



Call the Hands



Issue No. 58

November 2021

From the President

Welcome to the Society's 58th edition of *Call the Hands* and accompanying occasional papers. The occasional papers are available to members through the members' website page. These papers are made available to the community after twelve months.

RAN and ANARE activities in Antarctic waters was a theme in the October edition of *Call the Hands*. This month the Arctic and the growing use of sea routes through its waters is the subject of a paper by Robert Hetherington. His paper is republished courtesy of the Australian Maritime Museum volunteers with whom the Society maintains a close relationship. Another paper inspired by the new dockyard crane, now a feature on Sydney's skyline by Society Vice President John Jeremy looks at other iconic cranes, particularly those on Cockatoo Island which supported the Fleet for many decades.

The decommissioning of the RAN's two oldest vessels HMA Ships *Paluma* and *Mermaid* in September went relatively unnoticed by many. Similarly, hydrographic survey operations are generally taken for granted by the community as are the charts produced by the Hydrographic Branch. Their decommissioning does highlight a major shift in the nature of hydrographic survey in Australia where industry partners are now in long-term partnership with Defence to deliver hydrographic data and the RAN focuses on military survey capabilities.

The RAN's Hydrographic Department was established in Melbourne on 1 October 1920 after encouragement from the British Government which curtailed its surveying activities post WW1. HMAS Geranium, the RAN's first hydrographic ship and its successors have charted enormous areas of ocean in mostly remote locations and performed heroic tasks during World War Two.

The much-anticipated launch of three new books by Society volunteers occurs this month. They are; the Society's own fifty year history, the history of the Ikara missile and the second edition of Australia's Colonial Navies. They are now available in print and digital form and can be ordered through the [website shop](#). I am sure you will find them of great interest.

Finally, the Society's 2021 AGM is scheduled for Thursday 18 November at 1100. The notice of meeting was distributed on the 4th of October and related papers made available through the members area of the website. Registration to participate in this online meeting is via this [link](#). Please support the Society and join the meeting.

Kind regards,

David Michael

Support the Society

Although *Call the Hands* is a free service to the community, produced by volunteers there are costs. Our objective is simply to promote understanding of Australian naval history. Voluntary contributions are essential to deliver this service to readers. If you value our work **please consider a donation**. <https://www.navyhistory.org.au/donate/>



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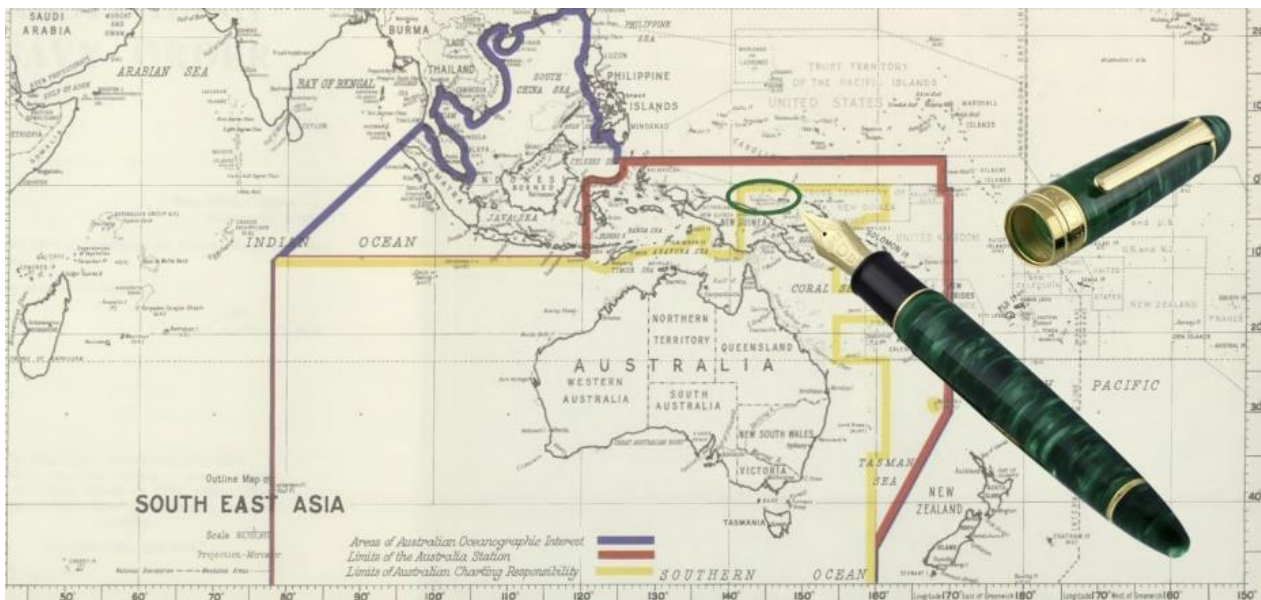
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Chiefs of Navy' use of Green Ink

