



AIMA NEWSLETTER

Australasian Institute for Maritime Archaeology

www.aima.iinet.net.au

The Search for Dutch East Indiaman *Fortuyn* at Christmas Island

by Alex Moss

Non-profit organisation Shipshapesearchers conducts research into how to effectively utilise remote sensing data that has been gathered for non-archaeological purposes.

Shipshapesearchers is collaborating on a maritime archaeology project centered around Christmas and Cocos Islands in the Indian Ocean; the other principal investigators are Graeme Henderson, Andy Viduka and James Parkinson. Research of primary historic documents has provided evidence that the Dutch East Indiaman trading vessel, *Fortuyn* is likely to have wrecked at Christmas Island in 1724. A second target is the Dutch trader *Aagtederke*, which disappeared in 1726 and may have

wrecked on Cocos.

The project includes finding and recording other submerged heritage material identified during the survey. The most effective way to run such a survey is in straight parallel lines, or transects. Bathymetric multibeam and lidar data for both islands were obtained from the Australian Hydrographic Service, and GeoScience Australia.

(continued on p.7-8)

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Bathymetric representation of Christmas Island. (Image courtesy the Australian Hydro-graphic Service)

From the President's desk

2015 March

Welcome to the first edition of the 2015 series of AIMA newsletters. This year begins with a number of changes in the Executive Committee. At our last AGM in September 2014 I was elected President. Other 'personnel' changes include Ross Anderson on board as Senior Vice President, Rick Bullers as our new Treasurer and welcome to Paddy Watterson as our new newsletter editor. Thank you so much to those who have left these positions for their hard work and dedication.

AIMA has started 2015 strongly advocating for good UCH management and positioning itself as a significant stakeholder in changes to occupational diving standards. AIMA has written to the New Zealand government regarding the SS Ventnor and

the importance of conserving and protecting this important site. AIMA has commented on Safework Australia's draft documents on occupational diving, and is now a member of Safework Australia's consultation group. Although AIMA does not run its own dive operations, it is the role of AIMA to advocate on behalf of its members for sensible and appropriate standards in scientific diving.

AIMA has also continued to work closely with the IKUWA conference committee throwing its full support behind IKUWA 6 in Fremantle in November 2016. It will be a significant event. On the subject of conferences good luck to the AIMA/ASHA conference committee who are planning what will be a great joint conference in Geelong this September.

Welcome everybody to a new year of research, fieldwork, NAS courses, collaborative projects and innovative

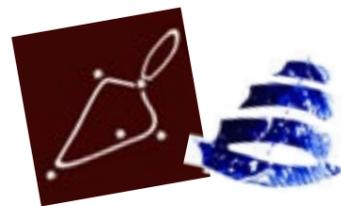
archaeology.

2015 Scholarship Applications Open

Thanks to the efforts of the scholarship committee, and in particular Emily Jateff, the application announcement for the 2012 scholarship round has been sent out. This year opens up the pool of applicants to those working in the Australasian region and removes the Australian residential restriction. So please distribute the scholarship announcement near and wide. See page 3 for more information.

with UNESCO.

David Steinberg President



2015 AIMA/ASHA Conference ...

The 2015 joint AIMA/ASHA Conference will be held at the Geelong Wool Museum in Victoria from Thursday 24 September to Saturday 26 September 2015

Conference Guest Speakers will include Professor James Symonds (University of Amsterdam) and Dr Annalies Corbin (PAST Foundation)

Full conference and registration details will soon be available at:

www.aima-underwater.org.au/conference

We invite offers of papers in the following sessions:

- Digital technologies in archaeology
- The archaeology of sealing and

whaling in the South Seas

Lessons from the past and opportunities for the future in Australasian maritime archaeology

Conflict archaeology in the Pacific

Voices about the past: oral history and local knowledge in historical and maritime archaeology

In situ preservation and conservation of cultural material

"With, for and by": Community engagement and the two big 'I's in archaeology (industry and/or Indigenous communities)

Urban archaeology in Melbourne

Research problems in historical archaeology

Rural homesteads around Melbourne and Geelong

Artefact studies and material culture in historical archaeology

Further session proposals will also be considered.

Deadline 31 July 2015

Please forward offers of papers with title, brief abstract (100-150 words) and intended session to peter.davies@latrobe.edu.au

More information is available on the web at <http://www.asha.org.au/conference/>.

AIMA Secretary

AIMA Scholarship 2015

AIMA is pleased to announce the 2015 AIMA Scholarship for maritime archaeological research projects. The investigation or project must be consistent with the objectives of AIMA and the work must have a benefit/application to maritime archaeology in Australasia. The award is open to all persons conducting maritime archaeological research within Australasia.

A total of up to \$2000 will be

awarded. AIMA may choose to partially fund more than one project. Recipient(s) are required to publish in the AIMA Newsletter, or for larger awards, a peer-reviewed paper in the AIMA Bulletin, or as an AIMA Special Publication. This award also includes one year of AIMA membership.

