of the results of such research. As such, it is the only maritime archaeology publication in existence. Please contact The Administrative Secretary of Trust, Mrs. Fenwick, 1 Old Hall, South Grove, HIGHGATE, LONDON N.6.

Whilst I am grateful for material for the newsletter, I have a small problem: whilst it is easy for me to extract material from your annual reports; in a way, this is needless duplication. It would be better to circulate your annual reports, and reserve this newsletter for more general material. If this was to happen, I need lots more material, which puts the ball back into your court. It is, however, great to have really good material from South Australia and Tasmania.

A number of things have happened recently, the Act has been declared in South Australia, and as a result, there is a suggestion that a second Southern Hemisphere Conference on Maritime Archaeology be held in South Australia next year. In the new year, I am hoping to establish an Australian Institute for Maritime Archaeology, along the same lines as the ICCM. This will resolve some of the administrative problems we have, allow us to fund raise for national projects, produce this newsletter and a bulletin, and get a bit more organized nationally. For this, I will be looking at a subscription of \$10, for which there will be four short newsletters and two bulletins per year. The newsletter will be just that, whereas the bulletin will be for reports like the MAAT Masons Cove and the SUHR Morgan. This will be a much better situation. I propose that we establish a Western Australian steering committee for the first year, to set the thing up and to arrange an election of president, treasurer and secretary. I will provide full details in the next newsletter.

Jeremy Green

SUHR/Department for the Environment Relationship

by : Peter Christopher

The co-operation and liaison established over past years between SUHR and, in particular, the Aboriginal and Historic Relics Unit has continued. The loss of Unit Head, Bob Ellis, to the Northern Territory and the change over to the new Heritage Unit, has caused some concern. In addition to tangible "material" benefits for the Society, Bob through his knowledge and foresight has been of tremendous assistance, in conjunction with the Committee, in determining the course which the Society has followed. Bill Jeffery, Department for the Environment Senior Technical Officer, became the Society's main contact point with the Department after Bob's departure. Bill has been active in the Society for over three years, and perhaps the best acknowledgement to his contribution is the approval by the Government to his undertaking a course in Maritime Archaeology in Western Australia. The approval for this course of study is seen as one of the first steps in South Australia by the Government to formally involve itself in this field in the future. Relationships between the Society and the Department are good, with officers and staff being helpful in any way they can. The moves of Bob Ellis, and Bill Jeffery (for 12 months) are, however, a loss to the Society. Bill's specific involvements in the recovery of the *Loch Vennachar* anchor is dealt with elsewhere in this Report. Departmental premises continue to be used for our growing conservation activities. Facilities are also provided for storage of equipment, relics and records. Financial assistance from the Department has been of direct benefit to Society operations. Legislative protection for shipwrecks is getting nearer to implementation, following a lengthy gestation period. Details of the Commonwealth Historic Shipwrecks Act are dealt with separately.

Standard Operating Procedures

by: Brian Marfleet

In 1974, the Society was formed bringing together people all of whom had the common desire to prevent any further loss of heritage from beneath our waters, and in fact, carry out research to this end. Like most new organisations, momentum was slow in the beginning where all facets being dealt with by members, although a little disjointed were somewhat under control. This was partly due of course, to the fact that we were all learning the basics. Since those times the involvement has increased with an increased membership and it follows that all actions and ideas be co-ordinated to enable the best possible result to be produced and presented. A proposal to formulate standard procedures was made in September 1979 for all members of the Society to follow. As a result of a general acceptance of the concept a number of meetings have been held by members of the committee and any other interested members wishing to participate in an effort to obtain the widest range of ideas. It is hoped that the finished product will become a working manual issued to all members. At this stage, the size will be about A5 and will be in two main sections; Administration and Operational. As the meetings have progressed the subjects have expanded. The following are the subjects that are seen by the committee as being applicable for the proper control and co-ordination of our activities:

Administration

membership & probation; projects; project supervision; publications;  
communication; public relations; finance; security

Operational

research; search; survey-land, underwater; recovery; registration;  
photography; conservation; draughting; artwork; displays; safety;  
boat handling; communications; training; equipment - care &  
maintenance.

Submission to Edwards Report

by : Brian Marfleet

Reference: *South Australian Museum Study - First  
Interim Report 1979*

Dear Sir,

The society for Underwater Historical Research Inc. was formed in August 1974, and was in fact the first such volunteer group in Australia whose sole aim was directed at the preservation of the immense historic heritage beneath the waters of the state of South Australia. At the time, it would appear that the only authority in Australia concerned with the subject of maritime archaeology was the Western Australian Museum who had the good fortune of having the Dutch wrecks in the waters of their state. The discovery of these fine examples of 17th century A.D. shipping, cargoes and traditional culture ensured, in short, that the Western Australian Government did its utmost to protect, research and bring before the community these discoveries. This involvement was also very desirable in the light of the international origins and interest (Australian Netherlands Committee on Old Dutch Shipwrecks, ANCODS). South Australia to this time has not been able to boast the likes of these finds; however, the heritage beneath and surrounding our waters is nonetheless as important and colourful. The broad aims of the Society are to foster interest in, promote the distribution of information regarding, assist in location, protection and conservation of matters relevant to nautical and riverine history. Also, to assist in the underwater study, recording and excavation of archaeological sites and recover, preserve and display the relics. To this end, the Society has worked on projects, published articles and booklets, become involved in the First Southern Hemisphere Conference on Maritime Archaeology held in Perth in 1977, and in fact convened a state seminar on maritime archaeology. In addition, it has been successful in obtaining grants for projects and having two areas of sea bed placed under the protection of the current Aboriginal and Historic Relics Preservation Act (1965). We cannot profess to be experts in the field and do not try to; however, due to the neglect shown in this area in the past, to prevent further loss by wanton vandalism, souvenir hunting and exploitation, positive action must be taken immediately. The Society, in an effort to gain knowledge and the much required expertise, has built up a very close relationship with the Maritime Archaeological Section of the Western Australian Museum and is a member of the recently formed Maritime Archaeology Association of Australia. Members of the Society have, as a result of this close liaison, been invited to accompany members of that section to the Exmouth Peninsula area to assist with work on a site.

Not only does the Society concern itself with maritime history but also the history surrounding the state's inland waterways. The passages of shipping, the wrecks and relics and evidence of coastal and inland settlement all refer to the colonial period of the state; a period of which our community should be more aware, but because of neglect in the past, are not. Similarly, evidence regarding habitation and culture prior to colonisation is available beneath our waters as has been illustrated by finds at the sites of Morgan and North West Bend by the Society. A very important task undertaken by the Society involves the conservation and preservation of relics. Because of the corrosive effects of various types of water and its inhabitants, the treatment can be quite lengthy and costly. Knowing the facilities that the South Australian Museum has, the Society has developed its own laboratory. Using international knowledge and advice from leading conservators within Australia, the Society has been able to stabilise and preserve various relics. The origins of relics varies from those recovered by members on the numerous projects to relics sent to the Society by National Trust Branches or individuals who see a need for work to be done on an item. It is unfortunate that such a laboratory had not been set up to assist previously as some of the material that has been on display, now undergoing treatment, bears little resemblance to the original. The Society has been able to treat successfully material from Kangaroo Island, both recovered by the Society and the local National Trust Branch, Morgan, Port Neill, Port Willunga and Outer Harbour. A project involving the Society and the Kangaroo Island Divers Club is currently underway. The aim being to raise one of the anchors of the Loch Vennachar, and with assistance of the Australian Mineral Development Laboratories who received a grant for preservation, treat it for eventual return to Kangaroo island to be placed as a memorial. The Society sees the role of a modern museum concept as catering for all matters relative to history and its making. The common idea that a museum is a place only where an interested person may view objects of natural history, Egyptology and the like, is dead. The stance to be taken should ensure the embrace of not only the well known subjects but also displays relevant to the state and country in which the museum is located. The South Australian Museum should place aspects of natural history, international themes and local pre-history and colonial history on the same level of importance and be prepared to highlight all equally so as to produce a well balanced picture to the community for their learning and enjoyment. The Society agrees with the recommendations as outlined in the S.A. Museum Study, First Interim Report prepared by Mr. Robert Edwards, but further submits that in order for the reorganised museum to be more representative in all facets, attention be paid to the following:

1. Effective State Legislation to protect Historic Areas and Relics

At present, the Aboriginal and Historic Relics Preservation Act and the S.A. Heritage Act are in force in this state. These Acts afford protection to Aboriginal sites, relics, other sites when proclaimed, buildings and like areas. At present, the two marine sites at Holdfast Bay and the *Loch Vennachar* wreck, are protected under the Aboriginal and Historic Relics Preservation Act. It is envisaged in the near future that a new Act, the Aboriginal Heritage Act, will be proclaimed and the Aboriginal and Historic Relics Preservation Act will be repealed. In the event of this occurring, the two marine areas will lose their protection. Although there is a Commonwealth Act, the Historic Shipwrecks Act, that can be proclaimed within a state it can only protect those shipwrecks nominated. There seems at this stage, little legislative protection afforded to marine sites, underwater sites inland and portable relics from such sites.

The society feels that either a suitable new Act dealing solely with the subject of shipwrecks and associated historic sites and relics similar to that in force in Western Australia or suitable amendments to either of the two new Acts, should be proclaimed. Coupled with the Commonwealth Act all areas of historic value should then benefit by the protection that they deserve. It can be argued that the state has a responsibility, internationally to protect such sites (9th Session of UNESCO General Conference, New Delhi, 1956).

2. The Act/Acts to be administered by the Museum Authority

It would seem correct that a body dealing with a particular subject should also administer the Act or Acts dealing with the subjects.

3. Formation of a Conservation Centre

The formation of a conservation centre as referred to in 2.5 of the Interim Report should have the capability to treat material recovered from beneath or associated with our waters. It goes without saying that the staff, with expertise in this field, would then be in a position to be able to advise interested volunteer groups similar to the Society. In South Australia, at present, there are a number of small museums set up displaying relics of a nautical theme. Some National Trust Branches also display similar type relics. Because of the small nature, the lack of funding and expertise in conservation, these sometimes irreplaceable items crumble to be lost forever. A prime example of this problem exists with the ketch *Annie Watt*, a place of our state's heritage left to rot away because of the lack of interest and funding by the Government and community. There are other glaring examples in existence.

4. The Formation of a Maritime Archaeological Section

It is submitted that there is a great need for the formation of a Maritime Archaeological Section in the proposed restructure of the South Australian Museum. The Society, because of its volunteer nature, lacks expert guidance on a day to day basis in the fields that it is trying to cover. Such a section would alleviate this problem. Because of the awareness of the value of historic sites, both historically and monetary, it is seen to be essential that a full time section be set up to monitor work and movement on these sites. It would also ensure that the subject and areas applicable would become the responsibility of a Government body that would be in a position to influence and to some extent control the activities of groups or individuals interested in historic areas.

5. Interdepartmental Assistance

The resources necessary to conduct the work required on an underwater site become over taxed at times owing to the unpleasant nature or an increase in danger. Expertise within other departments could be utilised. This type of action has occurred in the past with regards to the collection of fossil whale bones from the River Murray and on the west coast of Kangaroo Island on a survey of the wreck of the Loch Vennachar. The assistance came from the S.A. Police Diving Squad.

## 6. Assistance of Societies

The work done, by the various related societies, in connection with matters dealing with the research and collection of data, cannot be overlooked. Credit is due to such societies for the information and assistance to the relative areas of the museum. It is felt that the Government, through the museum, support and assist wherever possible even to the extent of joint involvement on projects. Many groups and societies presently meet in the museum lecture room. This facility has become antiquated. The type of facility envisaged in 2.6 of the Report is a definite necessity in an effort to create and maintain the interests.

To assist you in understanding the role of the Society, please find attached, the Society's Constitution and the 1979 Annual Report.

Reply from Robert Edwards

Dear Mr. Marfleet,

Thank you for the submission from the Society for Underwater Historical Research Inc. to the South Australian Museum Enquiry. The section of the report dealing with the situation of regional and specialised museums has now been drafted and your submission has provided me with most valuable information. The problems faced by many voluntary historical societies, and regional and specialised museums have been emphasised and clearly include needs for space, conservation advice and professional advice on curation. For a considerable time, regional and specialised museums have served an important function in preserving significant aspects of the heritage of the state of South Australia. I heartily applaud the actions of the many voluntary people and organisations carrying out this work to date, and, in my report, make recommendations which will, I would hope, redress the imbalance of the past and provide for a system whereby monetary and professional assistance will be available in future.