The practice of Australian Chiefs of Naval Staff and Chiefs of Navy using green ink to annotate and sign administrative correspondence, stems from a Royal Navy tradition established in the early 20th century.

The origin of this custom may well date from Admiral Jackie Fisher's second and brief appointment as the First Sea Lord at the British Admiralty at the start of the First World War. In his biography of Fisher (The Life of Lord Fisher of Kilverstone, Vol 2 [1929], 161) Admiral Bacon relates that on Fisher's return to the Admiralty in October 1914 he instituted a special 'RUSH' label in order to expedite administrative correspondence. On discovering that the First Lord of the Admiralty, Mr Winston Churchill, had "monopolised the red pencils and ink for his minutes, Fisher seized the green and used that colour exclusively".



Henceforth the use of green ink by successive First Sea Lords, Chiefs of Naval Staff and Chiefs of Navy both in the RN and RAN took hold becoming an enduring tradition. In today's digital age the use of green font routinely substitutes the more traditional green pen.

From: [Chiefs of Navy use of Green Ink | Royal Australian Navy](#)

Capable Beyond Our Dreams: Australia's Bathurst Class Corvettes 1940-1960

The Seapower Centre has released a new book which is available for online download.

This book is not about the people, the flesh, blood and souls of the men and what they did. It is a book about the ships themselves, the nuts and bolts, the steel and rivets, the very fabric of the ships. It is a comprehensive record...in written word, photographs and detailed drawings, of this little-praised class of warship that, while small and apparently insignificant when compared with the better-known and much larger frigates, destroyers and cruisers of Australia's war-time fleet, played a vital role in World War II



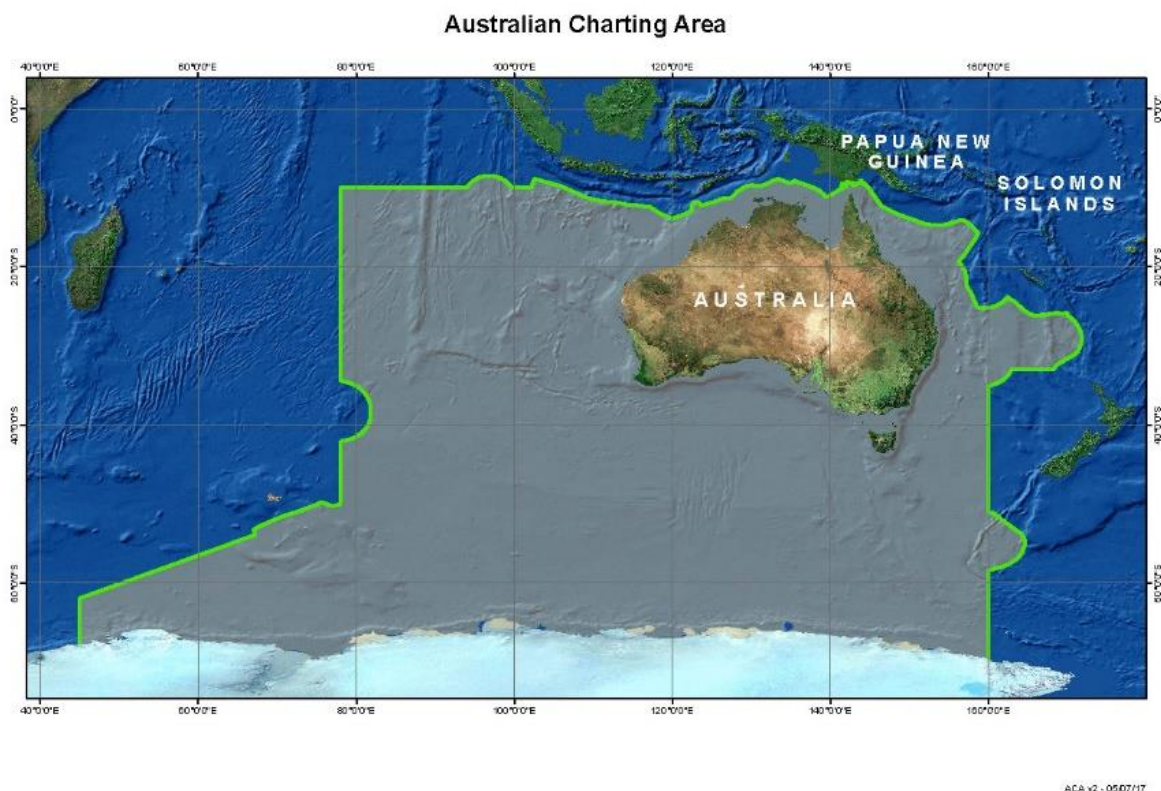
You can download the book at [Capable Beyond Our Dreams: Australia's Bathurst Class Corvettes 1940-1960 | Royal Australian Navy](#)