Applications must be forwarded to the Scholarship Chair by **30 July 2015** to be eligible. For information on past awardees,

please see the AIMA website: <http://www.aima-underwater.org.au/aima-scholarship/>

For other queries, contact the AIMA Scholarship Committee Chair at: scholarships@aima-underwater.org.au

Kind regards,
Emily

Australasia NEWS

Northern Territory



Heritage Declaration of the Three United States Navy Catalina Wrecks in Darwin Harbour

On 24 March 2015 Heritage Minister David Tollner signed an instrument declaring the three USN Catalina wrecks in Darwin Harbour protected 'heritage places' under the NT Heritage Act. A strength of this legislation is that it does not discriminate between types of sites, in contrast to for example legislation specific to a narrow definition of shipwrecks. All places are assessed against agreed criteria comparable to the criteria recommended in the Burra Charter. Two of these Catalina wrecks were first nominated for the NT Heritage Register in 1998 with the third in 2008.

Their listing is the result of the hard work and support of many people. The Statement of Heritage Value for the three wrecks is provided below: These three Catalina Flying Boats, now referred to as Catalina 4, 5 and 6, were attached to the United States Navy (USN) Patrol Wing 10, and were sunk at their moorings by the Japanese during the air attack on Darwin on 19 February 1942.

This was the first enemy attack on Australia's mainland and remains a formative event in Australia's 20th Century history.

Catalina missions from Territory bases were a particular aspect of our wartime story, with different objectives compared to other air or sea missions. Their long range, ability to land on water and bombing capacity made them strategically valuable and their mission histories unique.

They reflect the combined effort of the allies to defend Asia and northern Australia. As a part of Patrol Wing 10 their presence in Darwin symbolise the retreat of allied forces, and how Darwin became a part the new frontline in the War.

These flying boats were numbers 4, 8 and 41 of Patrol Wing 10, and are examples of two PBV-4 type Catalinas and one PBV-5 variant (28-5MNE). Though in each case the tail sections are gone and the engineering compartments have collapsed, the overall level of intactness of these wrecks mean they have an ability to demonstrate some of the principle characteristics of their innovative design. There was only a limited number of PBV-4s built and so two of these three are rare examples of their type.

These wrecks have the ability to address significant research questions about crew belongings that may be aboard, operational practices and archaeological site formation. The heritage listing of these wrecks have brought them in line with those shipwrecks also protected as casualties of the same bombing raid.

Shortly after the declaration of these wrecks Cosmos Archaeology and Tek Diving Services completed the final round of monitoring dives on the six Catalina wrecks of Darwin Harbour; a program which started in July 2012 and ran over the course of major dredging works in the harbour. The program amounted to 40 individual inspections. AIMA members involved included Cos Coroneos, Rick Weiss, Sue Sultana, David Nutley, Darren Cooper, Matt Carter, Stirling Smith, Vicki Richards and Jon Carpenter.



Catalina Flying Boat taking off from Darwin Harbour
J. Anderson Collection
PH0114-0006
NT Library

David Steinberg
Senior Heritage Officer, NT
Government &
AIMA President



Catalina Flying Boat taking off from Darwin Harbour
J. Anderson Collection
PH0114-0006
NT Library



Catalina on water (Courtesy of Silvano Jung)

Queensland

Great Barrier Reef Marine Park Authority

The Great Barrier Reef Marine Park Authority has a legislative obligation under the Great Barrier Reef Marine Park Act 1975 to protect cultural heritage sites — the Act provides for the long-term protection and conservation of the environment, biodiversity and heritage values of the Great Barrier Reef Region.

Under the Great Barrier Reef Marine Park Zoning Plan,

the Authority can declare Special Management Areas to protect maritime cultural heritage values.

One kilometre square Special Management Areas were recently declared to protect two significant Second World War Catalina aircraft wrecks — one off the Frankland Islands, south of Cairns, and one offshore from Bowen.

Boaters can travel through the special management areas but cannot stop unless in an emergency and cannot conduct any fishing activity or anchor.

People can apply for a Great Barrier Reef Park Authority permit to access the site for cultural heritage purposes, including monitoring, research and stabilising the wreck. Full details of the laws are incorporated into regulation 66, 66A and 88VA of the [Great Barrier Reef Marine Park Regulations 1983](#)



Queensland cont.

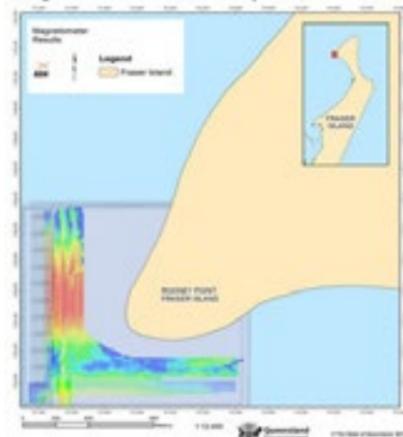
Department of Environment and Heritage Protection

Search for the Panama

In March 2015 the Department of Environment and Heritage Protection (EHP) undertook a joint search with the Queensland Department of National Parks, Sport and Racing (NPSR) for the 1864 wreck of the American barque *Panama*. A 2012 side scan survey for the wreck had been unsuccessful but it was anticipated that the magnetometer would have a higher probability of success as it could detect buried ferrous objects.