Kind regards,

Yours sincerely,

Robert Edwards,  
Executive Director

## The Raising of the *Loch Vennachar* Anchor

by : Bill Jeffery

The raising of the *Loch Vennachar* anchor was a fulfilment of the aims of the SUHR Expedition of 1977. The SUHR and the Kangaroo Island Scuba Club pooled their expertise into a common cause and worked on raising the anchor, in conjunction with the Department for the Environment. A large anchor immersed in sea water for 75 years needs lengthy conservation treatment before it can be set up on display, and this project enabled us to establish the equipment and method of conservation within the State.

Considerable arrangements were made following the SUHR survey in 1977 for the establishment of the necessary facilities. Visits to Kangaroo Island and negotiations between SUHR and the Kangaroo Island Scuba Club took place between 1977 and 1980. In early 1980, after consideration of several methods, lifting bags were specially constructed by Bulkera (Australia) Pty Limited to move the anchor from the wreck site. The Naval Reserves agreed to transport the anchor from Kingscote to Adelaide. Chris Harris (Department for the Environment) and myself, left for Kangaroo Island with the Department's boat on 26/3/80. On 27/3/80 camp was made after contact with George Lonzar at Rocky River. On 31/3/80 the weather moderated sufficiently for the recovery to proceed. The fishing vessel *Lady Buick* was radioed and arrived to undertake the tow. Wayne Buick, Anton Jamieson, Grant Treloar and myself secured three lifting bags, slings, chains and tow rope. The bags were inflated and as soon as they rose to the surface the *Lady Buick* winched the anchor and bags away from the cliffs. The anchor was towed 2 km around to West Bay and lowered to the sea bed. The next day arrangements were made to recover the stock of the anchor operating from the inflatable boat supplied by John Lavers of Adventureland, as the Department's boat had been packed away for the return trip to Adelaide. The *Lady Buick* was able to get very close to the wreck site and the recovery was undertaken with an SASIO News team onboard filming the activity. Although it was difficult to tell whether the wreck site was disturbed significantly in the short time we were on the site we did notice that positioning of the anchor and stock were not in the same place as shown in the plan of the wreck site in the report of the SUHR Expedition in 1977. Various methods of transporting the anchor and stock to Kingscote from West Bay were considered.

The stock was transported to Kingscote by the *Lady Buick* in early April and deposited on the sea bed adjacent to the jetty. Unfortunately, due to bad weather, the anchor itself could not be moved to coincide with normal training operations of the Naval Reserves Vessel, HMAS *Banks*. On 24th and 25th May, Barry Dillon of AMDEL, Peter Christopher, SUHR President, and myself travelled to Kangaroo Island on the *Banks* and collected the stock. A Department of Marine and Harbours crane was used in Adelaide to move the stock on our return. On 26th May following a break in the weather, Nigel Buick and members of the Kangaroo Island Scuba successfully raised the anchor from West Bay and secured it to the bow of the *Lady Buick*, which arrived in Kingscote on 27th May. Graham Steward and myself flew over to assist at Kingscote. A Kingscote Council front-end loader was used to lift the anchor from the *Lady Buick* and onto a Fleet Xpress trailer waiting to be shipped to Adelaide on the Troubridge that night. The conservation treatment of the anchor and stock by AMDEL will take at least 6 months. On completion of treatment, they will be returned to Kangaroo Island.

Morgan

by: Brian Marfleet

#### Geographical Situation

The area in which the township of Morgan now stands is on the River Murray just below the 'Bend', the point where the river turns from a westerly direction of flow to a southerly direction, in the hundred of Eba, South Australia.

With the coming of white man to Australia, explorers moved inland from the coast and down rivers in an effort to open up new frontiers. One such explorer, Captain Charles Sturt, on his epic voyage down the Murrumbidgee and Murray Rivers passed through the area and on the return trip camped a short distance from the present site of Morgan on 21st February, 1830. He there found the natives to be somewhat peaceful. From that time on, a number of overlanders came by way of the 'Bend'. Later, the area was divided for pastoral lease but owing to crop and stock failures, a great deal of this land went to commonage. In the meantime, in 1853, the first paddle steamers, the *Lady Augusta* skippered by Captain Francis Cadell R.N., chasing a purse of two thousand pounds offered by the Government of the day, and the *Mary Ann*, skippered by William Randell pushed their way upstream to Swan Hill from Goolwa. In 1874, surveying firstly for a rail link, Government interest in the area commenced and on 25th April, 1878 the town of Morgan, named in honour of Sir William Morgan, MLC, by Governor Musgrave was proclaimed. This was the start of a town built strategically to take a slice of the river trade from the then monopolising Victorians. Morgan could remain open for trade longer than the upper river ports of Echuca and Swan Hill and offered the shortest rail link with a sea port. The town grew to tremendous proportions with trade booming. Six trains per day serviced Morgan with all five steam operated hydraulic cranes worked around the clock by gangs of up to 40 men. This activity continued for a long time but as always, progress and modern technology caught up and the beginning of the end came after the turn of the century.

New Morgan is a sleepy little town, still however, with its two hotels serving a population of a little above 500. Its main industry today is the Highways Department dockyard, the remaining tie to the river. The prosperity of Morgan in the future will greatly depend upon the tourist. Other townships along the River Murray have seen the wealth that tourism brings. At present from other towns, paddlesteamers, houseboats and luxury river boats operate, plying the waters of the Murray above and below Morgan with the exception of two. the *Coonawarra* and the *Julie Faye*. The wharf facility, unused at this time, is the largest wharf surviving in South Australia but it may come to pass that Morgan will again prosper as a river port, not in wool and wheat, but in the tourist trade.

#### SUHR Involvement in the Area - 1977-1979

Members of the Society first visited this town in 1977 when a couple of dives were made in the wharf area. The finds at the time looked encouraging and bearing in mind the importance of the town to the early South Australian economy coupled with a request from a member of the centenary Celebrations Committee to organise a display, it seemed the perfect location for a project, dealing with the river trade, to be commenced. The subject was mooted at a Society meeting and upon approval a submission was made to the Australian Heritage Commission for funds to assist the project. In November 1977, a phone call from Canberra confirmed that the Society had received a grant of \$4,000 for Project Morgan. Briefly, the aims of the project were to carry out archival research, local research, on site excavations, produce a display for the Morgan Centenary, assist the Morgan people set up a National Trust Museum and to publish and distribute relative reports. A work plan, outlining the aims and execution of the project was compiled and distributed to members for their information. The project was divided into five stages as listed below:

1. Density survey of a controlled area.
2. Recovery of items from within this area.
3. Determination of mooring areas.
4. Survey of hulks located as a result of 2 and 3.
5. Production of reports and publications relative to the project.

Eventually when the grant became available, the first visit to the area to commence the project occurred on 14th and 15th January 1978. To obtain as much information as possible from the controlled area consisting of the southern 1/3 of the wharf and 30 metres to the south, the resulting area of 3,480 square metres, Area 'A', was sectioned and a survey was conducted to determine the density of material on the river bed. This information was then transferred onto a chart in colour. This chart is the first of three, the other two to show the actual density of relics located and types of relics located in each co-ordinate or section. Stage 1 was completed by July 1978.

All items recovered were allotted a registration number after being recorded in the Project Relics Register. All numbers were prefixed by the project initials MGN. A submission for the 1978-79 period, seeking a grant for the project, was rejected but the project continued, work concentrating on Stages 2 and 3. During this period, artifacts not of the paddle steamer trade were recovered whilst trying to determine the existence of a small landing to the south of the present wharf. The artifacts, glass tumbler bases and bottle bases, were identified as tools made by the aboriginal people. It was usual for the aborigine, where he came in contact with white man, to readily adapt to his discarded rubbish for material to make his primitive tools. Over that period, the method of recovery was by pushing ones hands about in the mud and upon locating an item placing it in a bag. It was found that this method was not very efficient. In an effort to find a better method, an air lift was experimented with but with limited resources, was not a total success. As funds were required to continue the normal running of the project and to develop a suitable air lift another submission for a grant was forwarded. With tremendous support from Mr. G. Toogood of the National Trust and Bob Ellis, the then Head of the Relics Unit, the Society received a further grant of \$2,600.

#### Progress of Work 1979-1980

The first visit to the Morgan area for the period was a second scheduled visit to Nor West Bend Station. A semi-circular search was conducted from the bank at a depth of .5 metres, gently sloping to a point about 5 metres from the bank where it commenced to slope steeply to a point about 15 metres out. The 'level' of the river bed consisted of about .3 metres of silt covering sand. During this and a subsequent dive, old bottles, an axe head, old shear blades and two apparent aboriginal artifacts were recovered; one a bottle base type and the other a portion of a top mill stone.

This activity was not directly involved in the project. However, because it is in the very near vicinity of the town of Morgan, the fact that the homestead was constructed prior to the foundation of the town and that the area in which the town now stands was part of the run of that station it is logical that this area be included in the project. With the discovery of these aboriginal artifacts, the likelihood of locating other artifacts relative to the culture is quite possible and could show that there was occupation at this point.

One theory held is that normally beneath a cliff, deep water exists and during dry seasons, at a time before the locks were installed, these water holes would have remained when the river ran dry. It would seem probable that the aboriginal would have camped near this water supply; i.e. on the river bed alongside the water hole.

I believe that this area should be subject to another stage of the project, but only upon completion of Stage 4.

For the remainder of the period work has concentrated on Area 'A', initially experimenting further with an air lift using both cylinder and hookah. These initial trials were carried out just to the south of the area and when some degree of success was experienced work continued on Co-ordinate A. Later, a 14 cfm hookah compressor was used on the air lift and found to be ideal, not only supplying enough air for the air lift, but also for two divers working with it. Items that had previously been missed by earlier techniques started to come up, proving its efficiency. Observing this, the Co-ordinate was started again in case anything had been missed and in fact small items had been. To the end of this period the second run on the co-ordinate is well underway. Besides aiding in the recovery of both large and small objects it was observed that the diver controlling the device could in fact feel changes in the strata of the river bed.

Out to about 9 metres from the base line the bed was a mixture of clinker and mud on a clay floor, a strata that was found to be very difficult to work through. Further out it changed to silt, a little clinker, mud (more compact than the silt) silt amongst the first few centimetres of sand, sand and then the clay floor. Out further still the bed changed to sand on a clay floor. Objects were recovered from all levels. One obstacle that became apparent with the new air lift system was the amount of sand build up on the pontoon and the amount of sand flowing over the edge of the pontoon and the amount of sand flowing over the edge of the pontoon back onto the site either ahead or on top of the diver.

Two methods to alleviate the problem were tried. Firstly a rudimentary gutter system from the pontoon to a point downstream, but this failed, due mainly to lack of suitable materials and secondly, a wooden coffer dam was constructed beneath the sieve and at intervals the sand had to be shovelled off. This proved to be the cheapest, most successful way. Techniques have steadily improved and innovations put to use. A steel grid measuring 1 metre by 1 1/2 metres is now used on the distance line to assist the diver, using the air lift, to recognise the bounds of the particular co-ordinate being worked. Due to the very cold water of the river during the winter months the water heater was improved and used successfully providing comfortable working conditions for the diver. By providing this 'luxury' the output of the participating divers was increased.

Terry Smith, for the past year has worked on the large overlay chart relative to Stage 1 of the project. The chart consists of a clear plastic sheet with the co-ordinate lines and distances etched on, in black, with special density filter film placed in respective positions to show areas of light, medium and heavy densities of material. By constructing a chart in this manner correctly shaded black and white reproductions can be produced on a die-line machine. Owing to the manufacturers specifications being incorrect for a particular shade of the density filter film a great deal of time has been spent in trying to find the correct one. With the apparent lack of a suitable film the medium density areas are now depicted by a series of dots. It can be seen in the following plate that a pattern has emerged, showing three areas where material is dense. Incidentally, the middle area is in line with the site of the southern most steam operated hydraulic crane.

Other areas of progress have been in the fields of conservation and archival research. Several items varying from ferrous material to leather have been delivered to the Society members dealing with the conservation laboratory. Now, as a result of updating our techniques, all items requiring treatment of some

form or other are tagged with a piece of dymo tape bearing the Registration Number. Prior to this it was very hard to identify the conserved object compared with the object when first recovered which led to a number of problems.

As the membership of the Society has grown more non-divers are joining. The interests of these people are many and varied and included amongst them are people like Tony Arbon who is content to do research in the State Library. It is through the efforts of Tony that we are now managing to get archival information regarding Morgan. Another person who, although not a member, has commenced to assist the project greatly is Ed Noak. He has been commissioned to conduct a Heritage Study of Morgan by the Department for the Environment and information that has come to light because of his research is available to the society.