Australia's Charting Area

The RAN Hydrographic Service has responsibility for charting more than one eighth of the world's surface, stretching as far west as Cocos Island in the Indian Ocean, east to the Solomon Islands, and from the Equator to the Antarctic. Following the recent decommissioning of two Survey Motor Launches four ships and one aircraft are now engaged in survey operations.

With less than half of the area around Australia surveyed to acceptable standards new technology and engagement with civil sector partners is expected to assist greatly in coming years.

The following from the Australian Hydrographic Office [website](#) describes Australia's charting responsibilities. 'The Australian Charting Area (ACA) covers waters where Australia has specific obligations under the International Convention for the Safety of Life At Sea (SOLAS) convention, United Nations Convention on the Law Of the Sea (UNCLOS) and the Navigation Act 2012. The ACA also covers areas where Australia provides hydrographic services, including the publication of nautical information and International Series (INT) Charts as agreed by members of the International Hydrographic Organisation. The AHO has supporting arrangements in place to provide hydrographic services to other countries namely, Papua New Guinea and Solomon Islands.'



HMA Ships *Paluma* and *Mermaid* decommissioned

The Navy's oldest vessels HMA Ships *Paluma* and *Mermaid*, were farewelled from service during a ceremony at HMAS *Cairns* on Saturday 18 September after more than 31 years of service each. During their service these survey motor launches collected hydrographic data necessary for creating products used by military, commercial and private vessels to safely navigate the waters around Australia. In addition to their survey function the ships also fulfilled operational support roles in recent years. Both ships deployed to Bougainville Island in support of the peace monitoring group conducting Operation *Belisi* II ashore in 1999 as well as support for the United Nations transitional administration to East Timor

The title of 'First Lady of the Fleet' held by *Paluma* was passed on to HMAS *Shepparton* during the decommissioning ceremony.

The decommissioning of *Paluma* and *Mermaid* was part of the staged introduction of up to eight specialist vessels, which will have robotic, autonomous and artificial intelligence systems. Under Project SEA1905-1 Defence will be provided with new capabilities to meet the growing threat of mines, while developing maritime environmental knowledge.



HMAS *Paluma* and *Mermaid* Decommissioning Ceremony, RAN Image

Video: Department of Defence Australia, [Decommissioning of HMA Ships *Paluma* and *Mermaid*](#)

Future RAN Hydrographic Operations

The decommissioning of HMA Ships *Paluma* and *Mermaid* marked the start of the staged introduction of up to eight specialist vessels utilising robotic, autonomous, and artificial intelligence systems.

Australia's hydrographic capability in the future will involve a long-term partnership between Defence and members of Australia's hydrographic industry known as the HydroScheme Industry Partnership Program (HIPP). Through this program, industry will utilise the latest hydrographic techniques and state of the art equipment to deliver hydrographic data to Defence, which will chart and disseminate this information. HIPP is a \$150 million Government investment in Australia's commercial hydrographic industry during a period of five years from 2020 to 2025. It involves a panel of six Australian and one New Zealand-based hydrographic survey companies conducting maritime surveys. Administration of the panel is the responsibility of the Australian Hydrographic Office (AHO).