The wreck was known to be located near Rooney's Point (formerly called Panama Point) on the north-western end of Fraser Island. A magnetic anomaly was detected just out from the point, in a position that coincided with a former 'secret' fishing spot. Investigations are continuing and the team hope to get back to inspect the area later in 2015 when conditions are favourable.

Magnetometer Results for Rooney Point, Fraser Island



A GIS overlay of the magnetic anomaly signal near Rooney's Point, Fraser Island

SS Maheno digital scanning

In March 2015 EHP undertook a collaborative project with NPSR and the CSIRO to digitally scan the wreck of the S.S. Maheno. The ship had been a trans-Tasman trader but had also served as a hospital ship for the New Zealand Army during the First World War providing medical care to ANZAC troops at Gallipoli and from the Western Front. The ship was lost while en route to Japan for scrap in the 1930s and washed ashore on Fraser Island where it has remained a local tourism icon visited by approximately 250 000 people per year.



The wreck of the S.S. Maheno. (Photo from DEHP)

The scanning and photographic recording project enabled the team to assess the condition of the wreck and will help inform future management and interpretation. CSIRO used the 'Zebedee' laser technology to undertake the scan.



A 'top-down' view of the digital scan results from S.S. Maheno.



SS Dicky Taskforce, Caloundra

EHP continues to support the SS Dicky Taskforce formed by the Sunshine Coast Council (SCC) to investigate and consider the future of the wreck. SCC and their consultant recently undertook preliminary excavations and testing of proposed cutting techniques on discrete areas. This work was approved and supervised by EHP.



The wreck of the S.S. Dicky being investigated by a marine archaeological consultant and

Communication

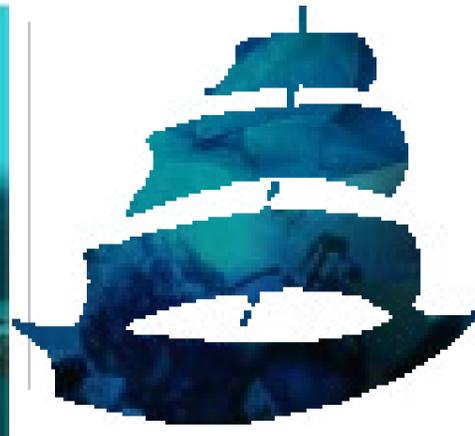
Online dive guides for north Queensland shipwrecks, the Yongala, Gothenburg and Lady Bowen have been developed to complement the four guides previously developed for south-east Queensland wrecks.

They are available at:

www.qld.gov.au/environment/land/heritage/archaeology/maritime/

The dive guides are currently being translated into various languages to support tourism and management of the wrecks. Additional guides are planned as are 'drive and dive' heritage trails.

Fiona Gardiner
 Director Heritage
 Department of Environment and Heritage Protection



South Australia



Government of South Australia

The Department for Environment Water and Natural Resources

The bower anchor of the *Clan Ranald* shipwreck will be unveiled on 27 June 2015 in Edithburgh after completion of its conservation by the Department for Environment Water and Natural Resources (DEWNR). The anchor was removed from its prominent display location on the cliffs overlooking the wreck site near Edithburgh in May 2000. The move was necessary, as it was determined that the anchor was rapidly deteriorating due to its many years in the marine environment and exposed location.



The *Clan Ranald* Anchor being transferred from the Netley storage facility.

The Department undertook site assessments of a number of shipwreck sites in the South East of South Australia, in the vicinity of Carpenter Rocks. These included the wreck of the Ketch *Hawthorn*, the sailing yacht *Pisces Star* and the MV *Erie*.

A number of additional wreck reports were also investigated. Senior Maritime Heritage Officer Amer Khan, was assisted by Dr. Brad Duncan from the Heritage Office in NSW, Flinders University

The *Clan Ranald* was wrecked near Edithburgh off the southern coast of Yorke Peninsula in 1909, with the loss of 40 lives. It remains one of South Australia's worst maritime disasters.

students Daniel Petraccaro and Kurt Bennet, DEWNR Heritage Officers Simon Carter and David Hanna, and Coastal Management Officers Guy Williams and Anthony Virag.

The Department has, until the end of June 2015, engaged Heritage Project Officer, Peta Straiton, to record, photograph, and store the maritime archaeological artefact collection at Netley. Once this project is complete, the relics will be transferred to appropriate museums around the state for public interpretation and display. Objects recorded so far include various relics from historic shipwrecks, including deadeyes, belaying pins, and in the case of the *Zanoni* wreck, the galley stove.