#### Assistance

Assistance to the Society over the past year has come by way of a grant of \$2,600 through the National Estate program, local participation, from a commercial interest and a town planning group in Adelaide. The grant monies were used for a wide range of services and facilities and perhaps the largest but most important expense has been the purchase of the 14 cfm hookah compressor manufactured in South Australia. This unit is unique in that it has the outlet facility for a work hose for machinery separate from the normal filtered units for the divers' hoses. Other operating areas and services so far assisted by the grant have been:

1. Travelling allowances to compensate members
2. Camping fee allowance
3. Art materials
4. Drafting materials.
5. Conservation chemicals
6. Fuels and oils for compressors and outboard motor
7. Photographic processing
8. Collection and storage bags
9. Printing costs.

The local help has included the continued support from Doug Thamm, owner of the Landseer warehouse, but owing to commitments is unable, at this stage, to house the Society display. Bearing in mind the vast amount of storage area required for both the display material and operational equipment, an alternative building is presently being sought. Other local help has come from the local council through the efforts of Eric Cornmane, the Town Clerk, the Youth Club who have generously agreed to allow Society members to accommodate the club rooms directly above the site and John McCoy who has loaned his ferro-cement pontoon for the Society to work from on the site. The pontoon successfully carries the hookah compressor, work lines, divers air line, sieve and sand collection dam, relic collection receptacles and the necessary attendants. In operation the pontoon is moored directly above the co-ordinate being worked at the time as depicted in the diagram.

The commercial interest in Adelaide who have continued to support the Society since the *Loch Vennachar* expedition has been Cornell Suzuki who have generously loaned a 5hp outboard motor for use on the pontoon to move it about on site and to and from its normal mooring point some distance downstream. Other areas of assistance from Adelaide have come from Ed Noak and Associates (previously mentioned) and Dennis Ayles. Because of his expertise in the field of bottles and ceramic items, Dennis, a member of the Adelaide Historical Bottle Club, was invited to come up to Morgan and assist with the classification of material recovered. This activity has commenced.

## Relics Recovered & Registration Technique

Firstly, the manner in which items are registered has remained the same, with the exception that material requiring conservation is now tagged with the Registration Number. Material recovered at Nor West Bend Station will bear the prefix NWB. This is seen to be appropriate as in time it would be advisable to register all items presently held at the Station with the hope that all this material will remain as the collection. Items from Area 'A' not only carry the normal prefix and number but also the co-ordinate designate so that in the register and on the object the number would appear thus: MGN-All-0697. The reason for this is to allow a person to be able to see what objects came from a particular section which may tend to show a pattern. In addition to the Registration Book, daily work sheets are used to detail not only the obvious relics but also note other material found in the section, i.e. butchered bones, tin cans and gasket material. In the past, it has been the practice that only objects that appear to be relics are kept for display or conservation for eventual display. It cannot be denied that some relics may have passed undetected, however, we are trying to correct and minimise the occurrence, by interesting persons with suitable expertise to attend and assist with the project. The situation at Morgan is not quite the same as a shipwreck of a particular period; a time capsule. At Morgan quite large amounts of 'modern' discard is mixed with the relics and at times can be quite frustrating to identify the historic relic. The relics recovered from Co-ordinate A in area 'A' have been very interesting. Some of the smaller items have included an opal pendant, a number of coins, including a 1907 half sovereign, attachments for braces, brass buttons, pieces of cartridges, a china drawer knob, brass badge and clay pipe bowls.

## Media Involvement

The project received a favourable coverage in the Dive News throughout the year. The publication in the Riverland *Murray Pioneer*, ran an article on 19th June and this started a number of news items in various newspapers even as far away as Victoria. The main theme of these articles revolved around the discovery of the pickles, which occurred a year or so previously.

## Latest Developments

The *Advertiser* seems keenly interested in the activities of the Society, carrying on the interest started by the *Murray Pioneer*. Society members have been interviewed and an article is being prepared. Negotiations have been held with the Morgan Council in an effort to obtain a building for storage and display purposes, and information has been received that an unused galvanised railway shed is available for use by the Society at the earliest opportunity.

## Summary

The last year has been reasonably successful and very beneficial to the Society. firstly because of the very worthwhile grant received, and secondly because of the help extended from the local people and Adelaide interestes. With increased public relations and press coverage, the future in this field looks bright.

Attendance	26 days
Members	15
Non-members	7
Total dive time	73 hours 45 minutes
High pressure compressor time	9 hours 38 minutes
Hookah compressor time	35 hours 20 minutes
No. of relics registered (this period)	306
Total no. of relics registered	955

It has been disappointing at times to see the number of members in attendance drop to a mere two people. Throughout the year the average attendance has been mainly four divers and three non-divers or visitors. Diving for the relics and conducting other underwater tasks is but a small part of the exercise. For every relic recovered, or piece of information collected about seven other processes are to be completed before the task is finished. Add to this, other extraneous tasks attended to on the site and it becomes very obvious that a far greater turn out is required.

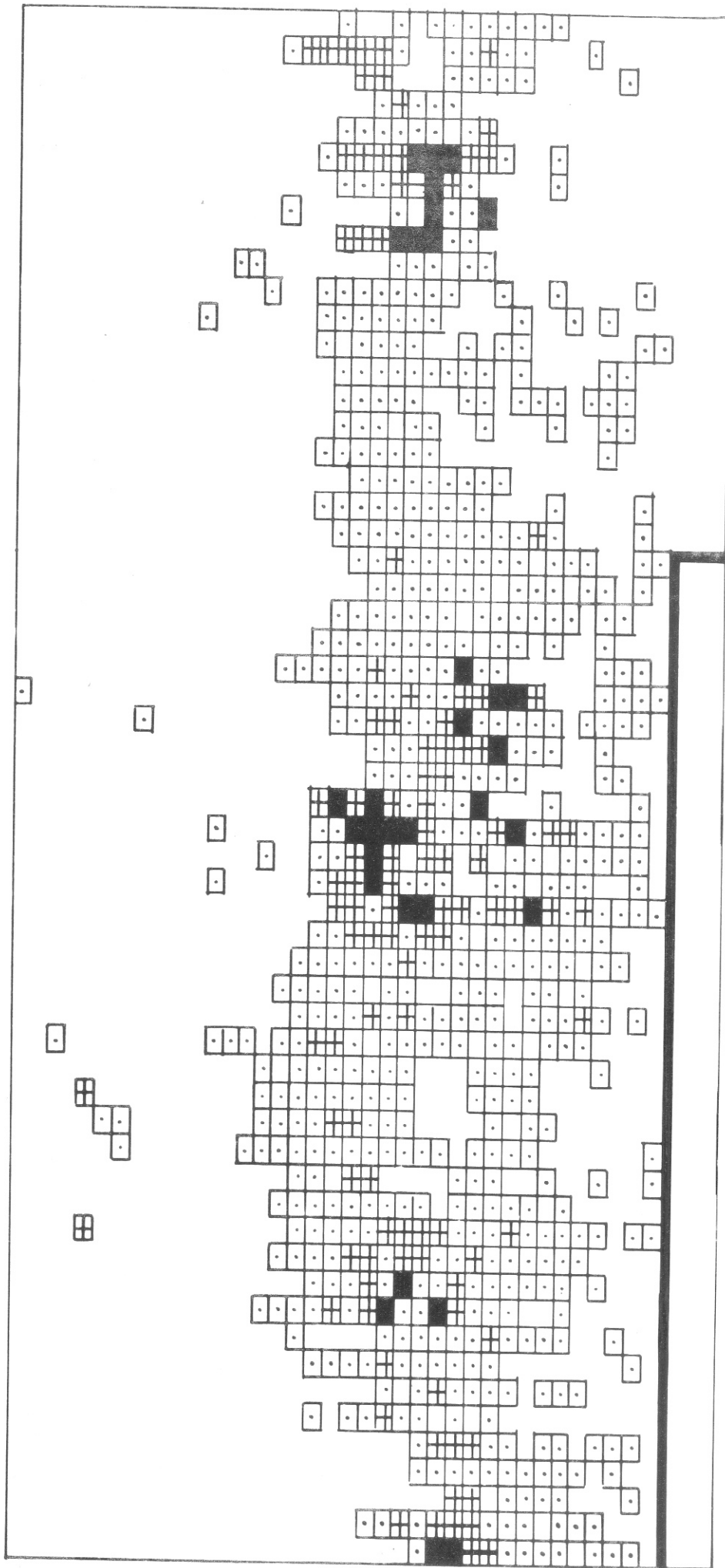
In the coming year, I look forward to an increased attendance thereby progressing at a greater rate.

#### Acknowledgements

Cornell Suzuki  
Ed Noak and Associates  
Dennis Ayles (Adelaide Historical Bottle Club)  
John McCoy (Past President of Morgan National Trust Branch)  
Jack White (Past Secretary of Morgan National Trust Branch)  
Mal Rogers (Member of the Morgan National Trust Branch)  
Marj Bailey (Morgan Youth Club)  
Ros and Herb Pollard  
Gerry and Ernie Asplin  
Errol Commane (Town Clerk)

#### References

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Morgan Heritage Studies	
- Working Papers 1 and 2	Ed Noak and Associates
Morgan Centenary 1878-1978	Jack White
River Boat Days on the Murray	
Darling, Murrumbidgee	Peter Philips



LIGHT  
MEDIUM  
HEAVY

05

## Wreck Register Report

by : Patrick Grove-White

We have started a wreck register, with the information on each wrecksite being catalogued on computer by the Queen Victoria Museum in Launceston. For ease of research the State has been divided into two sections, with Ken Atherton and David Wood covering all areas North of the points Sandy Cape in the West to St. Helen's Point in the East, and Patrick Grove-White covering the coastal waters South of those two points. The site, locality and condition of each reported wreck are described as fully as possible on the Wreck Register sheet and the data processed for the computer, any information will help: The computer doesn't mind if the initial data is meagre, even for instance if the name of the vessel is unknown or the exact location not yet detected. We will add more information as it comes along. There are many interesting wrecks around and the most up-to-date information is usually in people's heads, not in books. We'd be grateful for the benefit of your personal experience and the knowledge you have gained from other people. The objective is to catalogue as many as possible of the ship-wrecks which have occurred since Europeans arrived round Tasmania's coastal waters including those in the Bass Strait and the vicinity of Macquarie Island. Then we can go into further research on anyone of them or, for instance, a common factor such as all those carrying a particular cargo or of a particular rig. The Register will of course be open to Association members if you want to look into its data and progress.

## WRECK REGISTER

Locality name	Hebe Reef
District:	Tamar River (mouth)
Name of Ship:	<i>Eden Holme</i>
Grid reference:	41 <sup>0</sup> 03' 146 <sup>0</sup> 45'
Field recorder/date:	K. Atherton, 15th September 1980
Condition of locality:	Semi-submerged reef
Depth of water:	5 to 8 metres
Distance from coast:	6kms from Low Head light
Type of material found or evident	Most of steel structure still there although very scattered - basic outline of ship visible rigging where exists lies to east of main site.
Access restrictions and approach route	Access by boat from Tamar River - approach direct. Danger of hitting wreck at low water.
Facilities on shore:	Boat ramp and PLA museum staff
Threats to locality:	Shipping, divers, weather
Visitors (ease of access) :	Subject to weather from winds SW thru N to South East
Description of wreck and locality	Wreck lies on the south east side of Hebe Reef. It lies in the tide which is especially strong at the end of the ebb. Wreck is scattered over large area with mast being ,found to the south east of site. Wreck lies on rocky reef.

History of locality: Iron barque of 794 tons. Built in Sunderland and owned by Hine Bros. of Maryport. Wrecked 7th January 1907.

Please tick - photos: (see K.J. Atherton)  
- specimens (see K.J. Atherton)  
- other notes: P.L.A. presently investigating retrieval of anchor for Pilot Station Museum.