Further Reading:

Defence Media Release, 26 February 2020, [Hydroscheme Industry Partnership Program](#)
Australian Hydrographic Office website [HydroScheme outline](#)

New Mine Countermeasures and Survey Vessels

Defence Project SEA 2400 which includes HIPP is entitled the 'Hydrographic Data Collection Capability Program'. It will deliver vessels with military survey capability to replace the Leeuwin-class survey vessels. Those vessels are expected to be a variant of the Arafura Class offshore patrol vessels capable of both mine countermeasures and maritime survey. They will be constructed at the Henderson precinct in WA in the mid-2020s. A number of robotic and autonomous systems will be incorporated into these new vessels. These vessels have a length of 80 metres and displacement of 1640 tonnes.

Noting that the existing hydrographic survey ships HMAS *Leeuwin* and HMAS *Melville*, displace 2,205 tonnes the OPV option may be not be suitable.

Further Reading:

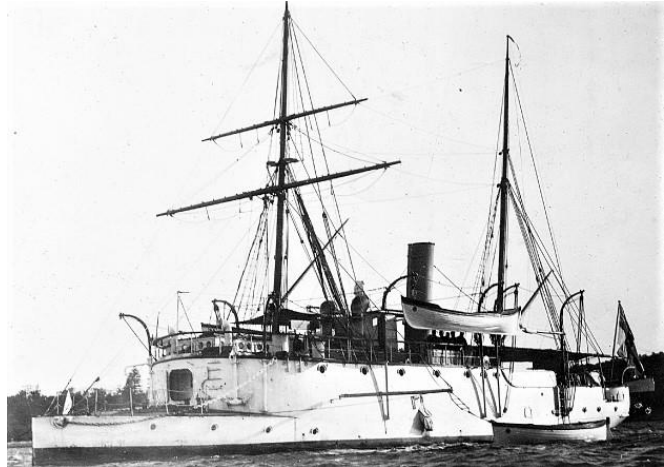
Sea Power Centre Australia, [Arafura Class OPV](#) overview



New Ship Arafura at the Osborne Naval Shipyard, SA. RAN image

Paluma (I)

Gunboats *Paluma*¹ and her sister ship *Gayundah* were built in the United Kingdom for the Queensland Marine Defence Force. *Paluma* was launched in May 1884 and commissioned on 28 October 1884. Under a prior arrangement between the Admiralty and the Queensland government *Paluma* was fitted out for survey work in northern Australian waters. Her 6 and 8-inch guns were not mounted and space made available was converted to facilities for hydrographic survey.



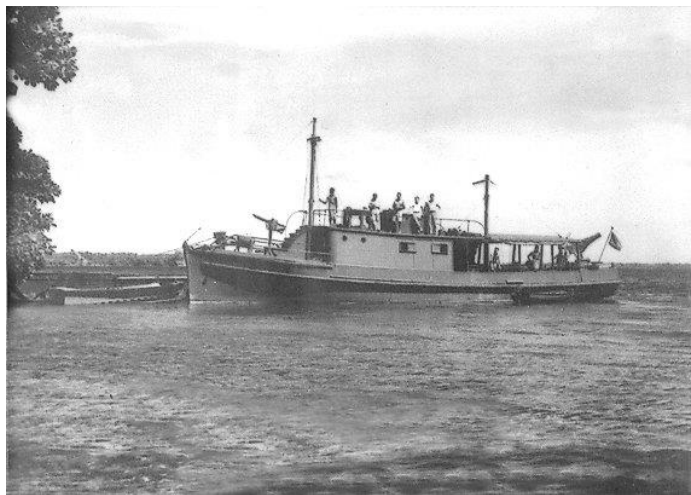
Having completed her ten-year term of survey duty with the Royal Navy, control was passed to the Queensland government in March 1895. From 1895 until 1949 *Paluma* fulfilled many roles for different organisations. These included; a training role for both the Queensland Naval Brigade and Australian Navy following Federation and harbour duties until 1916. After sale to the Victorian Government in 1916 she was renamed, *Rip* serving as a lighthouse tender and support vessel until 1949. She was finally broken up at Melbourne in 1950-51.