Survey image from recent archaeological investigations on the south-east of the coast.

Peta's second project will be to assist in the recording and registration of relics in regional collections. The recording and registration of these objects will contribute towards a project undertaken as part of the Commonwealth funded Historic Shipwrecks Program. Both of these projects will involve updating the state maritime register with the relevant relic records and associated images.



Hand gun originally excavated from Holdfast Bay Glenelg. Photo courtesy Peta Straiton.

The Department has recently completed installing signage for the Investigator Strait Shipwrecks Trail – these signs refresh the existing interpretive boards. The Department is also currently installing new signs on Kangaroo Island. These trails are part of a continuing effort to improve public awareness of the maritime history of South Australia and historic dangers to colonial shipping.



Brochure of the Kona wreck, Kangaroo Island.

As part of the Department's ongoing commitment to providing information to the Australian National Shipwreck Database, the Department has undertaken a database comparison and began to find ways in which the information in Canberra can be better integrated from DEWNR records. This will mean greater information at your finger-tips for all shipwrecks in South Australia in the near future.

Amer Khan and Peta Straiton



Shipssearchers help close in on the Fortuyn

Cont. from cover

This data was viewed in Fledermaus and ArcGIS programs and allowed us to plan detailed survey transects. Regional scale bathymetry provided an understanding of the how the Islands rise up thousands of metres from the ocean floor (figures 1 and 2). The bathymetric lidar data provided a more detailed view of the narrow shelving around the islands. Christmas Island is characterized by nearly continuous sea cliffs, which become a shelf, 0 to -50 metres, and averaging 250 meters out,

before plunging down to the ocean depths. The target contour was 6 meters, the estimated draft of a laden trading vessel of the period. This, in addition to operational safety margins, meant narrow restrictions for the transects were required.



An overhead Bathymetric view of Christmas Island.

Visualizing the data allowed us to lay out transect lines very precisely. The requirements for effective archaeological survey were combined with those of the vessel in the very early stages of planning (figures 3 and 4). The software enabled us to produce profiles for each transect, which assisted with further planning.

Hard copies were taken into the field, where they were used for planning dive operations (figure 5). Using the bathymetric data in this way also allowed us to run the transects so as to avoid areas too shallow for the survey vessel (figure 6).

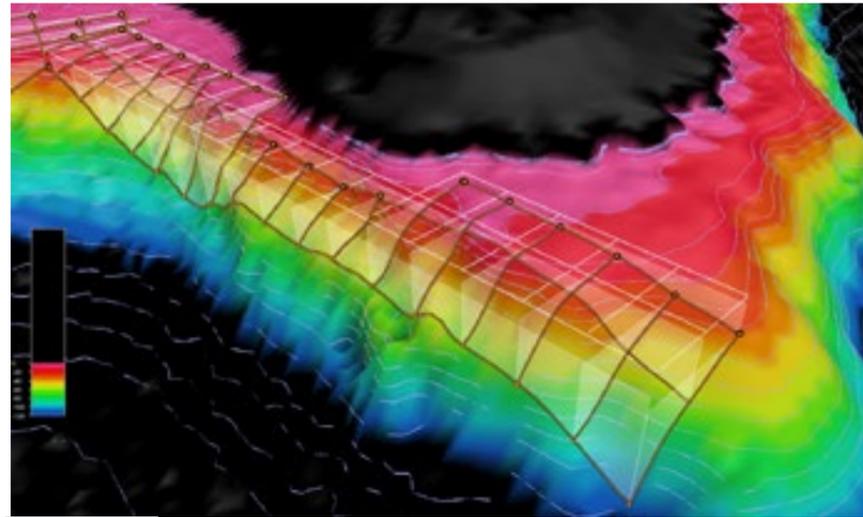


Figure 3

Analysis and interpretation of this season's fieldwork data has commenced. The location of anomalies have been input into various programs to provide a greater understanding of areas of interest. This data will naturally also help inform further planning for next season's fieldwork.

More information about the organisation and this project can be found at shipshapesearchers.org

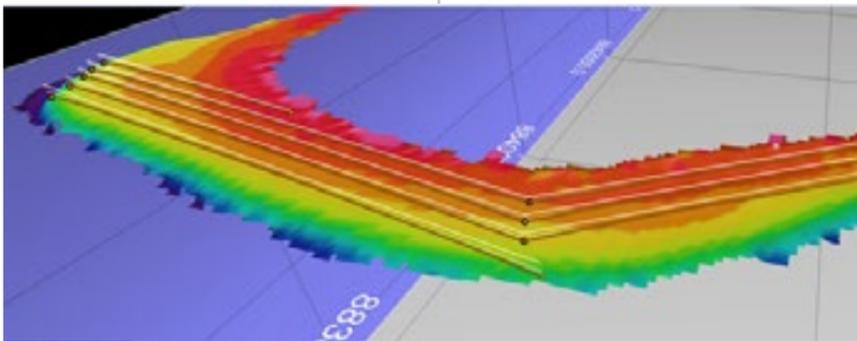


Figure 4

The 'Closing in on the Fortuyn Project' is one of the activities commemorating 400 years since Dirk Hartog's 1616 'First Landing' in Western Australia. The project is kindly sponsored by the Maritime Program of the Cultural Heritage Agency of the Netherlands Ministry of Education, Culture and Science; the Embassy of the Kingdom of the Netherlands in Canberra; John and Jacqui Mullin of the Silentworld Foundation; and Parks Australia.