Please return to - Queen Victoria Museum and Art Gallery,  
Wellington Street, LAUNCESTON, tas. 7250

Report of the Shipwreck of the brig *Apollo*,  
Maria Island, March 1827.

by: C.Cook and P.Clark

#### Introduction:

The brig *Apollo* was built at the Sarah Island shipyards by convict labour under the master shipwright David Hoy in 1826. The *Apollo* was 150 tons and was originally consigned for government use. It appears, however, that the vessel was privately owned, as at the time of the wreck she was carrying assorted cargo and merchandise, a Captain Bell, Captain Bethune, Captain Wilson and Mr. Wright having interest in the cargo (1). The *Apollo* sailed from Hobart for Port Dalrymple (Launceston) in March 1827. Whilst off Cape Pillar, the vessel shipped a quantity of water and became water-logged. Captain Laughton decided to put into Maria Island for repairs. The crew found 4 feet of water in the holds. The vessel was recaulked on the island (2). On Thursday 28th March, the *Apollo* departed from Maria Island but had scarcely sailed a quarter of a mile when she missed stays and struck a rock. Attempts were made to refloat her but she became a total wreck. One life was lost from the island's whaleboat(3). Many attempts at salvage were carried out, some sails and spares were saved and used on a new cutter being constructed at Sarah Island (4). Salvage was continued over a number of years with the last reference to salvaged material being iron, which was kept in the King's store, and finally being shipped to Hobart (5). The *Apollo*, amongst her general cargo, also carried tobacco (6), as well as spirits (7). Unfortunately no documents exist on the construction of the vessel, as records are unavailable prior to 1826. A dive was suggested on the site and proposed for 17th and 18th November, 1979. Rendezvous was at the Triabunna ferry terminal at 10 a.m. on Saturday 17th November. Two runabouts were powered across to the Island, while the remainder of the personnel and equipment were embarked on the ferry *Maria van Dieman*.

#### Aims of Investigation

1. To determine the location of the wreck of the *Apollo*, and, if successful, to undertake a survey of the site.
2. To determine if any relics remain in the main anchorage in Darlington Bay.

#### Personnel and Equipment

There were 15 persons who attended, 9 of whom were divers. Equipment

consisted of a 16ft. runabout and a 15ft runabout; divers supplied their own equipment.

#### Findings

No conclusive evidence was found. Some water-logged timber and rusty hand-made nails were located 3/4 of a mile north of the existing jetty, approximately 15-20 metres from the shore. Diving on the site was inadvisable due to the adverse weather conditions. A shoreline search was carried out with no conclusive evidence being revealed.

#### Conclusions

Owing to the shortage of time available, it was not possible to examine the area from which the few articles were recovered, and due to adverse weather conditions, it was impossible to make further dives on Sunday 18th. The lack of large iron objects from the wreck signifies that extensive salvage took place on the wreck site. Further research verifies this point (see Appendix 3 and 4).

#### References

1. *Colonial Times*. 6th April 1827, page 3 (Appendix 2).
2. *Colonial Times*, 6th April 1827, page 3 (Appendix 2).
3. Extract from the *Critic*, 16th October 1922 (Appendix 1).
4. Report of the superintendant of government vessels on the salvaging of rigging and spars from the *Apollo*, 16th April 1827, see also 29th May 1827 (Appendix 3).
5. Commandant of Maria Island to Colonial Secretary, 30th October 1828 (Appendix 4).
6. Letter from John Bell, declaring duty paid on tobacco. Page 337 of Colonial Secretary Office, 1.80/1830, Archives Office, Hobart (Appendix 4).
7. Minute number 140, 11th June 1827, Colonial Secretary's Office (Appendix 5).

#### APPENDIX 1

Extract from the *Critic*, 16th October, 1922

"On Thursday morning, the *Apollo* properly caulked, proceeded on her voyage at 7.a.m. She had scarcely sailed a quarter of a mile when in making a tack, she missed stays, and struck a rock. The sea was running high, and Major Lord's son was going to school at Launceston, Mrs. Laughton, child and servant were landed with difficulty. She soon filled and had three feet of water in the cabin. Every effort was made to lighten her, but to no purpose. Friday and Saturday were employed in landing the cargo and trying to refloat her. We were at work night and day. Major Lord and Mr. Lampriere relieving each other to protect the property, but in spite of every exertion some plunder took place. On Sunday the casks were all in place, to raise the vessel from the rocks, when suddenly a violent storm set in from the South West. I have never, since I have been on the Island, seen such a sea. It came directly on the port side of the brig and she is nearly destroyed, though Capt. Laughton thinks that with 10 ton butts he could get her off. She is now lying on her side on the rocks 5 or 6 yards

from low water mark. From the suddenness of the squall, the men on board with difficulty got on shore. Our Island whale boat and a boat belonging to the ship were dashed to atoms. Our large boat had two of the boats crew in it, and not being able to reach the shore, they let go the anchor and stayed in the boat, half full of water, till eleven at night, when parting from her anchor, she was driven on shore and one of the unfortunate young men, named Peter Swan was drowned. Mr. Meredith's boat, I am sorry to say was driven to pieces on the beach. The bale goods were all damaged. Everything possible was brought into the Kings store the remainder is raised on a platform on the rocks".

(The account mentions the story of David Hoy the master shipwright at Maria Island). Extract from an eye witness account, author not named.

#### APPENDIX 2

From the *Colonial Times*, 6th April, 1827 - page 3

"Advices arrived yesterday overland from Maria Island, stating loss eastward of the settlement of the new colonial brig *Apollo*, Capt. Laughton from the Derwent to Port Dalrymple. It appears the vessel while off Cape Piller became waterlogged and was obliged to put into Maria Island. Found 4ft. of water in the holds, recaulked on the Island, missed stays and went aground, became a total wreck. One man lost from the Islands whaleboat, which went to give assistance, Capt. Bethune, Capt. Wilson and Mr. Wright went to salvage some cargo ..."

See also: *Colonial Times*. 13th April, 1827 - page 3

#### APPENDIX 3

Report of Superintendent of Government vessels on the salvaging of rigging and spars-, etc. from the *Apollo*.

16th April, 1827

"Sir,

The rigging, sails and spars, (lengths?) with anchors and cables belonging to the *Apollo* lately wrecked on Maria Island, and advertised for sale on the 30th May be with the notice of his Excellency were they examined there no doubt, but many serviceable articles may be bought for the (prison?) dept. at a low rate and may be a great saving to the government-+."

29th May, 1827

"Sir,

The sails recovered from the wreck of the *Apollo* are in good order.

Rig - Fore top sail	.	240 sq. ft.	no.2
Fore try sail	.	120 sq. ft.	no.4
Spanker		150 sq. ft.	no.4.
Top gallant stud sail	....	30 sq. ft.	no.6

540 sq.ft.

I have purchased them from Capt Bell for the sum of £30.0.0. and they will make a full set of sails for the new cutter at Macquarie Harbour, and an order will be sent by the ordance store keeper to clean them."

APPENDIX 4

Commandant of Maria Island to Colonial Secretary 30th October 1828

"Sir,

I beg to acquaint you that a quantity of iron had at intervals been recovered from the wreck of the *Apollo* which remains in store at this settlement. I request to be informed whether it is to be forwarded to Hobart Town."

Page 337 - Colonial Secretary's Office (copy, Archives Office, Hobart).

*Apollo* carried tobacco in 41 baskets, all immersed in salt water, some talk of redrying tobacco, discrepancies in the weight of the baskets, suspected water spoilage, according to a letter to John Bell.

Page 337 - Letter states that the shipped weight of the tobacco was 2,318lbs. Duty was paid on 2,491 Ibs. due to water saturation, increased by 173 Ibs., average weight per basket was 4-1/4 lbs.

APPENDIX 5

Minute No. 140, 11th June 1827, C.S.O.

"Inform the Commandant of Maria Island, that the five soldiers, John Beaman, John Barry, Richard Williams, Robert Boston and Edward Conners, of the 40th Regiment have been tried by a court martial for getting drunk whilst on duty, on the 29th and 30th of March last, over the property landed from the wreck of the brig of the *Apollo* at Maria Island. The three former have been found guilty the two latter acquitted. Acquaint him that I have perused with the greatest attention the proceedings of the court, and I am sorry to be obliged to remark from the evidence addressed that there appears to have been a scene of irregularity, confusion and impropriety at the wreck of the vessel .....

(Letter continues for three pages.)

A Progress Report on the MAAT Survey at Masons  
Cove, Port Arthur, April 1980

by: C. Cook, K. Atherton,  
and K. Trebilco

Introduction

From the results of the previous investigation of the site on 12th May, 1979 it was obvious that the Masons Cove site required further investigations in a more detailed and sound archaeological manner. To this end, the association obtained the services of Don Ranson, archaeologist for the National Parks and Wildlife Service and David Wood, conservator for the Queen Victoria Museum and Art Gallery. By establishing a permanent shore based line and using theodolites, the position and concentration of artifacts could be more accurately established.

Resume of Findings from the Last Survey

The survey undertaken by M.A.A.T. on 12th May, 1979 (see report: - *underwater Archaeological Potential of Masons Cove and Waters adjacent to the Isle of the Dead 12-13-5-1979*) indicated a concentration of artifacts adjacent to the shipway. These artifacts were found to consist mainly of domestic items, crockery, bottles, but bricks and artifacts pertaining to the shipbuilding area were located. Some of these artifacts were raised

and are now held in the Queen Victoria Museum and Art Gallery undergoing conservation treatment.

The site is situated on the western shore of Port Arthur approximately 800 metres north of Port Arthur settlement. It has an easterly aspect and is in sheltered waters. The foreshore is rocky and this drops away through rock shelves to a sand and mud bottom. The area below 3 metres is Subject to extensive weed growth. The visibility is limited by rainfall and storm-water run-off. Tidal movement is not great. The site is open to cold south westerly conditions afflicting divers working the site.

#### Historical Significance of the Site

The site is an important source of early boat building techniques and materials. The construction of the shipyards began in late 1833, and shipbuilding continued until April 1844 although it was re-opened briefly to build another vessel. The nature of the artefacts revealed implies another later stage in the history of the area. This may coincide with the development by the Rev. J.B. Woolnough in the 1880's of the buildings on the site which he renamed 'Lithend' and used as a guest house.

#### Aims of this Survey

The objects of this survey were:-

- (a) To establish the concentration and type of artefacts on the sea floor adjacent to the slip at Masons Cove Port Arthur, and to plot these concentrations accurately in the form of a site plan.
- (b) To raise any threatened objects that may be found, after consultation with David Wood and Don Ransorn. The raising of any object to be accurately positioned before being raised, and once raised, to be recorded and restored.

;

#### Methodology

- (a) Base Line: This was established parallel to the foreshore and consisted of a line of site to other stations.
- (b) Buoy and Line with a theodolite : A buoyed line was run out to a limit of 100 metres at 90° to the theodolites.
- (c) Day (1) A general survey was carried out with divers operating in pairs
- (d) ~~Methodology~~ Theodolites were set up over the permanent stations and then manned. A dinghy was stationed over the site. Divers-used a buoyed line to hold tight), against the artifact and his assistant then surfaced and notified the boat crew of the description, and the buoy marking the artifact.
- (e) Communication: This consisted of two hand held radio sets operating - from the dinghy to the shore based stations.
- (f) Recording: A recorder was stationed between the two theodolite stations and received descriptions of the artifacts via the hand radios. Cross references were received from each trig station in degrees and minutes and recorded on a grid sheet.
- (g) Raising of Objects : Artifacts raised were placed in plastic bags under-water. After discussion with D. Ranson and D. Wood on the acceptability of such artifacts.

## Results

### (a) Objects Raised

Item Number	Description
21	Clay bottle
36	Lid of vessel
34	Small clay jar

Raised 5/4/1980 (see amended site plan) Government Lantern Glass with broad arrow mark.

### (b) Site Plan

A site plan was compiled using the theodolite bearings and is presented as appendix (1)

## Conclusion

The interesting variation of some objects and their age indicates not only shipbuilding in this area, but also the subsequent history of the shore activity. The concentration around the slipway and during the grid search do indicate that a lot of objects were thrown from shore. Extension of the grid patterns following the exploratory dive is necessary as further large artifacts are evident in this area. The potential of the site is varied and may be better evaluated by a trial trench within Masons Cove and by investigations of other areas adjacent to concentrated shore activity. Personnel gained valuable experience in triangulation techniques using shore based stations.

## Recommendation

It is recommended that:-

- (a) A complete survey of the site be prepared
- (b) Establish other areas of concentration
- (c) Prepare a test trench in any such areas located
- (d) Research into any anchorage within the area
- (e) Research into other shore activities likely to have resulted in artifacts underwater.
- (f) As **all** the pertinent sites are progressively being salvaged and vandalized, a degree of protection is of paramount importance to the continued existance of these areas. This protection of the relevant underwater sites would enhance the existing heritage of Port Arthur itself.
- (g) That facilities be established **in** Port Arthur for accepting artifacts and ensuring conservation, archaeological research and then display of these artifacts.
- (h) Continued support be encouraged from all interested parties pertaining to this site.