Further Reading:

Ross Gillett, [Australia's Colonial Navies](#) published by the NHSA Sea Power Centre Australia, [HMAS Paluma History](#), available

Paluma (II)

Paluma, a 20m launch was requisitioned for wartime use on 11 September 1941 and purchased on 1 June 1942. Initially employed as the examination and patrol vessel at Thursday Island it was then employed to insert Coastwatchers and gather intelligence for a proposed Allied offensive against Rabaul. However, the Japanese move from Rabaul forestalled any Allied attack on Rabaul and shifted focus to a counter offensive in New Guinea.



As Japanese forces controlled the prewar sea route to the north coast of New Guinea, Allied forces had great difficulty resupplying ground forces particularly in the Buna area. An inshore sea route in the area of operations had to be charted between Milne Bay and Oro Bay for larger vessels than those in the US Army Small Ships Section which were making nightly transits of this route. This area of the coast was both dangerous and essentially uncharted. The task of surveying a reliable, large vessel, route from Milne Bay to Oro Bay fell to HMAS *Paluma* in August 1942.

By early November *Paluma* had found a route around Cape Nelson. The hydrographic section in the RAN on learning about the local effort lent assistance with surveys by HMAS *Warrego*, *Stella*

and *Polaris* which assisted with finalising the safe passage for large ships from Milne Bay to Cape Nelson. *Paluma* worked the route forward to Oro Bay so that by 11 December 1942 the US Army controlled Dutch vessel *Karsik* was able to deliver tanks to the front. Immediately after *Karsik*'s passage the regular convoys code named Operation *Lilliput* began operations.

Later in the War from 26 March 1944 *Paluma* supported Coastwatcher operations. She was accompanied in this role by HDML 1321. Interestingly, these ships were commanded respectively by the brothers SBLT P. Palmer, RANVR, and SBLT E. Palmer, RANVR. Post War *Paluma* was returned to her owners, eventually meeting her fate in a fire near Airlie Beach in the 1990s.

References: Gill, G. Hermon (1968). *Royal Australian Navy 1939–1942*
Website ozatwar, <https://www.ozatwar.com/sigint/paluma.htm>

Paluma (III)

HMAS *Paluma*, a 120 ft former stores carrier was commissioned as a small survey vessel on 18 March 1957. During its fifteen-year service life this remarkable ship steamed 184,000 miles on coastal surveys the majority of which was in New Guinea and northern Australian waters.



After its initial survey of the St Vincent Gulf area in 1958 *Paluma* commenced a large and ambitious hydrographic survey in Papua New Guinea which for *Paluma* lasted seven years. During this time the ship returned to Australia for refits only. Many maintenance periods were conducted in Port Moresby.

In 1965 *Paluma* commenced operations in northern Australian waters and in 1967, while based in Cooktown during a survey of Cook's Passage through the Great Barrier Reef *Paluma* discovered a new two-mile-wide opening through the Reef, the widest known opening in a 200-mile stretch of reef. Other important surveys were of the inner reef route from Princess Charlotte Bay to Torres Strait which had not been surveyed since 1890 and a deep route to the Hay Point coal-loading terminal.

Paluma was paid off for disposal at Sydney on 30 March 1973. She was then sold to a Queensland based company who renamed her *Matlock*, and used her for hydrographic work.

Paluma (IV)

HMAS *Paluma* was the first ship of the *Paluma* Class (SML) and the fourth to bear the name *Paluma*. A custom-built survey vessel she was designed for surveying in the shallow coastal waters of the Great Barrier Reef and Northern Australia. She was built by Eglo Engineering of Adelaide in November 1987 and Commissioned on 27 February 1989. Her catamaran design provided good stability in rough weather and allowed her to sit well out of the water, drawing only 2.2 metres, ideal for operations in shoaling and reef waters. *Paluma* commissioned on 27 February 1989 and decommissioned at HMAS



Cairns on 18 September 2021.

Video of the Month

Whilst undergoing navigational training on 27 November 1956, Fairy Firefly VX 381 crashed into Hare Bay within Jervis Bay, in New South Wales after colliding with Fairey Firefly WD 887. The latter aircraft was not located until 2016.

Both aircraft were based at HMAS Albatross. The crew of VX 381 survived the crash. However, the crew of the missing Firefly WD 887 are still unaccounted for. The missing crew members were Sub-Lieutenant Arthur Arundel, Royal Navy and Midshipman Noel Francis Fogarty, Royal Australian Navy. The two crew who were rescued from VX 381 were Sub-Lieutenant J.D. Eagles, Royal Navy and Midshipman Donald Geoffrey Debus, Royal Australian Navy.