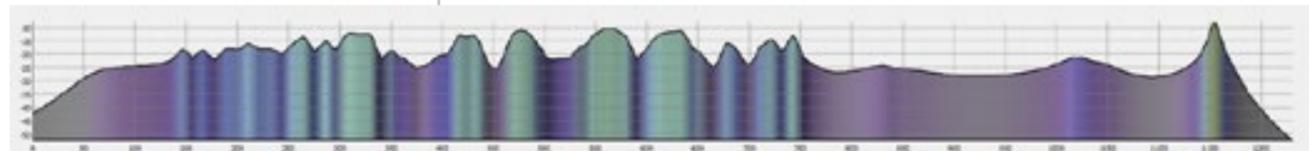


Figure 5

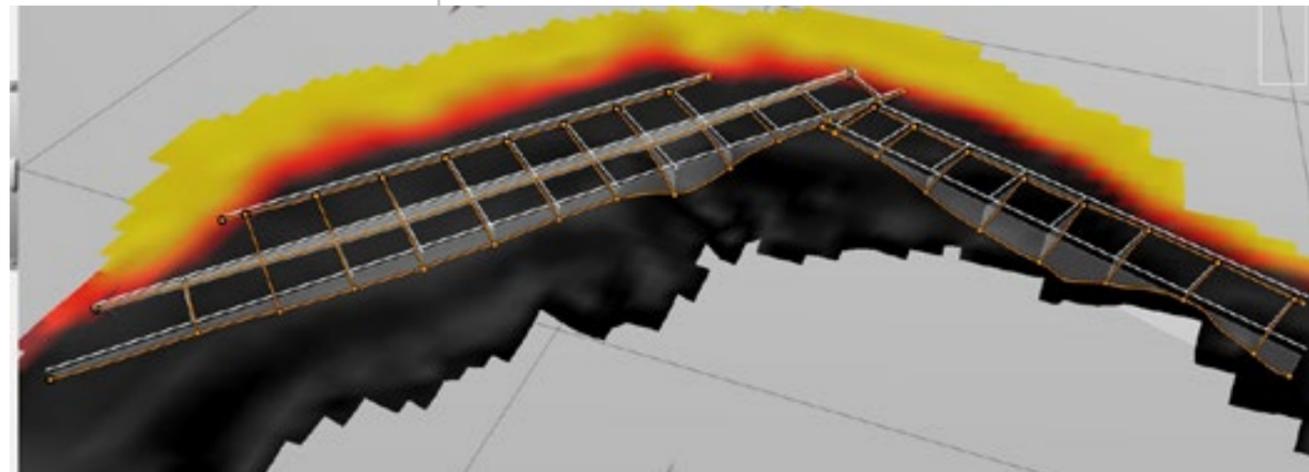


Figure 6



Could it be the Comet? - The Ashmore Reef Expedition 2015

In January 2015 archaeologists from the Australian National Maritime Museum (NMM), The Great Barrier Reef Marine Park Authority and the Department of the Environment joined up with the Museum's much valued research partner and sponsor, The Silentworld Foundation, to investigate an unidentified shipwreck which had recently been located on Ashmore Reef, some 950 kilometres north of Cairns and 250 kilometres east of Thursday Island, in the Australian Coral Sea Marine Reserve.

First sighted by Captain Ashmore in the brig Hibernia in 1811 and subsequently called either Hibernia Reef, Claudine and Mary Reef, Jones Shoal or Great Ormond's Reef it was not until the late 1960s that it was officially named Ashmore Reef after its first reported discoverer.

Confusingly named and (like the nearby reefs of Boot, Portlock, Lagoon and the Eastern Fields) imperfectly charted, it comes as no surprise that there was a great deal of misunderstanding amongst 19th century mariners regarding the location of these reefs that not only sat astride the northern section of the Outer Shipping Route around the Great Barrier Reef but which also guarded the north-eastern approaches to Torres Strait.

Isolated, rarely visited and even today still not completely surveyed, Ashmore Reef is believed to be the final resting place for some of the 35 vessels known to have been lost in the area between 1817 and 1923. One such resting place was recently located by the crew of HMAS Benalla when the vessel was surveying the northern section of Ashmore Reef in early 2014.