## Bibliography

*Penal Peninsula*

I. Brand.

## Wreck Inspection

by : Mike McCarthy

## Introduction

Maritime Archaeology Departments or amateur groups attempting to survey a large geographical region require a co-ordinated wreck inspection program (Sledge, 1977). Once the system is established and in operation, the inspection reports will enable an orderly program of wreck management. Wrecks are then placed in an order of priority based on the availability of funds, time and manpower. Fund raising, the use of conservation laboratory facilities and preparations for display can then be channelled to that wreck of most importance and not wasted on sites that can or should be left till a later date. Wrecks can also be managed on the basis of this inspection system and assessed not only for archaeological value, but also for recreational and educational value. Wrecks of little archaeological value but of great recreational and educational value to divers and other groups e.g. schools tourists etc. can be thus publicised with sailing directions, history, points of interest and other features, noted and made available to the public. Experience has shown, however, that wrecks with easily removable fittings suffer when their location is made public. This is a factor to be considered and the gains in publicising a site obviously need to be balanced against the losses.

## Prerequisites

An essential prerequisite to a successful wreck inspection program is, an alphabetical index of wrecks giving details of construction, newspaper reports, date of loss etc. (Henderson, 1977). Information from this index is also contained in the wrecks area list which being linked to the various admiralty charts gives at a glance, the known wrecks believed lost in any specific area, e.g.

Area	File	Chart
Fremantle	9/80	AUS 114
Jurien Bay	118/80	AUS 333
Esperance Area	62/G	BA1059

The results of the inspection can be then used to narrow the field and hopefully identify the site. Other necessities are a suitable all purpose diving rig (ours is a twin engine aluminium vessel), plastic sextants, monocular; compass, land and under water camera, tapes and recording gear. Our underwater cameras are standard Nikonos III systems with 15mm u/water lens, viewfinder and lightmeter. A graduated non-floating metre scale is used in all technical photographs with divers used as a rough scale in other shots, e.g. general purpose photographs. Apart from the underwater tapes (usually 30m or 50m PVC tapes), underwater recording is done using a board covered with plastic drafting film. This board has attached, a depth gauge, compass, small scale pencil, set of diving tables and occasionally a set of calipers. A diagram of the board is shown below:

The air supply used is a combination of scuba and hookah. Scuba is used on short inspections where freedom to move is required. Some wrecks, for example, are over 100 metres long with a variety of line snagging projections e.g. engines, boilers, propellers. Hookah is most often used when a prolonged inspection of a small area is required.

#### Inspection Records

1. Conditions on site: sea; bottom; type; visibility; surge etc.
2. Description of the wreck: physical stability; rib sizes; sheathing; keel/keelson size; fastening type and size; no. of boilers; type of engine; length; depth; spread of wreckage; cargo; anchor type; chain type; etc. etc.
3. A photographic and illustrative record:
  - (1) Overall e.g. photomosaic
  - (2) Technical shots of detail e.g. anchors, engine
  - (3) General photographs e.g. for display
  - (4) Line drawings.
4. Samples from the site: wood samples; fastening types; ceramic sherds; bottle types etc.
5. Wreck Position for future reference
  - (1) Sailing directions
  - (2) Compass bearings (preferably monocular type)
  - (3) Visual transits e.g. 4th tree over house on hill
  - (4) Sextant angles(Experience has shown that all four are required)

#### Recommendations

Based on the above, a recommendation can then be made about the historical importance of the site, its physical condition and its archaeological potential. The best season and the means of working the site, if necessary, should also be included along with an assessment of the monetary value of the site. Here, in W.A., we report first to the Maritime Archaeology Advisory Committee. This body consists of academics, divers, historians and museum personnel and its function is to advise the Director and Trustees of the W.A. Museum on such matters as rewards, historic status of sites, etc. The assessment of rewards follows the guidelines of the old Maritime Archaeology Act. That is that the finders should receive a reward of up to \$5,000 for reporting the site and 50% of the value of the non-ferrous metal on the site.

#### Identification of Wrecks from the Physical Evidence

Shipping records such as Lloyds, Bureau Veritas, Customs Registers etc. can give a variety of information which can be matched with the physical remains: length; construction; wood types; number of masts; fastening composition (copper or yellow metal); sheathing composition; types of knees; number of boilers; number of grates per boiler; etc. Lloyds also have a set of minimum sizes for such timbers as the keel, keelson, ribs etc. and a set of minimum sizes for: fastenings; anchor chain; etc. These minima vary according to the tonnage of a vessel and can be therefore used as a crude device for estimating a wreck's tonnage and therefore as an aid in identification: An example from Lloyds Fastening Dimensions:

Tonnage	100	400	1350
Keelson bolts'	13/16"	15/16"	1'-4/16"
Rudder pinties	2"	2-3/4".....3/34"	
Tree nails	1"	1-1/2".....3/34"	

The identification and matching of artefacts with dated types is 'also a method used: sheathing; sailors pipes; bottles; ceramics; coins; engines; stoves; anchors; windlasses; chain etc. In this area, there are a wide variety of. useful publications and most are easily available! Examples are: *The History of Technology* ; Rubin's Series on anchors British Patent Office Records; bottle guides, texts on steam engines. A wreck inspection program is normally an inexpensive undertaking. It requires, however, a broad range of skills and a wide knowledge of ships and the techniques used in their construction (in Australia 1600-1950). These can be embodied in one person on a full-time basis or where necessary, in a small group (divers, historians, researchers). Whichever way, it is a most rewarding undertaking and an essential part of any overall wreck management program. A sample inspection report is shown below, together with an historic precis.

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REPORT OF WRECK INSPECTION

Site: S8 WINDSOR (Known to Museum Staff)

Date of Inspection: 26/10/79

Personnel: M. McCarthy (Officer in Charge)  
G. Henderson  
P. Baker  
G. Green

Approx. Location: Southern end of Half Moon Reef Approx 7 km W of Wreck Point  
Pelsaert Island, Houtman Abrolhos.

Lat: 28°58.5'S

Long: 113°54.2'E

Compass bearings: Site to old Guano Jetty, Pelasert Is. 048°  
to Lt. House. Pelsaert Is. 085° Haze prevented  
taking third transit. Sextant angles unnecessary

Visual Transits: Vessels Iron boiler, reaching a height 4 metres above the reef  
is easily recognized from Wreck Point and from several km out to  
sea

Transit Photos: Not necessary (site clearly visible)

Site Photos: Colour Windsor Slide File WN(A&B), SAB 6-15, ZW/13/598-601  
B&W MA 994-997, 320-26-37, 321-2-11, 323-25-27, 324-1-3

Description of site:

The site was first inspected in 1974 but at that time an inspection of the wreckage outside the reef was not possible due to the extremely dangerous conditions then prevailing. On this occasion, conditions were ideal but entry and exit from the water still hazardous. The wreckage lying on the reef and in the lagoon beyond consists of a boiler, section of the ships floor, bollards, a winch, deck and side plating and other miscellaneous material. The underwater scene on a good day is very striking and the extent of disintegration of this large vessel is quite remarkable. Swimming from the stern (east) towards the bow (west) the diver sees the remains of the rudder in a crevasse some 7 metres below the surface followed by the portions of stern post with some gudgeons attached (it is interesting to note here, that the screw aperture with the remainder of the gudgeons lie some 400 metres away over the top of the reef in the coral lagoon beyond. Weight possibly 5-10 tonnes). Following that, are the remains of the four bladed propellor and shaft which, though broken at a number of coupling flanges, stretches 30 metres to the remains of the single triple expansion steam engine. The bedplate, crankshaft, main bearings and connecting rods lie to starboard of the line of the shaft while the cylinders lie in a crevasse leading up to the exposed reef itself. The engine frame itself lies some distance to port as does the other boiler which is largely buried in a hole on the bottom. From there, the wreckage consists of unidentifiable iron work and a substantial chain mound. The anchors were not seen and are presumed to lie in an inaccessible area of broken water near the reef face. The site is normally only accessible on the odd good day with no swell.

Material raised:

NIL

Identification Comments:

The identification of the vessel is beyond doubt. The two single ended boilers with 3 furnaces each, the cellular bottom and contemporary photographs also aid in identification.

Recommendations:

It was recommended after the 1974 inspection that should the legislation change the site should be declared historic because:

1. the wreckage provides information regarding the construction and equipment of an early steamer used in W.A. sandalwood trade with China.
2. the conspicuous nature of the wreckage makes it a point of interest to yachtsmen and holiday makers, and
3. it is evidence of a tragic incident in the history of the Abrolhos archipelago.

As these recommendations fall within the guidelines set by the Federal Government for declaring a wreck historic, I support that action.

No rewards are required as the wreck was previously known to Museum staff.

Mike McCarthy, 12/7/80

Joint Committee Action:

Resolved site be declared a Historic Wreck  
Resolution 31/80 1/6/1980

COLONIAL WRECKS  
HISTORY PRECIS

(Vessel) SS WINDSOR 2/2/1908 (Date)

Specifications:

Tonnage: 2892 Reg.Tons  
Reg.Dimensions: 314'6" x 40.6' x 20.5'  
Others: 10" Bar steel cellular bottom  
3 cyl; T.E.Engine, 2 single ended boilers with 3 furnaces ea.  
Built at: Hartlepool; England Date: 1890  
Owners: Britain S.S. Co.  
Master: Captain Watkins

Position: Half Moon Reef near Pelsaert Island.

Lie E/W Axis on and beyond the reef

Cause                                    Vessel given too much weather helm in view of her handling characteristics in the adverse conditions then prevailing which combined with an inshore current led to the vessel's loss.

Casualties:                            3 lives in wreck including Master, Capt. Watkins  
    2 lives lost in subsequent rescue attempts

Cargo:                                    2600 tons of sandalwood

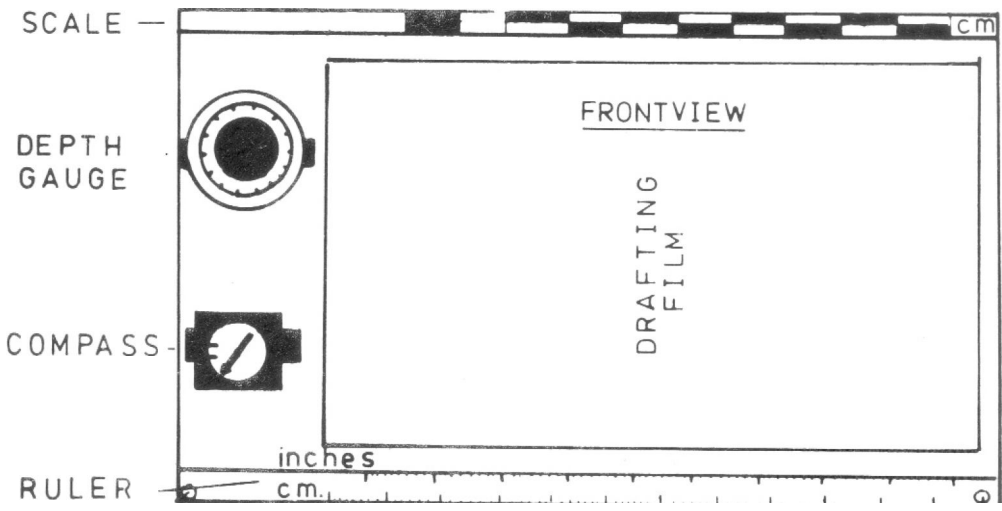
Disposal:                                Total loss

