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SHARKS AND HUMANITY

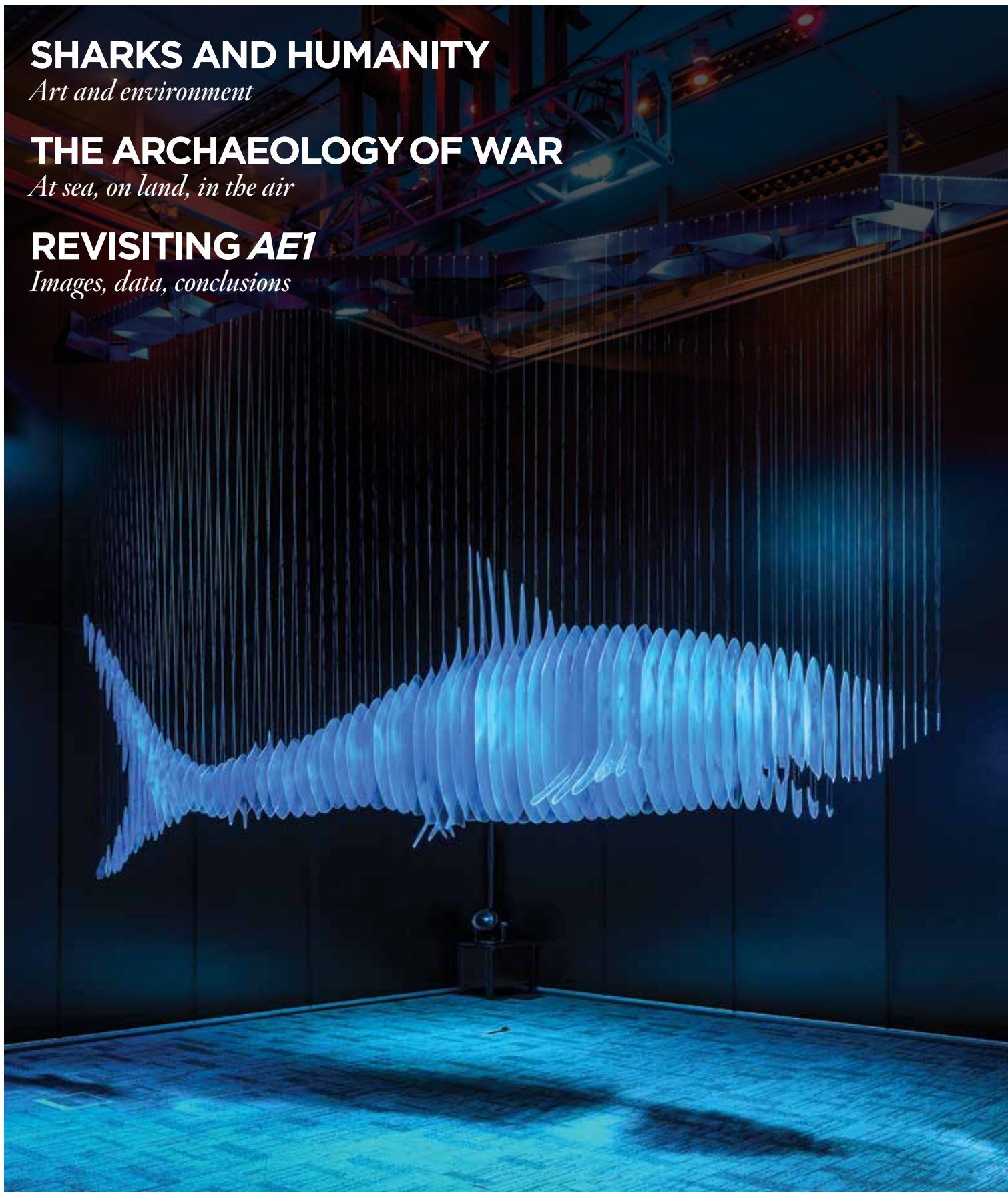
Art and environment

THE ARCHAEOLOGY OF WAR

At sea, on land, in the air

REVISITING AE1

Images, data, conclusions



Bearings

FROM THE DIRECTOR



01

01 *Evolution*, Gao Xiaowu, 2014. Image courtesy the artist and Parkview Arts Action

ON SHARKS AND HUMANITY is a compelling art exhibition that opens at the museum at the beginning of November. Importantly, it is the first in a series of programs that will highlight issues of ocean conservation and the future of Australia's blue economy. These will feature collaborations with innovative organisations working at the forefront of these issues, including the SeaBin Project, the Sydney Institute of Marine Science and the CSIRO.

Having already travelled around the globe, it is fitting that *On Sharks and Humanity* now lands in Australia, where our waters, rivers and estuaries provide some of the best shark habitat in the world. They are home to around 180 of the world's 400 shark species, 70 of them endemic. As apex predators, sharks are essential to the marine ecosystem, and several species are protected in Australian waters. While the practice of live shark finning is banned here, sharks are still fished in our waters.

On Sharks and Humanity uses the power of contemporary art to shine a bright light into some of the deepest shadows of the Australian imagination, the world of sharks – much maligned and misunderstood, yet critical to our oceans' ecosystems. Sharks occur in all of Australia's marine habitats, with most species found on the

continental slope or shelf, primarily on the bottom. Many sharks are also found in coastal waters and a small number even live in freshwater systems, such as rivers and estuaries. In Australia, most sharks can still be legally caught by commercial and recreational fishers. Due to declines in numbers, however, a handful of species are now listed as threatened under the *Environmental Protection and Biodiversity Conservation Act 1999*.

On Sharks and Humanity is first and foremost about shark protection. It features sculptures, installations, photography, paintings, drawings, performance, poetry and video by more than 30 artists from China, Singapore, Germany, the USA and Australia. Most of these artworks are drawn from the collections of Parkview Arts Action, a subsidiary of the Parkview Group, a Chinese construction company with offices and galleries in Beijing, Hong Kong and Singapore. The original exhibition was conceived by Parkview Arts Action founder, George Wong, together with Prince Albert of Monaco, and was launched at the Oceanographic Museum of Monaco in 2014. Between 2015 and 2018 the exhibition toured to the Ekaterina Cultural Foundation in Moscow, the National Museum of China in Beijing, the Parkview Museum in Singapore, and the Hong Kong Maritime Museum.

This latest iteration in Australia is the result of a robust collaboration between Parkview and ANMM Senior Curator Daina Fletcher. It also features ANMM artworks by Indigenous artists and artefacts from environmentalist Valerie Taylor.

Protecting both human life and sharks is an important, topical and continuing dialogue on beaches around Australia, and I am sure these contemporary artworks will encourage us all to think deeply and differently about sharks in the marine environment.

More than an art exhibition, *On Sharks and Humanity* is an environmental program that is truly global in its aims – to stop shark finning and ensure sustainable shark populations. So it is my sincerest hope that this exhibition will encourage all of our visitors to consider the frightening ramifications of oceans without sharks. Because without sharks, many of our ocean ecosystems will collapse and irrevocably damage vital ocean food sources.

Kevin Sumption PSM
Director and CEO
Australian National Maritime Museum

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SPRING 2018

Acknowledgment of country

The Australian National Maritime Museum acknowledges the Gadigal people of the Eora nation as the traditional custodians of the *bamal* (earth) and *badu* (waters) on which we work.

We also acknowledge all traditional custodians of the land and waters throughout Australia and pay our respects to them and their cultures, and to elders past and present.

The words *bamal* and *badu* are spoken in the Sydney region's Eora language.

Supplied courtesy of the Metropolitan Local Aboriginal Land Council.

Cultural warning

Warning: People of Aboriginal and Torres Strait Islander descent should be aware that *Signals* may contain names, images, video, voices, objects and works of people who are deceased. *Signals* may also contain links to sites that may use content of Aboriginal and Torres Strait Island people now deceased.



Cover: *Don't Copy II*, Li Jiwei, 2015. This is one of the works that features in our major summer exhibition *On Sharks and Humanity*. Image courtesy the artist and Parkview Arts Action

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Imaging Australia's first naval loss

THE 2018 PHOTOGRAMMETRIC SURVEY OF SUBMARINE HMAS AE1

In December 2017, the wreck of Australia's first submarine, HMAS *AE1*, was found off Papua New Guinea, 103 years after disappearing without trace. A second expedition, in April 2018, captured high-resolution images that shed light on the possible causes of the submarine's loss and have also been used to create a detailed digital 3D reconstruction of the wreck site. By **Dr James Hunter** and **Dr Andrew Woods**.

IN APRIL 2018, a remotely-operated vehicle (ROV) examined the wreck site of HMAS *AE1* in waters off the Duke of York Islands in Papua New Guinea. *AE1*, Australia's first submarine, participated in the capture of German New Guinea by Allied forces in the opening months of the First World War. It disappeared with all hands off the Duke of York Islands on 14 September 1914 while on patrol with the Australian destroyer HMAS *Parramatta* (D). The submarine's fate and whereabouts remained a mystery until December 2017, when it was found during a collaborative search expedition that included the Australian National Maritime Museum,

the Silentworld Foundation, the Royal Australian Navy, Find AE1 Ltd, the Submarine Institute of Australia and Fugro NV (see *Signals* No 122, March–May 2018).

Just four months later, in April 2018, an opportunity arose to conduct a detailed ROV examination of *AE1*. This follow-up expedition was conducted gratis from RV *Petrel*, a research vessel owned by Microsoft co-founder Paul G Allen and operated by Vulcan, Inc, the company that oversees Mr Allen's network of philanthropic organisations and initiatives. *Petrel's* crew was accompanied by a collaborative team from Australia that comprised researchers

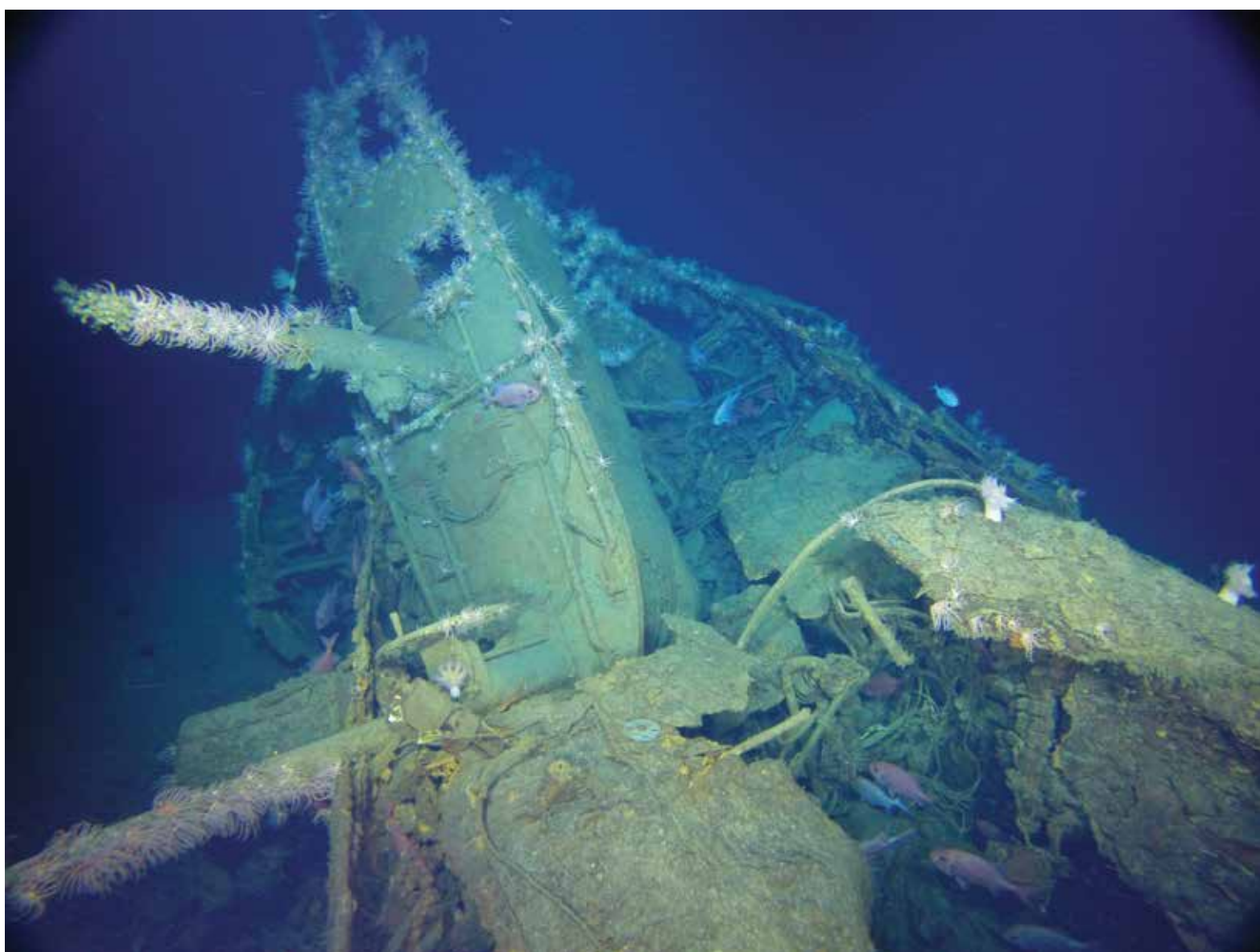
from Find AE1 Ltd, ANMM and Curtin University's HIVE (Hub for Immersive Visualisation and eResearch). Because *AE1* is located in more than 300 metres of water, the site was examined via *Petrel's* Bathysaurus XL, a Work-Class ROV built by Norwegian firm Argus that can operate to a depth of 6,000 metres. It is outfitted with manipulator arms and an array of standard- and high-definition video cameras. These were augmented with a specially designed deep-water digital still camera provided by Curtin University and the Western Australian Museum so that a photogrammetric 3D reconstruction of the wreck site could be developed.



- 01 Pages 2–3 Port side view of the interim 3D photogrammetric model of HMAS *AE1*. A high-resolution 3D model is currently being generated from the 8,000-plus still images at Curtin University's HIVE (Hub for Immersive Visualisation and eResearch). 3D model by Curtin University from images courtesy of Paul G Allen, Find *AE1* Ltd, ANMM and Curtin University. © Curtin University
- 02 A Remotely-Operated Vehicle (ROV) deployed from RV *Petrel* uses a camera mounted on its manipulator arm to inspect the interior of *AE1*'s stern torpedo tube. Image Paul G Allen, Find *AE1* Ltd, ANMM and Curtin University. © Navigea Ltd
- 03 Implosion of *AE1*'s forward hull has caused the fin to collapse into the remains of the submarine's control room. Image Paul G Allen, Find *AE1* Ltd, ANMM and Curtin University. © Navigea Ltd



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The same camera was among the equipment that captured photogrammetric imagery of the Second World War shipwrecks HMAS *Sydney* (II) and HSK *Kormoran* in 2015.

Photogrammetric 3D reconstruction

Photogrammetric 3D Reconstruction (P3DR) is a cutting-edge algorithmic process in which highly detailed and visually accurate digital 3D models or digital reproductions of real-world objects can be generated from multiple digital still images. The technique is also known as 'Structure from Motion', 'photogrammetry' or '3D Reconstruction'. The term 'photogrammetry' is widely used within the discipline of maritime archaeology to refer to P3DR; however, photogrammetry traditionally refers to the science of obtaining measurements from photographs, and although this occurs at very high density in P3DR, the later stages of digital 3D model development are beyond the scope of traditional photogrammetry.

AE1 is resting upright on a largely flat, featureless rocky seabed and is almost completely exposed

Photogrammetric 3D reconstruction is a multi-stage process. First, each image is individually processed to identify its visually unique features (known as 'feature points'). These might be edges or textures in the image that are mathematically unique. Computer algorithms, such as the Scale Invariant Feature Transform (SIFT), allow features to be described and matched regardless of their size or orientation. The feature identification stage may identify as many as 20,000 unique features within a given image. Identification of image features is followed by 'feature matching', in which all images in the dataset are compared with one another to identify common matching features. This is followed by 'bundle adjustment', an algorithm that calculates the relative location, orientation and lens parameters of the camera(s) used to capture each image. In addition, the bundle adjustment calculates the 3D coordinates of the image dataset's respective feature match points, which generates a sparse point cloud.

Once the camera locations are known and a sparse point cloud exists, further parts of each image can be matched in finer detail to produce a dense point cloud. The point cloud is then converted into a mesh of individual triangular-shaped surfaces that

are laid across the surface of the point cloud to generate an un-textured 3D model of the object. Finally, the original digital images are projected onto the mesh to generate a textured 3D model. The result, if the process is successful, is a photorealistic digital 3D model of the original object. The mesh and texture can be produced at various resolutions depending on the complexity of the object and the planned use for the 3D model, and the accuracy depends on a range of factors.

Typically, images that will be used for 3D reconstruction are acquired in a methodical manner that captures objects from different angles, shows all occluded surfaces and ensures all areas are imaged by at least two camera angles, if not more. P3DR can produce digital 3D models of areas and objects that are not flat, and generate relatively accurate site measurements. The 3D reconstruction process allows more detailed and realistic three-dimensional rendering of an area than can be generated with conventional 2D photomosaic techniques, but requires a higher number of images to do so.

The 2018 photogrammetric survey of *AE1*

Archaeological examination and documentation of *AE1* took place over two days and involved five separate dives by *Petrel*'s ROV. The first dive confirmed the submarine's location and identity, and allowed the ROV operators to familiarise themselves with the wreck site and its environmental conditions and to identify potential hazards (such as protruding structures that could foul the ROV's tether). It provided the research team with its first detailed glimpse of *AE1*, which proved useful in identifying features of interest and refining the survey strategy for subsequent dives. The first dive also allowed *Petrel*'s crew to ensure that the ROV was operating properly, and to check and colour-correct the video camera array. At the end of this dive, the photogrammetric still camera was installed on the ROV's pan-and-tilt mechanism. This camera was chosen because it was relatively simple to install and operate – a necessity due to the limited timeframe within which the *AE1* survey was organised and undertaken – and was pre-programmed to capture 12-megapixel resolution images every five seconds.

Once on site, the ROV ran multiple longitudinal transects along *AE1*'s hull at a relatively slow (approximately 0.10-knot) pace to allow for the required image overlap. Close-order survey was

conducted around complex hull features, such as *AE1*'s fin. During a handful of transects, particular emphasis was placed on capturing images along the submarine's lower hull where it meets the seabed. This was done to acquire greater detail in these areas, and contribute to the accuracy and completeness of the overall 3D model. To document the fragmented remnants of *AE1*'s side-mounted 'saddle' ballast tanks (which now lie in linear piles immediately beneath both sides of the hull), a 'zig-zag' pattern was adopted whereby the ROV would approach the hull, then pull away, to thoroughly document the extent of the adjacent debris. A standard-definition camera was attached to one of the ROV's manipulator arms and used to image and closely inspect specific areas of interest, such as the submarine's open bow and stern torpedo tube caps, the face of the bridge telegraph, and small openings in the pressure hull that could not be adequately imaged with the regular ROV camera array.

Imagery and data collected during the survey have refined and contributed to an understanding of the sequence of events that led to *AE1*'s loss

Once the second ROV dive concluded and image data became available, data processing commenced aboard *Petrel* to confirm that the camera and modelling software were working properly and to generate test models of specific site features. These interim models were in turn employed to find gaps in the image data and to guide the subsequent imaging strategy and ROV operations. By the end of the survey, interim low-resolution models had been generated for *AE1*'s stern and bow sections, starboard ballast tanks and fin. A total of 8,367 images and approximately 25 hours of full high-definition video were collected during the expedition.

Preliminary survey results

The ROV examination of *AE1* confirmed some preliminary observations made during the December 2017 expedition, but also offered new revelations. Detailed still and video imagery and the generation of a comprehensive 3D photogrammetric model of the submarine have also resulted in refinement of some conclusions made in 2017.



01

Unlike many historic shipwreck sites in shallow water and/or more developed areas, *AE1* appears to be relatively free of modern rubbish and debris

- 01 *AE1*'s disarticulated skeg and rudder lie on the seabed beneath the submarine's port propeller.
- 02 Since *AE1*'s discovery in December 2017, the fin has collapsed further into the remnants of the control room. This is evidenced by the forward periscope, which now rests directly atop the surviving starboard pressure hull plating.
- 03 Natural forces such as corrosion have caused most of *AE1*'s 'saddle' ballast tanks to disintegrate and collapse to the seabed. The opening for the submarine's port side amidships torpedo tube is visible at far right. Images Paul G Allen, Find *AE1* Ltd, ANMM and Curtin University. © Navigea Ltd

AE1 is resting upright on a largely flat, featureless rocky seabed and is almost completely exposed, with only the keel and the tip of a blade from each propeller buried in the surrounding silt. While the approximate aft half of the submarine is largely intact, hull sections forward of the fin have collapsed inwards due to catastrophic implosion. Specific areas within *AE1* devastated by implosion damage include the control room and forward torpedo compartment. Structural failure of the forward pressure hull has caused the fin to collapse and topple forward into the remnants of the control room.

Damage to *AE1*'s forward pressure hull from implosion is clearly evident in the 2018 ROV footage, still imagery and interim 3D model. Sections of hull plating have been folded over and collapsed, and the pressure hull completely opened from the forward torpedo room to the control room. Two copper-alloy hand wheels in the forward torpedo compartment have been bent and warped in a shallow 'U' shape – attesting to the power of the violent inrush of water as the pressure hull failed. Due to either the implosion or *AE1* striking the seabed (or both), the hull plating at Frame 70 failed, and effectively broke the submarine's back. This damage is evident in individual images, but the extent of the hull's failure is best captured by the 3D photogrammetric model, which shows the forward section misaligned and collapsing downwards relative to the rest of the hull.

AE1's aft torpedo tube cap was fully open – the necessary first step to launch a torpedo. However, the torpedo is protected from sea pressure by a sluice valve, which is shut. This indicates that the tube was not fully prepared for firing. The stern cap was opened via a manually operated hand-wheel, and the effort necessary to do this clearly indicates it was intentional. Why the cap is open remains unclear; it may have been opened as part of a training exercise, but could also have been in preparation for a speedy torpedo launch should *AE1* come under attack. The cap for the forward torpedo tube is slightly ajar, but not fully open. The worm gear used to open the forward cap does not appear to be damaged, which suggests it was either partially open – or in the process of being intentionally opened or closed – when the loss of *AE1* occurred. The doors for both amidships torpedo tubes – which were positioned athwartships across *AE1*'s central pressure hull and ballast tanks – are closed.

While still largely intact, the submarine's hull has been detrimentally affected by differential corrosion of its various metallic components. This is perhaps most evident in the destruction of most of *AE1*'s saddle ballast tanks, which were constructed of lighter-grade steel than the pressure hull and appear to have preferentially corroded, fragmented and collapsed to the seabed. Other disarticulated hull elements observed during the survey include *AE1*'s hydroplane

guards, rudder and skeg. All four guards are lying flat on the seabed, just beneath their respective hydroplanes. While natural processes such as corrosion could have caused them to fall away from the hull, it is more likely that they snapped off as *AE1* fell onto its keel after initially striking the seabed stern first and pitching forward. The 2018 survey confirmed that both fore and aft sets of hydroplanes were in the 'hard-to-rise' position, which indicates that the crew desperately attempted to recover from a dive and return to the surface. *AE1*'s rudder and skeg were found lying beneath the port side propeller. Both appear to have been broken off by the submarine striking the seabed stern first; however, the angle of the impact was shallow enough that it did not damage *AE1*'s propellers.

Specific hull components may also have deteriorated and disarticulated due to seismic and tectonic activity in the area. The fin, for example, has collapsed further into the control room since *AE1*'s discovery in December 2017 (and in the wake of large earthquakes and accompanying aftershocks in New Britain in March 2018). While there is clear damage to the submarine from natural processes, no evidence of human-manifested change (such as anchor or trawl damage) was noted. Indeed, unlike many historic shipwreck sites in shallow water and/or more developed areas, *AE1* appears to be relatively free of modern rubbish and debris.



02



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Both fore and aft sets of hydroplanes were in the 'hard-to-rise' position, which indicates that the crew desperately attempted to recover from a dive

Conclusion

The 2018 ROV examination and photogrammetric survey of *AE1* proved immensely successful. It acquired detailed still and video imagery, and an interim 3D digital model of the entire shipwreck site has already been produced. This in turn has aided archaeological examination of *AE1* on a macro scale, and led to the identification of large-scale features – such as the slump in the submarine's hull resulting from the break near Frame 70 – that otherwise might have gone unnoticed. A significantly more detailed high-resolution photogrammetric model of *AE1* is currently being generated at the Curtin HIVE, and is expected to offer even greater opportunities for analysis, interpretation and – eventually – exhibition. Lessons learned during the 2015 photogrammetric survey of *Sydney* and

Kormoran were put to good use during the *AE1* expedition, with the result that the latter shipwreck received effective, comprehensive photographic coverage in a short time. The survey also revealed – through the use of only one uncomplicated and inexpensive camera for photogrammetric capture – that much can be accomplished with relatively little.