This shipwreck is possibly the same shipwreck previously located by Ben Cropp and Bob Halstead on Ashmore Reef. (Coral Sea Shipwreck in Sport Diving, No. 137, Dec 2009)

Ben Cropp identified the shipwreck he located as the 185 ton brig The Sun – however the shipwreck site located by the RAN Hydrographic Office represent the remains of a much larger vessel – possible in the vicinity of 300-400 tons. The site located by the RAN also contained a significant number of obvious iron knees and iron standards along with ship's timbers, which do not appear in any of Ben Cropp's or Bob Halstead's photographs of the wreck site they located. Given the shipwrecks' potential to provide additional information on early trade routes and concerned about the on-going conservation and preservation of the historic wreck in late 2014 the Department of the

Environment, the managers of the Australian Coral Sea Marine Reserve, approached the Australian National Maritime Museum requesting their assistance in surveying the site and assessing its historical and archaeological significance. This work could only be achieved with the expertise and resources of NMM's collaborative research partner, The Silentworld Foundation

This request resulted in a small team of archaeologists, photographers and volunteer divers departing from Horn Island, Torres Strait in January 2015 to investigate the site of the Navy discovery and to also carry out additional survey work for any other shipwrecks located in the vicinity of Ashmore and Boot Reefs.

Following an 18 hour trip through flat calm tropical seas the expedition vessel safely arrived off the northern edge of Ashmore Reef – and after following the carefully worded directions provided by the crew of HMAS Benalla – the shipwreck site was speedily located and buoyed and the first groups of divers entered the water.

On first inspection the site - lying in between two and eight metres of water - consisted of a series of scattered iron lumps and bumps, numerous sections of broken anchor chain,

clusters of anchors, cannon, stone ballast, iron and copper fastenings and lead and copper hull sheathing strewn over a coralline rock bottom amongst patches of coral.

Closer examination of the concreted iron lumps began to reveal some of the sites hidden secrets. The anchors were found lying flat on the seabed rather than in the 'picked in' or deployed position along with the numerous pieces of stud-link anchor chain which, once plotted onto the overall site plan, revealed that they had been run out from all four anchors and across the reef top for 50 metres or so before ending in a jumble of iron concretions. These were the first indications that the crew of the unfortunate vessel were caught unaware and ran out all anchors after striking the reef – perhaps in an attempt to prevent the vessel drifting off and sinking in deeper water.

The divers also identified the various amorphous iron concretions as being different sized hanging, lodging and rider knees along with iron stern crutches and breast hooks.

Hanging and lodging knees are structural components, positioned hanging vertically from, or lodging horizontally between the (usually) wooden deck beams of a vessel. Rider knees (Moss, 1997:85 calls them knee riders) hang down between the hold beams and are attached to the vessels floors (frame) through the ceiling planking of the vessel; this provides additional strength to the lower part of the hull.

Crutch's on the other hand are used to strengthen the stern, while breast hooks strengthen the bow of the ship - they are placed horizontally across the inner stem or stern posts, cant frames and ceiling planks. (Stammers, 2001:118).

Although first suggested by Sir Anthony Deane in the 1670s iron knees do not appear to have been introduced into European shipbuilding until the mid-18th century – with Falconer first recording their use as a French Navy innovation in 1780. (Stammers, 2001) Interestingly Gabriel Snodgrass, the chief ship surveyor for the Honourable East India Company (HEIC) between 1757 and 1794 appears to have been the first advocate for the use of iron knees in British and Indian shipbuilding and was instrumental in having the HEIC use iron in their vessels for knees, stanchions, breast hooks and crutches from the early 1800s some twenty years before they became common practice in British-based merchant shipbuilding. (Stammers, 2001).

The size, shape and number of these important structural components allowed us to estimate that the wooden, copper sheathed and fastened sailing vessel had at least two decks and would have had a displacement tonnage of more than 300 tons.

Over the next few days the dive teams led by archaeologists Paul Hundley (The Silentworld Foundation) and Peter Illidge (GBRMPPA) first buoyed and recorded the general position of the two anchor clusters,

the iron carronades and the various grouping of iron knees and riders before assessing measuring and recording the features. At the same time the photographic team – led by Xanthe Rivett (Silentworld Foundation) and assisted by Grant Luckman (Department of the Environment) recorded the general artefacts, undertook assessment and survey work and supplemented the survey teams records by taking scaled photographs of the distinctive sites features in order to produce a scaled photomosaic of the entire site.



Carronade – Peter Illidge (GBRMPPA) recording the bore on one of the sites carronades

Image courtesy of Xanthe Rivett, the Silentworld Foundation

Whilst the divers worked below John Mullen (Silentworld Foundation) and Frits Breuseker (Seasee Pty. Ltd.) piloted Maggie II around the northern edges of Ashmore Reef in an attempt to locate any other shipwreck material that may have drifted off into deeper water.