Site discovered:                       Well known landmark

WAM Inspection:                       20/10/79

**WRECK INSPECTION  
 UNDERWATER  
 BOARD**

for use with    tape.nikonos3.15mmlens.                        and scale



DECOMPRESSION  
 TABLE  
 (PLASTIC) —

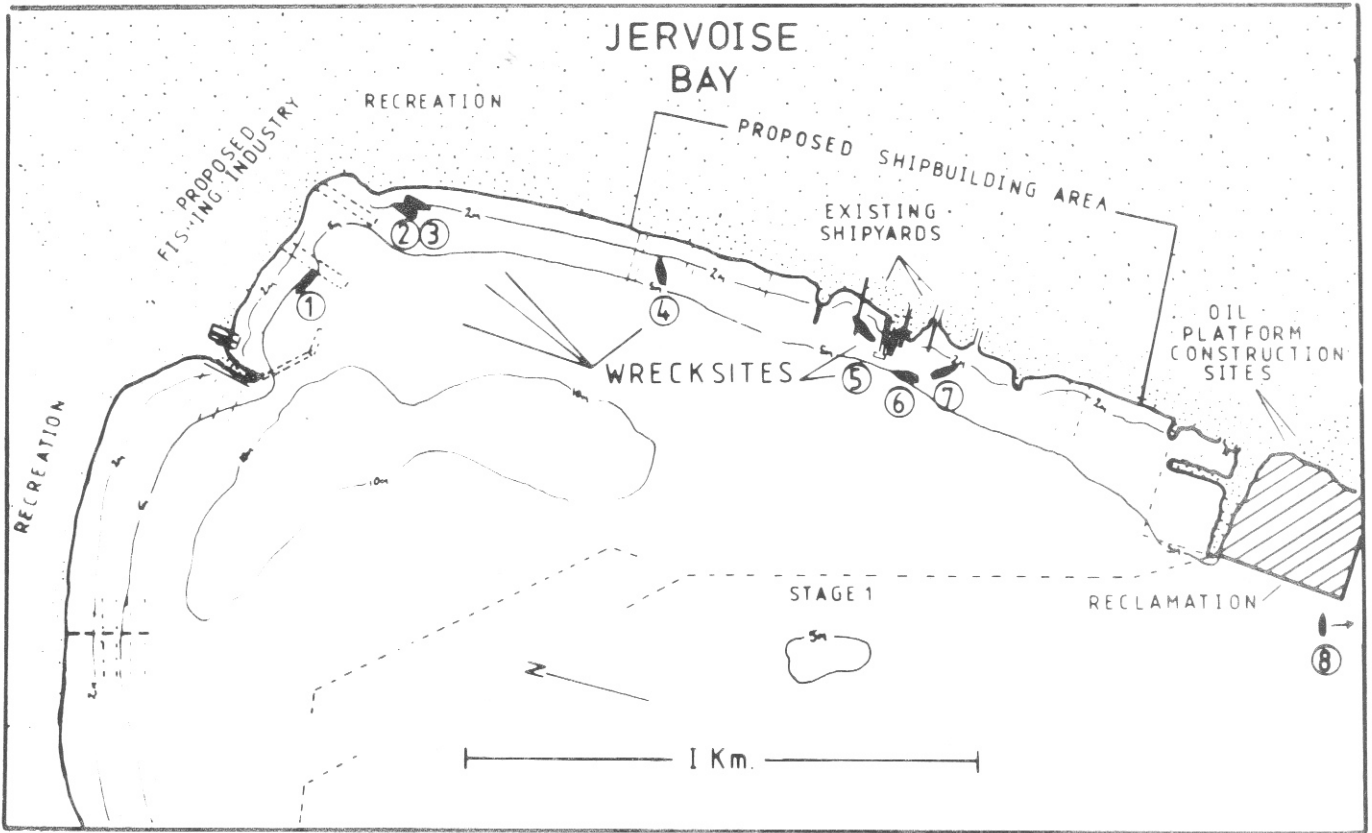
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
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0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9

BACK VIEW

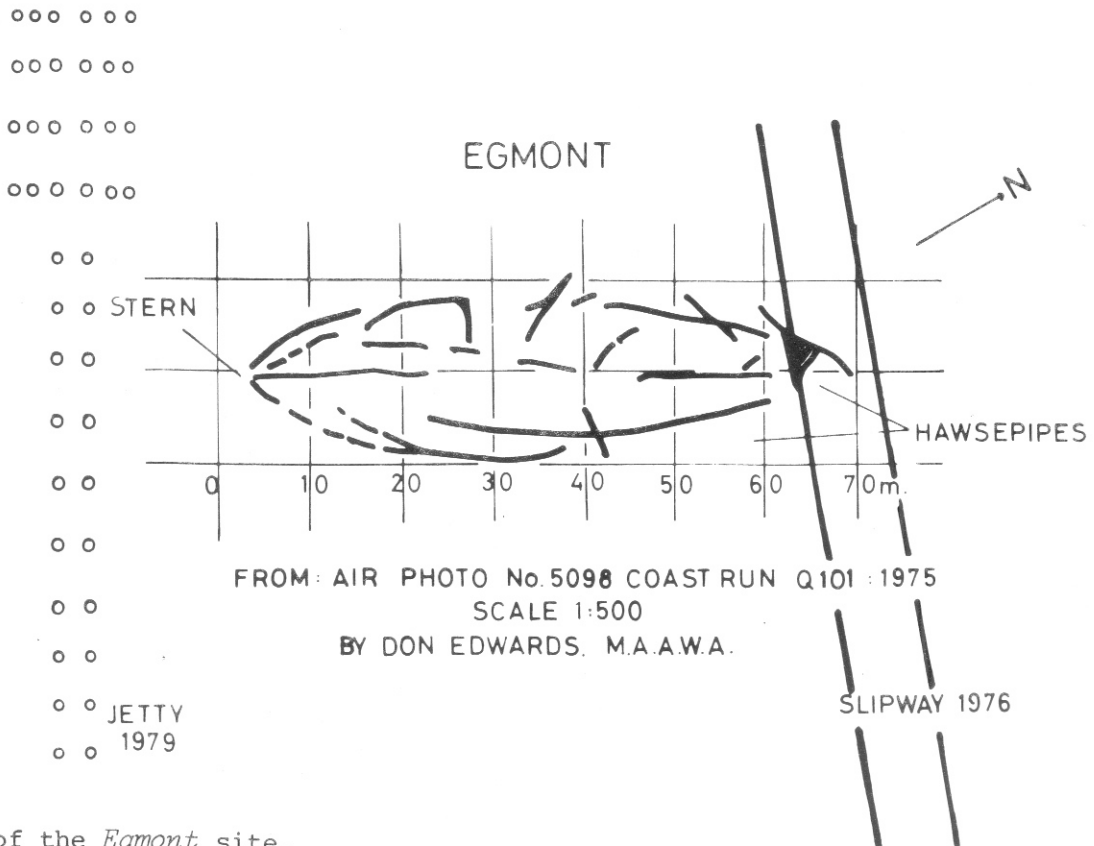
DRAFTING  
 FILM

CALIPERS

PENCIL



A Map of Jervoise Bay showing the endangered sites.



Plan of the Egmont site.

## INDUSTRIAL DEVELOPMENT AND THE JERVOISE BAY WRECKS

by : Mike McCarthy

Jervoise Bay, South of Fremantle, was recently thrown into prominence with the announcement of plans to greatly expand the Shipbuilding Industry in the area. The eight wrecksites in the area were seen to be at risk and a study was funded with a grant of Aus\$2,000 from the Department of Conservation and Environment. Information was also sought by the Metropolitan Regional Planning Authority who also wished to be informed of the Historic significance of the wrecks in the area.

In view of the small budget it was decided to allocate one staff member (the author) from the Maritime Archaeology Department of the Western Australian Museum to take charge of the project using volunteer helpers from the M.A.A.W.A.

The project commenced in November 1978 with 5 major aims:

1. To locate all the wrecks in the Bay
2. To inspect and evaluate each site
3. To identify each site from the research and physical remains
4. To report to the appropriate authorities
5. To preserve those worthwhile sites by the best means possible

### The Search for Wrecks

The underwater search was conducted on weekends by the M.A.A.W.A. and was limited to a 250 metre wide strip running along the shores of the Bay.

Line search techniques were therefore considered an adequate solution in the manpower and budgetary circumstances then prevailing, and the search was conducted between marked 15 metre wide grids extending 250 metres from the beach.

Eight wrecks were found all within 60 metres of the shore, on a sand bottom and in depths between 2 & 5 metres of water. Seven of the sites lay in the area of proposed development, and were therefore seen to be at immediate or future risk.

### Results of the Archival Research

At the conclusion of the archival search only 2 of the 8 sites were positively identified with at least 13 vessels as possibilities for the other 6 sites.

Of these 13, only 1 wreck was documented (Henderson 1977) as having been scuttled in the Bay and 2 others were recorded (McKenna & Pollard) as having been abandoned in the area, but not specifically in the Bay.

### Site Analysis

Each individual wreck was then photographed, measured, for length and breadth, its condition and stability assessed and its physical features noted. Identification of each site was then attempted based on the physical and archival evidence. This phase of the project was quite successful and has been published in an earlier edition of the newsletter.

The sites are:-

KVIII	A Dutch World War II submarine
<i>Abe mama</i>	An American 3 masted wooden schooner
<i>Alacrity</i>	An ex tug
<i>Egmont</i>	A former steamer and coal hulk

and less positive identification was made of the :

<i>Ellen</i>	An American built Brig and former hulk
<i>Gemma</i>	A German built Brig and former hulk
<i>Redemptora</i>	An American built ship and former hulk
<i>Camilla</i>	A European built vessel and former lighter

#### Protection Issues

The issues were broader than just the identification dating and recording of each site however, and the preservation question was obviously of vital importance. In general, the Museum's stance on all such sites, whether judged historic or not, is that they should be left alone or worked around if at all practical.

Informal contacts were established between Museum staff, the contractors and Government departments concerned with the development.

Contact was also made with the relevant site engineers, divers and leaseholders with a view to avoiding any potential clash of interest. These early and informal discussions on the situation and the associated problems were seen to be of great benefit.

#### The Present Situation

The first stage of development has already occurred in the area of the *Egmont* and is shown in the plan on the lower part of page 30.

The success of early informal personal contact can be seen in this case. The study showed there were no solid legal grounds to prevent the destruction of the site but the building contractors did their utmost to avoid causing any damage when constructing the 1979 jetty. The informal contacts made with the contracting firm, site engineer, foreman and chief diver had pleasing results and auger well for similar protection of the other wrecks in the area.

In like manner, contractors have avoided further damaging the KVIII, a site of very low priority. A recent informal contact with the Government body responsible for the overall planning suggests that all sites will be avoided as the development continues and this has been made possible by the early groundwork of both the Museum and developing bodies.

#### Conclusions

(i) Had the Museum taken a negative approach and used the Maritime Archaeology Act of 1973 and/or the Historic Shipwrecks Act of 1976, at the point of conflict of interests, the results may not have been as encouraging. Informal contact at the early planning stage has helped avoid any potentially damaging clash of interest. The realisation by both sides that compromise is necessary and pre planning essential has led to a situation that will hopefully allow the proper study of those worthwhile sites and more importantly, their retention for study by future generations.

The importance of early informal contact before any clash of interest develops, can be clearly seen.

(ii) The bay and its varied sites also forms an excellent training ground for the amateur archaeologist, an easily accessible source of ships' fittings and hull structures for study and display and one of the few safe and varied underwater educational and recreational areas that schools and dive organisations can use in their wreck and historical studies. The post graduate diploma course in Maritime Archaeology starts in July 1980 and the Bay and its wrecks assumes an even greater importance in the training of potential professional maritime archaeologists. A collection of 8 varied wrecks in an area of sheltered water accessible at all times of the year within 30 minutes drive of the City is a valuable resource in these regards.

(iii) Many of the sites in the Bay are abandoned 19th century hulks, and it is this almost forgotten class of shipwreck that has present and more importantly future value to Maritime Archaeologists and Marine Historians.

The hulk is often abandoned in out of the way calm shallow water and these old vessels often exist today in relatively good condition. Some are intact only up to those areas encased in sand or other anaerobic sediment. Others such as the wooden *Vicar of Bray* (Throckmorton 1977 p.17) in the Falkland Islands, the *Edyin Fox* in New Zealand (Lamson & France p.34) and the iron *Santiago* (Andrews 1976 p.50) in South Australia are almost intact hulls.

Many former hulks have been refloated and restored e.g. *James Craig* (Toghill 1978) *porly Woodside* (Darrock 1975) and *Great Britain* (Corlett 1970) and a great deal has been learnt about the construction of these vessels in the process.

Others, like the *Jhelum* (MacGregor 1973 p.150) *Actaeon* (Throckmorton 1977) are in much worse condition but have already been noted as worthy of study by such well known Marine Historians and Archaeologists as those above. Most of the hulks throughout the world, however, would appear like those in Jervoise Bay as much less imposing or even interesting structures to the present day but that does not lessen their potential value for future generations.

There is already a wealth of information on shipbuilding techniques of the 19th century but even more can be learned from an examination of the physical remains themselves especially when the wreck is identified and its details known, e.g. the hulk *Day Dawn*, formerly the American whaler *Thomas Nye* (McCarthy 1980).

The ships' graveyard and the abandoned hulk can be a rich source of such information. Even if the wrecks cannot or need not be excavated and examined, their future worth should be realized and steps taken to record their position and condition and preserve them for the future.