The wreckage of VX 381 was located in 1983 in about 13 metres of water.

The video is a 3 minute video of a dive onto the wreck of the aircraft.

[VX381 Fairy Firefly wreck on Vimeo](#)



Annual General Meeting: 2021

This meeting is scheduled for Friday 18 November 2021 at 1100 (AEDT). It will be conducted as a Zoom meeting with members required to register in advance to ensure they are eligible to vote.

Members please register via this [link](#).

The notice of meeting was distributed on the 4th of October and related papers made available through the members area of the website.

We look forward to your support.

Photo of the Month



From November 1949 the RN's 4th Submarine Flotilla was based at HMAS Penguin in Sydney to provide anti submarine training for the RAN and RAAF with the operating cost split between the two nations. The submarines were rotated every few years with the last submarine of the squadron leaving in 1969.

The submarines were frequently on display during events at Garden Island. This photograph of HMS *Tactican* was taken during the Trafalgar Day display at Garden Island on 21 Oct 1950.

News in Brief

Evolved Cape-class patrol boats

The first of six Evolved Cape-class patrol boats was recently launched at the Austal Ships shipyard in Henderson, Western Australia.

Head Maritime Systems Rear Admiral Wendy Malcolm said the vessels would replace the Navy's Armidale-class patrol boats and would be used as interim patrol platforms until the commissioning of the Arafura-class offshore patrol vessels.

Austal has commenced construction on the remaining five boats, the first of which is expected to be accepted by the Navy in early 2022.



Royal Navy Nuclear-Powered Submarine *Astute* visits Australia

The Royal Navy nuclear-powered submarine (SSN) *Astute* recently visited Fleet Base West. The visit, a first for an *Astute*-class submarine, demonstrated "the strong existing naval partnership between Australia and the United Kingdom" according to the Australian Department of Defence (DoD).

The visit comes six weeks after the announcement of AUKUS, an enhanced trilateral security partnership between Australia, the UK and the United States.



Royal Australian Navy cleared to buy 12 more MH-60R submarine-hunting helicopters

The US Department of State has approved a potential Foreign Military Sales (FMS) deal for the Royal Australian Navy (RAN) of 12 additional Sikorsky MH-60R Seahawk anti-submarine helicopters for an estimated \$985 million.

The RAN already operates a young fleet of 23 examples of the MH-60R that it acquired between 2013 and 2016.

The RAN flies its current Seahawk fleet from the back of its Anzac Class frigates and Hobart Class DDGs. It is not clear where it intends to base the additional MH-60Rs.



This Month in History

November 1884	HMQS GAYUNDAH sailed from Newcastle upon Tyne, England, for Brisbane, QLD. The ship was under the command of CAPT Henry Townley Wright, RN, for the voyage.
November 1900	AB J. Hamilton, of the New South Wales Marine Light Infantry, died at Tung Chao in China. He was the first sailor to die in an Australian expeditionary force overseas.
November 1911	The site of the RAN College was selected by Parliament. After consideration of several areas, the site at Captains Point, Jervis Bay, NSW, was selected. Construction of the College began the following year, but an interim College was opened at Osborne House, Geelong, VIC, where the first class of Cadet Midshipman commenced their training in 1913. The College transferred to the Jervis Bay site in 1915.
November 1914	HMAS UNA became the first Australian warship to carry aircraft when she transported two aircraft, and their pilots, from Sydney to New Guinea. The aircraft were not used because the German forces surrendered before their arrival.
November 1918	HMAS PARRAMATTA entered the Black Sea. PARRAMATTA was employed as a dispatch boat between Sevastopol and Constantinople.
November 1925	LEUT R. C. Casey, RAN, a 1916 entry to the Royal Australian Naval College, was lost when HM submarine M1 was lost with all hands off Devon, England.
November 1941	HMAS BALLARAT sailed for Jervis Bay to give anti-submarine protection to the transport QUEEN MARY. That ship and another giant liner of the Cunard Line, QUEEN ELIZABETH, were to comprise Convoy US13 to the Middle East, the troops embarked being mainly from the 6th, 7th and 9th Australian Divisions
November 1944	HMA Ships KALGOORLIE and TOWNSVILLE completed a three months' search for mines in the Great Barrier Reef, during which time 491 mines were swept. The mines were laid by HMAS BUNGAREE, in 1942 and 1943.
November 1949	The RN Fourth Submarine Flotilla was commissioned at Sydney to provide a submarine training facility for personnel of the RAN and the RNZN. The first submarines to join the flotilla were HMS TELEMACHUS and HMS THOROUGH.
November 1956	Firefly VX381 was involved in a midair collision over Jervis Bay, NSW. The pilot, SBLT(P) David Eagles RN, was able to successfully ditch the aircraft in Hare Bay and he and his pupil observer, MIDN Donald Debus RAN were rescued. The other firefly, WD887, struck the water at high speed, breaking apart and killing pilot Acting Sub Lieutenant Arthur Arundel and trainee observer Midshipman Noel Fogarty. The wreck of VX381 was found in Jervis Bay in 1983 and the wreck of WD887 in 2016.
November 1964	The RAN Nursing Service, (RANNS), which had been disbanded in 1948, was re-formed. Initially 21 registered nurses were commissioned, and they commenced duty at HMAS PENGUIN and HMAS CERBERUS. The RANNS continued as a separate service until amalgamated with the RAN in June 1985.
November 1969	HMAS VENDETTA supported South Vietnamese battalions in a night action to the west of Tuy Hoa, Vietnam. VENDETTA was the only British-design ship employed in operations in Vietnam, and ammunition supply for her 4.5-inch guns created a supply problem.
November 1976	HMAS STUART was dispatched to rescue survivors from the oil exploration barge PERENTIE. Two of the barge's crew of five were picked up.
November 1981	The Fremantle class patrol boat HMAS WOLLONGONG, was commissioned. WOLLONGONG was decommissioned on 11 February 2006 after 24 years of service.
November 1991	HMA Ships BRISBANE SYDNEY and CDT3, were awarded the Meritorious Unit Citation for service in the first Gulf War.
November 1998	The Royal Australian Navy's first female pilot, Sub Lieutenant Natalee McDougall, RAN, graduated from the Australian Defence Academy's helicopter training facility after 17 months of intensive classroom and practical training at RAAF Base Fairbairn. She joined 723 Squadron the following January
November 2016	After an earthquake on Nov 14 HMAS DARWIN arrived at Kaikoura, New Zealand on 16 November in company with HMNZ Ships TE KAHA, ENDEAVOUR and CANTERBURY, USS SAMPSON, and HMCS VANCOUVER. Working parties were sent ashore to assist in restoring essential services including electricity and water. Welfare checks were carried out as well as basic reconstruction tasks and clean-up duties

The entries selected for publication this month are randomly generated from an extensive database of historic naval events. The absence of a significant event is in no way intended to cause offence. The objective is to provide a cross section of events across time. The Society's website enables you to look up any event in RAN history. Searches can be made by era, date look up or today. The latter appears on the home page. The others are accessed via the Research page. <https://www.navyhistory.org.au/research/on-this-day/>

Occasional Papers

Included with this edition of Call the Hands are the following occasional papers:

- Occasional Paper 124 - Arctic Sea Routes: From Dream to Reality
- Occasional Paper 125 - Captain Fogarty Fegen VC
- Occasional Paper 126 - A new Crane for Sydney

Society Matters

Lieutenant Commander Michael Hickie DSC RN RAN (RTD)

Our thanks go to Mrs Joan Wilson for drawing attention to the 99th birthday of Michael Hickie which he celebrated on 17 October 2021. The response from our readers to our [website](#) and [Facebook](#) posts was overwhelming and greatly appreciated by Joan and the Hickie family. We understand the Chief of Navy and Commander Australian Fleet have also been in contact with Michael Hickie. Joan Wilson's late husband, LCDR Donald R Wilson, DSC, RANVR and good friend of Michael was a fellow WW2 submariner. Donald Wilson also achieved command during WWII. [His story](#) published by the Society in 2018 is equally compelling.

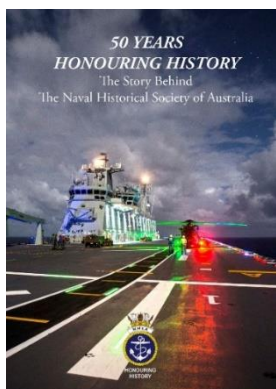
New Books Now in Print

Thanks to generous support from BAE Systems and Thales Australia, three books recently published by the Society are now available in print format. These books are;

- 50 YEARS HONOURING HISTORY: The Story Behind, the Naval Historical Society of Australia,
- Ikara; Australia's Cold War Wonder Weapon and
- Australia's Colonial Navies.



Thanks to COVID and the associated difficulty of scheduling a book launch event with Society Patron and Chief of Navy, Vice Admiral Michael Noonan as guest of honour, the process of writing, publishing and launching has been a protracted affair. Nevertheless, these books are now available in several formats.



The Society's own history describes the evolution of the Society over time, its many interesting projects and colourful characters who founded and continued to grow the Society over the decades. This book incorporates articles by a cross section of office bearers and volunteers about key aspects of the Society, where it has come from and where it is going. It also describes the major projects undertaken by the Society including; recovery of sections of the first HMAS Parramatta from its hulk in the Hawkesbury River to establish two memorials in Sydney, the production of video documentaries on iconic structures such as the mighty Hammerhead Crane which dominated Sydney's skyline for more than 40 years and the Captain Cook Graving Dock.

In many respects this book provides insight into the history of the Royal Australian Navy itself. This is achieved through frequent references to significant historical naval events the individual experiences of members and volunteers in war and peace as described in their biographies and anecdotes. This book will appeal to a wider audience than just members.

In his Foreword Society Patron and Chief of Navy, Vice Admiral Michael Noonan AO RAN describes the NHSA as part of the Navy Family and acknowledges the ongoing commitment of Committee members and volunteers in support of the RAN and Community as it develops new

and innovative ways to achieve its mission, 'To promote and uphold the history, prestige and traditions of naval service and to preserve Australia's naval history.'

Our thanks also to Vice Admiral Noonan who has personally signed 150 commemorative certificates which will be given to the first 150 buyers of this book.

[Visit the Society website shop to purchase your copy.](#)

Ikara; Australia's Cold War Wonder Weapon

This book describes the history of the Australian designed and built IKARA anti-submarine missile system. It traces the story of Ikara from concept development to feasibility study in 1959 through to approval, design, production and service ending in 1991. During its period of service, Ikara proved to be the most effective means to engage submarine targets at longer ranges and with faster response times and greater accuracy than any other system available worldwide.

This history of the Ikara missile is a case study which demonstrates the ability of Australia's Government, Defence Department, research laboratories and Defence industry to work together to develop a state-of-the-art weapon system. The book also demonstrates clearly that Australia had the ability to be self-reliant in the development of world class precision weapons in the past.

It provides a historical reconstruction of both the scientific, technological and engineering challenges involved and the top level of Defence and government decision making and provides an insight into how such processes proceed and the many factors that affect the initiation, continuation and ultimately the ceasing of such programs over several decades. The book provides understanding of how Australia achieved success in the past and avoided pitfalls with the Ikara system.



Australia's Colonial Navies

Australia's Colonial Navies, is the product of many years research into the separate naval forces of the colonies, a facet of local naval history not greatly covered in published books. Many of the vessels operated by each colony experienced unusual careers and their design and construction was indicative of a now long passed era of naval warfare. Each type of craft was built to fulfil one primary task, unlike the present day when a warship is referred to as 'general purpose'. Many contemporary writers severely criticised their respective colony's warships, usually referring to them as too slow or under-armed, and often as ugly looking vessels.



The majority of Australia's colonial warships remained in service until the early years of the 20th century, including those which formed the Commonwealth Naval Force in 1901 and a few which joined the Royal Australian Navy (RAN) in 1911. Three of the longest serving warships, Cerberus, Protector and Gayundah still survive as breakwaters in 2021. A number of name plates and other items from the ships, including several guns, are preserved around Australia, but for most, the five colonial fleets are largely forgotten.

The book begins with the early defence vessels constructed for New South Wales, Tasmania and Victoria. By way of numbers the British-built Armstrong gunboats and Thornycroft torpedo boats proved the most popular during the great 1883-84 upsurge of colonial naval power. The Victorian sloop *Victoria* (I) sailed to New Zealand during the Maori Wars and *Albert*, *Victoria* (II) and *Childers* were detailed to join British naval forces in the Sudan, enroute to Australia. *Gayundah* fired shots in anger when she apprehended foreign fishing trawlers off Broome in the early years of the 20th century.