Purpose built by The Silentworld Foundation – Maggie II – is equipped with several magnetometers (instruments that calculate and record changes in the earth's magnetic field caused by the presence of iron artefacts such

as anchors, cannon, iron knees, anchor chain etc), forward scanning and side scanning sonar (instruments which send out bursts of conical or fan shaped sound pulses down to the sea floor which are then bounced back to the survey vessel after striking a submerged object such as ballast stones. These returned signals paint an acoustic picture of the seabed and can be interpreted on plotting screens using a differential global position system (an enhanced Global Positioning System that uses both the normal navigational satellites, but also a series ground-based reference stations which broadcast signals from known fixed positions. The combination of the multiple sets of signals allows locational accuracy to be improved from the nominal 10 – 15 meters to about 100mm).

As the work progressed we slowly built up a picture of the mystery wreck. The divers confirmed that it represented the remains of large, wooden, copper sheathed, iron and coppered fastened, two or three masted sailing vessel.

The divers established that the anchors were of a type – known as a Pering-Patent anchor – designed by Richard Pering in July 1813. Being more compact, lighter and stronger than the earlier Admiralty longshank anchor, Pering-Patent anchors were taken up by the Royal Navy in 1815 and also became the preferred anchor for merchant vessels before being replaced by the Pering-Improved anchor in 1835. (Curryer, 1999:73-78)

Originally designed to be used with manila or hemp cable the Pering-Patent anchors on the Ashmore Reef site had been modified by the crew of the ship to accept iron stud-link anchor cable which had started to become commonly found on-board merchant ships by the early 1820's.

The method used by the crew to secure the iron cable to the two largest Pering-Patent anchors was quite unusual. They passed a run of iron cable through the iron anchor ring before running the cable around the stock of the anchor two or three times before passing it back through the anchor ring then securing it to the iron cable with a shackle – in a similar manner to a fisher tying a 'sheet bend' to a hook.

Whilst quite novel, this method of securing the anchor to the cable must have been a result of an immediate necessity – perhaps the captain or owner of the vessel was unable to purchase a suitable size shackle before departing port or the vessel had been recently fitted with iron cables - as this method of fastening was not only far less secure and but also resulted in weakening the anchor cable.



(PAUL HUNDLEY AND JACQUI MULLEN FROM THE SILENTWORLD FOUNDATION RECORDING THE DIMENSIONS OF ONE OF THE SITE'S ANCHORS.

IMAGE COURTESY OF XANTHE RIVETT.

When the divers first inspected the wreck the cannons located on the site were identified as being of a type known as a carronade. Named after the Carron Company of Falkirk, Scotland the 'carronade' were a short, stubby cannon developed in the mid-1770s that quickly gained a reputation for reliability, ease of loading, and at short range, incredible muzzle velocity earning them the nickname of 'smashers'.

After a more detailed examination the carronades on the Ashmore Reef wreck were recorded as having a reinforced loop under the second reinforce (joint), rather than having typical 'trunnions' – cylindrical protrusions which act as pivots - mounted on the side. The loop allowed the carronades to be mounted on a slide rather than on a gun carriage and made the weapon more portable and easier to use. The carronades on the site also had very pronounced foresites and backsites – for improved accuracy along with iron loops cast into the upper most portion of the back or 'breach' of the cannon, a type known as a 'Bloomfield Pattern' breach. All these innovations indicated a date of post 1820.

The dive teams also reported back that they had located and identified two hawse pipes (cylindrical tubes mounted in the bulkheads of the ship through which the anchor cable runs out from chain locker to the anchors), several lead scuppers – (a lead tube mounted at deck level that drains the deck of any seawater that comes on board) along

with a large iron winch or windlass axle.

The divers also observed, mixed in amongst the broken shell, coral fragments and sand grains, numerous copper sheathing tacks, coral encrusted rolls of lead, basalt ballast rocks, smooth river worn sandstone and shingle ballast, fragments of dark green bottle glass, a round deck prism (a glass prism that is laid flush into the deck of a ship allowing the prism to refract and disperse light into a compartment below the deck) along with numerous pieces of copper sheathings and several larger copper fastenings.

Although small in size all these artefacts were carefully examined and plotted just in case they might be able to provide us with additional information on the size, type, age and possibility nationality of the wrecked ship and hopefully, when compared with the historical records, allow us to identify with a fair degree of certainty what ship it was.

As the week progressed and the site had slowly given up its secrets the weather situation had started to deteriorate around us. The flat calms seas, whipped up by 30 knots winds, were now choppy and white capped and sets of deepening rolling swells were now crashing over the top of the site making working conditions below difficult. With no predicted break in the weather forecast and our survey work completed we decided to depart Ashmore Reef and wait out the weather in a more sheltered anchorage at Mer (Murray) Island.

Post script

Armed with the information obtained from the archaeological survey the unidentified site on Ashmore Reef has subsequently been tentively identified as the remains of the Canadian built, 314 ton, wooden, brig *Comet* which was on a voyage from Sydney to Batavia when it was wrecked on an unknown reef south of Boot Reef in May 1829.

Built in Portland, New Brunswick in 1826, archival information indicates that the *Comet* was a two decked, copper sheathed, copper fastened, armed trading vessel that had been retrofitted in England with iron knees, iron riders and iron anchor cables prior to being reregistered in England in late 1827 and sent out on a speculative trading voyage to Van Diemen's Land and Port Jackson.