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State	Name by which ship known	Type of ship or description of remains	Date Wrecked	Approximate location of remains or ship	Date shipwreck declared historic	Date Relics declared historic
W.A.	'Stevia's'	Dutch shipwreck	1627	Wrecked near the mouth of the Wallabi Group, Houtmans	15.12.76	15.12.76
	'Vergulde Draeck' or 'Gilt Dragon'	Dutch shipwreck	1656	Wrecked near the mouth of the Wallabi Group, Houtmans	15.12.76	15.12.76
	'Zuytdorp'	Dutch shipwreck	1712	Wrecked near the mouth of the Wallabi Group, Houtmans	15.12.76	15.12.76
	'Zeewyk'	Dutch shipwreck	1727	Wrecked near the mouth of the Wallabi Group, Houtmans	15.12.76	15.12.76
	'Trial' or 'Tryal'	Wreckage of British barque	1839	Wrecked near the mouth of the Wallabi Group, Houtmans	8.9.77	20.9.77
	'Queen'	Wreckage of iron steamship	1878	Wrecked near the mouth of the Wallabi Group, Houtmans		
	'James Matthews'	Wreckage of iron steamship	1878	Wrecked near the mouth of the Wallabi Group, Houtmans		
	'Cervantes'	Hull remains of American whaling barque	1878	Wrecked near the mouth of the Wallabi Group, Houtmans		
	'Arpenteur'	Wreckage of iron steamship	1878	Wrecked near the mouth of the Wallabi Group, Houtmans		
	'Eglinton'	Wreckage of iron steamship	1878	Wrecked near the mouth of the Wallabi Group, Houtmans		
	'Lady Lyttleton'	Hull timbers of whaler, 3 iron trypots, iron drum spars	1867	Wrecked near the mouth of the Wallabi Group, Houtmans		
	'Ben Ledi'	Wreckage of iron steamship	1879	Wrecked near the mouth of the Wallabi Group, Houtmans		
	'Centaur'	Iron hull plating of 118 ton brig	1874	Wrecked near the mouth of the Wallabi Group, Houtmans		
	'Chalmers'	Hull of 606 ton wooden barque	1874	Wrecked near the mouth of the Wallabi Group, Houtmans		
	'Fairy Queen'	Wreckage of iron steamship	1875	Wrecked near the mouth of the Wallabi Group, Houtmans		
	'Zeehoop'	Wreckage of iron steamship	1875	Wrecked near the mouth of the Wallabi Group, Houtmans		
	'Gem'	Wreckage of iron steamship	1876	Wrecked near the mouth of the Wallabi Group, Houtmans		
	'Hercules'	Skeleton of ship's timber of 356 ton barque	1876	Wrecked near the mouth of the Wallabi Group, Houtmans		
	'Eolo'	Wreckage of 332 ton iron-framed wooden steamship - large propeller	1876	Wrecked near the mouth of the Wallabi Group, Houtmans		
	'Lady Elizabeth'	Wreckage of 658 ton barque - iron frames	1878	Wrecked near the mouth of the Wallabi Group, Houtmans		
	'James Service'	Hull structure of 11 ton iron barque	1878	Wrecked near the mouth of the Wallabi Group, Houtmans		

State	Name by which ship known	Description of wreck	Date Wrecked	Approximate location	Date shipwreck declared historic	Date Relics declared historic
W.A.	Marten	Wreckage of 470 ton barque	1878	28° 55.5'S., 113° 59.6'E.	8. 9. 77	20. 9. 77
	Diana	Wreckage of 69 ton schooner	1878	28° 08.4'S., 115° 45.3'E.		
	Star	Badly broken up wreckage of 69 ton schooner	1880	22° 21'S., 119° 11.2'E.		
	Agincourt	Wreckage of 443 ton remains of hull and boiler	1882	21° 12'S., 119° 01.8'E.		
	Macedon	Remains of hull and boiler of 876 ton steamship	1883	21° 59.3'S., 115° 33.3'E.		
	Chaudière	Wreckage of 470 ton barque	1887	21° 02.2'S., 115° 02.1'E.		
	Mira Flores	Wreckage of 900 ton iron	1886	21° 00.2'S., 115° 27.9'E.		
	Bunbury	Wreckage of 470 ton barque	1886	21° 00.2'S., 115° 27.9'E.		
	Janet	Wreckage of 470 ton barque	1887	21° 00.2'S., 115° 27.9'E.		
	Denton Holme	Wreckage of 470 ton barque	1890	21° 00.2'S., 115° 27.9'E.		
	Day Dawn	Hull of 500 ton wooden barque, whaler converted to storage hulk	1890	21° 00.2'S., 115° 27.9'E.		
	Raven	Wreckage of 362 ton wooden barque	1891	21° 00.2'S., 115° 27.9'E.		
	Dato	Hull of 200 ton ship	1893	21° 00.2'S., 115° 27.9'E.		
	Ulidia	Iron hull plating and large iron I-beam frames of 1378 ton barque, three metal spars; hatch coamings	1893	21° 00.2'S., 115° 27.9'E.		
		Wreckage of 789 ton barque-rigged iron steamer	1894	21° 00.2'S., 115° 27.9'E.		
	Sepia	Wreckage of 172 ton iron	1898	21° 00.2'S., 115° 27.9'E.		
	City of York	Wreckage of 1484 ton sailing ship	1899	21° 00.2'S., 115° 27.9'E.		
	Carlisle Castle	Wreckage of 1484 ton sailing ship	1899	21° 00.2'S., 115° 27.9'E.		
	Unknown	Wooden vessel	-			
	'Europa'	Iron barque	1897			
	HMS 'Pandora'	English	1791			
Old.						
	SS 'Ballina'	Paddle steamer	1879	23° 23' S., 152° 54' 55" E.	4. 79	11. 4. 79
	I-124	Wreck of Japanese submarine	1942	2° 06.4' S., 130° 06.77' E.	12. 7. 77 19. 12. 78	12. 7. 77 19. 12. 78

by: Jennifer Amess (Mrs.)

Amendment of the Historic Shipwrecks Act 1976

The Historic Shipwrecks Amendment Act 1980 which received Royal Assent on 29 May 1980, amended the Historic Shipwrecks Act 1976 to provide for greater co-operation between the States and the Commonwealth. In accordance with undertakings on offshore constitutional matters agreed upon at the 1979 Premiers' Conference, the Act was amended to include the principle that the Act will only be applied or continue to be applied, with the consent of the adjacent State. The amendment provisions require the Governor General to declare that the Act shall cease to apply in relation to the water adjacent to the coast of a State or in relation to a specified part of those waters if the State or the Northern Territory so request. As the Prime Minister stated in the House of Representatives on 23 April 1980 "An exception is made in the special case of old Dutch shipwrecks lying off the coast of Western Australia. Those shipwrecks are the subject of a 1972 agreement between the Commonwealth and the Netherlands. They are protected at present by the 1976 Act and are to remain under that Act until satisfactory alternative arrangements are made with Western Australia."

Amendment of the Historic Shipwrecks Regulations

An area around an historic shipwreck may be declared to be a protected zone for the purpose of protecting a shipwreck. Regulation 4, contained in *Statutory Rules* 1979 No.93, states that the activities listed in Section 14 of the Act are prohibited in protected zones. These activities include the mooring or use of ships, trawling, diving or other underwater activity. Regulation 4 was amended by *Statutory Rules* 1979 No. 124 to correct the possibility of the regulation operating so that it might unduly trespass on the personal rights and liberties of Australia's citizens. The amendment has added the defence of reasonable excuse without which there might be a danger of persons being unjustly convicted under Regulation 4.

Reward Payments

In February 1980, Ben Cropp and Steven Oomm were advised that the Government had decided to pay a total and final reward of \$5,000 each in connection with the discovery and notifications of the wreck of what is thought to be the *Pandora* which was declared historic in terms of the Historic Shipwrecks Act 1976 on 18 November 1977. The Acting Minister for Home Affairs expressed his appreciation for the assistance both men had given the expedition to the wreck-site sponsored by the Department of Home Affairs in April 1979. The reward payment was made as the result of a detailed historical survey and report submitted to the Department by expedition leader Graeme Henderson of the Western Australian Museum. A total and final reward of \$17,500 was also paid to four people (Francis D. Paxman, Barry P. Paxman, Glynn R. Oomey and Larry R. Paterson) for the discovery and notification of the unidentified Point Cloates wreck which was declared historic on 14 December 1978. The payment of rewards is a discretionary matter for the Minister for Home Affairs and Environment. The Hon. R.J. Ellicott, Q.C., M.P., retained his position as the Minister for Home Affairs and the Environment following the 18 October 1980 Federal Elections and the subsequent Ministerial reshuffle on 3 November 1980.

National Survey of Current Position

On 30 September 1980, the Minister for Home Affairs and the South Australian Minister of Environment, the Hon. David C. Wotton, jointly announced that the Historic Shipwrecks Act 1976 would be proclaimed to apply to waters off the coast of South Australia. The two Ministers indicated they wanted to use the Act to protect an important part of South Australia's cultural heritage and both felt

sure that Australians would welcome this initiative. Mr. Wotton suggested anyone who discovered a wreck should notify the Heritage unit of his Department (G.P.O. BOX 667, Adelaide 5001, phone 426611). This would facilitate the study of South Australia's past and prevent raised objects from disintegrating after removal from the sea and being lost forever. Mr. Ellicott said he expected that a number of shipwrecks off the South Australian coast would soon be declared historic under the Act. Subsequently, a Proclamation by the Governor General declaring that the Historic Shipwrecks Act 1976 applies in relation to waters adjacent to the coast of the State of South Australia was gazetted on 8 October 1980. The Historic Shipwrecks Act 1976 also currently applies to waters off Western Australia (proclaimed on 3.9.77), Queensland (18.11.77), New South Wales (11.4.79) and the Northern Territory (to which the Act automatically applied from 15.12.76). A list of declared historic shipwrecks off these States is provided below. The article (or articles) which appeared to be the remains of three ships off the Western Australian coast were provisionally declared historic for 12 months from 8.9.77. They were the Eyre Wreck, the Browse Island Wreck and the Osborne Island Wreck. Western Australia has recently requested that these three wrecks and a further thirteen off its coast be declared historic shipwrecks and another wreck be provisionally declared historic. The Premier of Queensland recently nominated the Queensland Museum as the authority in that State to undertake the protection, recovery, preservation and exhibition of historic shipwrecks and their relics.

It is understood that the survey of the paddle steamer SS *Ballina* by the Maritime Archaeological Association of New South Wales being undertaken in co-operation with the Museum of Applied Arts and Sciences, Sydney, is proceeding at a satisfactory level despite the dangerous position of the wreck. Local survey leader Geoff Thame has left the area and has been replaced on the project by Eric Toms. Geoff's departure is regretted as his assistance was invaluable. The Minister for Home Affairs on 28 August 1980 and 17 October 1980 issued permits under Section 15 of the Act authorising the removal of historic relics from the *Ballina* wreck site.

#### The Future Direction of Maritime Archaeology in Australia

During the first Southern Hemisphere Conference on Maritime Archaeology held in Perth in 1977, it was resolved that a second conference should be held. It is envisaged that this conference would provide a forum for a review of Australian maritime archaeology since the introduction of the Historic Shipwrecks Act 1976 and for an analysis of progress and problems. Overseas speakers would contribute a wider view of developments. It is anticipated that the second conference might be held between mid or late 1981 and that it might provide some guide-lines and impetus to the development of more active maritime archaeology programmes in all States excluding Western Australia. A working party has been set up by the Commonwealth Government to examine the question of establishing a National Maritime Museum. The Working Party, convened by the Department of Home Affairs and Environment, was established pursuant to the recommendations contained in the 1975 Report of the Committee of Inquiry on Museums and National Collections. It has commenced negotiations with the State Governments with respect to possible sites for the Museum. Clearly, the establishment of such a museum will have implications for the development of maritime archaeology in Australia.

JOURNAL REVIEWS

The International Journal of Nautical Archaeology

VOLUME 9, NUMBER 1, February 1980

EDITORIAL

Another view of the ancient rudder

Jacques Thurneysen

The *Kennemerland* site. A report on  
the lead ingots

R. Price, K. Muckelroy  
and L. Willies

'A collection of 119 lead ingots are described and analysed,  
it includes an interesting account of a novel method of raising  
the objects, each weighing about 140kg. A thorough description and  
identification makes this a model archaeological paper.'

The Forty Cannon Wreck, Chinchorro Banks,  
Quintana Roo, Mexico. A preliminary  
report 1978

Jack B. Irion

'Forty iron cannon, some having letters E, F or G on trunnions.  
The site was dynamited in 1962. Markings on base ring are  
incorrectly identified as hundred weights, pounds and ounces,  
whereas the figure 3760A is the weight in Amsterdam Pounds.'

Side-scan sonar in Lake Champlain, Vermont  
U.S.A.

Marc. A. Theoret

'Includes an historical background to area, description of the  
survey and discovery of 24m vessel, some 4m breadth.'

The Armament from the *Batavia*. 1. Two  
composite guns

J.N. Green

'Description of guns, their investigation and historical research.  
The guns were found to be made of copper, solder and iron, a  
most extraordinary method of manufacture.'