Imagery and data collected during the survey have also refined and contributed to an understanding of the sequence of events that led to *AE1*'s loss. For example, the submarine's bow and stern torpedo tube caps were either partially or fully open, and this appears to have been an intentional act carried out on the surface. Why the caps were open, and whether they contributed in some manner to the loss, will probably never be known. *AE1* then entered into a dive, and despite efforts by the crew – as evidenced by the positions of the hydroplanes – was unable to resurface. At an unknown depth, the forward pressure hull partially imploded, killing the crew instantly. The submarine continued its fatal dive until it struck the seabed stern first at a shallow angle, breaking off the skeg and rudder. The hull then pitched forward, breaking *AE1*'s back and possibly snapping off all four hydroplane guards. This violent movement also affected the fin, which – probably already weakened structurally during the implosion – began to topple forward into the control room.

In the future, the imagery and 3D model generated from the 2018 investigations will prove critical in *AE1*'s ongoing interpretation, exhibition and management. Among other things, the survey revealed that the shipwreck site is in a state of rapid natural decline, as differential corrosion, and contributing factors such as local seismic activity, take their toll on the submarine's constituent parts. The interim photogrammetric 3D model already generated now serves as an accurate representation of *AE1*'s state of preservation when discovered, and can be the benchmark to which future surveys of the site may be compared. It can also serve as the foundation upon which a variety of innovative interpretive and exhibition options may be explored and developed to share *AE1*'s story for years to come.

This article is an edited version of a presentation by Dr James Hunter of the Australian National Maritime Museum and Dr Andrew Woods of Curtin University HIVE (Hub for Immersive Visualisation and eResearch) at the Archaeology of War conference at the museum on 23 June 2018.

For more information, see the following press releases:

news.navy.gov.au/en/Apr2018/Events/4577/Expedition-provides-detailed-new-look-at-HMAS-AE1.htm

news.curtin.edu.au/media-releases/photographic-processing-unlocks-secrets-hmas-ae1-shipwreck/



01 Private Harry Willis. Image © Tim Whitford (Harry's great-nephew). Photo presented to the author by the family
All other photos © University of Glasgow unless otherwise credited

At times the only way to find peace on the site was to sit quietly at a graveside

Finding the missing of Fromelles

TEN YEARS AFTER

The rediscovery of mass graves near the site of the Battle of Fromelles resulted in the recovery and identification of scores of Australian soldiers killed there in 1916. It also led to the establishment of a new Commonwealth War Graves cemetery, the first since 1982. **Professor Tony Pollard** led the excavation team.

2018 MARKS THE TENTH ANNIVERSARY of the discovery of intact mass graves resulting from the 1916 Battle of Fromelles – a fact that had entirely escaped me until the day after I spoke on the topic at the Archaeology of War conference at the Australian National Maritime Museum in June. Time flies by, and much water has passed under the bridge since I led a team on to that narrow strip of ground, adjacent to Pheasant Wood and overlooked by the village of Fromelles, in northern France. The Fromelles project was undoubtedly the most stressful and yet one of the most rewarding of my no-longer-short career as an archaeologist. Up until 2015, I would probably have said that it had been *the* most rewarding. However, that year I started work on the Waterloo Uncovered project, of which I am now the academic lead and a field director. The work of Waterloo Uncovered was the subject of a second paper I presented at the Sydney conference and, as will become apparent here, there is more of a link between the two than might initially meet the eye – but first to Fromelles.

The search for unmarked mass graves containing the bodies of Australian, and possibly British, soldiers killed in the Battle of Fromelles – fought in northern France on

19–20 July 1916 – was initiated by Australian art teacher Lambis Englezos. Lambis is now well known for his commitment to recovering and commemorating the dead of Fromelles, and indeed of other First World War battles in which Australian troops fought and died. It was he who first suggested that unmarked graves, dug by German troops in the lee of Pheasant Wood, some distance behind their own front line, still contained the bodies of Australian soldiers. At first he was a voice in the wilderness – the official search for the war dead by the victorious powers ceased in 1921, so there was little interest at government level in what might well have been a wild goose chase. However, the assistance of historian Peter Barton, and support from a small group of Australians – including lawyer Chris Bryant, author Patrick Lindsay, archaeologist Richard White and television journalist Ray Martin – resulted in a case strong enough to convince the Australian government to engage a team from Glasgow University Archaeological Research Division to carry out a limited program of fieldwork in order to ‘ground-truth’ Lambis’s assertions. There was some compelling documentary evidence, in the form of wartime aerial photographs of the area taken before and after the battle – the latter showing eight pits behind Pheasant

Wood, five of which were backfilled within a week or so of the battle. Other evidence included a burial order issued to men of the 6th Bavarian Reserve Division who had fought in the battle and were now assigned the task of burying the enemy dead lying in and around their frontline trenches.

So it was that in 2007, I led a small team of archaeologists in a project focused on the area that Lambis had identified as the burial site. The remit was clear: there was to be minimal intervention, in the form of ground disturbance, with the exception of the recovery of objects present in the topsoil and located through the use of metal detectors. Various types of geophysical survey were deployed in this initial phase of work, but given the heavy clay soils the findings were less than clear – it was certainly difficult to make out convincing traces of the pits in the resulting plots. Evidence came in the recovery of tell-tale artefacts, which included two medallions, at least one of which was presented to Australian recruits when they volunteered to serve at their local recruiting station.¹ This one bore the place name Shire of Alberton, surrounded by a horseshoe border, with the letters AIF (Australian Imperial Force) set into the centre,

I have a vivid memory of our digger driver Gary being in tears as he covered the men back over

- 01 Initial excavation of a pit, showing the subtle scalloped nature of the edges. The white flecks are lumps of quick lime. This photo was taken before the layer of burials was reached.
- 02 The Alberton Medallion belonging to Private Harry Willis.
- 03 Australian 'Rising Sun' badge recovered from a body in one of the pits.
Above images © University of Glasgow
- 04 Aerial photos taken before and after the burials (the latter showing the pits). The railway line passes diagonally across the images and Pheasant Wood is to top. Image © Imperial War Museum
- 05 Location of finds, including medallions, plotted against an enlargement of an aerial photo. The straight white lines indicate the paths of German soldiers as they walked around the grave pits. Aerial photo © Imperial War Museum; finds © University of Glasgow



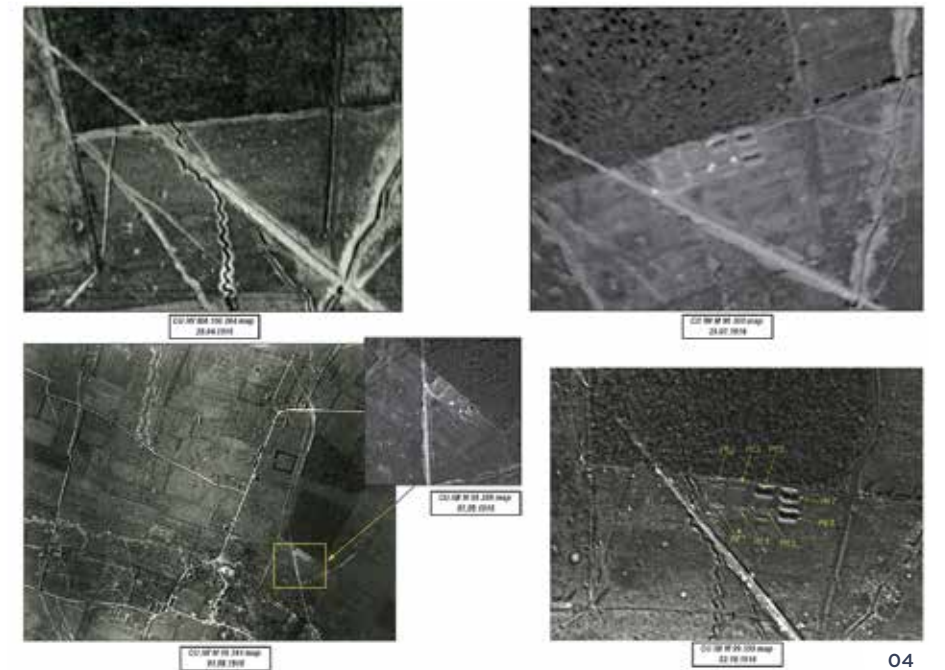
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surmounting a scroll bearing the inscription 'For Duty Done'. It seemed likely that these medallions had fallen from the pockets of dead Australian soldiers as they were being placed into the burial pits, having been brought to the site by a light railway which the Germans used to move supplies to the front. The only evidence of the railway today is a low embankment, which was picked up by the topographic survey, and the stones used as ballast, which when the field is under plough can be seen scattered across the slope rising from the grave area. Geological analysis at the University of Glasgow has established that these stones had been brought to France from the Rhur region of Germany. The Germans broke Dutch neutrality to use their canals for this purpose.

The detailed mapping of objects provided other insights, such as a concentration of Allied underwear buttons and German tunic buttons at the point adjacent to the former railway line which was closest to the pits. These were likely to have been pulled from clothing during the physical effort of removing the bodies from the train before carrying them to the pits. When these objects were plotted on a blow-up of the aerial photo taken soon after the battle, it was possible to see the tracks left by the burial parties where they had scuffed the earth while moving around the pits.

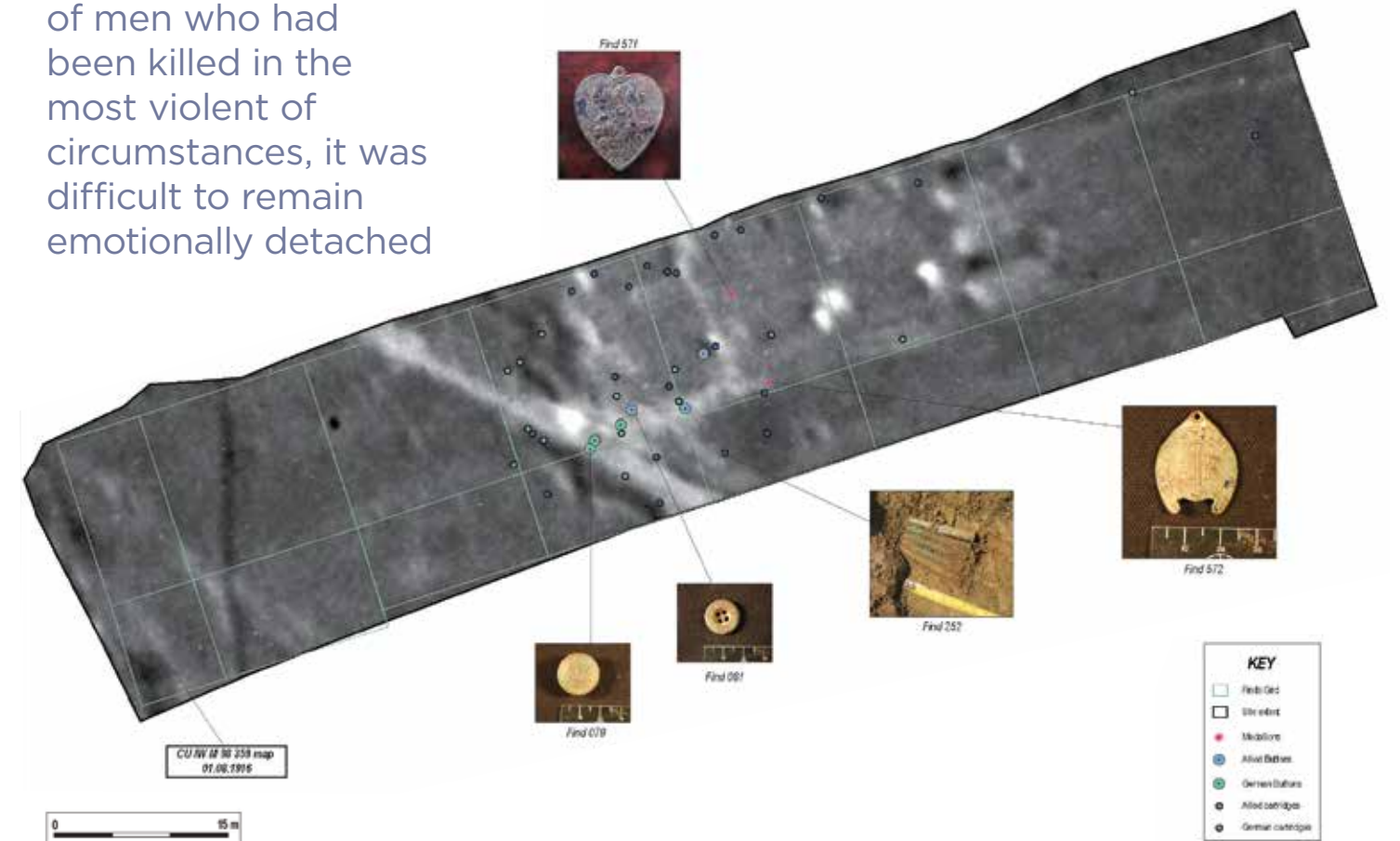
When all of the evidence was combined – both the documentary and the archaeological – it was concluded that Australian dead had been buried in pits at this location and that there was a high likelihood that they were still there; that is, that they had not been removed by a body recovery unit in the years following the war. Further to this, an examination of the online Australian War Memorial revealed that several men from Alberton, in Victoria, had volunteered and would therefore have received the same type of medallion as that recovered from Fromelles. The other was different, and bore a crest including an emu and a kangaroo, along with the inscription 'ANZAC'. Due to a number of factors too involved to itemise here, the most likely candidate was Private Harry Willis, who was just 20 years old when he was killed in the battle. The possibility that Harry was buried in the pit adjacent to the location from which the medallion was recovered was mentioned in the submitted report.

The findings detailed in that first report were enough to convince the Australian government that there was adequate evidence to merit a second, more invasive, investigation to be carried out by a larger team in 2008. The aim here was to excavate limited-sized test trenches across each of the eight pit locations to establish whether bodies were present. The test trenches were located via extrapolation from the

aerial photographs rather than the rather inconclusive geophysical plots. This time the team included a strong component of experts in human osteology, including Gaille MacKinnon, an Australian forensic anthropologist resident in Scotland, who had worked on a number of mass grave investigations in such places as Bosnia and Iraq. The team was to be supported by the Australian Army, with Major General (retired) Mike O'Brien engaged as liaison between the team and the army. A good rapport developed between Mike and myself as the project progressed. Despite some disquiet at what was perceived as a British team looking for Australian dead, the support for the project was strong – although, ironically, the British government was not at that stage willing to help fund the project, even though British dead would possibly be lying alongside Australians.

The project took place over three weeks and involved the initial stripping of topsoil by mechanical excavator, followed by hand digging as we approached the level where burials were likely to be. For the first few nerve-racking hours there was little to see other than sticky orange soil, with no trace of the edges of the pits. As the work was being carried out on the basis of the previous report and press interest was now almost frenzied, the stakes were high. A negative result at this stage would not have been good. Indeed, there were

Spending so much time with the remains of men who had been killed in the most violent of circumstances, it was difficult to remain emotionally detached



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One hundred and fifty nine of the men now have their names on their gravestones and their identities returned to them



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detractors on the sidelines who were convinced that the result would be a negative one. However, as the afternoon progressed, the picture began to change. First, a deposit of blue clay provided clear indication that there had been ground disturbance, as this should have been about two metres below the surface rather than not far below the topsoil. Then the first edge appeared. Initially it looked entirely straight, but on closer inspection there were scalloped curves along it. This was the first real sign that burial pits were present and that they had not been disturbed since the earth was returned by German soldiers in 1916. If a recovery party had found the graves after the war then these straight edges, with the scallop shapes created by the backs of the German shovels, would not exist as the pits would have been roughly re-dug to reach the bodies with the minimum of fuss, and the resulting edges would have been far from straight.

We could smell the dead before we could see them. Many of us on the team had worked on crime scenes or similar and were familiar with the sickly sweet aroma of decay, which was present as we approached the burial levels. Sure enough, not long after, the first bones were encountered. It was a relief to see that the bodies had decayed to skeletons, as given the anaerobic conditions it was possible that organic preservation would be high. As it happened, clothing was preserved in some pits, while in others the skeletons had an almost prehistoric appearance. The differences in preservation across the site were interesting and in part were influenced by tree roots which had removed the moisture from the pits closest to the wood. Bodies were present in all five of the pits that were seen to be backfilled on the aerial photographs, and remains were also present in the end of a sixth pit, something that had been surmised from careful analysis of the photos.

Excavation was limited to two-metre-square trenches over each of the eight pits (which were each 10 metres long). The project's aims were specific and challenging:

- to establish the presence or absence of burials
- to estimate the number of burials (if present)
- to identify nationality
- to establish whether DNA identification would be possible.

This was a tall order given the limited size of the investigation trenches and an agreement not to disturb any of the remains.

In all cases the bodies were found to have been buried in two layers, with a deposit of earth between the two. In some cases the only way of establishing this was by digging small holes where gaps appeared, between skeletons or below the feet in some cases. On the basis of the limited sample visible, an estimate of 175 to 400 bodies was reached (the latter number was mentioned in the burial orders). The presence of Australian troops was indicated by uniform types (such as waist belts stitched into tunics and Australian 'rising sun' badges) but the presence of a couple of British General Service buttons, not worn by the Australians, was enough to bring on board British government support.² Last on the list was assessing the potential for identification, and it was clear from the well-preserved skeletal remains that DNA analysis would be possible.

As the project developed, so plans for the next stage began to unfold. It was my initial opinion, and that of some of my team, that if bodies were present then they should be left where they lay and a monument raised to them. As time went on, though, and more bodies were exposed, that feeling began to change. Men were lying in contorted positions, on their backs and on top of one another. Spending so much time with the remains of men who had been killed in the most violent of circumstances, it was difficult to remain emotionally detached, and before the project was finished I was strongly of the opinion that the men should be recovered and each given an individual burial. At times the only way to find peace on the site, which had a press enclosure at one end, was to sit quietly at a graveside under the cover of the tents which shielded every pit. It might seem strange for an archaeologist to admit to be almost communing with men, some of them very young, who had died nearly 90 years before, but for me that was how it was.

After three weeks, and with our mission accomplished, the excavation trenches were carefully backfilled, and I have a vivid memory of our digger driver Gary being in tears as he covered the men back over. A second report was submitted and on the basis of the results it was decided to carry out a full recovery and attempt identification of individuals using DNA. The recovery operation went out to competitive tender and we put a lot of work into it, by then feeling a strong connection with the men at Pheasant Wood. But, as can be the way with competitive tenders, we lost out, in this case to Oxford Archaeology, which at the time was very painful.

They did a great job, though, and exhumed 250 bodies in the largest recovery of First World War casualties since the immediate aftermath of the war. Of these, 159 now have their names on their gravestones and their identities returned to them. Thus far none of the identified have proven to be British soldiers, although some of them were born in England (it might be that all are Australian and one of them happened to be wearing a British tunic – but there can be little doubt that more unmarked burials will exist in the general area of the battlefield). Private Harry Willis was lying exactly where I suggested he was on the basis of the medallion find in 2007.

The new Commonwealth War Graves Commission cemetery at Fromelles was established not far away from the primary burial site and it was a great honour to be present, along with various members of my team, at its inauguration in 2010 by HRH Prince Charles.

Hopefully the foregoing, however brief, has given some idea of the challenges and stresses of the project. My current project, Waterloo Uncovered, provides veteran recovery through participation in an archaeological project focusing on the 1815 battlefield, and my passion for this project is a direct result of my experiences at Fromelles. There the focus had been on the dead, but since then, and I think in part due to the intensive and stressful nature of that work, my attentions have moved from recovering the dead to assisting the living.

1 The Australian army was a volunteer force; unlike in the UK, there was no conscription.

2 The project team was praised for its work at a sitting in the House of Commons.

Further reading

Whitford, T and Pollard, T, 2009. 'For Duty Done: A WWI military medallion recovered from the mass grave site at Fromelles, Northern France'. *Journal of Conflict Archaeology*, Vol 5.1: 201–29.

Tony Pollard is Professor of Conflict History and Archaeology at the University of Glasgow. This is an edited version of a paper he presented at the Archaeology of War conference at the museum on 22 June.

- 01 General view of the search area from the ridge, with Pheasant Wood in background.
- 02 The 'Cobblers' Memorial at Fromelles, constructed on a shattered German pillbox. Above images © University of Glasgow
- 03 The new Fromelles (Pheasant Wood) Military Cemetery, inaugurated in 2010 and the final resting place of soldiers whose remains were found in the mass grave. In the background is the village church. Image David Crossland/Alamy Stock Photo image ID C4DXB5

The archaeology of Queensland's 'Secret War'

RESEARCHING THE QUEENSLAND NATIVE MOUNTED POLICE, 1849 TO 1904

A collaborative project between university researchers and local Aboriginal communities is investigating archaeological evidence relating to the Native Mounted Police, a force in colonial Queensland that employed Aboriginal people to track and kill other Aboriginal people. By **Lynley Wallis, Heather Burke, Bryce Barker, Noelene Cole, Leanne Bateman, Uschi Artym, Tony Pagels and Elizabeth Hatte.**

01 Members of the Native Mounted Police photographed on 1 December 1864 at Rockhampton, Queensland. In the back row from left to right are Carbine, George Murray, an unknown second lieutenant, an unknown camp sergeant and Corporal Michael. In the front row from left to right are Troopers Barney, Hector, Goondallie, Balantyne and Patrick. Reproduced with permission of Queensland State Library (negative no 10686)



Always take sides. Neutrality helps the oppressor, never the victim. Silence encourages the tormentor, never the tormented.

Elie Wiesel, Nobel Laureate and Holocaust survivor

THE QUEENSLAND Native Mounted Police (NMP) was a paramilitary government force that operated during the mid- to late 19th century, particularly in newly 'settled' districts. On occasion they undertook tasks such as escorting gold shipments, assisting exploration parties, establishing new travel routes and searching for missing persons. However, their main role was to respond to European requests for police assistance to 'disperse' (a euphemism for 'kill') Aboriginal people to facilitate European expansion.

The first detachment of NMP arrived on the Darling Downs in May 1849 (when Queensland was still part of New South Wales), under the command of the newly appointed Commandant of the NMP, Frederick Walker. This detachment comprised 14 Aboriginal men who had been recruited by Walker from the Murrumbidgee River district, and with whom Walker had worked previously. We do not know exactly how Walker, or subsequent recruiting officers, managed to convince Aboriginal men to join the NMP, given the hard life the job entailed. A careful reading between the lines of fragmentary mentions in historical records, and from the oral histories handed down among troopers' descendants, however, suggests several possible methods,

including coercion through forcible or other means, kidnapping, various forms of inducement and sometimes, perhaps, voluntary enlistment.¹ Given everything else we know about Aboriginal labour on the colonial frontier, it seems reasonable to assume that forcible recruitment into the NMP was probably common. And in rare cases we don't have to assume this, since written sources tell us as much: for instance, the boy 'Tommy', from Tchanning Station on the Condamine River, was 'seized for Native Police service while on his way back to Ferret's station after attending a bora'.² The high rates of desertion by Aboriginal troopers, even when they knew that such behaviour could be severely punished, further suggests that many troopers had not in fact been willing recruits.

From its humble beginnings the NMP eventually grew to nearly 200 troopers at any one time, and more than 450 Europeans served through the half-century history of the force. Detachments typically operated with between four and eight Aboriginal troopers under the command of a European officer. They were stationed in remotely located and unassuming base camps that were sometimes staffed with an additional European constable who served in the roles of camp-keeper and/or blacksmith.

The NMP was officially disbanded in 1904, although after that date some troopers went on to become trackers in the regular Queensland Police Force. The NMP was the longest-lasting force of its kind in Australia,

following a long tradition employed elsewhere in the British Empire of using local indigenous people in policing roles. Relegated to the realm of memory after 1904, relatively little was known about its functions until about 40 years ago, when historians such as Leslie Skinner, Henry Reynolds, Noel Loos, Ray Evans and, more recently, Jonathan Richards, began to shed light on its activities. Despite this attention, even today the role and effects of the NMP are not well known outside academic circles and the Aboriginal communities whose ancestors bore the brunt of their manner of policing.

As has been shown to be the case around the world, the victors of conflict write history and the voices of victims are often marginalised, silenced or ignored. It is not surprising, then, to find that, despite the meticulous research carried out by historians, the documentary record is inherently – and perhaps consciously – silent on many issues about the nature of the frontier wars and the actions of the NMP. Yet police staff and station files, inquest files and general correspondence to and from the Colonial Secretary's Office held in the Queensland State Archives, coupled with newspaper reports and first-hand accounts in private sources, such as letters and diaries, unequivocally support the idea that Aboriginal people were subject to attack, assault, incursion, conquest and subjugation at the hands of the NMP.



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Relocating these sites requires persistence, excruciating detective work in the archives, and a willingness to sit down and drink a lot of cups of tea with locals to tease out their knowledge ... and even then, without more than a pinch of luck thrown in, it's sometimes an almost impossible task.

Archaeology has the potential to contribute new perspectives on this conflict, and speak directly to the silences through a different lens

Even when NMP sites were occupied for decades – and some were, such as the camp at Kirtleton, which was occupied for 24 years, and Herberton, which was used for 23 years – the number of artefacts exposed on the surface is typically minimal. Sediment has been building up over some of these sites for more than 100 years, meaning that most of the artefacts are now buried and only become visible if exposed by erosion or other activities that disturb the ground, such as ploughing. With sites spread over several hectares and often covered with thick grass, deciding where to excavate a few small test-pits or trenches requires solid geophysical survey using equipment such as ground-penetrating radar and a magnetometer, and a robust archaeological assessment.

These sites rarely contain deep deposits, usually only about 10–20 centimetres, but somewhat surprisingly, what is present is often extremely rich, with huge quantities of glass, rusty metal and ceramics, and lesser quantities of bone and organic remains. Quite a lot of the thick bases of glass bottles have been 'knapped' by Aboriginal people (most likely the troopers and/or their wives), meaning they have been flaked to produce sharp cutting tools, using exactly the same techniques that were used by their ancestors for millennia to produce stone artefacts.

You might be wondering how, given these fairly generic types of archaeological assemblages, we can be so certain that they are NMP camps rather than pastoral or mining camps. Beyond correlations with historical data that describes or shows where camps were located, we find large

numbers of bullets and spent cartridges from government-issued Snider carbines, a weapon that was not often owned by pastoralists or miners. And perhaps even more importantly, we find the characteristic brass buttons that once adorned NMP uniforms. If found in isolation, most of these artefacts would not be singularly indicative of an NMP camp, but collectively they provide a sufficiently high level of evidence to allow us to be confident of what we're dealing with.

Most of these artefacts are not what people expect to hear described when talking about the 'archaeology of war' – we have no skeletal remains of victims with evidence of gunshot trauma, nor ships, planes or battlefields. However, the archaeological footprint of NMP camps across Queensland provides unequivocal evidence of the scale and enduring nature of the NMP's operations. The fact that 196 camps had to be maintained at various locations for a period of 55 years provides clear evidence of the persistent and determined resistance of Aboriginal people to the theft of their land and the violence and bloodshed that resulted.

Aboriginal people have always referred to the events on the 'frontier' as a war

The vast majority of that violence (though not all) took place beyond the physical borders of the NMP's living quarters. The familiar, banal qualities of these camps – their rubbish dumps, remnant fireplaces, paths and fence-lines – bely their nature as the central nodes in a web of violence that stretched across the state. The everyday, domestic role they served was crucial to the NMP being able to fulfil its duties, making the camps in essence the support structure for over half a century of organised violence against Indigenous people.

One aim of this collaboration is to raise broader community awareness of these places and their associated dark histories and meanings. This dark or 'difficult' heritage is not just in the past – it continues to reverberate in the present and is far more than just a historical legacy; it's one that's current, raw and exceedingly complex.

1 For more information on the complex issue of recruitment into the NMP, see archaeologyonthefrontier.com/2018/04/13/recruiting_part_i/

2 John Ferrett to Frederick Wheeler, undated, Records of the Colonial and Home Secretary's Office 1859–1896, QSA SA846747 61/1712, M/film Z5602.

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To learn more about the NMP or this project, the team has a blog that they post to every few weeks: archaeologyonthefrontier.com

In 2020 the team will also be launching a comprehensive database that will make the information collected from historical and archaeological sources readily available to the general public. There is no single story of the NMP; its history is as broad as the hundreds of officers and troopers who constituted it, and as deep as the personal choices, actions and reactions that generated decades of frontier violence. Through their blog and the database, the team aims to help people remember the NMP and understand their activities and their effects. By allowing people to access and assess the evidence for themselves, everyone will be able to come to their own conclusions about what happened, why and how.

- 01 NMP button from the site of Puckley Creek in Cape York Peninsula; the diameter of the button is 15 millimetres. The button bears the insignia 'VR', for Victoria Regina (Queen Victoria). Image Heather Burke
- 02 Student volunteers from Flinders University carrying out excavations of a living area at the NMP camp on the Burke River, a short distance from Boulia in western Queensland. Image Andrew Schaefer
- 03 A stone feature at the Puckley Creek NMP camp en route to the Palmer River Gold Field in Cape York Peninsula. Image Heather Burke
- 04 The remains of a stone fireplace at the NMP camp at Oak Park Station. Image Lynley Wallis
- 05 Team member Kelsey Lowe carrying out a ground-penetrating radar survey at the Boralga NMP camp site in Rinyirru National Park. Image Heather Burke



01 Australian trekkers and Papua New Guinean porters tackle a typical section of the Kokoda Track.
All images courtesy Andrew Connelly

More than 3,000 people now complete the gruelling Kokoda Track walk each year in an average of nine days

Stori blo bikpela pait emi bilong yumi olgeta

‘THE STORY OF THE WAR BELONGS TO ALL OF US’

The World War II Kokoda Campaign in Papua New Guinea left behind both physical relics and intangible memories, and spawned a trekking industry that now attracts thousands of people a year who want to walk the famous Kokoda Track. **Dr Andrew Connelly** looks at history, archaeology and heritage management on the track.

SEVENTY FIVE YEARS AGO, battle raged between Japanese and Allied troops along the Kokoda Track over the Owen Stanley Range north of Port Moresby, Papua New Guinea, in some of the worst fighting conditions of the entire Second World War. In late 1942, the Japanese South Seas Regiment invaded the north coast of Australian-governed colonial Papua, intent on taking Port Moresby on the south coast. The Japanese pushed Australian and Papuan defenders back over the Owen Stanleys to Ioribaiwa, within 40 kilometres of Port Moresby, before strategic and

tactical setbacks forced them to retreat to the northern beaches, where they were eventually annihilated by the pursuing Allied forces.

Historians may debate the strategic importance of the Kokoda Campaign, but the fact remains that Kokoda has taken a place alongside Gallipoli in the iconography of Australian national identity. News from the front during the campaign in 1942, and most notably Damien Parer’s Academy Award-winning newsreel *Kokoda Front Line*, made Kokoda a household word during the war. Its fame was resurrected more recently when Prime Minister Paul Keating kissed what he declared ‘sacred ground’ at Kokoda in 1992. From those early 1990s, a trekking industry has grown to serve mostly Australians (along with a growing number of Papua New Guineans) hardy enough to take on the 96-kilometre track between Owers Corner and Kokoda Station. More than 3,000 people now complete the gruelling walk each year in an average of nine days. While added attractions such as natural beauty and the physical challenge of the trek draw some trekkers, the overwhelming majority come to walk the same ground as the Australian Diggers, glimpse what they experienced, and learn more about the military history and heritage of the Kokoda Campaign.

While mainstream history has focused on the foreign combatants – Australia, the United States and, to an increasing extent, Japan – this is also a Papua New Guinean story, with memories and narratives of Papua New Guineans intertwining with these others, especially those of the Australians. Most notable is the mythic bond between Aussie Diggers and the so-called ‘Fuzzy-Wuzzy Angels’ – Papuan stretcher bearers who devoted much care and attention to their wounded charges – but Papua New Guinean narratives also include the story of the Papuan Infantry Battalion, which took part in the first armed response to the Japanese invasion in the form of an ambush at Arawa, just north of Kokoda Station. Perhaps most notable, and until recently most neglected, are stories of local inhabitants who witnessed the campaign first hand, and reacted in a variety of ways.

As the war moved on, large amounts of material were left behind. Munitions both live and spent, broken equipment and discarded supplies littered the length of the track. Over the decades this detritus of war has gradually ‘evaporated’, either collected as scrap or picked up as souvenirs by both locals and foreign visitors. What remains has increasing historical value, adding immediacy to the trekking experience, and is in need of preservation and protection.

Not long after the war, a Commonwealth War Graves cemetery was opened at Bomana, north of Port Moresby not far from Owers Corner, and four memorial cairns were dedicated at Kokoda Station honouring various participants. Between these two commemorative bookends, however, not much took place along the track except for local foot traffic, as has been the case since long before the war. Important sites large and small were retaken by the forest and forgotten. Starting in 1992, private individuals and groups indirectly supported by the Australian and Papua New Guinea (PNG) governments began installing memorials along the track, namely Ross Bastiaan's numerous brass plaques and the Kokoda Memorial Foundation's arches at each end. Also from the early 1990s, trekking pioneers such as Frank Taylor, Bill James and Charlie Lynn began rediscovering battle sites and adding them to their maps and trekking agendas. In 2002, the Australian government funded the installation of a major memorial at the Battle of Isurava site, at which a dawn service now serves as the highlight of many treks.

The PNG National Museum and Art Gallery (NMAG) is developing a military heritage management plan for the Kokoda Track and environs, to further research, preserve, interpret and promote the tangible sites and objects remaining from the war, as well as the intangible memories and stories of local residents and combatants. NMAG involvement comes under the aegis of the Kokoda Initiative, a joint Papua New Guinea–Australia agreement forged in 2008, based on shared histories and shared interests in looking after the track. The Kokoda Initiative Master Plan comprises three elements:

The track: A safe and well-managed track where the specialty military values and historical integrity are protected;

The people: Enhanced quality of life and income for landowners and communities of the region;

The environment: The sustainable use of the catchment area.

While these overlap, the NMAG's role mainly falls under the first element. The Kokoda Track Military Heritage Management Plan is intended as a pilot program. Once the plan for the Kokoda region is in place, similar plans will be formulated for other regions around PNG.

Stakeholders

There are multiple stakeholders to the Kokoda heritage management plan – including international, national, regional and local-level government bodies – but two groups are foremost: local communities and trekking operators. Any development activity in PNG must be community driven, for without community involvement no project is likely to succeed in the long term. Community consultation and involvement are therefore enshrined in all aspects of the plan. Trekking operators (both Papua New Guinean and Australian) travel the length of the track multiple times each season, and have an intimate knowledge of the conditions and state of sites and artefacts along the way. These operators recruit porters and local guides from the villages along the track, and usually have close attachments to certain communities. The Kokoda plan is partly intended to promote local livelihoods by sustaining the trekking industry, which provides the bulk of income to local communities. Commitment to these primary stakeholders is enshrined in the general principles of the plan.

As the war moved on, large amounts of material were left behind – munitions both live and spent, broken equipment and discarded supplies

The plan

The NMAG has recently completed a policy document which outlines the vision, scope and details of the nascent Kokoda heritage management plan. It begins with an overall vision and a mission statement:

Kokoda Track Military Heritage Management Plan

Vision

That the military heritage of the Kokoda Track remains safe, authentic and accessible for residents and visitors for generations to come.

Mission

To identify, protect, interpret, commemorate and promote the shared histories and heritage of the Kokoda Track.

After outlining the geographical scope of the plan, 16 general principles are laid out, detailing scale and foci (local, national and international), listing governmental and institutional linkages, acknowledging the various former combatants, providing a formula for assessing heritage significance of various features, and laying out a schedule for monitoring and assessing the plan. Specific principles make explicit the importance of community and trekking industry involvement, as well as gender awareness and social inclusion.

Five elements of heritage management

The plan is organised under five elements:

1. knowledge;
2. preservation, conservation and collections management;
3. interpretation and education;
4. commemoration;
5. promotion.

NMAG values for each of these elements are outlined, with specific policies and 'actions and tasks' detailed. This document will guide site management planning and special projects in the long term.

Implementation

While the Kokoda management plan is scheduled to be officially launched in September 2018, the NMAG is already moving ahead with implementation. Among other projects, a spatial database will be assembled, bringing together Geographic Information System (GIS) and other physical data from various sources to build a 3D interactive map of the entire Kokoda Track. This will facilitate research and project design, and allow users to 'fly' over the track at various levels of detail.

- 01 Australian three-inch mortars and Mills grenades lie in the open along the track near Eora Creek, part of a large weapons cache recently unearthed by a landowner.
- 02 Curator Gaksi Siosi with part of the Efogi Village Museum collection.
- 03 A garden fence along the track frames the Owen Stanley Range near Nauro Village.



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The Etoa site has multiple natural, cultural, historical and heritage values

- 01 Oral history: Alola village matriarch 'Mama' Leva recalls the past with doctoral student Nalisa Neuendorf.
- 02 Landowner Sai Lami of Alola displays a Japanese pack saddle frame he found while digging a new garden.
- 03 Trekkers join their Papuan porters and guides for a dawn service at the Battle of Isurava Memorial



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Selected local museums in villages along the track will be supported with improved structures, cabinets and interpretive material. Selected weapons caches lying in the open along the track will be rendered safe and secured with low-impact protective structures that will still allow trekkers and other visitors to view and photograph the contents. Site management plans for various critical locations will be developed, the first of which is well under way and brings together many of the elements of the plan.

The Etoa Battlefield Management Plan

Upon retreating from Ioribaiwa, the Japanese withdrew approximately halfway back along the track, digging in in force on the slopes above the wartime village of Eora Creek, in an area called Etoa by the local residents of nearby Alola village. Australian pursuers were met with withering resistance there, and it took six days to finally outflank the Japanese from above and send them into further retreat, in what became known as the Battle of Eora Creek, the largest battle of the entire Kokoda Campaign. Afterwards, Australian troops performed a hasty battlefield clean-up and moved on, whereupon the upper reaches of the site were forgotten for 70 years by all but the local inhabitants. Dubbed the 'Lost Battlefield' by an Australian trekking operator who was shown the site in 2008, it has since been renamed the Etoa Battlefield by the Alolan landowners.

Vivid memories of the war remain in Alola, both among the oldest residents and passed down to successive generations. The Japanese occupied the area for several months, a time of hunger and privation for Alolans. The Japanese are said to have regarded all local Biage people as 'friends' of the Australians, and hence laid waste to villages, killed precious pigs and dug up gardens as they advanced. While some Biage men were recruited as carriers by the Australians, most remained with their families. These men would often sneak down to observe both the Japanese and Australians, mainly to determine if it was safe to move around (in this way they also

witnessed much fighting, including at the Etoa Battlefield). When they met from time to time, the Diggers would give the Biage what supplies they could spare. People would visit their gardens when possible to gather food (as the Japanese could never completely clear gardens and there was usually something to be gleaned), but this was fraught with peril as the Japanese would shoot locals on sight. People mostly gathered bush foods: wild yam, wild taro and the new leaves of a tree fern known locally as *feiya*. They collected bush fowl eggs and caught tree kangaroos when they could. Whether wild or scavenged from gardens, food could only be 'burnt', or quickly roasted over small fires lit only at night. Firewood had to be collected and chopped quietly, so small sticks were mostly used. People couldn't sleep much as the sounds of battle were a constant reminder of the precariousness of their situation. Japanese engineers built a graded horse and mule track for carrying supplies through Alola to the upper reaches of Etoa, and local recollections of pack animals on 'Japanese Road' are corroborated by archaeological remains, Australian battalion diaries and relics held by locals, such as a Japanese pack saddle frame still in Alola.

Kokoda has taken a place alongside Gallipoli in the iconography of Australian national identity

The Etoa site has multiple natural, cultural, historical and heritage values. As a remote, high-altitude forested area it is home to a multitude of plant and animal species, including orchids, rare fungi, birds of paradise and bowerbirds. It is an important hunting and gathering area for Alolans and various plant resources, and is rich with *ples tumbuna* – 'spirit places' or sites of mythic importance. As a relatively undisturbed

World War II battlefield it is an important archaeological site, as well as a war grave holding the remains of approximately 70 Japanese soldiers buried in their foxholes (weapons pits). It also holds promise to be a major attraction for trekkers and other international visitors, such as Japanese relatives of the fallen, and in this way would be a source of tourist income for villagers.

The NMAG is working to help Alola develop the Etoa site for tourist access, simultaneously assisting the Japanese government to locate and repatriate their war dead, while preserving archaeological and historical values. The long-term vision is to allow sustainable tourist access to an archaeological site managed by the local residents, where continued research and interpretation are part of the visitor experience. Efforts are under way, with two joint expeditions to the site having taken place, when NMAG staff and Japanese researchers, hosted and guided by the Alolan landowners, visited the site. The Japanese surveyed several hundred weapons pits in preparation for excavation under the guidance of archaeologists, while NMAG staff and landowners conferred on prospects for interpretive trails, signage and an improved campsite for trekkers and other visitors. Due to the remoteness of the site and attendant logistical challenges, the Japanese repatriation effort is expected to last several years, so will dovetail with carefully managed tourist access expected to commence in 2019.

The Etoa site plan is emblematic of what the NMAG is working to achieve as part of the Kokoda Initiative: preserving the military heritage of the Kokoda Track, enhancing interpretation and education for both locals and visitors, and promoting continued research. Through these efforts the Kokoda trekking industry will be further supported in the long term, directly improving local livelihoods in a sustainable way.

Dr Andrew Connelly is the Military and Cultural Heritage Adviser at the Papua New Guinea National Museum and Art Gallery. This article is an edited version of a presentation he gave at the Archaeology of War conference at the museum on 22 June 2018.



What's left?

**AN ARCHAEOLOGICAL ASSESSMENT
OF THE TADJI AIRCRAFT WRECKS,
SANDUAN PROVINCE, PAPUA NEW GUINEA**

The former World War II aerodrome at Tadjii in northern Papua New Guinea is a well-known aviation heritage site, from which a number of aircraft wrecks have been recovered over the last 45 years. In 2016 and 2017 **Ashley Matic** visited the site to formally record the aircraft wrecks that remain, in order to determine their identities and to assess the impacts salvage works have had on the site.

Historical background

THE IMPERIAL JAPANESE ARMY invaded the Aitape area of northern Papua New Guinea in April 1942, then established the aerodrome at Tadj in early 1943, utilising large amounts of forced local labour to carve an airfield complex out of the jungle. The two runways, surfaced with crushed coral, had different purposes: the shorter, closer to the coast, was used by fighter aircraft, and the larger runway, further inland to the south, for bomber operations.

Identified by the USA as a potential base for future operations against the Japanese, the airfield was subjected to repeated raids by the US Army 5th Air Force between April 1943 and April 1944 prior to a planned operation to seize it. This neutralised the offensive threat posed by the field, but left the runways cratered and unusable. When the US assault on the Aitape area, Operation Persecution, commenced on 22 April 1944,¹ members of 62 Works Wing of the RAAF landed shortly after the initial landings by the US 163rd Regimental Combat Team and made straight for the newly captured fighter strip, commencing repair works early that afternoon. By nightfall the entire airfield had been captured, and after almost 48 hours of continuous works, the fighter strip was considered useable on 24 April. Further improvement works, including laying down steel matting to surface the runway, were completed on 28 April; however, the larger bomber strip was not fully serviceable until July.

For the remainder of the war the airbase was used by both the US Army Air Force (USAAF) and Royal Australian Air Force (RAAF), but its primary role from the Australian perspective was as the centre for operations against the Japanese by the Department of Aircraft Production (DAP) Beauforts of Number 71 Wing RAAF. This initially included numbers 8 and 100 Squadrons, but later also took in 7 Squadron and a detachment of 15 Squadron, who all flew the Australian-built bombers from the airfield.² Several RAAF support units were also based at Tadj, including 12 Repair & Salvage Unit (12 RSU),

who were kept busy with a continual stream of damaged and 'war-weary' aircraft to attend to. Their wartime work provided much of the evidence that remained after the end of hostilities.

Many RAAF personnel stayed on at the base until after the war, with most units not completely returning to Australia until early 1946. Upon leaving the site, both the USAAF and RAAF abandoned any material they considered surplus to post-war requirements, including the remains of many fighters, bombers and transport aircraft.

Tadj after the war

While many aircraft similarly abandoned throughout New Guinea after the war fell victim to the scrap metal trade, due to its remoteness Tadj was left relatively undisturbed into the 1970s. When first visited by aviation enthusiasts and curious travellers in the late 1960s and early 1970s, what remained in the jungles outside of Aitape was one of the best-preserved collections of Second World War aircraft left in New Guinea. In 1974 this led to a large-scale salvage of many aircraft wrecks from the site,³ many of which then underwent restorations in Australia, New Zealand, the United States and the United Kingdom.

Field investigation

An initial visit to the site in October 2016 determined that the remains of several aircraft were still extant within the boundaries of the former airfield complex. A second visit to the site, in August 2017, undertook formal recording of many of the wrecks. The fieldwork aimed to record the remaining wrecks and identify them wherever possible, and also to determine the impacts that salvage works and ongoing visitation over the preceding 40 years have had on the site.

Four main sites were visited, with varying degrees of recording undertaken on each, based on several factors: accessibility, the condition of the wreck(s), and the previous levels of information recorded for a site – that is, whether the wreck had been previously positively identified and whether that information was readily available.

12 Repair & Salvage Unit (12 RSU) were kept busy with a continual stream of damaged and 'war-weary' aircraft to attend to

Photographs were the primary means used to record the present condition of the aircraft. Photography of each wreck commenced with broad images showing the aircraft in situ to demonstrate the extent of the aircraft that remained, including the use of a quadcopter drone to take overhead images where possible. This was followed by more detailed photography to record specific features visible on the exterior of each wreck, including any remnant painted camouflage, stencils or identifiers such as squadron codes or serial numbers, damage, and retained structural features, followed by the detailed photography of any remnant internal features such as equipment housings, structural components, labels and stencils, all of which resulted in a substantial visual record of each aircraft.

This information was also transcribed onto a recording sheet designed specifically for the task, to allow the images to be cross referenced once fieldwork was completed. These forms were the primary written means of recording. They were developed to allow members of the field team with limited knowledge of aircraft design and terminology to describe the remnant features of each wreck sufficiently well to both provide a record of the state of the aircraft at that time and also possibly to assist in identifying the aircraft.

In addition, location information for each of the sites was recorded using portable GPS technology, and a site plan was created showing the general arrangement of the wrecks at the largest of the sites recorded.

- 01 Pages 26–27 An Australian-built Beaufort bomber, identified as A9-535 of 100 Squadron RAAF, viewed from above as captured by the quadcopter drone. Image Dermot Oakley
- 02 A9-535 as viewed from a much closer perspective. Image Ashley Matic
- 03 The forward section of the Beaufort at Prou, showing the pilot's rudder pedals. Image Ashley Matic
- 04 An aerial view of the Beaufort and C-47 wreck at Prou village. Photograph Dermot Oakley



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Due to its remoteness Tadj was left relatively undisturbed into the 1970s



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One aim of the fieldwork was to identify physical evidence of the various impacts upon the sites over the last 75 years

Results of the field investigation

The most significant of the four main sites investigated (in terms of numbers of wrecks) was the former works area for 12 RSU, located to the north of the shorter airstrip. Here the substantial remains of no less than nine Australian-built Beaufort bomber aircraft were identified, in addition to many smaller components such as stern fuselage sections and outer wing panels that were dispersed around the site. At the time of writing three of these have been positively identified and another has a probable identity determined. It is likely that remaining wrecks will be identified with further research.

A second, smaller site was visited close to the village of Prou, near the western end of the former airbase. Here the remains of another RAAF Beaufort were recorded (which has also been identified), as were the remains of an as-yet-unidentified Douglas C-47 and components of a tubular steel framed aircraft, possibly an RAAF Avro Anson, although this could not be determined from the limited remains in the brief time spent on site. The location of these wrecks was interesting, as they appear to have been moved there in the years after the war, although it is uncertain if this was due to abandoned salvage works or another factor, such as clean-up works after the tsunami that struck the area in 1998.

The remaining two sites were subject to much lower levels of investigation. The former American aircraft boneyard, located within an area of swampland, was inspected remotely using the quadcopter drone, which was the best means of recording the site in the time available. This site was heavily salvaged in the 1970s; the only wreck remaining consists of components of a USAAF Boeing B-17 Flying Fortress bomber that force-landed on the field in 1944. The forward fuselage section is the largest surviving component of the wreck, although the aerial inspection showed that its rear had recently been affected by fire – grass fires are common throughout PNG, and the likely cause of the damage.

The final site was one we were fortunate to be shown by our local guides as we were leaving. It consisted of the partial remains of a Lockheed F-4 or F-5 Lightning (the reconnaissance version of the P-38 fighter), located within a densely vegetated area near one of the runways. Very little of the aircraft appears to have survived; the only components visible were the portside wing, engine mount and partial tail boom, as well as part of the wing centre section, including the radio bay from where the cockpit had been located. Despite this, the surviving structural features allowed a broad determination of type to be made, with the presence of a blue paint

on some external surfaces indicating the reconnaissance role (such paint was specific to USAAF aircraft used for this purpose). This aircraft has not yet been identified. Records for such an aircraft having crashed at Tadjji do exist, which may relate to the wreck visited, but considerable further research will be needed before this can be confirmed.

Impacts to the sites

One objective of the fieldwork was to identify physical evidence of the various impacts that have affected the sites over the last 75 years. The most obvious of these were from nature: metal components, particularly those containing iron, have been heavily affected by corrosion, and while much of the aluminium in the airframes was in relatively good condition, impacts such as the fire damage to the B-17 were recorded. Natural factors have also affected much of the paintwork on the aircraft, although the paint on those wrecks located in densely vegetated areas appears to have been protected by mosses and lichens that have covered them.

Most of the sites visited have been heavily affected by visitation and salvage works, which have also had significant impacts on the wrecks. These impacts were most noticeable at the former 12 RSU works area, where all of the aircraft have been largely

disassembled and components moved around the site. Most of this activity is believed to have occurred during the early 1970s, when the large-scale salvage of this area was undertaken. More recent evidence of salvage works was also recorded here, with sections of several Beauforts having been cut out with power tools in the recent past – stories of which were relayed to us by our local guides.

The future for Tadjji

The archaeological assessment of the aircraft wrecks at Tadjji has further demonstrated the value of the site as a unique opportunity to see several Second World War aircraft wrecks within the context in which they have remained since the war. As such, it retains significance in terms of research potential and as a tourism destination that will benefit not only outsiders looking to visit or study the site, but also the local people who would gain from such visitation. As with all aircraft wreck sites in Papua New Guinea, it will continue to face threats from visitation, nature and salvage works; however, with the awareness of the importance of such places growing in that country, and the development of strategies to further protect them, it will hopefully survive into the future as an important reminder of the air war in the South-west Pacific.

1 Davison J. 2004 *The Pacific War Day by Day*, Chartwell Books Inc, New York p 106

2 Odgers, G. 1957 *Australia in the War of 1939–1945, Series 3 – Air, Volume II: Air War Against Japan*, Australian War Memorial, Canberra pp 337–341

3 Darby, C. 1979 *Pacific Aircraft Wrecks ... and Where to Find Them*, Kookaburra Technical Publications, Melbourne

Acknowledgements

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Ashley Matic has a Masters in Archaeology from Flinders University, South Australia, and is a practising heritage consultant. He has been involved in more than 150 archaeological and cultural heritage management projects for both European and Aboriginal cultural heritage sites in Australia, and he is also a Specialist Reservist with the Royal Australian Air Force.

01 The forward fuselage component of the B-17 in the American Boneyard as viewed from the drone.

02 One of the numerous painted stencils that have survived inside the Beauforts at Tadjji.

03 After 75 years in the New Guinea jungle, remnants the RAAF insignia remain on this wing section of one of the Beauforts at the former 12 RSU works area. All images Ashley Matic

Meaningful remembrance at Coomalie airbase

DEFINING WHAT IS 'IMPORTANT' IN REGARD TO HERITAGE

For whose benefit and remembrance do heritage professionals manage and preserve World War II aviation sites? Archaeologist **Fiona Shanahan** provides some answers from her work at Coomalie Airbase in the Northern Territory.

01 The last operational flight of World War II from Australia's mainland returning to Coomalie after peace had been declared, 1945. Image courtesy Mosquito Association of Australia

Coomalie holds an important place in Australia's World War II history due to four major events that occurred there



IT IS THE ROLE of heritage professionals to engage with sites and the people for whom those sites have meaning. We do this through legislation, site visits, interacting with the participants of the site and implementing flexible management plans. At World War II aviation sites, we should aim to provide a management plan with protections that ensure that those engaging with the site are able to experience meaningful remembrance. To achieve this, we must explore how and why we define sites as important, establish what protection we can provide and, most importantly, identify the site's stakeholders.

In 2015, 70th anniversary commemorations were being planned for Coomalie, a World War II airbase in the Northern Territory. I was discussing them with someone without a heritage background when they asked the hard-hitting questions:

- How do heritage professionals decide if a site is important?
- At what point do you stop researching the site?
- How do you know that you have spoken to all of the right people in regards to the site?

These questions led me to change my research topic at Coomalie. I went from studying the living history evident at the site, to studying meaningful remembrance – the way that sites are used in the active remembrance of a place or time, or by people associated with that site.

Coomalie is located approximately 83 kilometres south of Darwin. It was constructed in November 1942 as a satellite airbase to Batchelor, some 14 kilometres south-east, in response to the Japanese bombing of Darwin in February that year.

The current owner to the present day has always approached the site and its wartime objects with the aim of maintaining a living history



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Families have begun sending the ashes of past Coomalie veterans to Coomalie with the request they be scattered on the airstrip

- 01 Richard Luxton, the current landowner of Coomalie airbase, 2015. Image courtesy Jordan Gannaway
- 02 Coomalie Airstrip, 2015. Image courtesy Jordan Gannaway
- 03 Re-enacting the last operational flight from Australia's mainland at the 60th anniversary of the end of World War II, 2005. Image courtesy Mosquito Association of Australia

At its peak, Coomalie was home to 2,000 military personnel. These units mainly consisted of photoreconnaissance units (87 Squadron, No 1 Photoreconnaissance), bomber units (31 Squadron), secret wireless units (No 2 Wireless Unit) and travelling units as the war progressed (34 Squadron).

Coomalie holds an important place in Australia's World War II history due to four major events that occurred there. Firstly, Coomalie was the last location to be bombed on Australia's mainland during World War II, on 12 November 1943 (the 64th Darwin raid). Secondly, No 1 Photoreconnaissance was born there, on an active airbase during wartime, which is rare for the Royal Australian Air Force (RAAF). Thirdly, the investigation of a crash there in August 1945 (in which pilot Frederik Gillespie was killed and navigator Frank Haynes seriously injured)¹ led to the establishment of protocols to be undertaken by pilots and navigators prior to take-off, which are still used by the RAAF today. Finally, Coomalie was the site at which the last operational flight from Australia's mainland took off during wartime and returned during peace.

After the war Coomalie was abandoned by the military and in 1977 was purchased as farming land by Richard Luxton. Richard has remained the owner to the present day, and has always approached the site and its wartime objects with the aim of maintaining a living history. This has seen Coomalie remain mostly intact and allows a wide variety of people to visit and interact with the site in a meaningful manner.

Due to this rich wartime history and the current condition, it has been argued that the site is important. But how do heritage professionals define 'importance' in regard to the heritage in Australia's Northern Territory? To answer that question, I reviewed government heritage websites and heritage reports and was surprised to find that despite using the words 'important', 'significant' and 'valuable' to justify listing or not listing sites on the heritage register, it was never explicitly stated how those words are defined. Rather, four broad categories – aesthetic, historical, scientific and social – are listed in the 2017 Heritage Council report to establish this meaning.

As of May 2018, 302 sites had been declared for listing and protection in the Northern Territory, of which 47 sites were World War II related. Since the establishment of the Northern Territory Heritage Register in 1991, 60 per cent of World War II sites and objects nominated for heritage listing and protection have been approved. Coomalie is one of them. It was nominated for heritage listing in 2007, when heritage-nominated sites were assessed against 16 criteria (in 2008 this was altered to eight criteria as an Australian standard for all states and territories). These criteria are assessed in the process of producing a heritage report of the site.

The heritage assessment report for Coomalie was produced in 2007 and unfortunately is an example of the need to change how desktop assessments are completed. The front-page image of the report is that of a World War II airbase in Western Australia, not Coomalie.

The criteria section of the report stated that Coomalie did not meet the first eight criteria, as it was not nominated for its natural attributes. The remaining eight criteria were addressed in two to three sentences, which were not substantial enough to determine whether the site was eligible for heritage listing. Furthermore, Richard Luxton was not made aware that his property had been nominated for heritage listing until after the report had been written, and therefore Richard's resources and knowledge of the airbase were not utilised. Due to the lack of a site visit, the report could not detail the state of the airbase in 2007. The way this assessment was conducted is one that should be discouraged. Rather, it is advised that all heritage assessments be conducted in a way that engages with site owners and involves at least one site visit. Once aware of the nomination, Richard approached the Heritage Council and in 2011 the Coomalie airstrip and 50 metres either side of it were declared for heritage listing and protection.

Knowing that the main camp and work sites are approximately one kilometre from the airstrip, as a heritage professional I wonder if this is enough protection for Coomalie.

However, the only way to establish if such protection is suitable is to understand who the active participants or consumers of the airbase are. The use of the term 'consumer' is appropriate for this assessment, as a consumer is 'someone who uses a place, service or item for personal use' and that is exactly what people who visit past conflict sites seek to do. So who are the consumers of Coomalie?





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- 01 Richard R Searle (Lyn Hutton's father) and his wartime friend Jack McAuley standing on their tent site. Image courtesy Lyn Hutton
- 02 A group of Coomalie veterans' descendants prior to a dinner held on the site of the officers' mess at Coomalie in 2015. Image courtesy Jordan Gannaway
- 03 Doug Nicholas at Coomalie, 2017. Image courtesy Doug Nicholas

Veterans have been revisiting Coomalie over a number of decades for varying reasons

Arguably the most important consumer group are Coomalie veterans. Veterans have been revisiting Coomalie over a number of decades for varying reasons. Some return to remember lost friends, to show their families and/or friends where they served, to remember their time there or to reunite with old wartime friends. Due to the varying reasons for remembrance, this occurs in differing ways.

At the 70th anniversary commemoration, Lyn Hutton told me that her father and his wartime best friend met at Coomalie a few years earlier. This was the first time they had seen each other since the war and they were able to look at photos of their time there and revisit the sites (such as their tent site).

Other veterans have been able to fly down the Coomalie airstrip due to the active recreational pilots in the area. Richard Luxton has found that families have begun sending the ashes of past Coomalie veterans to Coomalie with the request they be scattered on the airstrip. Additionally, every time a Coomalie veteran dies, Richard lets off a flare on the Coomalie airstrip on the day of their funeral. An example of this was the flare set off for Air Vice Marshall J C 'Sam' Jordan in July of this year when his funeral was held. Due to the role the Coomalie airstrip

plays in allowing Coomalie veterans to gain meaningful remembrance, its heritage listing, protection and management are vital.

With the Coomalie veterans aging and passing away, the number of their partners and descendants visiting Coomalie is steadily rising. Veterans' widows visit mainly to gain an understanding of why the site meant so much to their husbands, or to finally see where their wartime letters had been coming from. Since my involvement with Coomalie in January 2013, I have met more than 20 descendants of Coomalie veterans. Descendants visit for similar reasons to those of Coomalie veterans' partners: they want some context.

Doug Nicholas is one such example. He contacted me in 2016 hoping that Coomalie might still be accessible and parts of it might remain. He had heard stories and seen photos that his father had taken and he wanted to be able to place them in context. His father's role was to fit cameras for flight operations. Doug recalls his father talking about Gillespie's crash and the melted camera from the aircraft. When visiting Coomalie in 2017 Doug held that same melted camera, and stood where his father had stood before on the original 1942 sealed Coomalie airstrip.

Current members of the 31 and 87 Royal Australian Air Force Squadrons have recently begun actively engaging with Coomalie. In 2016 five current members of 87 Squadron attended the 70th anniversary commemorations. While being shown the site of 87 Squadron, one member remarked that in his current role, if he had served during World War II he would have most likely been posted there. After the memorial service held on the site of Gillespie's crash I asked them what they thought of it. They said that despite attending numerous services as part of their duty, this was different because it was the actual site where one of their own had died. In June of this year I met another 87 Squadron member at Coomalie and he stated that the visit far exceeded his expectations and he hoped to learn more of Coomalie's history on his return from service overseas.

For at least the last three decades, Royal Australian Air Force cadets have been camping and training at Coomalie. Richard Luxton notes that after graduating, those that progress into the Royal Australian Air Force often return to Coomalie to reflect on their camping and training experiences at an actual World War II airbase. The ability for children and teenagers to be able to

actively engage with World War II history has proven invaluable for their education, as they are more likely to remember the site visit than what they read about in books.

It is not only defence personnel that engage with Coomalie; a number of local community groups and individuals regularly visit. The local recreational flying club is actively engaged with Coomalie. The pilots are known to willingly offer veterans and descendants free flights from the airstrip around the site. This offers the opportunity for the passengers to share their knowledge of the site as well as for the pilots to illustrate where certain building foundations, taxi ways and other World War II objects and structures remain today. The active involvement of these pilots allows Richard Luxton to manage the site in a flexible manner. The pilots are likely to identify any changes and damage to the site much sooner than Richard would be able to, due to the sheer size of the site.

Maintaining a living history for active participants at Coomalie is the ideal that Richard Luxton has maintained for over 40 years. This goal has allowed for the implementation of a flexible management plan which is supported by the current heritage listing of the Coomalie airstrip.

The management plan can be adjusted to each of the different consumer groups currently engaged with the site as well as any new groups and individuals that seek the ability to achieve meaningful remembrance in the future.

In summary, providing meaningful remembrance at World War II aviation sites is possible, as evidenced by Coomalie. It does, however, take time and a flexible approach, and requires the heritage professionals involved to actively engage with the site themselves.

¹ This was the only fatal aircraft crash at Coomalie for the entire war. It occurred when the aircraft suddenly veered off the airstrip during take-off (Mosquitos were prone to do this on occasion). It then flipped and caught fire.

Fiona Shanahan is a consulting archaeologist in Australia, specialising in aviation and conflict archaeology. She has published papers in regard to Coomalie and its living history as well as creating the first definition for 'aviation archaeology'. This is an edited version of a paper she presented at the Archaeology of War conference at the museum on 23 June.



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The partnership with CSC will also provide complimentary entry to the families and friends of international competitors in this year's Invictus Games

- 01 All Defence Forces veterans, serving members and current cadets are offered free access to the museum through a partnership with CSC. Image Zoe McMahon/ANMM
- 02 Exploring *Action Stations* and the history of Australia's navy. Image Zoe McMahon/ANMM

Visitors can explore all areas of our unique indoor-outdoor museum and see our historic fleet and exhibitions. These include the acclaimed *Gapu-Moynuk Saltwater – Journey to Sea Country*, which features significant bark paintings by the Yolju people of north-east Arnhem Land, and the immersive exhibition *James Cameron – Challenging the Deep*.

Museum director Kevin Sumption PSM said:

There is no doubt that the history of the Royal Australian Navy and the men and women who serve is an important, fascinating and ongoing chapter in Australia's maritime story. It's an area we have researched, collected and shared with our visitors since opening in 1991. I'm particularly delighted that, with the generous support of CSC, all Australian Defence Force members, cadets and veterans will have even greater access to the museum, our collections and importantly their history.

Visitors can explore all areas of our indoor-outdoor museum

CSC's Corporate Affairs Manager, Damon Whittock, said:

CSC greatly values and appreciates the commitment and loyal service of our veterans, serving members of the army, navy and air force, and cadets, and providing free entry to the museum is one way for us to show our gratitude and thanks.

To access this offer, current Australian Defence Force members, current cadets and veterans simply need to show a valid ADF IC card, DVA-issued card or service medals to the museum's front-of-house team, or arrive in uniform, and they will receive free entry. This offer is valid from September 2018 until September 2020.



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Museum welcomes new partner

COMMONWEALTH SUPERANNUATION CORPORATION

The museum is pleased to announce its exciting new partnership with the Commonwealth Superannuation Corporation (CSC), providing complimentary access to the museum for all Defence Force veterans, serving members and current cadets. By External Relations Manager **Shirani Aththas**.

FOR MORE THAN 30 YEARS, CSC has been providing superannuation services to members of the Australian Defence Force and employees of the Australian Government. CSC is committed to putting its members first and providing them with valuable support and guidance to achieve the retirement they deserve.

As part of this new partnership CSC is fully subsidising the cost of museum entry for all Defence Force veterans, serving members and current cadets, enabling them to visit the museum, for free, as often as they like.

When visiting the museum they will have the opportunity to explore Australia's rich maritime heritage, including the history

of the Royal Australian Navy and the experiences of past servicemen and women, and the museum's exciting program of exhibitions and events.

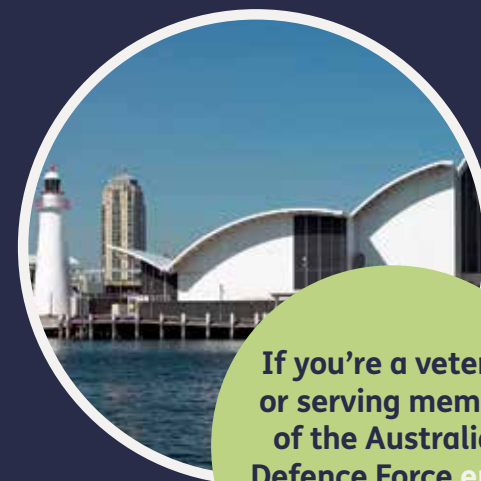
The partnership with CSC will also provide complimentary entry to the families and friends of the many international competitors travelling to Sydney in October for this year's Invictus Games.

Complimentary entry includes access to the Museum's *Action Stations* experience, which tells the story of life in the Royal Australian Navy, as well as the opportunity to climb aboard ex-navy destroyer HMAS *Vampire* and submarine HMAS *Onslow*.



Australian Government

Commonwealth Superannuation Corporation



If you're a veteran or serving member of the Australian Defence Force entry to the Museum is on us



Commonwealth Superannuation Corporation

Commonwealth Superannuation Corporation (CSC) has a long history of serving members of the **Australian Defence Force**.

We greatly value and appreciate the commitment and loyal service of our veterans, serving members of the Army, Navy and Air Force, and cadets.

As a way of saying thanks, CSC is providing every single Defence Force veteran, serving member and current cadet with a complimentary pass to the Australian National Maritime Museum.

If you're a Defence Force veteran, a serving member, or a current cadet just show the Museum's front of house team your valid ADF ID card, a DVA-issued card, service medals, or arrive in uniform and you'll receive free entry to the Museum.

csc.gov.au

CSC – the experts in superannuation for Australian Government employees and ADF members

Spring activities

MESSAGE TO MEMBERS



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Now that spring is here, it's time to head out and get over those winter blues. The museum has some great experiences to reinvigorate you as the weather warms up.

OUR MAIN ATTRACTION for spring and summer is *On Sharks and Humanity*. This indoor-outdoor exhibition looks at environmental awareness and shark protection through works by leading Chinese and international artists, and addresses the critical issue of shark populations and the impact of human activity on our oceans. *On Sharks and Humanity* opens on 31 October, and entry is free.

Two of our events this quarter commemorate significant maritime anniversaries. This year it is 30 years since the keel was laid on our *Endeavour* replica. Some people may recall that Bond Corporation initially funded the project, others that there was a British component, but not many know the full story. Veteran sailor John Longley will talk on how *Endeavour* was conceived, built, commissioned and sailed to Sydney.

On 19 November, we mark the 77th anniversary of the historic battle between HMAS *Sydney* (II) and HSK *Kormoran* off Shark Bay in Western Australia. Gillian Lewis and Noel Phelan, museum volunteers and members of our Speakers Group, will talk about this brutal encounter.

Among our member events this spring is a special photography workshop. Our photographer guide, Alistair MacDougall, will take you on a virtual safari through Botswana, Tanzania and Uganda. And still on the wildlife theme, don't forget that *Wildlife Photographer of the Year* will end on 10 October.

Our popular annual Members' Anniversary Lunch is also scheduled for this quarter. We invite you to join Chairman Peter Dexter AM, Director Kevin Sumption PSM and special keynote speaker Rob Mundle OAM for this special occasion on 24 November.

Also while we are saving dates, don't forget our Boxing Day and Australia Day cruises. They are always popular, so we encourage you to book early!

Finally, we will be planning more events and cruises, so make sure you look out for these in our regular Member emails. If you are not receiving these emails, please contact Tracey, Sherry or me on 9298 3646.

I look forward to seeing you at the museum over the next few months, and would love to hear your feedback and suggestions about your membership or your museum experience.

Oliver Isaacs
Manager, Members

- 01 Members aboard Tribal Warrior Association's *Mari Nawi* at the start of their NAIDOC Week cruise to Clark Island in July. Image Robert Schaverien
- 02 Port Botany Container Terminal, site of a special Members tour in August. Image Robert Schaverien

AUSTRALIAN NATIONAL MARITIME MUSEUM

Special Invitation

We look forward to seeing you!

Special guest speaker Rob Mundle OAM is often referred to as 'the voice of sailing' in Australia. Rob is a journalist and best-selling author. He has reported on seven America's Cup challenges, four Olympics and 45 Sydney to Hobart races. Rob has competed in the Sydney to Hobart and won local, state and Australian sailing championships. He is currently media manager for the *Wild Oats XI* campaign.



Rob has written 16 sailing and maritime books, including a biography of Bob Oatley and the international best-seller *Fatal Storm*. He is also a media commentator and community leader.

Members' 27th Anniversary Lunch

Please join Chairman Peter Dexter AM, Director Kevin Sumption PSM and special keynote speaker Rob Mundle OAM

Saturday 24 November 2018
11.30 am–2.30 pm, at the museum

BOOK online at anmm.gov.au

OR complete and return the members' events booking form on the reverse of the mailing sheet

RSVP Friday 16 November 2018

Members \$115
General \$135
Includes a delicious three-course lunch with matching wines

Members events

SPRING 2018

SEPTEMBER

Presentation and workshop

Wildlife photography with Alistair MacDougall

2–5 pm Thursday 20 September

Wildlife photographer Alistair MacDougall shares his top photography tips

For carers with children 0–18 months

Seaside Strollers tours and play

12.30 pm Saturday 15 September

Wildlife Photographer of the Year tour and Sensory Jungle play theme

Bookings and enquiries

Booking form on reverse of mailing address sheet. Please note that booking is essential unless otherwise stated. Book online at anmm.gov.au/whats-on/calendar or phone (02) 9298 3646 (unless otherwise indicated) or email members@anmm.gov.au before sending form with payment. Minimum numbers may be required for an event to go ahead. All details are correct at time of publication but subject to change. Members are requested to check our website for updated and new event information.

Available free

ANMM Speakers

ANMM has a team of professional speakers available to give free talks in the greater Sydney area. The complete list of talk topics can be found on anmm.gov.au/Speakers. If you would like to invite a speaker to your club, please contact Noel Phelan or Ron Ray:

noelphelan@bigpond.com /
0402 158 590 / (02) 9437 3185

ron.ray@aapt.net.au /
0416 123 034 / (02) 9624 1917

OCTOBER

One-day creative workshop

Photo story: Cockatoo Island

10 am–4.30 pm

Wednesday 3 October

Young photographers can build skills in using digital SLR cameras

Family torchlight tour

Secrets of the sub

6–7.30 pm Thursday 11 October

A dramatic after-dark tour through HMAS Onslow and Action Stations

Exclusive tour

Welcome to new Members

10–11 am Tuesday 16 and
Sunday 21 October

Tips and tricks to get the most from your museum membership

For carers with children 0–18 months

Seaside Strollers tours and play

12.30 pm Monday 22 October

Indigenous Collection highlights; play: Under the Sea theme

For carers with children 0–18 months

Seaside Strollers tours and play

12.30 pm Tuesday 23 October

Container tour and Colour and Shape play theme

Maritime Series

The Endeavour build 1987–1994

2–4 pm Thursday 25 October

John Longley talks about how the HM Bark *Endeavour* replica was conceived, built, commissioned and sailed to Sydney

NOVEMBER

Maritime Series

The Sydney–Kormoran battle

2–4 pm Thursday 1 November

Gillian Lewis and Noel Phelan recount this dramatic chapter in Australia's history

Annual event

Members Anniversary Lunch

11.30 am–2.30 pm

Saturday 24 November

With special keynote speaker Rob Mundle OAM, yachting journalist, broadcaster and best-selling author

For carers with children 0–18 months

Seaside Strollers tours and play

12.30 pm Tuesday 27 November

On *Sharks and Humanity* tour and Creature Feature theme

Dates for your diary

6 December – Special Members discounted Christmas shopping (museum Store)

26 December – Boxing Day Cruise

31 December – NYE at the museum

26 January 2019 – Australia Day Cruise

28 January–8 February 2019 – *Endeavour* voyage from Sydney to Hobart

13 February–24 February 2019 – *Endeavour* voyage from Hobart to Sydney

01 Wildlife photographer Alistair MacDougall. Image courtesy Alistair MacDougall

02 *Endeavour*'s frame under construction. Image courtesy John Longley

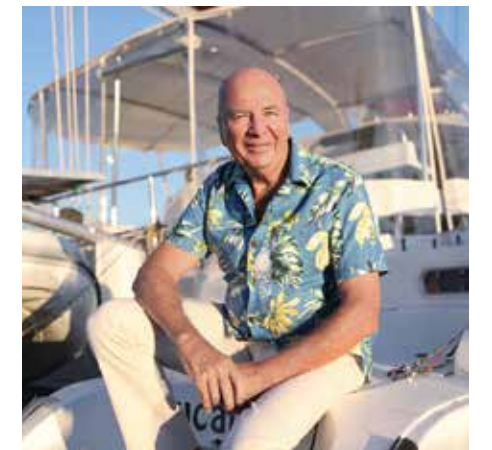
03 Rob Mundle is the guest speaker at this year's Members anniversary lunch. Image Rob Mundle



01



02



03

Presentation and workshop

Wildlife photography with Alistair MacDougall

2–5 pm Thursday 20 September

What do you do when a 250-kilogram mountain gorilla sniffs your ear? And more importantly, how do you get a photo of it? Wildlife photographer Alistair MacDougall will answer this and other photo-related questions during a virtual photographic safari through Africa. Alistair will discuss what makes a notable image and share his top tips.

Participants will also use super telephoto lenses (300, 500 and 600 mm) and cameras in a hands-on workshop around the museum. One guest will win our lucky door prize of a special print donated by Alistair MacDougall.

Members \$20, general \$35. Includes afternoon tea. Bookings essential

Exclusive tour

Welcome to new Members

10–11 am Tuesday 16 and
Sunday 21 October

This tour is specially designed to welcome new Members (with a membership of six months or less, or upon request) to the museum. A representative of the membership team will guide you through the museum and point out areas of interest, including the galleries, kiosk and Yots cafe. At the end of the tour, enjoy morning tea in the Members Lounge and take the chance to ask any questions.

Free

Maritime Series

The Endeavour build 1987–1994

2–4 pm Thursday 25 October

Hear how the museum's magnificent replica of HM Bark *Endeavour* was conceived, built, commissioned and sailed to Sydney.

Thirty years ago, on 22 October 1988, *Endeavour*'s keel was laid in a purpose-built shed in Fremantle. The dramatic tale of how the project kept going through those turbulent years of corporate collapse and recession is as fascinating as that of the construction itself. John Longley, who led the project from start to finish, will talk about both.

Members \$20, general \$35. Includes afternoon tea. Bookings essential

Maritime Series

The Sydney–Kormoran battle

2–4 pm Thursday 1 November

On 19 November 1941, HMAS *Sydney* (II) and the German merchant raider HSK *Kormoran* met off the Western Australian coast. The ensuing battle, at point-blank range, was catastrophic. *Sydney* sank with all 645 hands; only 300 survived from *Kormoran*. The mystery endured for 67 years, until the wrecks were finally found in 2008, and what really happened on that fateful night was revealed. Gillian Lewis and Noel Phelan recount this dramatic story.

Members \$20, General \$35. Includes afternoon tea. Bookings essential

Annual event

Members Anniversary Lunch

11.30 am–2.30 pm

Saturday 24 November

You are invited to join Chairman Peter Dexter AM and Director Kevin Sumption PSM at the Members' 27th Anniversary Lunch, with special keynote speaker Rob Mundle OAM.

Rob Mundle is often referred to as 'the voice of sailing' in Australia. Rob is an internationally recognised author, competitive sailor, media commentator, journalist and community leader. His most successful book has been the international bestseller *Fatal Storm*, the story of the tragic 1998 Sydney–Hobart yacht race. For the past 10 years, Rob has been media manager for the super-maxi *Wild Oats XI*, the most successful yacht in the 73-year history of the Sydney–Hobart race.

Rob will tell of his life as a premier yachting journalist, broadcaster and maritime author, dipping in and out of maritime historical inquiries and subjects such as Cook, Bligh and the great clipper ships. Expect interesting anecdotes and a few surprises.

Book early to secure your seat. Members \$115, general \$135. Includes three-course lunch with matching wines. Bookings essential

Members events

SPRING 2018



01

High-seas sailing
Endeavour voyage to Tasmania
28 January–24 February 2019

Experience tall-ship sailing at its best! Join our HMB *Endeavour* replica for a unique sailing adventure, 18th-century style. Early next year *Endeavour* will sail to Hobart to participate in the Australian Wooden Boat Festival. Come aboard as voyage crew to participate fully in the challenge, or as a supernumerary for a more relaxing experience.

Two 11-day voyages are scheduled:
Sydney–Hobart: 28 January–8 February
Hobart–Sydney: 13 February–24 February
For more information and to book, see our website.

Kids and family activities
Spring school holidays
20 September–14 October

Make a splash at the museum these school holidays with exhibitions, vessels, hands-on workshops, themed creative activities, 3D films and more. It's a whole day of fun for the entire family!

There's oodles to do every day, including art-making, scientific experiments and dress ups in Kids on Deck, exploring touchable objects and artefacts at the Cabinet of Curiosities, relaxing with a film screening, taking a kids activity trail and more.

See anmm.gov.au/schoolholidays for full program



02

Kids on Deck
Saltwater Wonders
10.30 am–4 pm (drop-in sessions) daily
30 September–14 October

Play, create and discover at Kids on Deck. Enjoy hands-on experiments and creative capers inspired by saltwater stories, spectacular ghost net sculptures and the science of ocean conservation.

Play with propulsion, wonder at watercraft and go wild with gigantic bubbles in our outdoor lab. Sculpt, print and weave your own amazing artworks, and enjoy dress-ups and interactive games.

Family torchlight tour
Secrets of the sub
6–7.30 pm Thursday 11 October

Join your character guide for a dramatic after-dark tour through HMAS *Onslow* and *Action Stations*. Enjoy creative capers, light refreshments and exclusive after-hours access to the vessel. For ages 4–12 and adults.

Members \$20 child, \$14 adult; general \$24 child, \$18 adult. Bookings essential at anmm.gov.au/schoolholidays



03

Cabinet of Curiosities touch trolley
Creature Feature
11 am–12 noon and 2–3 pm daily
in school holidays

Explore wonderful and intriguing artefacts related to saltwater animals and Yolŋu culture in this hands-on discovery device in our galleries.

Free with any entry

One-day creative workshop
Photo story: Cockatoo Island
10 am–4.30 pm
Wednesday 3 October

Ferry out to the spectacular shipyards of Cockatoo Island for an adventurous photography workshop. Build skills in using digital SLR cameras and learn photo-editing techniques, then display your photos in a special exhibition at the museum. For ages 8–14. Suitable for all levels of experience. Course held in partnership with the Sydney Harbour Federation Trust.

Members \$80, general \$90. Bookings essential at anmm.gov.au/schoolholidays

- 04 Enjoy free play and dress-ups in Kids on Deck. ANMM image
- 05 Crafty capers in Mini Mariners. Image MacDougall Photography
- 06 A Seaside Strollers tour. ANMM image



04

Term time family programs
Kids on Deck Sundays
11 am–3 pm every Sunday
during term time

Play, create and discover at Kids on Deck with art-making, interactive games and dress-ups every Sunday!

Members free. Entry included in any paid admission

Talks and tours
On Sharks and Humanity
Various times, daily from 5 November

Experience our spectacular new exhibition through interactive daily talks, tours and creative activities for all ages.

Full program and bookings online at anmm.gov.au/sharks. Fees apply



05

Under fives activities
Mini mariners
10–10.45 am and 11–11.45 am every
Tuesday during term time and one
Saturday each month

Explore the galleries and sing and dance in interactive tours with costumed guides. Enjoy creative free play, craft, games, dress-ups and story time in our themed activity area. For ages 2–5 + carers.

September – Alphabet Animals
October – Aquanaut Adventurers
November – Pirates Ahoy
Members free. General child \$10, adult \$8 (includes galleries and 3D cinema). Booked playgroups welcome. Bookings essential at anmm.gov.au/whats-on

Time out
Deep-sea Lounge
9.30 am–5 pm daily to December

Relax with deep-sea story books and soft sculptures, or make a luminous mural.

Members free. Included in any ticketed entry to *James Cameron: Challenging the Deep*

Free for kids
Activity trails
Available every day in exhibitions
Explore our exhibitions *Container* and *Gapu-Monuk* with fun and creative activity trails.

Free with entry for carers with children 0–18 months



06

For carers with children 0–18 months
Seaside Strollers tours and play

Take an educator-led tour through new exhibitions and enjoy refreshments from Yots Café, adult-friendly conversations in the galleries and baby play time in a specially designed sensory space.

Strollers, front packs, baby-slings and breastfeeding welcome.

12.30 pm Saturday 15 September – tour: *Wildlife Photographer of the Year*; play: Sensory Jungle theme

12.30 pm Monday 22 October – tour: Indigenous Collection highlights; play: Under the Sea theme

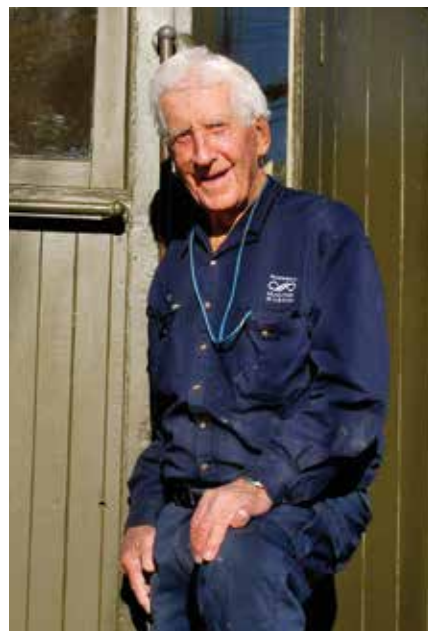
12.30 pm Tuesday 23 October – tour: *Container: The box that changed the world*; play: Colour and shape theme

12.30 pm Tuesday 27 November – tour: *On Sharks and Humanity*; play: Creature Feature theme

Members \$15, general \$20. Babies free. Includes afternoon tea and admission to the exhibition. Bookings essential at anmm.gov.au/stroller

Our Fleet's longest-serving volunteer

MEMBER PROFILE RONALD MCJANNETT



01

When and why did you become a Member?

For as long as I can remember, I have always had an interest in ships. Once I retired from the police force I decided to volunteer at the museum. I became a Member in March 1992. I'm now 90 years of age and the longest-serving volunteer with the museum's Fleet.

Do you have a nautical background?

Yes – I grew up sleeping on the top veranda of my home at 30 Fitzroy Avenue, Balmain, which overlooked Cockatoo Island in Sydney Harbour. From my bed I could observe ships of all shapes and sizes being brought into the dock and repaired by the workers there.

I also went to sea for a year as a marine engineer and served as an apprentice at Morts Dock in Balmain.

What's your favourite aspect of museum membership?

To be able to observe any of the displays. My wife, Marie, and I also attend the volunteers' Christmas event every year.

What sort of museum events or programs do you tend to participate in?

I am more involved in assisting with the presentation of exhibits. I have volunteered at the museum every Monday for 28 years and have spent much of that time on the restoration and conservation of MV *Krait*.

I get a lot of pleasure from spending time at the museum with Fleet staff, fellow volunteers and enthusiasts.

What have been some of your favourite exhibitions or events so far?

In my volunteering capacity, we used to take a vessel to Newcastle, Port Kembla or even Kiama. There it would be open to the public, which was great PR.

Exhibitions that I have enjoyed include *Escape from Pompeii – The untold Roman rescue*, *Arctic Voices*, which had a stuffed polar bear about seven feet tall, and *On the waterfront*, which showcased all the industries associated with shipping, and brought back the days when every second wharf in Sydney would have a docked coastal ship!

In general I enjoy viewing photos of early shipping – I remember one of a ship being unloaded in Sydney after travelling from Boston, USA, with a cargo of huge blocks of ice, insulated with straw between them.

If you had to sum up the museum, what would you say?

I would say it is educational, inspiring and important for appreciating history.

What else would you like to see the museum doing in the future?

Maintaining people's interest in the influence that shipping had in the birth of Australia.

01 Ronald McJannett, the longest-serving volunteer with the museum's Fleet, aboard MV *Krait*. Image courtesy Kelly McJannett

AUSTRALIAN NATIONAL MARITIME MUSEUM PRESENTS

JAMES CAMERON

CHALLENGING THE DEEP

Immersive Exhibition | Members Free
Tickets at anmm.gov.au/jamescameron

Developed by: Australian Government, Australian National Maritime Museum
In collaboration with: Avatar Alliance Foundation
Strategic Sponsors: NSW Government, sydney.com
Media Partners: National Geographic, 9, The Sydney Morning Herald
Catering Partner: Level 124 Catering

Created by the Australian National Maritime Museum's USA Programs supported by the USA Bicentennial Gift Fund



01

On Sharks and Humanity

FROM 1 NOVEMBER

On Sharks and Humanity is an exciting and thought-provoking international art exhibition by leading Chinese and world artists. Its aim is to use art and the emotional and lyrical possibilities it offers to raise awareness of the threat to shark populations and build understanding of sharks' role in the marine ecosystem worldwide. On a deeper level it is also designed to promote shark protection and sustainable fishing and bans on the cruel practice of shark finning and the illegal trade in shark products.

The exhibition features a variety of works by leading and emerging contemporary artists from mainland China, Hong Kong, Taiwan, Singapore, Germany and America. It incorporates sculpture, installations, photography, paintings, drawings, performance work, poetry and film.

On Sharks and Humanity is supported by leading international non-profit organisation WildAid, whose mission is to end the illegal wildlife trade and reduce demand for wildlife products, such as shark fins.

At the Australian National Maritime Museum the exhibition will also explore the topical issue of shark protection while responding to local discourse about sustainable fishing and trade, species that are endangered, at risk and protected, and human and shark management on Australia's beaches.

The exhibition will feature an Australian dimension by incorporating works by Indigenous artists. These explore sharks as totems and their role in informing cultural and ecological sustainability in water, land and species management. It will also display

photographs and artefacts from the collection of prominent Australian shark experts Ron and Valerie Taylor.

On Sharks and Humanity will feature more than 45 works by 35 artists, many of an ambitious scale and detail. They will be displayed in and around the museum – even on the water – from 1 November.

Developed by Parkview Arts Action, Parkview Group China, Hong Kong, Singapore

01 *Us*, Liu Zining, 2014. Image courtesy the artist and Parkview Arts Action

- 02 ANMM image
- 03 Still image from the *Clash of the Carriers* film produced for the *Action Stations* cinema. ANMM image



02

James Cameron – Challenging the Deep

Until 30 January

In an exhibition that integrates two worlds of modern museums – the power of the artefact and the thrill of experience – visitors will encounter the deep-ocean discoveries, technical innovations and scientific and creative achievements of underwater explorer James Cameron. For and during his dives, he has pioneered lighting, submersible, ROV, communication and recording technologies, broken records and been the first to see and explore the least-known places on earth.

Created by the Australian National Maritime Museum's USA Programs supported by the USA Bicentennial Gift Fund



03

Clash of the Carriers: Battle of the Coral Sea, 4–8 December 1942

Currently showing

Three navies, four aircraft carriers, 255 aircraft and 76 ships in a four-day battle that changed naval warfare forever. Eight ships sunk, 161 aircraft destroyed and 1,622 men killed in a battle that should never be forgotten.

As part of our 'War and Peace in the Pacific 75' program, the museum has launched a new documentary short film in the *Action Stations* cinema to commemorate the 75th anniversary of the Battle of the Coral Sea, fought by the US Navy and Royal Australian Navy against the Imperial Japanese Navy.

Funded by the USA Bicentennial Gift Fund



04

Remembering Skaubryn: 60 years on

Until 7 October

The Norwegian liner *Skaubryn* was the only vessel lost at sea during the era of post-war migration to Australia, when it caught fire and sank in the Indian Ocean in 1958. On the 60th anniversary of the *Skaubryn* disaster this small photographic display captures the dramatic fire and rescue.

Women of the River Country

Until 20 September

This exhibition showcases the stories of 19 unique women from the mid-1800s to present day, all of whom have connections to the magnificent riverscape of the Murray Darling Basin, home to Australia's three longest rivers – the Murray, Darling and Murrumbidgee.

Women of the River Country was developed by the volunteers and staff of the Mannum Dock Museum in South Australia.

Gapu-Moṇuk Saltwater – Journey to Sea Country

Currently showing

Gapu-Moṇuk Saltwater – Journey to Sea Country acknowledges the Yolŋu people of north-east Arnhem Land and their fight for recognition of Indigenous sea rights in the landmark Blue Mud Bay legal case.

The Yirrkala Bark Paintings of Sea Country – also known as the Saltwater Collection – were created by 47 Yolŋu artists who petitioned for sea rights by painting their Sea Countries onto bark.

The museum would like to advise visitors that this exhibition may contain the names and images of, and artwork by, deceased Aboriginal or Torres Strait Islander people.

Unbroken Lines of Resilience: feathers, fibre, shells

Until January 2019

This exhibition brings together some of Australia's most renowned Aboriginal and Torres Strait Islander female artists, leading practitioners in their fields of weaving and shell stringing. Their innovative works highlight the unbroken practices of our First Nations women and their deep cultural connections and knowledge systems. These practices include harvesting and processing organic and contemporary fibres, feathers and shells to create intricate body wear for adornment.

The exhibition also features domestic fishing implements made from organic materials.

- 01 *Container*, a free outdoor exhibition at the museum. Image Andrew Frolows/ANMM
- 02 Explorer and filmmaker James Cameron emerges from the hatch of *DEEPSEA CHALLENGER* during testing of the submersible in Jervis Bay, south of Sydney. The vessel travelled to the bottom of the Mariana Trench and was the centrepiece of *DEEPSEA CHALLENGE*, a joint scientific

- project by Cameron, the National Geographic Society and Rolex to conduct deep-ocean research. Photo © Mark Thiessen/National Geographic
- 03 The fantastical submarine *Nautilus*. Image Andrew Frolows/ANMM
- 04 *Sewage surfer* © Justin Hofman (USA)/ Wildlife Photographer of the Year

- 05 Detail from a diorama of Suvla Bay, Gallipoli, made by Geoff Barnes. Image Andrew Frolows/ANMM
- 06 Detail from a banner from the *Submerged* exhibition. Image Daniel Ormella/ANMM

- 07 USS *Lexington's* deck on fire during the Battle of the Coral Sea. Official US Navy photograph, Collections of the National Archives, Naval History and Heritage Command 80-G-16802



01



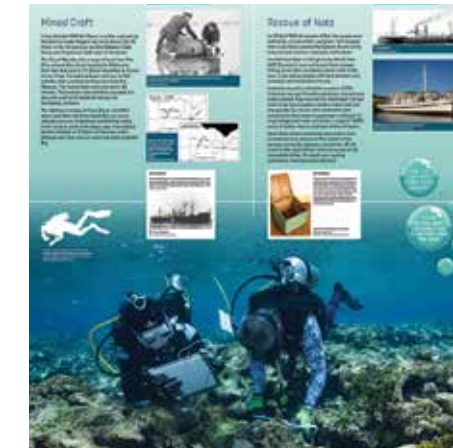
02



03



05



06



07

Container – the box that changed the world

Until 10 October

The museum's first-ever outdoor exhibition is dedicated entirely to the history and impact of the humble shipping container. The exhibition goes beyond the corrugated steel to reveal the fascinating story of this revolutionary maritime invention. Housed entirely within specially modified 20-foot containers, the exhibition quite literally takes our visitors 'inside the box' to explore the economic, geographic, technical, environmental, social and cultural history and impact of containerisation.

Container – the box that changed the world is open daily and is free

Special 3D film screenings

11 am, 2 pm and 3 pm daily

Relax in our newly refurbished theatre and watch a fascinating 3D nature film. Currently screening:

Oceans 3D: Our Blue Planet takes you on a global odyssey to discover the largest and least explored habitat on earth.

DEEPSEA CHALLENGE 3D follows James Cameron on his record-breaking solo dive to the Challenger Deep in the Mariana Trench – at 11 kilometres down, the deepest point on our planet.

Included in any paid entry. Please check availability at anmm.gov.au/3dcinema as sessions may occasionally be cancelled due to event bookings

ANMM travelling exhibitions

Voyage to the Deep: Underwater adventures

Newcastle Museum, Newcastle, NSW
Until 21 October

Based on Jules Verne's 1870 classic *20,000 Leagues Under the Seas*, the exhibition brings to life the mythical deep-sea world of Captain Nemo and the fantastical submarine *Nautilus*. Kids can climb aboard and take control at the helm, peer through the periscopes, crank the propeller, test out the bunks and explore the Cabinet of Curiosities, full of wonderful marine specimens. For children under 12, it's a hands-on experience with opportunities to touch, explore and play.

Wildlife Photographer of the Year

Until 10 October

This world-renowned exhibition, on loan from the Natural History Museum in London, presents 100 extraordinary images that celebrate the beauty, drama and diversity of the natural world, from intimate animal portraits and astonishing landscapes to photo essays and mesmerising abstract images.

Please note that *Wildlife Photographer of the Year* will be temporarily closed on 17 and 18 September due to museum works, it will reopen on 19 September and run until 10 October. We thank you for your understanding



04

Undiscovered: Photographic works by Michael Cook

Western Plains Cultural Centre, Dubbo NSW
Until 27 October

A striking series of large-scale photographic works by celebrated Aboriginal artist Michael Cook, from the Bidjara people of south-west Queensland. *Undiscovered* provides a contemporary Indigenous perspective of European settlement in Australia, a land already populated by its original people. Cook's artworks shift roles and perspectives around the notion of European 'discovery' of Australia, reflecting upon our habitual ways of thinking and seeing our history.

War at Sea

Queensland Maritime Museum, Brisbane, QLD
Until 12 November

The histories and stories of the Royal Australian Navy and its sailors – less widely known than those of the soldiers at Gallipoli and the Western Front – are told through diaries and journals, objects, film and interactives from the National Maritime Collection, the National Film and Sound Archives and the Australian War Memorial.

This project has been assisted by the Australian Government through the Australia Council for the Arts, its arts funding and advisory body

Shackleton: Escape from Antarctica banner display

Various dates and venues in WA, SA, QLD and NSW

Through dramatic photographs taken by Australian photographers Frank Hurley and Keith Jack, *Shackleton: Escape from Antarctica* walks in the footsteps of the Imperial Trans-Antarctic Expedition of 1915–17. Discover what happened to these great men and their ships.

The display is supported by the Australian Antarctic Division and sponsored by Antarctica Flights and APT Luxury Touring & Cruising

Submerged: stories of Australia's shipwrecks

Various dates and venues

The Australian Maritime Museums Council (AMMC) and the Australian National Maritime Museum partnered to develop the graphic panel display *Submerged: stories of Australia's shipwrecks*. Content for the display was developed by AMMC members at maritime heritage organisations across the country, and merged into a nationally touring display by the ANMM.

There is no cost to host the graphic panel display and the ANMM will arrange and pay for transport costs. This display is supported by Visions of Australia. For bookings and enquiries, please contact touringex@anmm.gov.au

Australian Sailing Hall of Fame 2018

Various dates and venues

This graphic panel exhibition features the stories of the inaugural inductees to the Australian Sailing Hall of Fame. These greats of the sport have produced some of Australia's most memorable sporting moments – in the America's Cup, the Olympics, blue-water racing and world sailing.

The Australian Sailing Hall of Fame touring exhibition is developed by the Australian National Maritime Museum in partnership with Australian Sailing

Clash of the carriers: Battle of the Coral Sea panel display

Various dates and venues in the USA

Fought between combined United States and Royal Australian naval and air forces and the Imperial Japanese Navy, this was the world's first sea battle between aircraft carriers. Literally 'fought in the air', it was also the first naval battle in which opposing ships neither saw nor fired on each other. This exhibition is part of the 'War and Peace in the Pacific 75' program.

Created by the Australian National Maritime Museum's USA Programs supported by the USA Bicentennial Gift Fund

Guardians of Sunda Strait panel display

Various dates and venues in the USA

On the night of 28 February–1 March 1942, HMAS *Perth* and USS *Houston* fought bravely and defiantly against overwhelming odds – outnumbered and outgunned by a large advancing Japanese naval force – as they approached Sunda Strait. Both ships sank that dreadful night in the Battle of Sunda Strait. This exhibition is part of the 'War and Peace in the Pacific 75' program.

Created by the Australian National Maritime Museum's USA Programs supported by the USA Bicentennial Gift Fund



01 The two-masted brigantine *Windeward Bound*.
All images courtesy the Windeward Bound Trust



Windeward Bound

EMPOWERING YOUNG PEOPLE AND TRAINING FUTURE SAILORS

Captain Sarah Parry and her beautiful Hobart-based brigantine *Windeward Bound* recently took centre stage on the international sail training calendar when Sarah was awarded the prestigious title of World Sail Trainer of the Year for 2017. Master Mariner **Jonathan Wallis** relates the tale of Sarah and her beloved ship.

IT IS IMPOSSIBLE to talk about Captain Sarah Parry without also talking of *Windeward Bound*. The vessel was born of her vision and built to fulfil her long-time dream, and stops waterfront visitors to Hobart with its beautiful lines. Sarah has trained some 4,500 folk through the ship's 22-year life, during which time it has sailed well in excess of 100,000 nautical miles (185,000 kilometres). In 2017 alone, it carried 410 voyage trainees and 39 crew, of whom 21 lived aboard for varying periods.

Many of *Windeward Bound*'s trainees have come away motivated to pursue and obtain tertiary maritime educations and International Maritime Certificates, and can now be found sailing the world in larger vessels, both commercial and naval. Many say they will always remember with gratitude and nostalgia their initial training aboard *Windeward Bound* under Captain Sarah's watchful and efficient eye.

My association with 'Windy' (as the ship is affectionately known by its friends) began in mid-March 2003. I was strolling along a wharf in Port Lincoln, South Australia, where, to my astonishment, lay one of the most beautiful traditional wooden vessels I had ever seen. It was *Windeward Bound*, a two-masted brigantine, and it was making the 26,600-nautical-mile (49,000-kilometre)

circumnavigation of Australia in the wake of Matthew Flinders. It even had a ship's cat, Trim – named after Flinders' feline companion – peering at me from a warm spot on the forward hatchway. Trim has since gone to her reward, but I like to feel that her spirit lives on as generations of young sailors and trainees continue to experience life under authentic conditions in a real ship.

The *Windeward Bound* story began in 1965, when a young Royal Australian Navy (RAN) sailor stood on the shores of Garden Island Naval Base in Sydney and watched an old Baltic trading vessel called *New Endeavour* arrive from England. From this encounter a dream emerged of building and then operating a similar tall ship.

The dream was shelved for a while, due to a distinguished service in the RAN and, later, the rigours of acquiring a trade as a joiner/cabinetmaker while providing for a growing family, but it was never lost. It eventually came to fruition on 30 March 1996, when *Windeward Bound* slipped into salt water for the first time.

Between the dream and its realisation were more than 10 years of planning and six years of construction. In the beginning, renowned naval architect Michael Seward was employed to draw up the plans.

Then the materials for the build were salvaged from various local sources. The blue gum keel and stem were built of floor joists from the old Prince of Wales theatre, whose roof frames also provided the Douglas fir for the ribs and deck beams. The stern post was constructed from two massive beams from the Long Gallery in Salamanca Place. The old Hobart harbour ferry *Excella* was painstakingly dismantled, providing two container loads of Huon pine and New Zealand kauri. A further 120 tonnes of old-growth *Eucalyptus regnans* whole logs were generously donated by Australian Newsprint Mills.

While development and planning were under way, much other work was accomplished, including gaining the ever-important sponsorship. In 1990, as a form of sponsorship, Australian Newsprint Mills agreed to allow the ship's construction to take place in its old newsprint warehouse on the Derwent River, opposite Hobart's Royal Botanical Gardens.

There, once the materials were assembled, construction began in earnest. Happily, there was no shortage of volunteers, or advice. Well-known Hobart boatbuilder Bill Foster OAM provided practical guidance and mentoring, and the skeletal form of 'Windy' began to take shape.

On board, trainees become involved in all aspects of a working sailing vessel, from repairs and maintenance to sailing

- 01 Participants in the Youth Development Sail Training Program learning the ropes ...
- 02 and taking a turn at the helm.
- 03 Captain Sarah Parry in the saloon of STV *Windeward Bound*.



01



02



03

The keel was finally laid at the end of June 1990, using the team's last \$1,000 to buy the steel. As the days, weeks and months passed, all the recycled timber was cleaned up, machined to the required dimensions and slowly laminated into place by Sarah and her growing band of volunteers.

At the end of 1992, Sarah and her team were concerned to discover that Hobart, like the rest of Australia, had a growing problem with disadvantaged youth, young offenders and youth at risk. At the time, Sarah was vice president of Project Hahn, a successful youth group loosely modelled on the famous Outward Bound movement, which used wilderness adventure-based therapy to bolster self-esteem and personal growth. This led Sarah to consider using *Windeward Bound* for a similar purpose.

Studies of sail-training organisations in Europe, the UK, New Zealand and the United States made it clear that this was a highly feasible way to help prevent these young people from falling through the cracks. Thus, the *Windeward Bound* Trust was formed and 'personal growth by adventure sailing' for young people became its target. The trust believed that no young person should be denied this opportunity, and its program specifically targeted the disadvantaged, from whatever circumstances. Word quickly spread, and within months a small group of nervous, but otherwise extremely streetwise, young men and women were hard at work alongside the adult volunteers assisting with construction. Most of them stayed with the ship through its launch, fitout and early sailing days.

On board, trainees become involved in all aspects of a working sailing vessel, from repairs and maintenance to sailing the ship. They acquire traditional skills, including overhauling wooden blocks and even caulking the decks, as well as emergency procedures and survival, all under expert supervision.

Oscar Broadby, from Collinsvale, completed the Hutchins School trip to Bathurst Harbour in 2015:

That trip on the Windeward Bound gave me the confidence to work within a team on board a working ship. I enjoyed the experience of being out on the water, and Captain Sarah encouraged all of us to try new skills and challenge ourselves. These positive experiences will stay with, and assist, me throughout my life.

Although the sail training program is aimed at young people, older people benefit too, such as cook Valerie Monaghan of Mount

Stuart, who filled in at short notice for the ship's regular cook:

I rapidly adjusted and found my 'sea legs' and became part of this beautiful working vessel and her daily life. It was such a wonderful way to complete my working life as a cook, which I had thought was at an end.

Windeward Bound has produced 40 Ship's Masters in the last 10 years alone, as well as obtaining cadetships for some in the Merchant Navy and careers for yet others in the Royal Australian Navy. Several thousand young people have discovered themselves on the decks of this wonderful ship and have made changes to their lives that probably would not have happened otherwise.

Since launch day in 1996, *Windeward Bound* has circumnavigated Australia, sailed to New Zealand and back, circumnavigated Tasmania and crossed Bass Strait 37 times. It also regularly sails Australia's lower east coast. Invariably it is crewed by young people, repeatedly proving the value of a structured sail training program on a traditional square-rigged vessel.

Windeward Bound is complemented by a beautiful 20-foot (6-metre), eight-oared hard-chined whaler. It was donated, complete with a sailing rig, by the late David Boykett OAM, two-time Australian Olympic rower. This fine vessel is ideal for sailing or rowing programs for junior schools around Tasmania and is also an invaluable tender for *Windeward Bound*. In a nice touch, it is named *Trim*, after the ship's former cat. Recently the Australian Navy Cadets also donated three 14-foot (4.3-metre) dinghies, which, once restored, will supplement the training program.

As well as being the flagship of the Naval Association of Australia, *Windeward Bound* proudly flies the flag of many sponsors, and of Rotary International, with whom it works closely. The ship has also been prominently supported by its former patron, Professor the Honourable Dame Marie Bashir AD CVO, former Governor of New South Wales, and now by its current Patron, Her Excellency Professor the Honourable Kate Warner AC, Governor of Tasmania.

For a vessel that receives no regular government funding, *Windeward Bound* has been remarkably successful, to the great credit of Captain Sarah Parry, the ship's sponsors past and present, and its managers, volunteers and dedicated crew, both ashore and afloat. This success was acknowledged in 2017, when Captain Sarah was awarded the title of World Sail Trainer of the Year.

The award was presented on the final day of the annual Sail Training International Tall Ships Conference, held last year in Bordeaux, France. Attending were representatives from 330 tall ship operators, including 150 tall-ship captains. Sarah was there in her capacity of vice president of Tall Ships Australia and New Zealand (TANZ), and the award came as a total surprise, she recalls:

I was just sitting there quietly observing, obviously interested and attentive. When they came to the sail training award, I thought they were having an interesting discussion, not realising until the last instant that it was me they were discussing!

As well as recognising Sarah's achievements and the efforts and dedication of all involved in the operation of *Windeward Bound*, this award also honours Australia's entire sail training community and the vital role it plays in furthering maritime training at all levels.

And what of *New Endeavour*, which in 1965 was the kernel of inspiration for this project? It was broken up in 1987, but happily its masts, yards, anchors, anchor windlass, cables and some of its sails now form part of *Windeward Bound*.

Specifications

Windeward Bound was named in honour of Lewis Winde, the builder of the 1848 Boston topsail schooner on which it was modelled, and is rigged with 12 sails: four square sails, three headsails, three staysails between the masts, a gaff mainsail and gaff topsail.

Tonnage: 105

Displacement: 120 tonnes

Construction: Tasmanian eucalypt, Huon pine, New Zealand kauri and Oregon

Length overall: 110' 0" (33 metres)

Length of hull: 81' 0" (24 metres)

Beam: 24' 0" (7 metres)

Draught: 10' 8" (3.2 metres)

Height of mainmast: 85' 0" (25 metres)

Rig: Brigantine

Main engine: 300 HP Cummins

Auxiliary engine: 22KVA Onan Genset

Fresh water: 2 tonnes

Fuel: 2.5 tonnes

01 Multi-beam echo sounder image of SS *Macumba*. Image CSIRO/Marine National Facility

Shipwrecks in the deep blue sea

HIGH-TECH WRECK HUNTING ON BOARD RV *INVESTIGATOR*

RV *Investigator* uses the latest technology to survey, record and analyse the coast and waters of Australia, including searching for shipwrecks. Curator of Ocean Science and Technology **Emily Jateff** joined the crew for a recent expedition.

THE CSIRO Marine National Facility (MNF) blue-water research vessel RV *Investigator* is rewriting history as it pieces together the most complete modern map of our territorial waters. It can host 40 scientists on sea voyages of up to 60 days over a 10,000-nautical-mile (18,500-kilometre) radius, from the icy sub-Antarctic waters of Macquarie Island to the tropical Coral Sea. *Investigator* is outfitted with laboratory spaces, acoustic equipment and scientific winches to accommodate all aspects of atmospheric, oceanographic, biological and geoscience research.

The Australian National Maritime Museum (ANMM) also has a keen interest in exploring the oceans. Our exhibitions feature current scientific and environmental issues and activities, as well as cultural understandings of the ocean sphere. As the ANMM's inaugural Curator of Ocean Science and Technology, my duties include supporting the national and international profile of Australian ocean science and technology through exhibitions and programming, and acquiring significant objects for the National Maritime Collection.

I was granted a berth on *Investigator's* recent transit voyage from Brisbane to Hobart (14–21 May 2018). My aims were to assess the vessel and its capabilities, to observe the

deployment of equipment and results, and – since I am also a maritime archaeologist – to check out a few shipwrecks en route.

Piquing interest

In 2017, *Investigator's* crew collaborated with the Northern Territory government to conduct a targeted multi-beam sonar survey for the wreck of SS *Macumba* in the Arafura Sea, off Arnhem Land.

Macumba was a 2,526-ton steel steamship built in 1919 by Charles Hill & Sons, Albion Shipyards, Bristol, UK. The vessel was purchased in 1920 by the Australian United Steam Navigation Co (AUSN) and operated as an interstate freighter in the AUSN east coast timber and coal trade.

It pieces together the most complete modern map of our territorial waters

In August 1943, *Macumba* was attacked by two Imperial Japanese Navy seaplanes while transporting a cargo of general supplies from Sydney to the military port of Darwin. Despite return fire from *Macumba* and escort vessel HMAS *Cootamundra*,

the Japanese aircraft made a direct hit on *Macumba*, striking the engine and boiler rooms. The vessel lost power and began taking on water. Within an hour, the crew was forced to abandon ship, which went down stern first.

The *Investigator* survey collected multi-beam echo sounder (MBES) and drop camera images of the shipwreck and surrounding site, which were publicly shared. As a result, *Macumba* is now protected under the Commonwealth *Historic Shipwrecks Act 1976*.

Buoyed by their success, the MNF notified the Victorian government of an unknown shipwreck located during a routine bathymetric survey by *Investigator* near Crocodile Rock in Bass Strait. Images and location were shared with Heritage Victoria and the site inspected by the Maritime Archaeological Association of Australia (MAAV), which identified the wreck as that of iron barque *Carlisle*.

On 6 August 1890, the 1,121-ton *Carlisle* struck a rock south-east of Wilsons Promontory. *Carlisle* was en route from Melbourne to Newcastle to load coal before continuing towards South America. After striking the rock, the crew manned the pumps, but to no avail; the vessel was abandoned after a two-hour effort.

- 01 SS *Macumba*. Allan C Green (c 1940), State Library of Victoria, Accession no H91.108/2210
- 02 HMAS *Encounter* in Auckland, New Zealand, c 1918. ANMM Collection 00018144 ANMM Collection Gift from Barry Jones
- 03 Photomosaic of HMAS *Pioneer*. Image NSW Wrecks
- 04 HMAS *Pioneer*. Allan C Green, State Library of Victoria, Accession no H91-325-2123

HMAS *Encounter* was stripped and scuttled off Bondi Beach on 14 September 1932, and is a popular technical dive site

The captain and crew managed to escape in two boats, but became separated in the darkness. One boat made it to Ninety Mile Beach and the survivors were rescued by locals. Those in the second boat landed at Cliffy Island and were later rescued by the steamer *Lady Loch*. An inquiry into the loss exonerated the captain and officers of blame, finding that *Carlisle* struck a recently discovered rock that did not appear in Admiralty charts at that time.

HMAS *Pioneer* is purported to have fired the most shells in anger of any RAN vessel during the First World War

The information gathered by *Investigator's* remote-sensing survey indicated that the site is in good condition. The initial photographic inspection by MAAV technical divers also provided significant information. Now that the wreck has been found, Heritage Victoria hopes to complete detailed, accurate mapping and interpretation of the site for long-term management and preservation. *Carlisle* is protected under the *Historic Shipwrecks Act*.

Transit opportunities

Prior to the May 2018 transit voyage, I was contacted by CSIRO with an offer to look for significant shipwrecks located within striking distance of the planned voyage track from Brisbane to Hobart. ANMM maritime archaeologists reviewed locations for known and unknown shipwrecks and identified two sites that could be surveyed with little deviation from the track: HMAS *Pioneer* and HMAS *Encounter* (1). *Pioneer* and *Encounter* are located relatively close to the entrance

of Sydney Harbour, but in deep enough water that *Investigator* would easily be able to acquire MBES imagery of one or both sites. A 2010 CSIRO hydrographic survey of *Pioneer* led to its 2014 investigation by the wreck-diving organisation NSW Wrecks, but *Encounter* had not been documented with comprehensive sonar imagery. It was proposed that *Investigator* conduct close-order MBES sweeps of one or both sites, with the goal of obtaining a solid three-dimensional picture of what survives.

Both vessels were scuttled after the First World War, and are significant because they are remnants of some of the larger vessels that constituted Australia's first national fleet. Following consultation with the New South Wales Office of Environment and Heritage, *Pioneer* and *Encounter* were confirmed as the two primary sites of interest within the transit area.

HMAS *Pioneer*

HMS *Pioneer* was built at Chatham, UK, in 1900 and commissioned as a Pelorus class light cruiser by Britain's Royal Navy. *Pioneer* was recommissioned for service on the Australia Station in 1905, and used as a drill ship by both the Australian Commonwealth and Imperial British governments. In 1912, the vessel was transferred to the Royal Australian Navy (RAN) as a gift from the Admiralty. *Pioneer* participated in blockades, captured enemy vessels and is purported to have fired the most shells in anger of any RAN vessel during the First World War.

Following its return to Australia in November 1916, *Pioneer* was used as an accommodation ship at Garden Island in Sydney. Its stripped hull was scuttled off Sydney Heads in 1931. The surviving hull structure shows clear evidence of the reduction processes employed to strip the vessel before it was scuttled.

HMAS *Encounter*

The Challenger class cruiser *Encounter* joined the Royal Navy's Australian Squadron in 1905. Commissioned into the RAN in 1912, it was referred to as the 'foster mother of the Royal Australian Navy'. *Encounter* was Australia's first cruiser and served overseas and as a training ship. Paid off in 1920, it was renamed *Penguin* and used as a depot and accommodation vessel at Garden Island naval base. It was stripped and scuttled off Bondi Beach on 14 September 1932, and is a popular technical dive site.

Surveying for shipwrecks

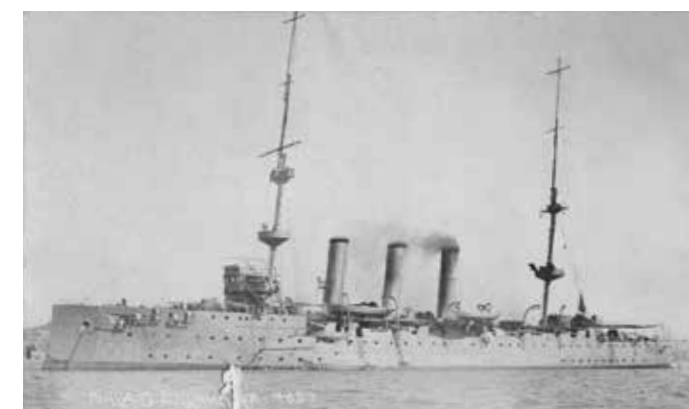
Investigator carries its acoustic instrumentation within a gondola mounted 1.2 metres below the hull. The ship deploys a Kongsberg EM122 MBES and a shallow-water Kongsberg EM710 high-resolution MBES. Multi-beam echosounders send acoustic signal beams down and out from the vessel and measure both the signal strength and time of return on a receiver array.

Data are transmitted by the receiver to the operations room for real-time processing. These data provide topographic information, and register features within the water column and on the seabed. As well as general location, it is important to know vessel dimensions, as shape and size can be spotted in the raw MBES point data, providing initial confirmation that the site has been located.

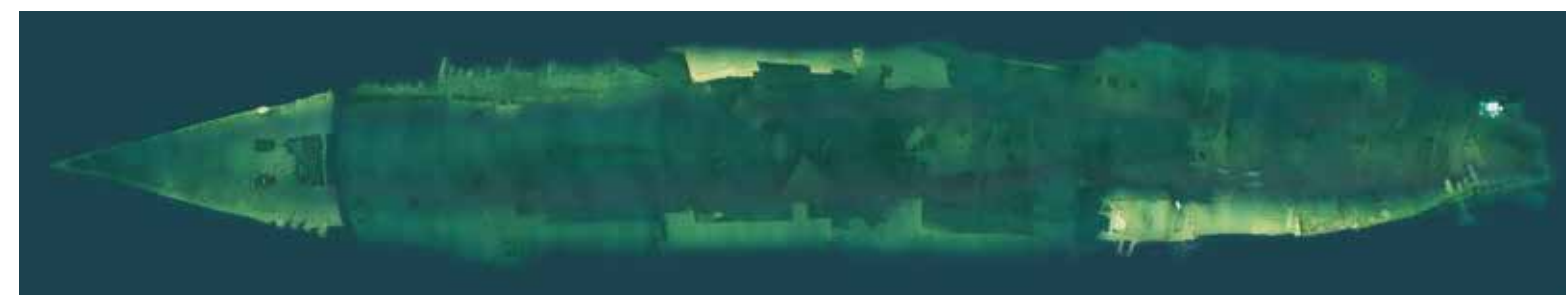
Due to time constraints, we only had a few hours to locate and survey both sites. Hydrographer Matt Boyd and I were positioned in front of a bank of computers in the operations room, scanning the screens for blips in the raw point data. As we had accurate coordinates, provided by the New South Wales Office of Environment and Heritage, both sites were relocated and surveyed within the allotted time – a great result for the team. Collected data is stored in the online CSIRO archive and provided



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- 01 Diver from the Maritime Archaeological Association of Victoria (MAAV) investigating *Carlisle*. Image Malcolm Venturoni
- 02 Hydrographer Matt Boyd (MNF) and Emily Jateff (ANMM) in the operations room on board RV *Investigator* during the survey of HMAS *Pioneer*. Image Chris Gerbing, CSIRO/Marine National Facility
- 03 RV *Investigator* at sea. Image CSIRO/Marine National Facility

to the New South Wales Office of Environment and Heritage to assist with site management. *Pioneer* is protected under the *New South Wales Heritage Act 1977* and *Encounter* under the Commonwealth *Historic Shipwrecks Act*.

Blue-water approach

The museum is working to develop a strong and continuing partnership with the CSIRO Marine National Facility and *Investigator*. As custodians of the National Maritime Collection, we at the museum are thrilled that the MNF recognises the significance of Australia's underwater cultural heritage. Ben Rae, Acting Marine National Facility Program Director, said:

The Marine National Facility enjoys a collaborative and fruitful relationship with the Australian National Maritime Museum ... To be able to utilise our multi-beam survey capability to map, and in some instances discover, historic shipwrecks, including naval vessels from World War I and World War II, is inspirational and rewarding work for our research teams, knowing that we are helping document and understand our marine history, while simultaneously enabling great science for our future.

We look forward to more exciting projects with the Australian National Maritime Museum, and opportunities to promote their work and that of Investigator to the Australian public.

Investigator's capabilities are now being utilised to work with state and national agencies and in locating and surveying Australian shipwrecks in deeper waters. The Australian government recently announced an increase in funding to the MNF to support the vessel up to 300 days at sea per year. This will almost double the capacity of the MNF to deliver future collaborative research opportunities across our marine estate.

The author would like to acknowledge the assistance of Maddy McAllister, Heritage Victoria; Caroline Wilby, Heritage Branch, Northern Territory; Brad Duncan, Heritage Division, New South Wales; and CSIRO Marine National Facility.



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Behind the scenes of our special projects

DONORS SEE THE RESULTS OF THEIR SUPPORT

In the past year, generous donations to the Australian Maritime Foundation have helped to fund the successful search for HMAS *AE1* and the restoration of MV *Krait*, and enabled the acquisition of new objects for the National Maritime Collection. The Foundation has also instigated a program of tours and talks to show donors what their support has achieved. By **Dr Kimberley Webber**.

THE AUSTRALIAN NATIONAL Maritime Foundation is the fundraising arm of the museum, and is overseen by a board chaired by Mr John Mullen. In May 2018, Mr Malcolm Moir took up the position of Head, Foundation and Development, bringing to the museum extensive experience in fundraising. He has held appointments at various cultural institutions and agencies, including Sydney's Powerhouse Museum, the Sydney Opera House and the Sydney Festival.

In the 2017/18 financial year, the Foundation's notable achievements included raising funds to enable the search for Australia's first submarine, HMAS *AE1*, which disappeared in the waters off Papua New Guinea on 14 September 1914. As the Autumn issue of *Signals* reported, this was a singular success, with the largely intact remains of the vessel being found only hours after the search began.

The Foundation also ran its customary fundraising campaigns for the end-of-calendar and end-of-financial years. In 2017/18, the key projects being supported were the SY *Ena* Conservation Fund and the restoration of MV *Krait*. The Foundation continues to support the National Maritime Collection; significant acquisitions include the 1929 model of SS *Orontes* and a major ghost-net sculpture, *Au Karem ira Lamar Lu*, by artists from the Erub Arts Centre on Erub (Darnley Island) in Torres Strait. The museum is particularly grateful to the museum's founding Ambassador, Ms Christine Sadler, Justice Anthe Philippides

and Mr Peter Dexter AM for enabling the purchase of this powerful work. Its installation in the foyer will serve as a reminder of the importance of our seas and waterways to Aboriginal and Torres Strait Islander people and of the environmental damage caused by abandoned fishing nets.

We recognise the importance of informing donors of what their generosity has made possible. In the past year we have held several behind-the-scenes events to show them what we have achieved and to highlight key programs. In September 2017, Dr Nigel Erskine, curator of *The Art of Science: Baudin's Voyagers 1800–1804*, led a tour of this important exhibition from the Muséum d'Histoire Naturelle in Le Havre, France.

Through the generosity of the Oatley family and with assistance from Foundation Director Rob Mundle OAM, we were able to arrange two inspections of *Wild Oats XI*, in October 2017 and January 2018. Those who attended found it fascinating to go below decks on this superb maxi yacht – which has won line honours in the Sydney–Hobart race a record nine times – and to hear accounts from the crew.

While MV *Krait* was being restored at Michael Bartley Shipwrights in Woolwich, we were able to inspect it to see the work in progress. Once *Krait* returned to the museum, Curator of Historic Vessels, David Payne, showed some of our donors over the vessel, explaining the work that had been done and outlining his plans for the next stage, the internal fitout.

The biennial Classic & Wooden Boat Festival in April brought together 130 of Australia's most outstanding craft. David Payne led a tour of the festival for donors before it opened to the public. We had the special experience of going on board some of the most significant vessels on display, including *Defiance*, *Landseer III*, *Hurrica V* and the 65-foot Halvorsen *Silver Cloud*.

Most recently we were able to benefit from the visit of Simon Stephens, a curator at the National Maritime Museum, Greenwich, UK, and an international expert on ship models. He was at the museum to advise on the restoration of the SS *Orontes* model and gave us new insights into the history and construction of such models. This was also an opportunity to bring together some of our Members, who have vivid memories of sailing and working on this classic passenger liner.

In the coming year we hope to take advantage of the museum's travelling exhibition program to invite some of our many regional and rural supporters to special events. In the meantime, if you would like further information about any of our priorities and programs, please contact Kimberley.webber@anmm.gov.au.



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In the coming year we hope to take advantage of the museum's travelling exhibition program to invite some of our many regional and rural supporters to special events



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- 01 Some of our donors inspecting the model of SS *Orontes* in the museum's object store. ANMM image
- 02 *Krait* back at the museum, where Fleet staff are completing the internal fitout to bring it back to its 1942 configuration. Image Janine Flew/ANMM



01 Scottish immigrants John Scott Grant and Ann Grant in Casterton, Victoria, c 1878. Reproduced courtesy Catherine Bell

Just three weeks after their wedding in Edinburgh, John and Ann were among 186 immigrants who embarked on the *India*

The burning of the barque *India*

MEETING THE DESCENDANTS FROM A DISASTER AT SEA

One of the museum's most-requested paintings for public viewing is a dramatic watercolour by Sydney landscape artist Samuel Elyard titled *Burning of the Barque India*. Curator **Kim Tao** reports on a recent viewing for cousins Catherine Bell and John Grant, whose great-great-grandparents survived when the ill-fated emigrant ship caught fire and sank on its second voyage to the Australian colonies.

'PERSEVERANCE AND BRAVERY in the face of adversity are qualities that are often associated with the early settlers of our country,' says Catherine Bell of Victoria. 'Our great-great-grandfather John Scott Grant and his wife Ann exemplified these traits as pioneers of the Casterton and Penola districts in Victoria and South Australia. In sailing from Scotland in 1841 to an unknown land halfway around the world, and building a new life there, they survived several traumatic events that occurred both at sea and in the new colony.'

John Scott Grant (1821–1879) and Ann Grant (née Kilpatrick, 1825–1903) spent their early years in and around Edinburgh, Scotland. John, the son of a flax dresser, was a blacksmith by trade, while Ann was the daughter of a miller on the Water of Leith. On 4 June 1841, just three weeks after their wedding at New Greyfriars in Edinburgh, John and Ann were among 186 bounty

immigrants' who embarked from Greenock on the 493-tonne, three-masted wooden barque *India*. They were bound for the Port Phillip District of the colony of New South Wales (now part of Victoria). Among the passengers were a number of young families from one Scottish village, as well as a group of single women who had been specially selected by the Board of Emigration as domestic servants and potential wives for single men in the colonies.²

On 19 July 1841, six weeks into the voyage, *India* was engulfed by a fire sparked by a candle and spilled medicinal rum. According to a report in the *Port Phillip Patriot*, 'The third mate and one of the boys were below about one o'clock pm, drawing off spirits, when the candle they used accidentally fell on some spilled rum, which immediately caught fire, and the flames spread with such rapidity that all efforts at extinguishing the tremendous blaze were unavailing, and the ship soon

became one mass of flame.'³ John and Ann Grant and their fellow passengers were forced to abandon ship in the South Atlantic Ocean, some 200 miles (320 kilometres) off the coast of Brazil.

The *Port Phillip Patriot* continues: 'No one saved a single article except such clothes as were on their backs, and ere they could be rescued from their perilous situation, the flames had driven them from the deck to the bowsprit, from which they dropped into the sea.'⁴ The museum's watercolour by Samuel Elyard, based on a sketch by survivor Robert Allan, captures this chaotic scene as the terrified passengers cling to the ship's bowsprit, amid towering flames and thick smoke clouding the sky. In the foreground, three boatloads of survivors row away from danger, while others struggle with a longboat that has capsized due to overcrowding. At the lower left, a solitary figure floats precariously on a piece of debris.

‘... the flames spread with such rapidity that all efforts at extinguishing the tremendous blaze were unavailing’

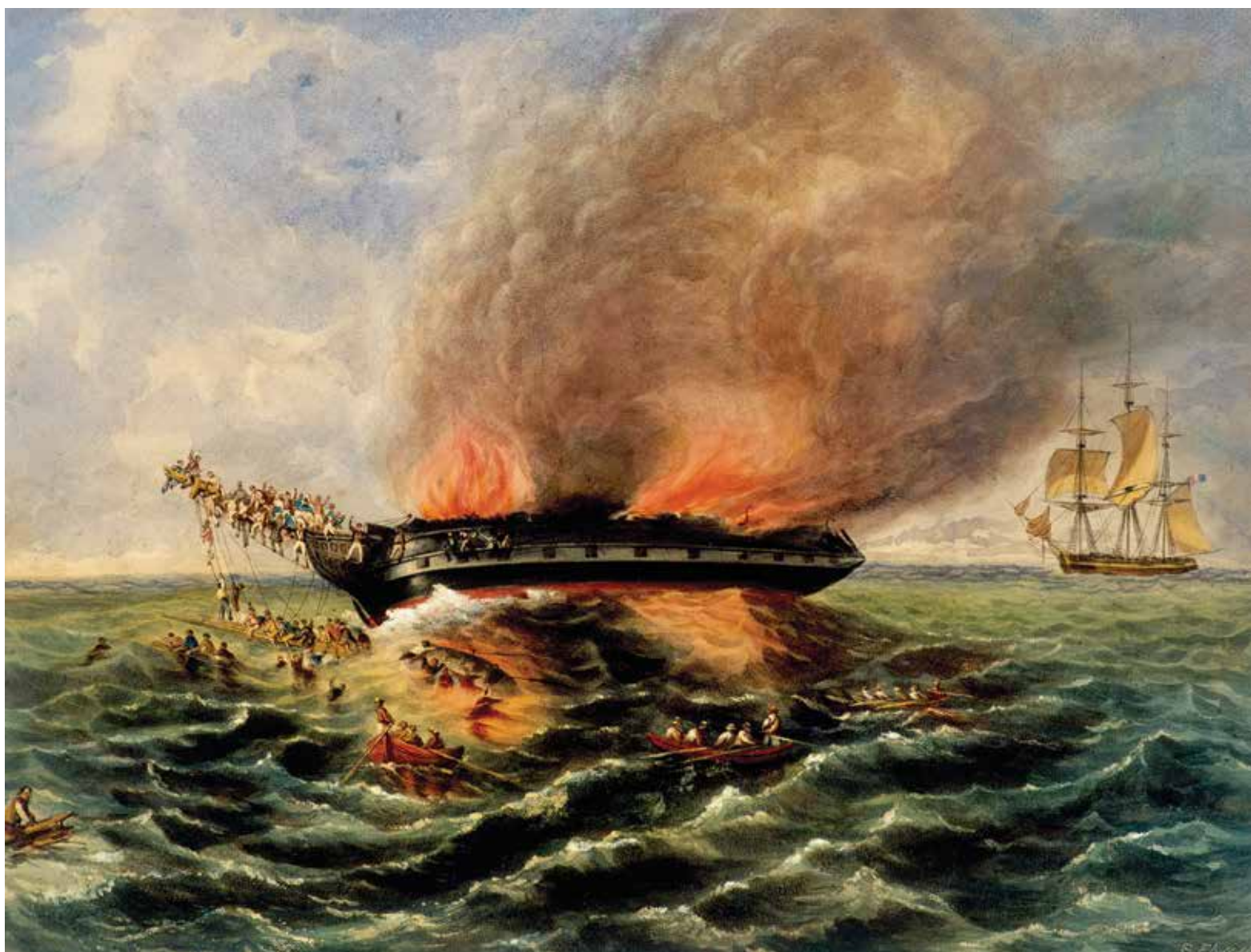
- 01 John Scott Grant in Portland, Victoria, c 1855. Reproduced courtesy Catherine Bell
- 02 Ann Grant (née Kilpatrick) in Casterton, Victoria, c 1900. Reproduced courtesy Catherine Bell
- 03 Samuel Elyard, *Burning of the Barque India*, c 1841–1845. Watercolour on paper. ANMM Collection 00004246



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John and Ann displayed a framed lithograph of the burning of *India* in the front parlour of their Caledonian Union Hotel

Samuel Elyard (1817–1910) was born on the Isle of Wight, off the south coast of England. He immigrated to New South Wales in 1821 on the convict ship *John Bull*, on which his father, Dr William Elyard, was the surgeon-superintendent. Elyard demonstrated an early talent for portrait painting and studied under the colonial artists Conrad Martens and John Skinner Prout. Although he would eventually specialise in landscapes, it is in *Burning of the Barque India* that Elyard's regard for the human figure becomes manifest, reflecting his initial training as well as his longstanding disciplinary interest in portraiture. The work is an evocative and sensitive treatment of a tragedy in which 17 people drowned at sea.⁵

The *India* survivors were rescued by the South Sea whaler *Roland* of Le Havre-de-Grace, which is depicted on the horizon, flying the French flag. *The Courier* reported, ‘Many of them were taken on board literally in a state of nakedness, others only half dressed, and most of them suffering from wounds, bruises and burns.’⁶ They were transported to Rio de Janeiro, Brazil, and later resumed their journey to Port Phillip on the 386-tonne barque *Grindlay* of Liverpool.

After disembarking at the port of Williamstown in October 1841, John Scott Grant worked as an agricultural labourer and shepherd on a number of large rural properties in the Casterton district, while Ann Grant was a domestic servant. They were among the earliest pioneers of this region in the far south-west of Victoria. John and Ann had nine children between 1842 and 1859, three of whom died in infancy.

In 1848 the Grant family decided to head west to South Australia in pursuit of unoccupied grazing land, where they acquired a run near Penola called Morningside Station. Following the discovery of gold in the early 1850s, the family was lured back to Victoria in search of their fortune. John's success on the goldfields

would allow the family to purchase the Woodford Inn at Dartmoor, near Portland, in 1854. Two years later they built a substantial two-storey brick hotel in the new settlement of Sandford and named it the Caledonian Union Hotel, in honour of their Scottish heritage.

An advertisement in *The Portland Guardian* described the Caledonian as ‘the largest and most commodious building in the Western District, and has been erected and furnished in the very best manner, and at a great outlay. The accommodation now offered to gentlemen and ladies visiting this part of our unrivalled colony has never before been attempted. Besides the numerous large single bedrooms, servants' room, and other apartments usually provided, the Caledonian Hotel boasts an elegant and lofty drawing room.’⁷

According to John and Ann's great-great-granddaughter, Catherine Bell, the couple displayed a framed lithograph of the burning of *India* in the front parlour of the Caledonian Union Hotel. Was it a reminder of the disaster at sea or a commemoration of their survival?

Sadly, the fire on *India* was only the first of three misfortunes to beset the Grant family. The second occurred in the early 1850s, when John and Ann's 18-month-old son strayed from their home near Penola and perished in the impenetrable bush. The third ordeal was in December 1870 when, in a tragic case of history repeating itself, a fire destroyed the top floor of the Caledonian Union Hotel. The building was then converted into a single-storey hotel and still stands today on the western side of the Portland–Casterton Road in Sandford.

John and Ann remained in Sandford for the rest of their lives. John Scott Grant died in 1879 at the age of 57. Referred to by the *Hamilton Spectator* as ‘one of the oldest of the old identities’ in the area, he ‘was

borne to his rest, escorted by, perhaps, the largest funeral seen in this neighbourhood, thus mutely testifying to the esteem in which the deceased, Mr John Scott Grant, was held.’⁸ Ann Grant died in 1903, aged 77. Both were buried in the Sandford Cemetery in western Victoria.

Today the *India* lithograph, in its ornate leather frame, is still in the possession of John and Ann Grant's descendants. Catherine Bell and her cousin John Grant were deeply moved when they finally came face to face with the original Samuel Elyard watercolour at the museum, in all its fine detail and vivid colour. ‘I didn't think it would affect me so much,’ John said. ‘Imagine if they didn't meet, marry, survive the fire – we wouldn't be here.’

As the two cousins left the museum, Catherine remarked, ‘I feel quite emotional leaving [the painting] behind. It feels like a family member as we have grown up with it in our lives. It's like a memorial.’ For the museum, this was a very special object viewing that illustrated the power of immigrant voyages in shaping the lives of five generations of one family, nearly two centuries after the burning of *India*.

1 Bounty immigrants had their passage paid by colonists or shipping agents, who would be reimbursed by the government after the immigrant arrived.

2 Kieran Hosty, ‘The burning of the barque *India* in 1841’, *100 Stories from the Australian National Maritime Museum*, NewSouth Publishing, Sydney, 2012, pp 64–65.

3 *Port Phillip Patriot*, 18 October 1841.

4 *Port Phillip Patriot*, 18 October 1841.

5 The subsequent deaths of two young passengers raised the total number of voyage casualties to 19.

6 *The Courier*, 16 November 1841.

7 *The Portland Guardian*, 19 June 1857.

8 *Hamilton Spectator*, 20 September 1879.

History in art

DATING A CHINA TRADE PAINTING

A small but significant detail of a British Red Ensign has helped in revising the date of a Canton factory painting in the museum's collection to a narrow window of time after the First Opium War in China. By curator **Kim Tao**.

01 *The French and United States factories at Canton, 1842–43.* ANMM Collection 00015750. Purchased with USA Bicentennial Gift funds



WHEN I VISIT MARITIME MUSEUMS, I am always drawn to the 'China trade' paintings of Canton (now Guangzhou), the southern Chinese port to which all foreign trade was restricted from 1757 under the Qing dynasty's Canton System. There is something about their composition that is so intriguing – the merging of Chinese and European artistic traditions, the curiously high vantage points and low horizons, and the detailed architectural rendering of the Western merchants' *bongs* (factories) with their national flags proudly displayed out front.

Recently I have been researching one of the museum's paintings that depicts the French and American *bongs* on the western side of the Thirteen Factories district along the Pearl River. It has been dated about 1841, or the latter stages of the First Opium War (1839–1842) between Britain and China. This war would result in the abolition of the Canton System, the opening of five Chinese treaty ports to foreign trade and the ceding of Hong Kong Island to the British. What I really wanted to know about the painting was: why would the British Red Ensign be flying in front of the Spanish factory?

For a long time art historians dismissed the Canton factory paintings as generic works of art that were mass-produced as souvenirs for foreign merchants. But recent research by Paul Van Dyke and Maria Kar-wing Mok, extending the scholarship of Carl Crossman and Patrick Conner, shows that these paintings are unique. In *Images of the Canton Factories 1760–1822: Reading History in Art* (2015), Van Dyke and Mok have cross-referenced the scenes denoted in export paintings with the archives of the European East India companies, to argue that they can be interpreted as reliable historical records. In some cases they have been able to use British, Dutch, Danish, French, Swedish and American registers of foreign arrivals and departures in Canton to refine the date ranges of certain paintings down to a single year, month or even week.

The Canton factory paintings became fashionable from the 1760s onwards, with fine examples now held in maritime collections, including the Hong Kong Maritime Museum and the Peabody Essex Museum in Salem, Massachusetts. Our oil painting, created by an unknown Chinese artist, exhibits a conventional frontal

composition that provides a clear vista of factories lined along the Canton riverfront, with a lively parade of sampans and small watercraft in the foreground.

At the lower left of the canvas the artist portrays a crowded boat that is being steered with oars, while in the centre foreground there is an elegant 'flower boat' (pleasure craft) decorated with green trelliswork. Animated figures carrying yokes or going about their daily business are visible on the quayside and in China Street (the fenced passage to the left of the American factory), but the factory area itself shows few signs of activity. The American factory features a courtyard garden, originally laid out about 1840, boasting a number of flourishing circular beds. American and French flags fly from tall flagstaves, along with the Red Ensign at the far left of the canvas.

Hoping that the presence of the British flag might help us to date the painting more precisely, I contacted Paul Van Dyke (Sun Yat-sen University) and Maria Mok (Hong Kong Museum of Art) for assistance. Maria confirmed that our painting documented a very specific period of time between two fires that occurred in 1842 and 1843. On the right side of the painting, marked by two empty flagstaves, the artist represents the ruins of the once-grand British, Dutch and Creek factories (the latter named for its proximity to the creek that formed the eastern boundary of the Thirteen Factories) that burnt down in a fire on 7 December 1842.¹ The remnants of the white clock tower that stood in the courtyard of the British factory are discernible, as is the adjacent Hog Lane, where foreign sailors would head for entertainment and souvenirs.

With the loss of the British factory, the British consulate was temporarily settled in the building once occupied by the Spanish on the western side of the Thirteen Factories, identified in the painting by the Red Ensign. On 24 October 1843, another fire destroyed the Danish, Spanish and French factories.² This means that the date of the painting can now be narrowed to a 10-month window between December 1842 and October 1843. A wonderful illustration, in the words of Mok and Van Dyke, of history in art.

¹ *Chinese Repository* vol 11, 1842, p 687.

² *Chinese Repository* vol 12, 1843, p 560.

From Basque Country to cane country

A BITTERSWEET HISTORY

Sixty years ago, in August 1958, the first contingent of assisted immigrants arrived under the Spanish migration agreement's *Operación Canguro* ('Operation Kangaroo') to work as cane-cutters in North Queensland. But the origins of Spanish involvement in the Queensland sugar industry date back much earlier, to the introduction of the White Australia policy in 1901. By curator **Kim Tao**.



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01 Frank Artiach (right) with his older brother Manuel and their parents, Theodore and Segunda, in Nabarniz, Spain, c1949. Reproduced courtesy Mary-Anne Waddell

BETWEEN 1863 AND 1904, more than 60,000 indentured labourers were recruited from the Pacific Islands to work on Queensland's sugarcane plantations, many through a process of coercion or kidnapping that is referred to as 'blackbirding'. After Federation in 1901, the new Commonwealth government enacted legislation known as the *Pacific Island Labourers Act* to enforce their mass deportation under the terms of the White Australia policy. Substitute sources of white labour were quickly found in Italy, and then the Catalonia and Basque regions of northern Spain.

Basque cane-cutters were held in particularly high regard as they were considered to be strong, hardworking and honest. By the early 1910s and 1920s, a modest Basque community had been established in the Innisfail and Ingham districts of north Queensland. This was followed by a small but steady chain migration as they sponsored relatives and fiancées from Basque Country (*Euskal Herria*) to cane country.

Francisco (Frank) Artiach Bengoa (1931–2003) was born in the village of Nabarniz in Biscay, one of a number of autonomous Basque provinces in the western Pyrenees, which form the border between Spain and France. Nabarniz is located near Guernica, the spiritual capital of the Basque people that was bombed in 1937 during the Spanish Civil War. Much of Frank's childhood and adolescence was shaped by the military dictatorship of General Francisco Franco,

who ruled Spain with an iron fist after the Nationalist victory in 1939. The Basques, who were allied with the defeated Republican forces, were harshly dealt with for their political allegiances, and the distinctive Basque language and culture were banned for many decades.

Frank was the youngest of three sons born to Basque farmers Theodore Artiach and Segunda Bengoa. His brothers were Jose, who sadly died of pneumonia at the age of eight, and Manuel. Frank attended elementary school in Nabarniz, where he was educated in his second language of Spanish. He often returned home for lunch, walking through snow without shoes, to eat a few cooked dried beans. At the age of 12 or 13, Frank left school to work on his family's farm, a small enterprise that would have offered little more than a subsistence livelihood.

Shortly after his 18th birthday, Frank decided to emigrate to Australia. He accepted that there was no future for him in Spain, given the poverty of his agricultural background and the ongoing oppression of the Basque minority by the Franco regime. The Basques had a long tradition of emigration, particularly to the Americas following the discovery of the New World. Frank's brother, Manuel Artiach (1928–2017), migrated to the American West, to an area near Boise, Idaho – home to one of the largest Basque diaspora communities in the world. Manuel was employed on a sheep farm for about six years, before he returned to Spain to marry and settle in Guernica.

In one of history's great migrations, more than seven million people have crossed the seas to settle in Australia. The museum's tribute to all of them, The Welcome Wall, encourages people to recall and record their stories of coming to live in Australia

In 1949 Frank signed a three-year indenture agreement to cut sugarcane by hand in the Burdekin district of north Queensland, located between Townsville and Bowen, and known as the sugar capital of Australia. Under the terms of the labour contract, he would be provided with fares, lodging, food and a small wage. Frank was accompanied by his cousin Geno Lequerica and their friend Geno Barrenechea. The three young men were sponsored by Basque cane farmer Manuel Muguira, who is believed to have been a member of Frank and Geno Lequerica's extended maternal family. Manuel Muguira had settled in Queensland in 1925 and was operating a cane farm near Ayr in partnership with his brother, Vincente, and one of their fellow countrymen, Jose Gabiola.

On Christmas Day 1949, Frank and his two companions departed Basque Country and journeyed through France to the Italian port of Genoa. On 28 December they embarked for Australia on the Italian liner *MV Sebastiano Caboto*, which was carrying a large contingent of European refugees and displaced persons who were being resettled after the Second World War. The passage took three and a half weeks, with port calls at Naples, Port Said, Colombo and Fremantle, before docking in Melbourne on 29 January 1950. *Sebastiano Caboto* was scheduled to continue to Sydney, but the onward voyage was cancelled due to a lack of passengers. Frank and his friends were given economy rail tickets and then travelled thousands of kilometres by train through Victoria, New South Wales and Queensland

- 01 Portrait of Frank Artiach from his incoming passenger card, 1950. Reproduced courtesy National Archives of Australia NAA: J25, 1957/8598
- 02 Frank Artiach's alien registration certificate, 1950. Reproduced courtesy National Archives of Australia NAA: J25, 1957/8598
- 03 Josie Barbagallo and Frank Artiach on their wedding day, Home Hill, Queensland, 1957. Reproduced courtesy Mary-Anne Waddell
- 04 Frank slashing the grass at his home in Brandon, Queensland, 2003. The historic Pioneer Sugar Mill is visible in the background at far right. Reproduced courtesy Mary-Anne Waddell



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Frank developed a reputation as one of the strongest cane-cutters in the Burdekin district



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until they arrived at their final destination, the town of Ayr, on 4 February 1950. Frank's worldly possessions consisted of the clothes he was wearing and a small suitcase.

Because of the extreme monsoonal conditions prevailing at the time, Frank was unable to commence work immediately on the Muguira farm, which was situated between Ayr and Brandon. When he eventually started a few weeks later, Frank's first job was to walk up and down the drills (or furrows) in the bare sugarcane paddocks to spread fertiliser by hand. After labouring in the cane fields all day, he took evening classes in English for adults at the school in Iona, a small village south of Home Hill. Frank had a talent for languages and was ultimately able to speak fluent English, as well as Basque, Spanish, French, Italian and possibly even some Portuguese.

By 1953 Frank had completed his contract as a cane-cutter and farm labourer, but he continued to cut cane by hand for several more years. He developed a reputation as one of the strongest cane-cutters in the Burdekin district. One story often told is that when the empty narrow-gauge cane railway trucks came off their tracks, Frank could single-handedly lift them back onto the rails – a feat of strength that could be matched by few others. He learned to drive a tractor and eventually saved enough money to buy his own cane haul-out truck. Geno Lequerica, his cousin and travelling companion who would remain a lifelong friend, recalled that when Frank was learning to drive, others on the farm would take refuge behind buildings or vehicles

in fear for their safety. Frank operated the haul-out truck for a few years, before selling it and using the funds to put a deposit on his own sugarcane farm near Giru in 1958.

The Artiach farm was located on Pilchowski Road, on the western side of the Bruce Highway, and bounded on the south by the Houghton River. The farm had some existing cane paddocks as well as unimproved grazing land, which Frank cleared and filled to create level fields for growing cane. He also had two wells dug on the property to provide irrigation water, and laid a network of underground irrigation pipes to distribute this water to all of the cane paddocks.

Frank married Innisfail-born Josie Barbagallo (born 1934) at St Colman's Church in Home Hill in 1957. Frank and Josie had three children: Mary-Anne (born 1961), Julie (born 1966) and John (born 1972). The young family's first home was in the old cane-cutters' barracks on the farm. Frank's eldest daughter, Mary-Anne Waddell, remembers learning to speak Basque as a child by mimicking the cane-cutters who lived with them in the barracks during the cane-crushing season. In 1972 Frank and Josie had a new weatherboard house built on their farm.

Frank made his only return visit to Spain in 1977, to see his elderly parents shortly before they died. He spent the rest of his working life growing sugarcane and finally paid off the Giru farm in 1978. He sold the cane farm in 1995, and he and Josie constructed a retirement home in Brandon, not far from where he first began working

in Australia in 1950. Tragically Frank died in a tractor accident on the property in 2003. He is survived by his wife, three children and five grandchildren.

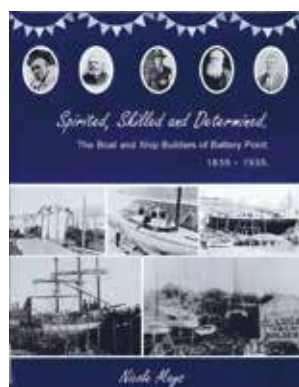
Frank's daughter Mary-Anne notes that he was grateful for the opportunities offered by his adoptive country, especially with respect to education. All three of his children obtained tertiary qualifications – a prospect not afforded to Frank as a first-generation immigrant. Frank remained proud of his Basque heritage and retained a keen interest in the political struggles of the Basques for autonomy and recognition of their unique culture. He never forgot his roots and was widely known in the Burdekin district by his Basque nickname, 'Patxi' (pronounced 'Pat-chi', which translates as Frank in the Basque language).

Mary-Anne registered Frank Artiach's name on the Welcome Wall to honour his life and his small, but significant, contribution to Australia's history. She acknowledges her father's courage in leaving his family behind to move to a foreign land on the other side of the world, where he knew nobody and couldn't speak the language, to work as an indentured labourer cutting sugarcane by hand. Mary-Anne says, 'He perceived Australia as a country of opportunity and wanted to work hard not only for his family but also his community. If he was here today I know he would be humble about his name being placed on the Welcome Wall. He truly was a very fair and honest person who wanted to make a difference.'

The author wishes to thank Mary-Anne and Bruce Waddell for their assistance with this article.

Tasmanian industry and innovation

FROM HOBART TO THE WORLD



Spirited, Skilled and Determined: The Boat and Ship Builders of Battery Point 1835-1935

By Nicole Mays, self-published, 2014. Hardback, 308 pages, illustrations, bibliography, appendix, index. ISBN 9780646931340. RRP \$59.99, available from nicmays@gmail.com

IT WAS ALL HAPPENING in Hobart's Battery Point once, and those involved probably thought it would last forever. In a sense it does, but now it's mostly in black and white images capturing the moments – scenes of boatbuilding, tradesmen and craftsmen at work, the principals planning their next project, workers clocking on or putting on the last coat of varnish. Vessels would launch into the bay, and the wind, sun and snow would all come and go. You have to imagine the sounds of major industry, and the smell too – that low-tide saltwater and seaweed mix, Stockholm tar, paint, metal work, smoke and fire, and Huon pine shavings.

All of this is captured in two superbly researched and presented books by the very talented and dedicated Nicole Mays. They take their titles from adjectives deserved by the trade, and both link together: *Spirited, Skilled and Determined: The Boat and Ship Builders of Battery Point 1835-1935* is followed by *Industrious, Innovative, Altruistic: the 20th Century Boat Builders of Battery Point*. As history books, these volumes indicate that this period, though now in the past, is one whose rich heritage must be recorded for the future.

The first book, *Spirited, Skilled and Determined*, really does dig into the past. The infant colony of Tasmania (known as Van Diemens Land until 1856) was still finding its feet when boatbuilding began there, but the industry was inevitable, given that water was the only means of contact with anywhere outside Hobart. With a trove of resources built around the superb woods available in Tasmania, boatbuilding grew into a significant industry that made high-quality vessels. Mays works through the builders individually, bringing to life

as much as can be known about some of the earlier ones, before we reach more familiar names such as Inches, Blore, Abel, Coverdale, Purdon and Featherstone. Mays notes the personal background of each builder, along with key work-related events and achievements – all wonderfully researched with complete footnotes that show the depth and accuracy of the narrative. A genealogy at the end of each builder's story is a bonus that provides a neat conclusion before moving on to the next entry. Then there are the images, the wonderful shots of the builders' boats and vessels – under construction, launching, out on the Derwent – and portraits of the subjects and their workforces.

Industrious, Innovative, Altruistic focuses on 20th-century craft – and colour images get a look in now. Following a similar pattern to that of the first book, Mays delves deeply into the names that dominated the last century and saw the trade at its height before it slowly began to fade. This demise was a consequence of social and economic progress in the community and the world at large that saw the end of large-scale bespoke building here and almost everywhere else. Once again we have an enormous amount of detailed research for which to thank Mays as she tells the builders' stories, lists their craft and brings wonderful images out into the open from various sources, including one of the most valuable – the personal albums and archives left behind.

'Still Going Strong' is one of the last chapters, and notes about 115 craft from Battery Point still in use. Many of the vessels built by people in the book are still out on the Derwent and other waters. This leads in to Mays' next task – helping Graham Broxam



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to produce a revised version of *Those that Survive*, a book eagerly awaited by anyone interested in these heritage craft.

One more book with a Battery Point origin is *Blood, Sweat and the Sea*, the story of an international success from the bottom of the world. Nicole Mays had carefully put together the story of Jock Muir, one of the last Battery Point boatbuilders. Jock's son John became a diesel mechanic, but John's company, Muir Engineering, is now a world leader in anchoring equipment.

Mays delves deeply into the names that dominated the last century and saw the trade at its height before it slowly began to fade

In an expansively illustrated narrative, author Mike Swinson, assisted by Nicole Mays and designer Georgie Pajak, has told the story of John and the next generations of the Muirs. The text spans the world and brings to life a remarkable story of determination to succeed, based on confidence in the products John Muir was designing, building and using.

Muir Engineering remains a Tasmanian business. As well as being the major force in Australian anchoring systems technology since 1968, it has become recognised as one of the leaders and innovators for anchoring systems worldwide, and they are Australian made.

Muir Engineering was awarded the 2013 Marine Export and Superyacht Industry Champion banner and has been inducted into the Australian Marine Export and Superyacht Industry Hall of Fame.

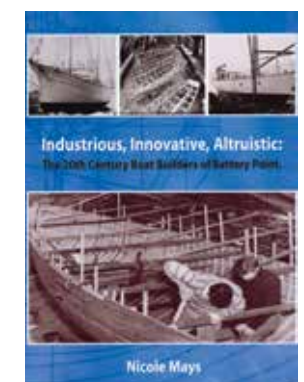
The story of this success and of the family behind it is narrated generously in this beautifully presented book. The foreword by Bob Clifford AO, another international maritime industry success from Tasmania, reminds us of the hard times these people have been through to get their companies to the forefront of their industry. Clifford relates that he was once late in paying an invoice to Muir because he was short of cash due to a defaulting customer, so the bailiffs came looking for some assets and he nearly lost the fridge. Bearing no grudges, he still specifies Muir winches on his Incat craft.

Muir winches are on some of the top superyachts worldwide, and they feature on many pages in the book, as do the stories of how the business built on each success to create more. Swinson does this well, working through the varying periods in the story so far. A huge amount of detail includes personal recollections of those involved at the time. The modern Muir family is represented, a strong reminder of how important family support and involvement are in so many success stories.

Together, these three books are worthy additions to the ongoing story of Tasmanian maritime heritage, and with more promised from Nicole Mays in particular, the future looks bright for recording and presenting more of this state's exceptional craft.

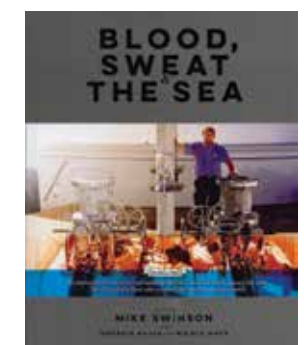
David Payne, Curator of Historic Vessels

With a trove of resources built around the superb woods available in Tasmania, boatbuilding grew into a significant industry



Industrious, Innovative, Altruistic: The 20th Century Boat Builders of Battery Point

By Nicole Mays, published by Navarine Publishing, Hobart, 2017. Hardback, 368 pages, illustrations, bibliography, index. ISBN 9780992366049. RRP \$70.00



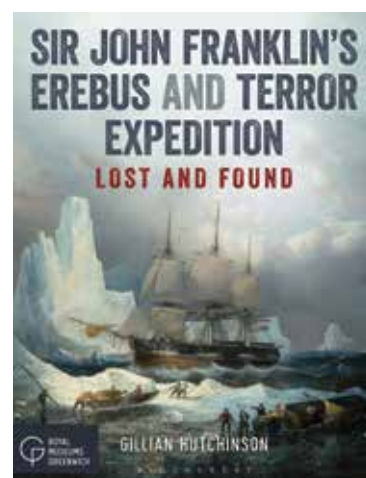
Blood, Sweat and the Sea

By Mike Swinson and Nicole Mays, published by Forty South Publishing, Hobart, 2017. Hardback, 416 pages, illustrations, index. RRP \$79.00

01 Probably the earliest existing image of Battery Point's Napoleon Street boatyards, from about 1860. Tasmanian Archive and Heritage Office NS179/3/1/195

A doomed fight for survival

THE FATE OF THE *EREBUS* AND *TERROR* EXPEDITION



Sir John Franklin's Erebus and Terror Expedition: Lost and Found

By Gillian Hutchinson. Published by Adlard Coles Nautical/Bloomsbury, London and New York, 2017. Paperback, 176 pages, illustrations, index. ISBN 9781472948694. RRP \$39.00

AMONG THE MANY EVOCATIVE IMAGES in *Sir John Franklin's Erebus and Terror Expedition: Lost and Found* is a sketch by Edward Harrison, a member of one of the search expeditions that set out in 1850. At the time, there was still a general hope that the missing men would be found and rescued. The expedition was supposedly equipped with ample supplies and the most modern of Victorian equipment, and crewed with professional naval men, many of whom – like Franklin himself – were experienced in Arctic conditions. Harrison imagined a scene with the *Erebus* and *Terror's* crews playing a very British game of cricket in the incongruous setting of an icefield, as balloons drop messages around them and a lookout perched up a flagstaff signals a rescue ship in the distance. The buoyant optimism forms a stark contrast to the photographs of artefacts found at the 'Boat Site' in Erebus Bay in 1859, alongside skeletal remains damaged by scavenging animals. Those objects found inside the boat – which was mounted on a sledge to haul over land – told the real story of what fate befell Franklin's men. Among the beautifully photographed objects from the site are curiously modern-looking snow goggles to protect against snow glare, a Masonic seal belonging to an unidentified Freemason in the crew and a neck scarf made of silk with a seaweed pattern. If there were any survivors from the 129 men on Franklin's

expedition still alive in 1850, they were in the final throes of an ultimately doomed fight to survive.

Sir John Franklin's Erebus and Terror Expedition: Lost and Found by Gillian Hutchinson is a companion guide to the exhibition *Death in the Ice* by the National Maritime Museum, Greenwich, UK. The story of the expedition – its origins, the fate that befell it and the efforts to reconstruct the story from Inuit accounts and scattered objects, including human remains – is a complex one, as detailed in 'Legacy of a Lost Explorer' (*Signals* 112, September–November 2015). The reader will appreciate the book's logical chapter progression that seeks to untangle many strands to create a coherent narrative from a story that was pieced together from Inuit accounts and objects collected in a non-linear fashion over more than 150 years of investigation and discovery. Those new to the tale will particularly appreciate the clarity and concision, as it is easy to get lost among the many accounts of subsequent expeditions.

The Franklin tale is dogged at every step with controversy and conflicting interpretations, many of which are referenced in the book, from questions around Franklin's competence to lead the expedition through to more recent forensic investigations into whether lead poisoning contributed to the expedition's collapse.



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The most sensational and controversial of all 19th-century revelations about the fate of Franklin's men – John Rae's evidence of cannibalism among the crew as they struggled to survive in the Arctic wilderness – is treated in a matter-of-fact, non-lurid way, unlike in many other accounts. The scope of *Lost and Found*, with its succinct and direct delivery, manages to relate all these intricacies in a narrative tone that is both brisk and engaging, capturing the poignancy of the images without lapsing into mawkishness.

But it is the images that are the stars of the story, from the period engravings that imagine and contextualise the events of the text, to the haunting artefacts that returned from the Arctic archipelago when their original owners did not – a pair of gloves, Sir John Franklin's Royal Hanoverian Guelphic Order badge that can be seen in the photo taken of him on board *Erebus* before departure, an Inuit knife made with a salvaged British blade. What was lost by the expedition and then found by searchers is supremely evocative both of the individual lives and of the group's fight to survive.

The penultimate chapter addresses the recent discoveries of *Erebus* and *Terror*. While it is clear from this and the final chapter that many questions remain to be answered (some of which may some day be found in the remarkably well-preserved vessels),

the archaeological excavation of these ships is very much a work in progress and, as such, it is still too early to assess the full impact of the sites on Franklin research (see 'Terror in the Ice: Franklin's ships begin to give up their secrets', *Signals* 121, December 2017–February 2018). The Franklin story is far from closed, as the book makes clear: 'every new discovery throws up new questions'.

The expedition was supposedly equipped with ample supplies and the most modern of Victorian equipment

One aspect that could have been more prominently addressed was the Inuits' role in the Franklin story. It is particularly relevant in light of recent work that has been done with Inuit oral history, a significant factor in finding the wreck sites, and is true of the entire history of interpreting the disaster. Inuit accounts collected by Franklin searchers performed a vital role not only in locating physical artefacts (including the ships themselves), but also in providing oral accounts about the final days of the expedition. That narrative is woven through the text and its importance is acknowledged

The Franklin tale is dogged at every step with controversy and conflicting interpretations



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by the author – as is the ongoing role in and ownership of the testimony by the local community – but it is an aspect of the continuing Franklin story that might well have merited its own chapter.

For those looking for a clear, concise account of the complex Franklin story, this guide serves the purpose well, providing a well-illustrated contextualisation of the objects that were left scattered in the wake of a group of men as they trekked across the Arctic Archipelago. From personal objects to the ships and equipment that served them, the disaster that emerges from the pages is less the well-visited grand Victorian melodrama of legend, but rather a narrative that – while still epic in scope – is a very human, intimate story of individuals, who left behind them broken clay pipes, boxes of needles and shards of bones to bear witness to their fate.

Reviewer Inger Sheil is a project officer at the museum and the author of *Titanic Valour: The Life of Fifth Officer Harold Lowe* (The History Press, 2011).

- 01 An 1850 sketch by Edward Harrison takes an optimistic view of what might have happened to the expedition.
- 02 A hybrid knife, with Inuit handle and British blade.
- 03 Snow goggles used by an expedition member. All images courtesy Adlard Coles



01

01 Australian launch of Seabin at the museum
The international Seabin Project held the first Australian demonstration of its unique floating 'sea bins' on World Oceans Day (8 June) at the museum. Invented and developed by two Australians, Peter Ceglinski and Andrew Turton, the Seabin Project has created a unique 'floating debris interception device' to collect rubbish, oil, fuel and detergents from our oceans, with the ultimate goal of pollution-free oceans for future generations. Each Seabin can catch an estimated 1.5 kilograms of floating debris per day, including microplastics as small as 2 millimetres. The museum trialled the Seabin overnight, with it collecting a staggering amount of rubbish and debris, including tiny pieces of plastic.

According to the Seabin Project, an estimated 5.25 trillion plastic particles currently float in the world's oceans, with 10–20 million tonnes of plastic ending up in our oceans each year.

The Seabin Project returned to the museum for Science Week in August.

Story Shirani Aththas, photo courtesy Seabin



02

02 Battle of the Coral Sea commemorations
On 5 May 2018 the museum again partnered with the Naval Officers Club of Australia to mark the 76th anniversary of the Battle of the Coral Sea with a special commemorative service and luncheon. His Excellency Mr Sumio Kusaka, Ambassador of Japan, and Mr James Carouso, US Chargé d'Affaires, were the guests of honour, laying wreaths on the bow of HMAS *Vampire* along with museum Director Kevin Sumption PSM and President of the Naval Officers Club, Mr Rick Bayley.

Pictured, from left: CAPT Craig Powell RAN representing Commander Australian Fleet RADM Jonathan Mead; US Chargé d'Affaires, Mr James Carouso; museum Director Mr Kevin Sumption PSM; His Excellency Mr Sumio Kusaka, Ambassador of Japan; Naval Officers Club President Mr Rick Bayley; CAPT Shinsuke Amano JMSDF, Naval Attaché Embassy of Japan; and Mr Donald Maynard, Consulate General of the USA.

Story Shirani Aththas, photo Andrew Frolows



03

03 James Cameron opens *Challenging the Deep* exhibition Deep-sea explorer and Academy Award-winning film maker James Cameron made a whirlwind visit to Sydney in May to open the museum's major new immersive exhibition *James Cameron – Challenging the Deep*. It focuses on his history-making deep-sea exploration career and the many innovations he has pioneered in underwater film making.

While in Sydney, James Cameron met and answered questions from Year 9 students from Sydney Secondary College Balmain Campus (pictured), showing them how to operate ROVs (remotely operated vehicles) in the museum's waters.

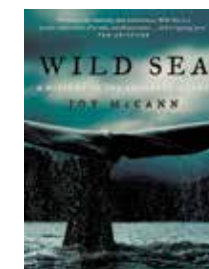
Story Shirani Aththas, photo Andrew Frolows

Correction
In *Signals* 122, image 01 on page 70 was incorrectly captioned as showing Joseph and Mario Cutajar. It is, in fact, of Frank and Mario Cutajar. We apologise for this error.

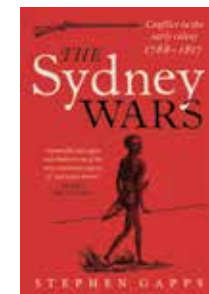
SEE WHAT'S IN STORE



MARCIA LANGTON: WELCOME TO COUNTRY
Curated guidebook to Indigenous Australia and the Torres Strait Islands by respected Elder and author Professor Marcia Langton.
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WILD SEA
Environmental and cultural histories of the Southern Ocean, drawn from accounts by sea captains, whalers and explorers, scientific reports, ancient beliefs and Joy McCann's own voyage.
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THE SYDNEY WARS
The history of military engagements between Europeans and Aboriginal Australians around the greater Sydney region in the first years of colonial Sydney.
\$35.00 / \$31.50 Members



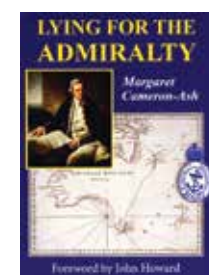
KAKADU PLUM AND GOAT'S MILK HAND CREAM
High in Vitamin C to help prevent signs of ageing through anti-oxidant properties. Features artwork by Alma Granites from Warlukurlangu Artists of Yuendumu, Australia.
\$19.95 / \$17.95 Members



CARPATHIA
The search for the wreck of *Carpathia*, the Cunard steamship that rescued more than 700 *Titanic* survivors and was later sunk by a German U-boat in 1918.
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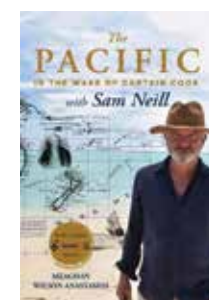
TITANIC 'HEART OF THE OCEAN' PENDANT
A replica of Rose's pendant from the film *Titanic*. Dark blue Austrian crystal (3 cm diameter) and zinc alloy chain (48 cm long).
\$99.95 / \$89.95 Members



LYING FOR THE ADMIRALTY
Margaret Cameron-Ash has subjected James Cook's journals and charts to forensic examination, and presents a new theory for anomalies in his reports.
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Acknowledgements

The Australian National Maritime Museum acknowledges the support provided to the museum by all our volunteers, members, sponsors, donors and friends.

The museum particularly acknowledges the following people who have made a significant contribution to the museum in an enduring way or who have made or facilitated significant benefaction to it.

Honorary Fellows

RADM Andrew Robertson
AO DSC RAN (Rtd)
John Mullen

Ambassador

Christine Sadler

Honorary Life Members

Robert Albert AO RFD RD
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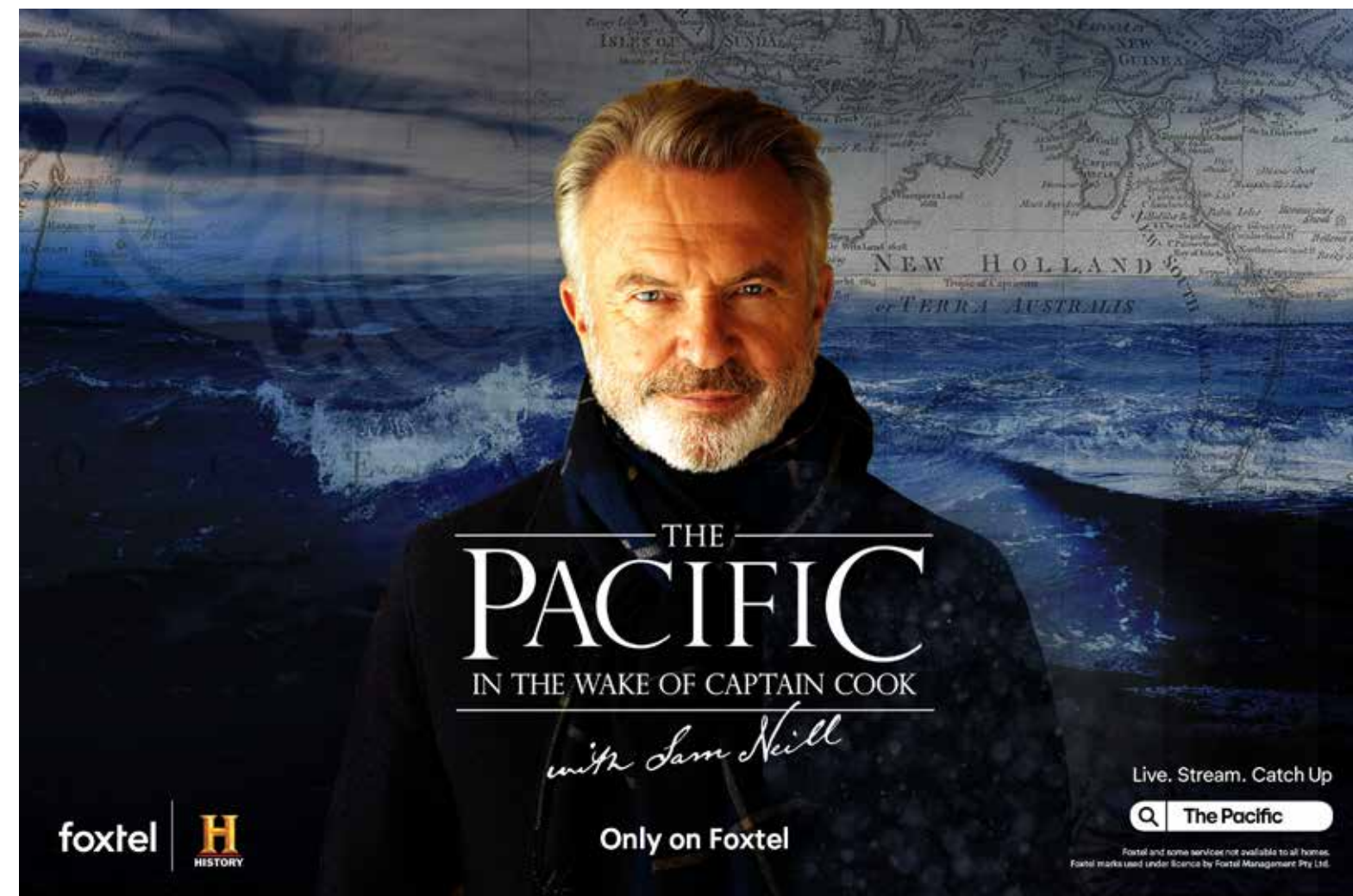
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01



02

- 01 Captain McCole, his wife Adelaide, sons Malcolm and Duncan, and pets aboard *Mount Stewart*, 1923. Samuel J Hood Studio ANMM Collection 00036760
- 02 Congratulations to Gillian Lewis, who won the *Signals* 123 caption competitions with this entry: 'The stevedore didn't tell me about THIS type of deck cargo ...'.



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