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A Holistic Examination of Normanville Beach

By Peta Straiton

The township of Normanville is located an hour south of Adelaide in the Yankalilla District. Now known as a popular tourist destination, this quiet seaside community was once the location of a thriving sea port. Converted to farming land in the late 1830s, the district soon grew into a profitable venture, particularly after the installation of a flour mill in 1854, which allowed community members to process wheats and grains for trade.

The early years of the township's commercial history saw water craft travel up the local river for mooring. However, with a steady increase in cargo hauls both leaving and arriving in the area, this tactic soon became untenable. In the early 1850s, the first jetty was constructed at Normanville Beach. Unfortunately, due to the area's exposure to strong south-westerly winds and tides, it was destroyed in 1856. A new jetty was constructed and lasted almost a decade until it was destroyed by a flood in 1864.

A third jetty was built at the site and was named the 'Yankalilla Jetty' in 1868. Damaged twice by severe winter storms in 1910 and 1915, it was finally repaired in the early 1930s and repurposed as a recreational jetty.

Recently, archaeological fieldwork was undertaken in an attempt to locate any physical features on Normanville Beach that might verify these unsourced verbal and recorded histories. Surveys undertaken over three days included a variety of land and underwater surveys. With historical documents indicating that the first two jetties were constructed between Bungala Creek and the current jetty, and some community members anecdotally supporting this information, ground penetrating radar was used along the stretch of beach between the jetty and the creek. Underwater surveys investigated a possible anchor, numerous metallic objects, and probe surveys to locate jetty pylons.

Results and recommendations from this fieldwork are due to be published through Flinders University in June, 2015, as part of a Master's Thesis.

Acknowledgements

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SASMAP Seminar and Workshop, Viking Museum, Denmark

In April 2015 James Parkinson attended the SASMAP (Development of Tools and Techniques to Survey, Assess, Stabilise, Monitor And Preserve Underwater Archaeological Sites) Seminar and Workshop at the Viking Museum in Roskilde, Denmark on behalf of the Australian Historic Shipwreck Preservation Project (AHSP). SASMAP is a collaborative research project funded by the European Commission's Seventh Framework Program.

The 11 partners within SASMAP took a holistic approach to locating, assessing, monitoring and safeguarding underwater cultural heritage. This involved developing and utilizing tools and technologies to allow "down-scaling" from the large scale regional level, moving on to the local site level and finally to the individual components of a site.



SASMAP WORKSHOP ATTENDEES, VIKING MUSEUM DENMARK.

The research project was divided into 6 work packages;
1. Geological models for regional evaluation of the probability of locating archaeological sites and their preservation.

2. Development of tools for surveying and monitoring coastal and underwater archaeological sites.
3. In situ stabilization of underwater archaeological sites.
4. Assessing the burial environment and deterioration of organic archaeological
5. Tools and techniques to raise waterlogged organic archaeological artefacts
6. Assessment of the state of preservation of waterlogged archaeological wood.

The technologies developed during SASMAP and demonstrated during the workshop at the Viking Museum are extremely innovative. It was refreshing to see such a large collaborative exercise actively engaging small to medium enterprises (SMEs); especially as it was so groundbreaking in the fields of geo-archaeological modeling, conservation science and remote sensing.



INNOMAR 3D SUB-BOTTOM PROFILER

Of particular interest during the seminar and workshop were presentations and demonstrations of the following;

1. Geographical modeling for regional evaluation of probability of locating archaeological sites.
2. 3D Parametric sub bottom profiler.
3. Vibracoring system. (80mm diameter, 2mtrs long capable of retrieving a perfect core in coarse grain sand and shell underwater with minimal effort)
4. Diver operated digital in situ spear / sediment profiler.
5. Diver operated digital pneumatic pilodyne.
6. New materials to stabilize fragile organic artefacts. (Carbon fiber, fiber glass, polymers and freezing.)
7. Development of methods for block lifting in sediment underwater.

A considerable amount of effort has gone into developing and testing. Some of the above technologies are still at the proof of concept phase while some have already gone into production, see SASMAP.eu.

The consortium will be publishing the outcomes of the projects in two sets of guidelines that will be coming out late in 2015.



SEAGRASS INSTALLATION DEMONSTRATION



DIVER OPERATED DIGITAL PNEUMATIC PILODYNE AKUT TECHNOLOGIES



VIBRO-CORE DEMONSTRATION AKUT TECHNOLOGIES



UNISENSE INSITU SEDIMENT PROFILER



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EDITOR'S NOTE

Dear Members,

This is my first edition as Editor and I would like to acknowledge the hard work of my predecessor, Mark Polzer, who set an incredibly high standard. I hope to maintain the newsletter as a quality publication and ask for your support. Please try to submit articles and updates as often as possible, so that your hard work is recognised and the membership remain informed.

- Editor.



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