On the problem of the preservation of human  
bone in sea-water

G. & S. Arnaud, A. Ascenzi,  
E. Bonucci and G. Graziani

NOTES AND NEWS

Copper ingots and marine copper

R.F. Tylecote

Two-masted Greek ships

L. Casson

Mediterranean hull types compared 4:

An unusual type of construction. The

hull of wreck 1 at Bon Porte

O. Jestin and F. Carraze

Stone anchor-shanks in the Western

Indian Ocean

N. Chittick

Hydraulic probing: one solution to  
overburden and environment

G.P. Watts, Jr.

Museum Report 8: The New Western

Australian Maritime Museum at

Fremantle, with description of

building facade.

J. Green

News: Caribbean: The Cayman Islands

survey Texas: Research progress

REVIEWS

Ian Atkinson, *The Viking ships* (Christensen); M. Bonino, *Archeologia e ttcdizione navale tra la Romagna e il Po* (Dolley); J. du Plat Taylor and H. Cleere (eds), *Roman shipping and trade: Britain and the Rhine Provinces* (Millett); D. McCaslin, *Hala Sultan Tekke 4; the Underwater report* (Green); A. McKee, *The Queen's corsair; Drake's journey of circumnavigation 1577-1580* (Martin); A. Roland, *Underwater warfare in the age of sail* (Bathe); D.L. Clarke, *Analytical Archaeology* (Muckelroy); F. Spengemann, *Die Seeschiffe der Hannoverischen Weserflotte* (Robinson).

VOLUME 9, NUMBER 2, May 1980

EDITORIAL

Systematic registration of older sinkings  
and wrecks in Swedish waters

Carl Olof Cederlund

'A comprehensive survey of wreck sinkings related to  
preservation in Swedish waters.'

The Jerusalem ship, *IRIS MYRIONYMOS* and  
the True Cross

S.W. Helms

'A scandalous case of restoration of an illustration of  
a ship in the Church of the Holy Sepulchre, showing the  
Christianization of a possible pagan inscription, the  
distortion of the original ship inscription and the resulting  
tragic loss of one of the best ship inscriptions in the Holy Land.'

*Hemiolia trihemiolia*

J.S. Morrison

'The old rowing controversy all over again'.

Three terracotta braziers from the sea off  
Sicily

Gerhard Kapitan

Archaeological underwater investigation in  
1977-78 of the remains of an early medieval  
bridge, Bobegin, S-upska district, Poland

Andrzej Kola and Gerard Wilke

Maritime archaeology applications for a  
programmable calculator

Jeremy Green

'Applications relating to profile recording, rectification  
of titled photographs, and co-ordinate transform programs.'

Conservation and maritime archaeology

C. Pearson

NOTES AND NEWS

Ours is to reason why: The  
iconography of ancient ships

A.F. Tilley & V.H. Fenwick

'Even more rowing controversy, but well argued for.'

The Bronze Age site off Moor Sand,  
Salcombe, Devon. An interim report  
on the 1979 season.

Keith Muckelroy & Philip Baker

News: Bulgaria: Thoughts arising from Sozopol Conference 1979.  
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where maritime archaeology is going.

Great Britain: The Welsh Institute of Maritime Archaeology and  
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Greece: various underwater surveys

Thailand: Report on Koh Kradat excavation of Sawanghalok  
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#### REVIEWS

R. Scranton, J.W. Shaw and L. Ibrahim, *Kenchreai. eastern port of  
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#### EDITORIAL

The Caergwrle Bowl - A possible prehistoric  
boat model G.T.Denford & A.W. Farrell

Kyholm 78. A joint archaeological geological  
investigation around a 13th century wreck  
at Kyholm, Samsø, Denmark Ole Crumlin-Pedersen, Lis Nymark  
& Christian Christiansen et.al.

'A very substantial excavation report of survey and excavation  
in shallow water of a Viking wreck. Other finds from area and  
investigations of harbour basin, and geological investigations.'

'The Copper Wreck', The wreck of a medieval  
ship raised by the Central Maritime Museum  
in Gdansk, Poland Jerzy Litwin

'A description of an excavation of a 15th century clinker built  
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The Yorktown shipwreck archaeological  
project: results from the 1978 survey John D. Broadwater

'Survey in 1978 located and studied 8 wrecks associated with  
a British fleet of 1781.'

NOTES AND NEWS

- Finds from the wreck of *HMS Pandora* Graeme Henderson  
Phoenician joints, *coagmenta punica* W. Sleswyk  
A Roman wreck off Cap del Vol, Gerona,  
Spain. Federico Foerster  
Another view of the ancient rudder,  
*IJNA* 9 :3-6 Federico Foerster
- News: Great Britain  
a possible Italian trading  
galley site, with bronze  
guns at Teignmouth, HMS  
*Assurance* (1753) wrecksite  
at Isle of Wight. London  
Conference.
- Israel: Survey of Mediterranean  
sites
- U.S.A.: Georgia: Feasibility study  
to recover Confederate  
ironclad  
Florida: Sports divers and  
archaeology

REVIEWS

Bernard Liou, Ed., *Archaeonautica* 2 (Parker); D.P.S. Peacock, Ed., *Pottery and early commerce characterization and trade in Roman and later ceramics* (Arthur), A. Fioravanti and E. Camerini, *L'abitato Villanoviano del Gran Carro sommerso nel Lago di Bolsena* (1959-77) (Ridgway); Frank Howard, *Sailing ships of war* (McKee) J.Barto Arnold III and Robert Weddle, *The nautical archaeology of Padre Island: the Spanish shipwrecks of 1554* (Martin); David McDonald and J. Barto Arnold III, *Documentary sources for the wreck of the New Spain fleet of 1554* (Martin); Robert C. Wheeler, Walter A. Kenyon, Alan R. Woolworth and Douglas A. Brik. *Voices from the rapids: an underwater search for fur trade artefacts 1960-73* (Williams)

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- THE REBUILDING OF BRITISH WARSHIPS 1690-1740. Part I. By *Brian Lavery*  
CAPTAIN GEORGE PEACOCK: THE PIONEER COMMANDER OF PACIFIC STEAMERS.  
By *Roland E. Duncan*  
THE BOMBARDMENT OF ALEXANDRIA 1882. By *Colin S. White*  
GRAVES AND HOOD AT THE CHESAPEAKE. By *Kenneth Breen*

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The National Maritime Museum of Ireland  
Bell of H.M.S. *Resolute*  
Mast and Sail in Scandinavia in the Bronze Age  
The Metal Sheathing of Roman Ships: the 'Trapezoid' on the Roman  
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A Commonwealth Model  
A Note on M. Lucien Basch's Phoenician and Roman Triremes  
News from the National Maritime Museum  
The Steam Yacht *Discovery*  
Captain Scott's *Discovery*  
A New Maritime Museum on Merseyside  
Anti-invasion Patrols 1940  
An Unique Anchorage  
The White House and the Royal Navy  
The Foundering of H.M.S. *Ramillies*  
Margaret Pleasure Rowing Boats

REVIEWS: The Industrial Revolution and British Overseas Trade - The German Navy  
in World War II - Jam Compagnie 1602-1799 - Les Freres Surcouf - Random  
Naval Recollections - A Treatise on Practical Seamanship - The Defeat of  
James Stuart's Armada - Maritime History - Mystic Seaport Museum Water-  
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THE BATTLE OF JUTLAND: AN APPRECIATION GIVEN AT THE ANNUAL JUTLAND  
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*By the late Admiral of the Fleet The Earl Mountbatten of Burma*  
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*B. Kapstein*  
THE FORMER SHIP OF THE LINE *LOIRE* ON THE CLIPPER ROUTE. *By Marc Paille.*

NOTES: The Navy Records Society  
A Stuart Manuscript of Woodall's *The Surgeon's Mate*  
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The Sailboat *Glide*  
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#### REVIEWS

The Black Battlefleet  
Sailing Ships of War 1400-1860 - *Liber Nauticus* and Instructor in the Art  
of Marine Drawing - Fregate de 18 *La Venus* 1782 - More Marine Paintings -  
Guns and Government - Three German Reprints - Henry Tyrer - The Building  
of Boats - Bristol Inns and Alehouses - The China Station - The Salty Shore -  
History of Naval Architecture - Three Australian Publications - Men-of War  
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Sydney - Those in Peril - Climatic Atlas of the Indian Ocean - Three  
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*Special Section on Maritime Archaeology*

ARTICLES

Jeremy Green, *Maritime Archaeology and the Indian Ocean*".

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Chusiri Chamoraman, "Some Historical International Ports of the Malay Peninsula".

Graeme Henderson, "Three Early Post Australian Settlement Shipwreck Sites: HMS *Pandora* (1791), the *Sydney Cove* (1797), and an unidentified site near North West Cape".

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ARTICLE

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Hawkins, Clifford W., *The Dhows* (by Esmond Martin)

Hough, Richard, *The Murder of Captain James Cook* (by O.H.K. Spate)

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INFORMATION

First Seminar on Indian Maritime History: Indian Ocean Newsletter

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Conway Maritime Press, Greenwich. 1980

'A fine well illustrated book on complex subject. Reviewed  
M.M. (1980), 66-3: 275.

HENDERSON, Graeme *Unfinished Voyages, Western Austrazian shipwrecks  
1622-1850.* W.A. University Press, Nedlands, 1980

'Just published, this is the first of a series of books covering  
Western Australian shipwrecks. Because of the limited scope, both  
in period and geographical area, the author has been able to  
concentrate more detail of each particular wreck than the Bateson  
series which covers all of Australia. The result makes pleasing  
and interesting reading, contrasting with the latter work, which  
tends to be inevitably skimpy and incomplete. The W.A. University  
press have produced a really pleasing format, with good photographs.'

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'Reviewed M.M. (1980) ,66-3:275. The publication is based on papers  
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of England; Square rig sailing capacity; Viking rigging; iconography;  
and Conservation.'

PLATT, H.M. *Progress in underwater science.* Volume 5 (New Series)  
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'General headings: Electronics in the service of the diver;  
archaeology (Preservation of ships and artifacts in shallow water  
Mediterranean wreck sites, marine archaeology in Newfoundland,  
slatewrecks); biology-underwater surveys; biology-animal behaviour;  
pollution.'

TCHERNIA, A., POMEY, P. *L 'Gpave" romaine de la Madrague de Giens (Var).* XXIV  
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types; ceramics; miscellaneous objects; the hull; tonnage; analysis.'

NEPTUNIA

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BOUDRIOT, J.,                   Modèle d'un vaisseau de 70 canons dit 1 Assure

ANON                           Chronique d'uniformalogie maritime

GUEROUT, M.                   L'epave de torpilleur-vedette no.59

## Wreck Inspection

"  
by : Mike McCarthy

## Introduction

Maritime Archaeology Departments or amateur groups attempting to serve a large geographical region require a co-ordinated wreck inspection program (Sledge, 1977). Once the system is established and in operation, the inspection reports will enable an orderly program of wreck management. Wrecks are then placed in an order of priority based on the availability of funds, time and manpower. Fund raising, the use of conservation laboratory facilities and preparations for display can then be channelled to that wreck of most importance and not wasted on sites that can or should be left till a later date. Wrecks can also be managed on the basis of this inspection system and assessed not only for archaeological value, but also for recreational and educational value. Wrecks of little archaeological value but of great recreational and educational value to divers and other groups e.g. schools, tourists etc. can be thus publicised with sailing directions, history, points of interest and other features, noted and made available to the public. Experience has shown, however, that wrecks with easily removable fittings suffer when their location is made public. This is a factor to be considered and the gains in publicising a site obviously need to be balanced against the losses.

## Prerequisites

An essential prerequisite to a successful wreck inspection program is an alphabetical index of wrecks giving details of construction, newspaper reports, date of loss etc. (Henderson, 1977). Information from this index is also contained in the wrecks area list which being linked to the various admiralty charts gives at a glance, the known wrecks believed lost in any specific area, e.g.

Area	File	<u>Chart</u>
Fremantle	9/80	AUS 114
Jurien Bay	118/80	AUS 333
Esperance Area	62/72	BA1059

L,

The results of the inspection can be then used to narrow the field and hopefully identify the site. Other necessities are a suitable all purpose diving rig (ours is a twin engine 18' aluminium vessel), plastic sextant, monocular compass, land and underwater camera, tapes and recording gear. Our underwater cameras are standard Nikonos. III system with 15mm u/water lens, viewfinder and lightmeter. A graduated non-floating metre scale is used in all technical photographs with divers used as a rough scale in othershots, e.g. general purpose photographs. Apart from the underwater tapes (usually 30m or 50m PVC tapes), underwater recording is done using a board covered with plastic drafting film. This board has attached, a depth gauge, compass, small scale pencil, set of diving tables and occasionally a set of calipers. A diagram of the board is shown below: