The Warfare Sailors Career Handbook is a compendium of information relating to the professional opportunities available to any young Australian man or woman who is either interested in a career in the Navy, or who aspires to serve as a member of the Royal Australian Navy’s Warfare Community.

The Sailor Warfare Community is comprised of a number of specialist categories, each of which offer unique life skills and challenging and rewarding experiences within the maritime environment. Each of these employment categories has its own dedicated chapter that details the history, nature of work and predominant type of platform (ship, aircraft or submarine) in which the work is undertaken. These specialist warfare employment categories are:

- Aircrew
- Acoustic Warfare Analyst Submarines
- Boatswain Mate
- Clearance Diver
- Communication & Information Systems
- Communications & Information Systems Submarines
- Combat Systems Operator
- Combat System Operator Mine Warfare
- Cryptologic Linguist
- Cryptologic Systems
- Cryptologic Systems Submarine
- Hydrographic Systems Operator
- Naval Police Coxswain
- Photographic
- Physical Trainer

Importantly, this career handbook offers some contextual commentary on how each of these individual categories combine to form the formidable team of skills that make a modern, technologically advanced warship function to its full capability. In doing so, it also looks at the proud history of sailors within the Royal Australian Navy and how their achievements and selfless sacrifice have shaped not only the Navy of today, but the values and freedoms that we enjoy in Australia. The essence of this sacrifice is captured in the following poem penned by US Naval Chaplain, Father Denis Edward O'Brien who wrote, after witnessing the carnage of Guadalcanal in World War II:

'It is the sailor, soldier and airman, not the reporter,
who has given us the freedom of press;
It is the sailor, soldier and airman, not the poet,
who has given us freedom of speech;
It is the sailor, soldier and airman, not the campus organizer,
who has given us the freedom of association and demonstration;
It is the sailor, soldier and airman, not the lawyer
who has given us the right to a fair trial;
It is the sailor, soldier and airman,
who salute the Flag, serve beneath the Flag,
whose coffin is draped by the Flag,
who allows the protester to burn the Flag.'
This Career handbook will not appeal to those who seek a simple and predictable line of work or employment. Life within the Warfare Sailor Community is demanding and challenging. Successful candidates will be expected to demonstrate leadership and moral courage beyond their years in an often unforgiving maritime environment. Many who seek to gain this employment are often found wanting and don’t make the grade.

The question that must be asked for each individual who aspires to join this community and honour its proud heritage and exciting future is ‘Are you good enough’?

P.G. LOCKWOOD, DSC, CSC
Commodore, RAN
Head of Warfare Community.

November, 2007
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The Navy warfare community crest was launched by Chief of Navy, 10 May 2007. It is the symbol of some 4800 officers and sailors. The crest is “Azure; issuing out of base barry wavy of four argent and azure, a trident gules encircled by a Great White Pointer Shark (Caracharodon carcharias) proper”. The varied blue (Azure) represents the air, sea and undersea in which the Warfare Community members serve. The waves (barry (even) wavy) and foam (argent) indicate the importance of the littoral and in “operating over the ocean wave”. The use of the shark indicates strength, speed and power in the Sea. Notably, the Great White shark is identified well as being Australian but also travels and lives in the areas that are of interest to RAN. The red (gules) trident is indicative of the base of maritime power traditionally identified with Neptunus Rex. Finally the motto Combine and Conquer indicates the strength and power that comes through bringing together the various categories and corps of Navy Warfare to produce the capability for the Navy to fight and win at sea.
The Royal Australian Navy (RAN) is a naval force of medium power, of an island nation with no continental land borders and with one of the largest maritime jurisdictions of any nation. Not surprisingly, naval forces have long played an important part in our history. It was, after all, the Royal Navy which discovered, explored and then in 1788 founded European Australia. For the next 125 years the Royal Navy provided the ultimate security guarantee for the developing Australasian colonies, but following Federation in 1901 it was only natural that Australians would wish to assume greater responsibility for their own defence. The Royal Australian Navy (RAN) can in some ways be seen as an offshoot of the Royal Navy, and even today still retains many traditions in common. But as one of Australia’s oldest and most important national institutions the RAN has also played a vital role in defining our independent national identity.

Colonial Navies

The origins of an independent Australian Navy date back to the mid-19th century when the self-governing colonies of Victoria, New South Wales, Queensland, South Australia and Tasmania all decided to acquire small numbers of naval vessels and raised local forces to man them. These vessels were designed purely for local defence and were prohibited from operating outside the three mile coastal limit. More limiting in the longer-term however, the colonies found it very difficult to keep such small navies efficient and most soon languished on the brink of disbandment. The officers and men remained enthusiastic nevertheless, and members of the colonial naval forces served in both the South African War (1899-1902) and the Boxer Uprising in China (1900-1901).

Creation of an Australian Navy

The Australian Navy was created on 1 March 1901 when, after Federation, the states transferred all their naval and military forces to the Federal Government. Although this date marks the official birth of the Australian Navy, much had yet to be accomplished. Initially known as the Commonwealth Naval Forces (CNF), the Navy had less than 250 men and its vessels were tired, old and inadequate even for training.

The British, however, faced a growing number of challenges to their global naval supremacy and the idea of a more capable Australian Navy gradually gathered support. At the 1909 Imperial Conference, the British Admiralty suggested that the CNF be expanded into a modern, balanced naval force based around a battlecruiser, several light cruisers and a flotilla of destroyers and submarines. This self-contained package represented the ideal force structure; small enough to be managed by Australia in times of peace, but in war capable of effective combined action with the Royal Navy. Orders for the new vessels were soon placed in British and
Australian shipyards, while the Naval Depot at Williamstown in Victoria began catering for the greatly increased number of recruits. Reflecting the increased status of the force, the CNF was retitled the Royal Australian Navy on 10 July 1911.

On 4 October 1913, the new units of the Australian Fleet made their first formal entry into Sydney Harbour and control of the Australia Station passed from the Admiralty to the Commonwealth Naval Board. That Australia had secured and manned a credible ocean-going Navy in just four years was a remarkable feat, and one that was only possible through the active and willing support of the Royal Navy.

World War I

At the outbreak of hostilities in August 1914, the Australian Fleet comprised the battlecruiser, HMAS Australia I, three light cruisers, three destroyers, two submarines and several support and ancillary craft. The total number serving in the Permanent Naval Forces in 1914 was 3,800. At the close of
hostilities in 1918 there were 5,263 personnel serving, while the Reserves provided a further 76 officers and 2,380 sailors for home service, and 51 officers and 1,775 sailors for service overseas.

During the war the ships and men of the RAN operated as an integral part of the Royal Navy and spent much time in the Atlantic Ocean, Mediterranean Sea and off East Africa, but the RAN’s initial tasking took place much closer to home. One of its most important early roles was to deter the powerful German East Asiatic Cruiser Squadron from attacking Australian ports and shipping. Operations to hunt down these warships included the destruction of their bases and Australian warships played a key part in a succession of joint operations to capture Germany’s Pacific colonies. Casualties in action were remarkably light but included the first two Australians to fall in the Great War, Able Seamen John Courtney and Bill Williams. More sobering was the unexplained disappearance of the submarine AE1 with the loss of all hands on 14 September 1914.

Thereafter the Navy began the vital role of convoy protection, including the escort of the first of the ANZAC convoys to the Middle East. While escorting this convoy the light cruiser HMAS Sydney was detached to investigate the sighting of a suspicious warship off Cocos Island. The warship was found to be the German raiding cruiser SMS Emden which had sunk or captured 25 allied steamers in just two months of operations. In the brief engagement which followed, Sydney’s superior firepower proved decisive and Emden was driven ashore and destroyed. The victory removed the only remaining threat to Australia’s maritime security and cemented the fighting reputation of the Australian sailor.
The RAN was also actively engaged in supporting the Gallipoli campaign. The Australian submarine AE2 was the first Allied unit to successfully penetrate the Dardanelles where she attacked shipping in the Sea of Marmora, until she was eventually lost after an action with the Turkish Navy. On the Gallipoli Peninsula the RAN Bridging Team also provided vital engineering support to the troops ashore and its members were among the last Australians to leave the Peninsula.

Other Australian ships served in all naval operational areas, including the African coast, the Indian, Pacific and Atlantic Oceans, and the North and Mediterranean Seas.

**Between WW I and WW II**

Following the declaration of an Armistice in November 1918, a period of global naval retrenchment and negotiated disarmament began, culminating in the Washington Treaty of 1922 that brought drastic changes to naval planning. Under the terms of this treaty the battlecruiser HMAS Australia was scuttled off Sydney Heads in 1924.

In 1924 Australia ordered two 10,000 ton cruisers and two modern submarines. The two cruisers commissioned as HMAS Australia II and HMAS Canberra in 1928. In the following year the HMA Submarines Oxley and Otway were delivered. A seaplane carrier had also been ordered in 1924 from Cockatoo Dockyard, Sydney and was subsequently commissioned as HMAS Albatross in 1929. A further vessel, HMAS Moresby was acquired in 1925 for surveying duties.

The monotony of peace-time exercises was occasionally broken by operational activities such as a punitive expedition to the Solomon Islands in 1927 undertaken by the cruiser HMAS Adelaide.

The Great Depression which began in 1929 again forced many economies in naval activity. The personnel strength of the RAN fell to just 339 officers and 2483 sailors in 1933, while the two
submarines and the seaplane tender Albatross were later transferred to the RN. One of the few bright spots was the transfer from the RN of five additional destroyers to replace aging ships that were due for scrapping. These ships were not new but later became famous during World War II as the ‘Scrap Iron Flotilla’. A further boost in the RAN’s capabilities came with the acquisition of three modified Leander-class 6 inch cruisers as part of a gradual move towards Australian rearmament. The first, HMAS Sydney II, was commissioned into the RAN in 1935, with HMA Ships Hobart and Perth commissioning in 1938 and 1939 respectively.

As the world once again drifted towards war, the RAN continued to suffer from the effects of cost cutting. Despite being manned by well trained and competent men, its ships were in no condition to undertake sustained warfare duties.
World War II

At the declaration of war in September 1939, the RAN numbered two heavy cruisers, four light cruisers, five destroyers, three sloops and a variety of support and ancillary craft. There were 5,010 personnel serving in the Permanent Naval Forces at the outbreak of war but by July 1945, the heavy demands of war had increased this to nearly 37,000 personnel of all ranks.

Operations initially followed the pattern set in WW I. Australia’s sea lines of communication were secured against German raiders and the fleet contributed units to Allied naval forces. In the early part of the war RAN ships again came under RN control and the RAN served as far afield as the North and South Atlantic, the Caribbean, the Mediterranean, the Indian Ocean, the Persian Gulf and the Red Sea.

‘The Scrap Iron Flotilla’ earned a particularly distinguished career in the Mediterranean, as did the cruiser Sydney with her destruction of the Italian cruiser Bartolomeo Colleoni. Tragically, Sydney was later lost with all hands in an action with the German merchant raider Kormoran.

The Japanese attack on Pearl Harbour on 7 December 1941, and the subsequent Japanese
advance down through the Malay Peninsula and the Pacific Islands altered Australia’s strategic circumstances. Most forces were hurriedly redeployed to meet the immediate Japanese threat. The RAN operated with the British, Dutch and American Navies in the failed defence of the archipelagic waters to the north and later in the campaigns to recover these islands.

During the Pacific War the RAN participated in many notable engagements including the battles of the Java Sea, Sunda Strait, Coral Sea, Savo Island and Lingayen Gulf. In addition it provided maritime support to amphibious and re-supply operations across the South-West Pacific and the Indian Ocean. The naval coastwatch network was another vital Australian contribution to the Allied cause.

Combat losses during the war were very heavy. In addition to Sydney, the cruisers Perth and Canberra were sunk, as were the destroyers and sloops HMA Ships Nestor, Vampire, Voyager, Waterhen, Parramatta and Yarra. Nearly 30 other RAN ships and vessels of all types were lost as a result of their wartime service and 2,170 RAN servicemen and women lost their lives.

**Later Conflicts**

Following the end of WW II the RAN became intimately involved in the occupation of Japan and then plunged almost immediately into operations connected with the Cold War between the Soviet Union and the Western powers. This development ensured that the Australian ships and men would continue to participate in a broad range of combined operations and encouraged a gradual
shift away from Britain and towards the United States in matters of both defence policy and equipment selection.

To cope with a range of new threats, and in particular a greater emphasis upon anti-submarine warfare, the RAN acquired several powerful new assets including two modern light fleet aircraft carriers together with their embarked air groups. In 1951 the first of these carriers, HMAS Sydney III deployed to Korea as part of the contribution to the forces deployed by the United Nations to resist a communist invasion. Australia was one of only three nations to contribute a naval aviation capability to the war. The Pacific War had caused the Australian Government to review its strategic defence policy and alliances, a process that was fuelled by subsequent events in South-East Asia. In 1951 Australia obtained a security arrangement with the US and New Zealand, known as the Australian, New Zealand and United States Treaty (ANZUS). Australia ratified the South East Asia Treaty Organisation (SEATO) pact on 27 October 1954. Australia also contributed forces to the Commonwealth Far East Strategic Reserve, which was created in 1955.

The RAN's acquisition practices also changed. Turning away from British designs, in 1962 the Navy decided to acquire two Charles F Adams-class guided missile Destroyers (DDG) from the US. A third was later ordered. Subsequent platform and system selection placed great emphasis on interoperability with the US, a need that was strengthened by the RN's progressive withdrawal of its Far East Fleet from 1972.

In other regional operations, the RAN contributed ships during the Malayan Emergency and later during the Indonesian ‘Confrontation’ with Malaysia. Most notable, however was the RAN’s participation during the Vietnam War. Between 1965 and 1973 the Navy contributed destroyers, aircrew and clearance divers, as well as substantial heavy lift logistic support. In all, some 13,500 members of the RAN saw active service and eight lost their lives.

The Navy has always been about more than warfighting and during the 1980s and 1990s, the
RAN regularly displayed its inherent flexibility. In particular, it played an active role in supporting United Nations peace operations throughout the world, including those in the Sinai, Somalia, Cambodia, Rwanda and East Timor. Illustrating that instability also plagues our part of the world, a variety of evacuation and crisis intervention operations were undertaken in Bougainville, the Solomon Islands and Fiji. The Navy’s defining task during this era, however, has probably been the ongoing operations in the Persian Gulf. Beginning in 1990, these operations have embraced economic sanction enforcement, two confrontations with Iraq, and most recently security patrols in support or Iraq’s reconstruction.

Today’s Perspective

The RAN of today is a highly trained and internationally respected maritime force. It retains a proud tradition of courage, initiative and professionalism based on more than a century of service to the nation. In the uncertain world of the 21st century the utility of maritime forces shows no sign of diminishing and we can be certain that Australia’s future security needs will continue to rely on a strong, capable and balanced Navy.
Warfare Profession Today

“The key to defending Australia is to control the sea and air approaches to our continent, so as to deny them to hostile ships and aircraft, and provide maximum freedom of action to our forces. That means we need a fundamentally maritime strategy”.¹

One of the fundamental responsibilities of a State is to protect its territorial sovereignty at all potential levels of conflict. Australian defence policy is primarily concerned with the maintenance of territorial integrity. The Navy, like the Australian Defence Force as a whole, is largely presently structured for defeating attacks on Australia and maintaining a capability to operate at the higher levels of conflict. This is however changing, with the planned acquisition of the large amphibious ships and the air warfare destroyers to support them. Australia faces significant wider security challenges due to its vast coastline, large maritime jurisdictional area and distance from traditional allies. In addition to purely defence considerations, Australia also exercises sovereignty over offshore assets that contribute to the national economy and identity. These include islands and territories at substantial distances from the continental shelf, and resources such as fish stocks, oil and gas reserves, and seabed minerals. External territories extend from the tropics to the Antarctic. The activities of resource extraction and the supply of offshore territories are fundamentally maritime in nature. The RAN plays a major role in offshore sovereignty enforcement and is increasingly required to operate in a constabulary role in its littoral waters extending up to 350 nautical miles (nm) offshore from the mainland and offshore territories.² In effect this encapsulates the requirement to patrol and enforce some eight million square nautical miles of Australian Territory.²

Australia’s broad defence strategy remains maritime in nature, involving the three armed forces working jointly. To achieve this, the RAN must maintain a broad span of operational capabilities, and a skill base that is well informed about contemporary tactics and systems. A national defence industrial infrastructure is essential to support the force-in-being and to contribute to its progressive improvement. The tempo of operations will not diminish and a high degree of readiness will be required of the RAN in the future.

The RAN is relatively small, having regard to its geographic area of operations and the nation’s extended Sea Lines of Communication (SLOCs).

² Australia exercises powers and rights in the surrounding seas. Territorial Seas extend to 12nm offshore. Contiguous Zone 12-24 nautical miles for Customs control, fiscal and sanitary regulations. The Exclusive Economic Zone extends 200 nautical miles with right to seabed and water resources. The continental shelf extends in places to 350 nautical miles where some seabed rights may be claimed.
³ Australian Maritime Doctrine (RAN Doctrine 1 2000).
One only has to see the large number of ships off ports like Newcastle, Broome and Brisbane, to name a few, to understand the scope of maritime trade. For these reasons recourse has been made to modern systems that diminish the disadvantage of small numbers, with considerable emphasis on surveillance, intelligence and networking of systems. New challenges include the threat of ‘cyber war’, continued international terrorism and the havoc wrought by failed states; foreshadowing an unpredictable future. These and other emerging threats will call for new deterrence options spanning the full range of threats that may be faced.

In the littoral 4, technical advances in area-denial forces including mines, small boats, diesel submarines, sophisticated anti-ship missiles, land based aircraft and ballistic missiles have expanded the challenge. As the threat evolves and becomes more capable, so must the Navy’s combat systems.

The ability of the RAN to conduct combat operations is dependant on a number of factors which include the number and type of ships, submarines and aircraft, logistic support, and the level of training and experience of its personnel. It has long been argued that our most important resource is our people. Of those people, the naval warfare profession consists of a number of important groups or categories at both the officer and sailor levels. Naval Warfare Officers5 are categorised by their Primary Qualifications (PQs), which consist of Seaman, Pilot and Observer.

For Seaman Officers these are further divided into specialisations of:

- Principal Warfare Officer (PWO)
- Mine Clearance and Diving (MCD)
- Submariners (SMN SM)
- Maritime Geospatial (MGO)

For non-commissioned personnel within the RAN the warfare profession is divided into categories. Although some of these categories have histories that can be traced back to the birth of the Australian Navy, most have changed significantly since WW II. This reflects not only increasing sophistication of platforms and weapon systems, but maritime warfare’s evolution from traditional ‘blue water’ roles to providing greater degrees of protection, and more recently naval support in the Global War against Terrorism.

These create demand for Navy people with high professional skills across many disciplines, capable of operating in highly trained and close knit teams. History shows that ships with the best officers and sailors invariably win in combat at sea.

To meet these challenges, the RAN has had to be proactive and reactive to these demands which in recent years have seen the rationalisation of

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4 The Littoral is defined as that part of the land affected by the sea and that part of sea affected by the land.
5 Detailed descriptions and information regarding Warfare Officers can be found in the Warfare Officers Career Handbook.
the warfare categories. In many cases this has required new skills and capabilities, and the removal of old work practices. The current list of warfare sailor categories is:

- Aircrewman (A)
- Acoustic Warfare Analyst Submariner (AWASM)
- Boatswains Mate (BM)
- Clearance Diver (CD)
- Communication Information Systems (CIS)
- Communication Information Systems Submarines (CISSM)
- Combat Systems Operator (CSO)
- Combat Systems Operator Mine Warfare (CSOMW)
- Cryptologic Linguist (CTL)
- Cryptologic Systems (CTS)
- Cryptologic Systems Submarines (CTSSM)
- Hydrographic Systems Operator (HSO)
- Naval Police Coxswain (NPC)
- Photographic (PH)
- Physical Trainer (PT)

Each of the warfare categories provide specialist warfare skills that range from seamanship to crewing operations rooms, firing weapons (small arms) and intelligence support. In combination, these categories provide the warfare capability to the Navy, and the ADF, across all of its platforms. These platforms include:

- Aircraft including AS350B (Squirrel), SK50 (Sea King), S70B2 (Seahawk), and the SH-2G (Super Seasprite).
- Major Surface Combatants (Adelaide-class FFG and Anzac-class FFH)
- Submarines (Collins-class SSG)
- Mine Warfare (Huon-class MHC)
- Patrol Boats (Armidale-class ACPB)
- Auxiliary vessels (Sirius AO and Success AOR)
- Survey Vessels (Leeuwin and Paluma-class AGS)
- Amphibious Vessels [Kanimbla and Manoora (LPAs), Tobruk (LSH) and six Heavy Landing Craft (LCH)]

The naval warfare profession today requires of its people dedication, initiative, camaraderie and innovation. In return it offers an exciting career with the opportunity to serve in a variety of areas around the world supporting Australian interests.
Whole Ship Activities and Responsibilities

While every warfare sailor belongs to a specific category and therefore has unique and specialist skills associated with their category, there are a number of duties and responsibilities that are required to be carried out by all members of a ship’s company, these are termed Whole Ship Evolutions. Although not new to the RAN, the minimum manning of ships in today’s Navy have re-invigorated the importance of an ‘all in one ship’s company’ undertaking a ‘whole of ship’ evolution.

Whole Ship Evolutions are used to carry out replenishment of stores/fuel, render assistance to other vessels and carry out maritime surveys and emergency response. In short, ships are expected to be able to provide a ready-use pool of personnel for short notice seamanship evolutions such that weapons and sensors can still be crewed, albeit at a reduced level. The following Whole Ship Evolutions are carried out by ships at sea:

- Take a ship in tow or be towed, and providing the gear.
- Take a ship in tow or be towed, and receiving the gear.
- Transfer fuel, water, stores, personnel and ammunition at sea [Major Fleet Unit (MFU) only].
- Land an appropriate type of emergency party.

‘Coaling Ship’ HMAS Australia I at the turn of the last century.
• Transfer portable fire fighting equipment (including portable pumps) ashore or to another ship.

• Send a boarding party, including conducting a Fisheries boarding (if qualified).

• Pick up survivors.

• Lay and recover a dan buoy (if fitted).

• Stream a splash target (if carried).

• Rescue the crew of a helicopter and salvage a ditched helicopter (if equipped).

• Provide divers to clear a wire from a propeller (MFU/MHC only).

• Send a demolitions party ashore (MFU/MHC only).

• Send divers and equipment to another ship (MFU/MHC only).

• Send a fire party to a ship or establishment.

Irrespective of category, as part of a ship’s company, every sailor will perform activities such as:

• **Fire Fighting** - containment and extinguishing of all types of fires.

• **First Aid** - knowledge and application of basic first-aid medical skills.

• **Duty Watch** - member of the overnight security, fire fighting and emergency party.
- **Communal Duties** - working in teams to help clean and maintain all work and living areas.
- **Damage Control** - assisting with ship damage emergency repairs.
- **Replenishment at Sea** - assisting with the re-supply of ships at sea.
- **Ship Husbandry** - maintenance and upkeep of ships’ surfaces, fittings and equipment.
- **Physical Fitness** - All members of the Navy are required to maintain an appropriate level of physical fitness. Physical fitness is tested on an annual basis.
While alongside or serving in a shore establishment, in addition to normal day to day employment, all sailors will form part of a Duty Watch system; the duties performed are as follows:

- Overnight security.
- Containment party (fire fighting).
- Emergency party (first aid).
- Platform system monitoring.

The efficient and successful completion of these tasks relies heavily on cooperation and teamwork from all departments. They are critical to the well being, safety and morale of a ships company and reinforce the teamwork required to bring the many facets of a crew together, to make it one ships company.
Ship Survivability and Safety

The building of state-of-the-art warships is a significant national capital expenditure item. They represent a significant cost in material and personnel and are direct contributors to a nation’s national security. One of the key factors in the selection of any warship design is its ability to survive, fight and win at sea. To do this, ships and submarines may employ a range of features and systems.

Ship Design

The ability of any warship to remain undetected from an enemy is a key component of a ship’s survivability. The use of stealth technology has been adopted in most new warship designs, used primarily to reduce a ship’s radar, infrared and acoustic signatures. Ship design is a complex and constantly evolving area to ensure warships can survive against equally developing weapons technology.

Defensive Systems

Defensive systems provide a warship with the ability to defend itself after coming under attack, and are normally categorised as ‘hard kill’ or ‘soft kill systems’.

Hard kill systems include:
- Close in Weapons Systems (CIWS),
- larger calibre gunnery systems such as 5 inch in FFHs and 76mm in FFGs, and
- missile systems such as SM-1 or 2 and the evolved Sea Sparrow Missile (ESSM).
- surface launched torpedos.

Soft kill systems include:
- medium and short range chaff,
- bubble decoy,
- electronic jamming systems, and
- deception equipment systems such as NULKA and le Scut Decoys.
Offensive Systems

The fitting of offensive weapon systems provide a warship with the ability to defeat an enemy before their offensive systems can cause catastrophic damage. Some weapons such as gun systems can effectively provide both an offensive or defensive capability. Other systems such as Harpoon are designed primarily as an offensive weapon against hostile shipping. The range and accuracy of these systems can directly impact on the survival capability of a warship.

Damage Control

A critical aspect of a warship’s capacity to sustain damage during an engagement with an enemy is not only dependent on the ships armour for protection but on the ability of a crew to carry out effective damage control.

In 1982 HMS Sheffield, a type 42 Air Defence Destroyer, burned to the waterline after being hit by a single Exocet missile launched by an Argentinian Super Etendard strike fighter. Twenty sailors were killed in this attack. The warhead failed to explode but residual propellant ignited an uncontrollable fire (UK MoD image)

Personnel

While material and equipment are integral features in the safety and survivability of a warship, the most critical factor remains the warship’s crew. The increasing sophistication of platforms and weapons systems demands that personnel are highly trained professionals able to adapt and react as situations develop.

Conclusion

The survivability and safety of a warship at sea is dependant on a number of complex facets, of which only a few were highlighted above. Other factors include:

- Research and Development (R&D),
- logistics,
- crew sustainment,
- ships maintenance,
- training, and
- morale

All of these either taken in isolation or combination with each other will affect a warship’s ability to fight and win at sea.
A member of a Damage Control Party shoring up.
Occupational Health and Safety

The ability to conduct maritime warfare operations relies upon smart people, sophisticated platforms, weapon systems, infrastructure and support mechanisms. The RAN possesses all of these elements in excellent measure and strives to be among the world’s best providers of maritime capability. The Navy recognises that its ambition depends upon building the safest work environment for its people, reducing all identifiable and foreseeable risk within the Navy workplace to as low as reasonably practicable, establishing and nurturing a positive culture of safety and providing supportive and effective mechanisms within such a culture. When driven by personal commitment and the Navy’s values, a positive culture of safety is achievable, sustainable and a capability enhancer.


As the provider of maritime capability within Defence, the Navy also recognises its responsibilities to be responsive to the eight Defence Priorities of the Defence Occupational Health and Safety (OHS) Strategic Plan. The Navy’s Plan Green integrates its own vision for safety with that required under law and broader Defence priorities through ‘Keep Navy Safe’.

Essentially, ‘Keeping Navy Safe’ depends on two fundamental elements. The first is the growth and continuous development of a positive, sustainable and just culture of Safety understood by all personnel at all levels. The second fundamental element is an effective working system into which all participants can connect and use to improve their contribution to Navy’s capability. Bringing the culture of safety and the system into alignment, and establishing both upon a foundation of organisationally transparent risk management across the Navy, is the reason for the establishment of the Safety Management System – Navy. (SMS-Navy)
Warfare Categories - Administration and Management

The administration and management of the warfare categories is a critical component of the personnel and human resource organisation within the RAN. Warfare category management principally involves three areas:

- Category Sponsorship.
- The Divisional System.
- Career Management.

Category Sponsors

The administration and management function of each of the Warfare categories is allocated to a Category Sponsor who is supported by Category Managers, generally Officers or Warrant Officers (WO)/ Chief Petty Officers (CPO). Category Sponsors have the task of managing the overall development of their categories to meet the Navy’s capability requirements. They must ensure that their category is recruitable, trainable, employable and sustainable to meet the Navy’s needs now and into the future. Because of the scope of this task, the areas in which Category Sponsors are involved in are broad. These support organisations are generally located to optimise opportunities to interface with their members and remain well informed of policy issues affecting their category. The roles and function of Category Sponsors is laid out in Defence Instruction (Navy) DI(N) Personnel 2-2 “Instructions to Category Sponsors”. The Warfare Categories Sponsor Staff Officers are listed below:

Table 1: Category Sponsor Contacts

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### Divisional System

The Divisional System provides the member management framework necessary for the Navy to best develop and retain men and women who want to serve at sea, are well trained and supported, and are committed to fight and win. The Divisional System has been structured to care for the well-being of Navy members. Under the Commanding Officer (CO) and Head of Department (HOD), the system is an integral part of the chain of command for the management of a ship, establishment or workplace. In essence, the Divisional System is about shared responsibility; being receptive to and supportive of the needs of those who work beside us and form part of our division. It is a unique management system only utilised by Navy and its purpose is to provide a structured personnel management organisation that:

- provides leadership,
- facilitates effective two-way communication,
- promotes teamwork and morale,
- fulfils professional training and education requirements,

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• monitors professional performance and standards of behaviour,
• encourages and assists in the advancement of personnel,
• supports and assists individuals to resolve workplace and personal problems, and
• is concerned with the wellbeing of personnel.

While Category Sponsors fulfill the administration and management function at an organisational level, the administration and management of individuals within each category relies on the Divisional System at the individual unit level and the Directorate of Sailors Career Management (DSCM) at the organisational level.

Career Management - Directorate of Sailors Career Management (DSCM)

The function of DSCM is to deliver employment and advancement opportunities that balance the career management aspirations of the Navy’s sailors with the requirements of the service. DSCM is part of the Naval Personnel and Training branch in conjunction with DNOP, policy directorates and the Training Authorities.

Management of sailors’ careers is a joint effort that encompasses the individual, their divisional staff and Command, category sponsor and DSCM. All these elements must work closely together to ensure that the desired endpoint of meeting the Navy’s needs while balancing the individual’s aspirations”.

The DSCM guide to the organisation and management of personnel including postings career progression and policy can be found in the Sailors Career Management Manual (ABR 10).

2 CAPT M.J. Noonan CSC - DSCM.
Future Issues and Developments

People of the Future Navy

As technology advances and becomes more widely accessible, the equipment advantage between the ADF and potential adversaries will be increasingly hard to maintain. A fighting edge will be generated through future Navy people being superior decision-makers, advanced mariners, having intimate knowledge of the operational environment, and being adept at the application of technology.

Future Navy people will spend more time posted to seagoing positions and less time in non-seagoing postings, particularly during the first decade of their careers. Sailors will be multi-skilled and the delineation between operator and maintainer may, in some areas, blur. Sailors will be supported in their attempts to balance Navy and personal interests by flexible workforce practices and supporting initiatives that improve retention and quality of life. Technology will assist them in their day-to-day administration, training and career goals. Bureaucratic processes will be refined to minimise personal effort and maximise benefits to Navy people. The changing national demographic towards an ageing population will likely be reflected in the Navy; consequently the importance of health and fitness as a component will increase.¹

Future Technologies – Network Centric Warfare and Information Management

Network Centric Warfare (NCW) broadly describes the combination of merging tactics, techniques, and procedures that a fully or even partially networked force can deploy to create a decisive war fighting advantage. NCW focuses on using advanced information technology and high speed data transfers to link together ships, aircraft and shore installations into a highly integrated computer/telecommunications network. Within these networks ships, submarines, aircraft, unmanned vehicles and shore installations will share large amounts of critical information on a rapid and continuous basis.

NCW systems are complex in integration of architecture, technological information, human integration and organisational content. Understanding the human dimension of NCW will assist in preparing the Navy to meet the challenges that this aspect of warfare will provide in the future.

Similarly, as part of NCW, information knowledge and management are also emerging as major themes. Navy has a number of Categories that cover the spectrum of information knowledge and

¹ Plan Blue 2006.
management in the warfare sense: CSO, CTL, CTS, CIS, CSO(MW), PHOT, CIS(SM), CTS(SM) and AWA(SM) being the main ones. These categories may change and indeed may merge in the future as technology and the naval environment evolve.

**Future Acquisitions**

**Air Warfare Destroyer**

The *Defence 2000 - Our Future Defence Force (the Defence White Paper)* stated the ADF would replace the Navy’s FFGs with a class of three air defence capable ships, the new Air Warfare Destroyers (AWDs). The three AWDs will be named HMA Ships Hobart, Brisbane and Sydney, and are based around the Navantia F100 hull design and the AEGIS combat system.

In addition to providing support to land forces and infrastructure in the littoral, the AWD will provide air defence for accompanying ships, and self-protection against attacking missiles and aircraft. The Aegis weapon system, incorporating the state-of-the-art phased array radar, in combination with the SM-2 missile, will provide an advanced air defence system capable of engaging enemy aircraft and missiles at ranges in excess of 80nm. The AWD will also carry a state-of-the-art helicopter for surveillance and to provide support to key warfare areas.

The surface warfare function will include long range anti-shipping missiles and a naval gun capable of firing extended range munitions up to 20nm that could be used for support to land forces. The AWD will also be able to conduct undersea
warfare and will be equipped with modern sonar systems, decoys and surface-launched torpedoes. *Hobart* is due to enter service in 2013 with the *Brisbane* in 2014 and *Sydney* in 2015. There remains an option to purchase and build a fourth AWD in the future.

**Amphibious Ships Project**

The two LHD amphibious ships, which will be known as the Canberra–class will comprise HMA Ships *Canberra* and *Adelaide*. They will provide a flexible capability boost to the RAN Fleet and will be capable of embarking up to 1000 troops with their tanks, vehicles and equipment, lodging them ashore via helicopters or landing craft for combat or humanitarian missions, and supporting them with state-of-the-art command, medical and logistics facilities.

*Canberra* is due to enter commission in 2011 and *Adelaide*, in 2013.
Aircrewman Category

Introduction
The Aircrewman category evolved from the Underwater Control (UC) and Radar Plot (RP) categories when shortfalls in Observer numbers required an alternate category to operate airborne Radar and Sonar systems. They were known as UC Air and RP Air Sailors. In 1962 they were renamed Sailor Aircrew and referred to as Aircrewman. Historically, Aircrewman have been employed as sensor operators in both fixed and rotary wing aircraft and as helicopter winch operators, loadmasters and Search and Rescue surface swimmers. Today the Naval Aircrewman category has provided a corps of personnel to fulfil a variety of flying and aviation support duties both at sea and ashore.

The Early Years
The RAN has been operating aircraft from ships at sea since early June 1917, when HMAS Brisbane, a Town-class light cruiser had temporarily embarked a Sopwith Baby seaplane and used it during reconnaissance operations against the German commerce raiders Wolf and Seeadler ¹ in WW I.

By 8 December 1917 her sister ship HMAS Sydney had successfully launched a borrowed Sopwith Pup, the first reported launch from a RAN ship ² and by March 1918 the Australian Flagship, Battle Cruiser HMAS Australia, had launched a Sopwith Stutter. ³

By mid 1918 the RAN had begun to routinely operate aircraft from its cruisers. Naval aviation developed and grew through its formative years culminating in the commissioning of the seaplane carrier HMAS Albatross in 1929.

The aircraft embarked in Albatross from the late 1920s until the late 1930s was the Supermarine Seagull III.

¹ Navy Sea Power Centre Ship History HMAS Melbourne I.
² Navy Sea Power Centre Ship History HMAS Sydney I.
³ Navy Sea Power Centre Ship History HMAS Australia I.
These were replaced by the Seagull V which was progressively embarked in the RAN’s cruiser force from 1935. These aircraft had a crew of three: a pilot, an observer and one telegraphist air-gunner. This was the first time non-commissioned personnel were assigned flying duties in naval aircraft.

Naval aviation experienced a temporary hiatus during the mid to late 1940s, but in 1948 it was revitalised with the formal commissioning of the Naval Air Station HMAS Albatross, and the progressive introduction into service of carrier borne air operations with the commissioning of the aircraft carrier, HMAS Sydney. Amphibious aircraft were eventually replaced by more modern and capable piston engine aircraft during the early 1950s and were embarked in Sydney for two operational deployments of the Korean conflict. Naval ratings were once again employed as Radio Operators, Lookouts and Anti Submarine Warfare (ASW) system operators in various Anti Submarine and Reconnaissance aircraft.

With the loan of HMAS Vengeance, a Royal Navy (RN) aircraft carrier, for a small period in 1953 the RAN conducted multi carrier operations off Brisbane culminating in a joint carrier fly past of 50 RAN aircraft over Brisbane. Since then the Navy’s Air Arm has undergone further development and change. Following the decommissioning of the sole remaining aircraft carrier, HMAS Melbourne, in 1982 and the cessation of fixed wing flying operations at sea, the Fleet Air Arm transitioned into primarily a helicopter force, operating from the flight decks of new generation guided missile frigates, amphibious and afloat support ships.

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5 Ibid.
The primary role of today’s Aircrewman is the operation and management of sensor systems in the Seahawk and Sea King helicopters. As a Sensor operator (SENSO), their key responsibilities include operation of aircraft systems such as Radar, Forward Looking Infrared (FLIR), Electronic Warfare (EW), Magnetic Anomaly Detection (MAD) equipment, and acoustic warfare systems, such as sonar buoys. The Aircrewman will also assist with aircraft navigation using aircraft sensors and ancillary systems.
Additional roles of Aircrewmen are the support of helicopter utility operations, which includes Search and Rescue (SAR), external and internal cargo, personnel transfers, winching and cabin gunning operations. Aircrewmen also provide the swimmer rescue capability. Finally, as part of a small crew, Aircrewman are required to provide support to both pilots and observers, in general aircraft systems management, cockpit duties and navigation, including gathering information from navigation aids and air traffic control agencies and making radio calls.

**Enlistment**

As there is no direct entry method into the Aircrew Category, Aircrewmen are drawn from other sailor categories. They must be a minimum rank of Leading Seaman or Able Seaman with the required seniority for promotion to LS. All candidates are required to undergo fitness, swim and psychological testing, and then finally appear before a selection board as part of the selection process. Transfer of Category (TOC) information is contained in ABR 10 Chapter 16 Annex A.

**Training**

Aircrewman Basic Rotary Course (ABRC) is conducted at HMAS Albatross in 723 Squadron. It consists of 37 weeks training in aviation subjects such as Aviation Medicine, Meteorology, Navigation and Air Traffic Control. Personnel retain their current category until successful completion of ABRC at which time they will be re-categorised as Leading Seaman Aircrew (LSA). On successful completion of ABRC, ‘provisional wings’ are awarded. A four year Return of Service Obligation (ROSO) will apply upon successful completion of ABRC.

After graduation, Aircrewmen can be expected to consolidate their flying skills at 723 Squadron before being posted for Seahawk or Sea King SENSO Operational Flying Training (OFT). This training is conducted at 816 Squadron in the S-70B-2 Seahawk helicopter or 817 Squadron utilising the SK 50A Sea King aircraft, which will be progressively replaced by the new maritime support helicopter MRH90 from about 2010. SENSO OFT provides the Aircrewman with the skills to utilise the aircraft sensors to assist in ‘fighting’ the aircraft in the operational environment (anti submarine warfare, anti-surface warfare and amphibious support). Confirmation of ‘wings’ and therefore category is upon successful completion of OFT.

**Postings**

Members of the Aircrewman Category are employed in embarked flying operations in Ship’s flights and within the RAN Squadrons 723, 816 and 817 located at the Naval Air Station, HMAS Albatross in Nowra. The MRH 90 will provide expanded posting
opportunities under the joint Navy/Army training and management regimes to Townsville and Oakey. Aircrew can expect to be deployed at short notice on operations to locations within or external to Australia both ashore and embarked.

Aircrewmen also support aviation operations and training with sea postings as part of Ships’ Aviation Departments and in aviation training and technical support positions in Sydney, Nowra, East Sale and Perth. It is envisaged that there will be positions in the Air Departments of the new large amphibious Canberra-class landing helicopter dock (LHD) ships for senior sailor and officer Aircrewmen. They also have the opportunity to sub-specialise as an instructor, training the next generation of Aircrewmen for the Squadrons.

**Promotion Policy**

All Aircrewman will be required to obtain the SENSO proficiency (or an equivalent qualification when MRH 90 enters service) to access the next higher rank. Where necessary, provisional protection may be afforded to sailors that have not had the opportunity to complete the required qualification due to exigencies of the service. Personnel provisionally promoted must achieve the SENSO proficiency to be confirmed in rank.

For promotion to Petty Officer Aircrewman (POA), a Leading Seaman Aircrewman (LSA) requires four years seniority. 36 months of this must be effective service as an aircrewman. They must have completed SENSO training, served a minimum of three months at sea employed on an embarked flight, and completed all relevant leadership and management courses.

For promotion to Chief Petty Officer Aircrewman (CPOA), a POA requires four years seniority, a minimum three months employed on an embarked flight at the rank of PO and a minimum of 1,000 flying hours experience plus the relevant leadership and management courses.

Promotion to Warrant Officer Aircrewman (WOA) is via the Warrant Officer Promotion Board, details of which can be found in the promotion section to the rear of this handbook.

Aircrewmen may commission through the Warrant Officer Entry Scheme. Aircrewman officer billets have been established at the Lieutenant (LEUT) and Lieutenant Commander (LCDR) ranks both ashore, including a flying instructors billet and at sea in the Landing Platform Amphibious (LPA) Air Departments and in future the LHD Air Departments. At the time of writing, a trial was under way to commission Aircrewmen from the rank of CPO.
Aircrewman Career Structure

**PAY GROUP 6/SG3**

- **Aircrewman Training Officer/Aviation Related Positions**
  - LEUT/LCDR
  - 3 Years

- **Category Staff Officer/Aviation Related Positions**
  - (Warrant Officer Aircrew)
  - 3 Years
  - Awarded Advanced Diploma of Aviation Studies

- **Aircrewman Instructor**
  - (Petty Officer Aircrew)
  - 3 Years

- **Squadron/Non Flying**
  - (Aviation Related Position)
  - 2 - 3 Years

**PAY GROUP 5/SG2**

- **Embarked Senso Aircrewman**
  - (Leading Seaman Aircrew)
  - 2 - 3 Years
  - Awarded Diploma of Aviation Studies

- **Seahawk or Sea King Senso OFT**
  - 12 Months

**PAY GROUP 4/SG1**

- **Aircrewman Basic Rotary Course**
  - 8 Months

- **Aircrewman Selection Board**
Suggested Reading – Aircrewman Category

ABR 10 – Sailor’s Career Management Manual

Divisional Staff Handbook 2007


Lehan, Mike Editor ‘Flying Stations-A story of Naval Aviation’ Allen and Unwin, 1998


Leading Seaman Aircrewman Adele Shimmings controls the winch in a S-70B-2 Seahawk.
Acoustic Warfare Analyst Submarines Category

Introduction

The submarine’s principal task is to keep Australia’s maritime environment free from the threat of incursion by hostile ships and submarines. An important factor in the submarines achieving this aim is in detecting, tracking and classifying the noise sources produced by these potential threats.

Techniques employed by the submarine for the detection of other submarines and ships include broad and narrow band, noise source detection. Broadband uses the combined noise that a contact emits whereas narrowband analysis allows the submarine to ‘fingerprint’ a contact for classification.

Additionally, Acoustic Intelligence (ACINT), or intelligence derived from the analysis of underwater acoustically detectable emissions, is a fundamental source of information in the maritime environment. It is a major contributor to the development of awareness and essential to seizing and maintaining both the initiative and dominance of the maritime battle space.

AWA Category

AWA operators supervise and manage all passive and active acoustic sensors in the Collins-class submarines. They are trained to detect, track and classify all noise sources in the oceans ranging from diesel engines to biologics (whales, snapping shrimp, seismic noise, waves etc). This acoustic information provides Command with classification, environmental considerations and tactical recommendations to ensure that the submarine maintains the overall tactical advantage. Additionally, AWA submariners form part of the seamanship department, whose duties include surfaced helmsman and lookout, navigator’s yeoman, berthing, boat and helicopter transfer parties.

ABAWA Jamie Dennis monitors his console in HMAS Dechaineux.
As with most categories within the Royal Australian Navy (RAN) Submarine Squadron, their history begins in the Royal Navy (RN).

Hydrophones were being fitted to submarines as early as 1914. Rudimentary in design, the hydrophones were primarily for sending and receiving shore station signals and submarine to submarine underwater transmissions (SST).

The original hydrophone operators were Telegraphists (TELs), a sub-speciality of the Signalman Branch. The wireless office was set up in a lead-lined, soundproof enclosure, complete with SST headphones and telegraph key, and as the TELs were already accustomed to listening for sounds and didn’t have much to do while dived, they were given the job of listening for underwater sounds.

As this science developed and evolved to surface vessels, it became obvious that the TELs already had enough to do and a new branch was created. They operated Anti-submarine Detection Investigation Committee (ASDIC), Sonar and were known as Submarine Detectors (SD), with advanced ASDIC operators referred to as Higher Submarine Detectors (HSD) and Submarine Detector Instructors (SDI).

The Early Years

Australia’s first submarines, the AE1 and AE2, were launched in 1913. Manned by composite Australian and British crews, both boats arrived in Australia in May 1914. AE1 was lost with all hands on 14 September 1914 off the coast of Rabaul, and AE2 was lost due to enemy action on 30 April.
1915, in the Sea of Marmora, having penetrated the Dardanelles—the first allied ship to successfully do so.¹

In 1919, six ‘J-class’ submarines were gifted to Australia from the British Admiralty. They arrived in Sydney on 15 July 1919 accompanied by the Submarine Tender HMAS Platypus. The submarines were unfortunately in poor condition and were immediately placed into refit before being based in Geelong, Victoria. They saw a brief period of local operation before all six submarines were decommissioned in 1922 as part of a Government economy measure. J1, J2, J4 and J5 were sold in 1924 and eventually scuttled off Barwon Point, Victoria. J3 was sold in 1926 and scuttled as a breakwater in Port Phillip Bay, Victoria. J7 survived for a number of years as the electrical power generator for the Flinders Naval Depot. Finally in 1929, she joined J3 as a breakwater.

Late in 1924, the Government made the decision to strengthen the RAN with two more submarines. Commonwealth Naval Order (CNO) 186 of 1926 called for volunteers to qualify for the rating of SD 2nd Class. The original HMAS Oxley was commissioned on 15 April 1927 and HMAS Otway followed on 15 June 1927. Each boat carried three SD qualified ratings all of whom were TELs or Leading TELs. Both submarines made a grand entrance into Sydney Harbour on 14 February 1929. Unfortunately, their arrival coincided with the Great Depression, and in May 1930 both Oxley and Otway were placed into reserve. Maintenance proved extremely costly, and in April 1931 the submarines were gifted back to the RN.

Anti-Submarine School

The SD rating went astray from 1931, until it was resurrected on 16 February 1939 when the RAN commissioned its own Anti-Submarine School in HMAS Rushcutter, in Sydney. Also attached to this new School was the Destroyer HMAS Vendetta and the Boom Defence Vessel HMAS Kookaburra. The School was modelled on and followed the style of HMS Osprey, the RN Anti-submarine School in Portland, UK. Rushcutter’s initial training staff consisted of one Commander and six Petty Officers made up from SDI and HSD ratings, all of whom were loaned from the RN. By the time war broke out in September 1939, the RAN had trained 66 anti-submarine officers and 32 SD ratings.

Under the Empire Training Scheme, and so long as the RAN requirements were satisfied first, the RAN provided a minimum of 12 officers and 20 ratings to the RN every month. Approximately one fifth of the RN’s anti-submarine personnel were supplied by the RAN. The following text was received via signal from their Lordships in the Admiralty by the Australian Commonwealth Naval Board:

“The value of RAN trained Officers and Sailors is held in such high esteem that Admiralty would be glad to have more of them”.

Additionally, personnel from the RN, Royal New Zealand Navy (RNZN), United States Navy (USN), France and the Netherlands were also trained at Rushcutter.

During WW II, the RAN was given use of the Dutch Submarine ‘N39’, for training and she was commissioned HMAS K9 on 22 June 1943. She saw limited use as a training boat after sustaining damage in the Japanese midget submarine attack on Sydney Harbour, and K9 decommissioned on 31 May 1944.

Birth of the Underwater Control Category

As a result of the re-organisation of naval occupations and trades that followed WW II, 1 January 1948 saw the SD rating amalgamate with the newly formed Torpedo Anti Submarine (TAS) branch. SD’s became Torpedoman Detector 3rd Class, HSDs became Torpedoman Detector 2nd Class and SDIs became Torpedo Anti-Submarine Instructor (TASI).

The next change occurred when the Commonwealth Naval Board decided that TAS branch ratings would specialise in either Underwater Control (UC) or Underwater Weapons (UW). Chief of Naval Staff Orders (CNO) 234 of 1952 stated, ‘The UC rating will be responsible for the manning, operation and routine TAS maintenance of the following control and detection equipment: Anti-
submarine (including Seaward Defence), Torpedo, Minehunting’. The effective date of the sub-division was 1 January 1953, although the final division of ratings between the new UC and UW categories was not completed until later that year when CNO 356 of 1953 was promulgated.

In 1954 construction of a new TAS School commenced at HMAS Watson and in early March 1956 the TAS School moved from Rushcutter to Watson.

UCs became responsible for sonar sensor operation and UWs assumed responsibility for anti-submarine weapons such as Squid, the Mortar MK 10 and anti-shipping torpedoes carried in the ‘Daring -class’ Destroyers. Petty Officers were classed either as Torpedo Instructors (TI) or Underwater Controller 1st Class (UC1). Additionally, there was a provision for senior instructors to become proficient in both rates and become TASIs.

**Rebirth of the Australian Submarine Squadron**

Other than the training submarine K9, Australia had not operated submarines since April 1931. In November 1949, and as a result of discussions between the Australian and British Governments, a flotilla of three British submarines was permanently based in HMAS Penguin in Sydney. This continued until 10 January 1969 when the last of these submarines (HMS Trump) returned to the UK.

In January 1963 the Government announced approval for the building of four new, British Oberon -class submarines in Scotland; a further two boats were ordered and built for the RAN some eight years later.

Soon after the keel of the first boat (Oxley) was laid down, the RAN began sending volunteers for submarine training to HMS Dolphin, in Gosport, UK. This steady flow of personnel was maintained as the building program progressed and as each vessel was commissioned, she was manned almost entirely by RAN Officers and Sailors.

On 18 August 1967 the RAN commissioned its new submarine base, Platypus, at Neutral Bay, in Sydney, and on that same day Oxley arrived alongside. Training for UC submariners (UCSM) remained primarily in the UK, until the Submarine School at Platypus began operating in mid-1984.
The Collins-class

The need to replace the RAN’s highly successful, but ageing ‘Oberon-class’ submarines was identified in the early 1980s and a decision was made to call for expressions of interest in 1983. After determining the Navy’s requirement it soon became evident that no off-the-shelf submarine available at the time would satisfy Australia’s unique operational requirements and that a new design was the solution.

On 3 June 1987, a contract worth over $5 billion was signed with the Australian Submarine Corporation (ASC) for the design and construction of six submarines and associated supplies and services for the RAN.

The first ‘Collins-class’ submarine, HMAS Collins, was laid down on 14 February 1990 and commissioned on 27 July 1996.

The Collins-Class is an indigenously built World Class submarine, globally deployed with deep specialist sailors and officers. It will remain the spearhead of underwater capability until approximately 2025.
Early in 1995 the UCSM Category underwent a review by the Defence Force Remuneration Tribunal (DFRT). As a direct result, on 12 August 1995, all UCSM’s were re-categorised Acoustic Warfare Analyst Submariners (AWASM). As for the rate badge, although some colourful and rather exotic designs were submitted, it remained the same, only the lettering underneath changed from ‘C’ to ‘AWA’. During this time training for AWASM’s was being conducted both in Platypus and the newly built Submarine Training and Systems Centre (STSC) in HMAS Stirling located at Garden Island in Western Australia.

In 1999 Platypus was decommissioned and all RAN submarines were home ported to Stirling. The last Oberon-class submarine, HMAS Otama was decommissioned in late 1999. Today, all AWA category specific training is conducted in Stirling with advanced courses conducted in HMAS Albatross, the UK and/or Canada.

**Generic Sea Duties and Posting Options**

Ranks from Able Seaman through to Chief Petty Officer can be posted to sea and to positions in the ‘Collins-class’:

- WOAWA at sea, include duties as the Ship’s Warrant Officer.
- CPOAWA at sea, duties include employment in the following roles.
  - Chief of the Boat,
  - Submarine Sea Training Group, and
  - Acoustic Intelligence sea riding specialist.
- POAWA at sea, duties as the AWA 3, Sonar Supervisor.
- LSAWA at sea, duties as the AWA 2, Sonar Watch Supervisor.
- ABAWA at sea, duties as a Sonar Operator.
- SMNAWA at sea duties as a Sonar Operator.
Generic Sea Duties and Posting Options

Warrant Officer Acoustic Warfare Analyst Submarines (WOAWASM)

A WOAWASM may be employed in capability development or Sailor Management positions within the Submarine Headquarters or Training Authority Submarines, or in a Ship or Command Warrant Officer roles throughout the Navy.

Although primarily in managerial positions, Warrant Officers possess a high degree of professional knowledge and whilst imparting these skills to their subordinates should remain approachable yet always be beyond reproach. Additionally, they must be self motivated and are expected to demonstrate initiative and efficiency in the execution of their duties, at all times upholding the morale and direction of the Category.

Chief Petty Officer Acoustic Warfare Analyst Submarines (CPOAWASM)

At sea a CPOAWASM may be employed as Chief of the Boat (COB), a member of Sea Training Group, or as an Acoustic Intelligence Sea Riding Specialist.

The COB’s role includes but is not limited to Whole Ship Co-ordination, Ships Medical Officer, Coxswain (Discipline/Leave and Movements), Training Co-ordinator, Senior Petty Officer of the Watch including Navigation, Manoeuvring Control, Track Manager/Track Motion Analysis Operator, Physical Security Officer, Escape Equipment and provide command oversight as the senior, Senior Sailor onboard the submarine.

Ashore a CPOAWASM may be posted to Stirling as the AWASM Category Sponsor, AWASM Instructional Staff, Combat Systems Training Staff, Secondary Acoustic Analysis Centre Manager, Operational Preparedness Staff and Submarine Human Resources Staff. Shore positions also exist at Albatross as a member of the Secondary Acoustic Analysis Staff and overseas at Pearl Harbour Hawaii as a member of ACINT (Acoustic Intelligence) organisation.

The role of the CPOAWASM is a multi-faceted one and requires a high degree of professional knowledge, well developed task management skills, the ability to foster and grow co-operation, trust and harmony within the team and continually adapt to any situation that may arise.
**Petty Officer Acoustic Warfare Analyst Submarines (POAWASM)**

In their seagoing role the POAWASM is the Sonar Supervisor (AWA3) and as such is responsible to Command for all matters regarding acoustic warfare. In addition they liaise with intelligence organisations both internal and external, conduct surface navigation (Petty Officer of the Watch), Planesman (Dived), Track Manager/Track Motion Analysis and are the understudy to the Chief of the Boat.

Ashore a POAWASM may be posted to Stirling as AWASM Instructional Staff, Combat Systems Training Staff, Secondary Acoustic Analysis Centre Staff and Operational Preparedness Staff. A shore position also exists at Albatross as a member of the Secondary Acoustic Analysis Staff.

POAWASMs are required to have a high level of initiative, self direction and an ability to think outside the box. Additionally, they ensure maintenance of harmonious relations within their department and mentor the Leading Seaman Acoustic Warfare Analysts.

**Leading Seaman Acoustic Warfare Analyst Submarines (LSAWASM)**

At sea the LSAWASM is the Sonar Watch Supervisor, they ensure that quality Sonar information is passed to Command through the Track Manager as to maintain the overall tactical picture. They are required to lead by example correcting, directing and mentoring their subordinates.

Ashore a LSAWASM may be posted to Stirling as AWASM Instructional Staff, Combat Systems Training Staff, Secondary Acoustic Analysis Centre Staff, Capability Division Staff and Operational Preparedness Staff. A shore position also exists at Albatross as a member of the Secondary Acoustic Analysis Staff.

LSAWASMs are required to have a highly developed sense of situational awareness and the ability to analyse and prioritise a large volume of data in order for the Submarine to maintain the overall tactical advantage.

**Able Seaman/Seaman Acoustic Warfare Analyst Submarines (AB/SMNAWASM)**

At sea the AB/SMNAWASM operate the Sonar consoles of the Submarine Combat System. With the guidance of their Sonar Watch Supervisor they detect, track and classify contacts. Additionally, they can perform the duties of Navigators Yeoman, Executive Storeman and Cleaning Gear Storeman.

Ashore an ABAWASM may be posted to Stirling as AWASM Instructional Staff, Combat Systems Training Staff, Secondary Acoustic Analysis Centre Staff, Capability Division Staff and Operational Preparedness Staff. An ashore position also exists at Albatross as a member of the Secondary Acoustic Analysis Staff.

As a Junior Sailor, AB/SMNAWASMs have a large amount of responsibility placed upon them. Desirable attributes are being a team player, employing a can do attitude, a willingness to learn and the ability to adapt and overcome whilst enjoying the challenge.
Thinking of a Career as an Acoustic Warfare Analyst?

If you are considering a career as an Acoustic Warfare Analyst Submarines, your attention is drawn to ABR 10 Chapters 16 – Transfer of Category, 17 – Transfer to Submarines and DI(N) PERS 75-41 Submarine Selection and Initial Training.

It is recommended that you also complete the Enhanced Selection Process (ESP). This exposes any potential Submariner to life onboard a Collins-class Submarine. The up side is that this allows the candidate to make an informed decision on whether or not to engage in a career of wearing Dolphins.
Acoustic Warfare Analyst Submarines - Career Model

Promotion to Petty Officer
- 4 years seniority as LS
- 12 months Sea Time as LS
- Advanced Acoustic Analysis Course
- AWA 3 Course
- J/S Leadership & Management Course

* Awarded after successful completion of Competency Log

Promotion to Leading Seamam
- 2 years seniority as LS
- 12 months sea time as LS
- AWA Course

* Awarded after successful completion of Competency Log

Promotion to Warrant Officer
- 4 years seniority as CPO
- 12 months sea time as CPO
- CLDP

Promotion to CPO
- 4 years seniority as PO
- 12 months sea time as PO
- CLDP

AWA 3
- Skill Grade 3*

AWA 2
- Skill Grade 2*

SMS Q Achieved

Collins Class (Sea) Training

AWA 1
- Skill Grade 2

Collins Class (Shore) Training

Suitable for SM

Enhanced Selection Process

Recruit School

Direct Entry

Return to General Service

Unsuitable for SM

If Direct Entry TOC
Suggested Reading – AWASM Category

ABR 10 – Sailor’s Career Management Manual

DI(N) PERS 75-41 Submarine Selection and Initial Training

Divisional Staff Handbook 2007


J David Perkins, The Development of the Torpedo Branch, (remains a work in progress [yet to be published] notes obtained via, “www.pbenyon.plus.com/branches”)

David Stevens, A Critical Vulnerability, Sea Power Centre - Australia (re-printed 2005)
Boatswains Mate Category

Introduction

The Boatswain’s Mate (BM) category provides the bulk of the Navy’s corps of professional seaman. BMs provide the specialist knowledge, training and supervision of the more advanced seamanship evolutions including anchor work, rope work, small boat handling and operations, berthing, towing, helmsmanship, and replenishment at sea.

In addition, BM sailors are the Navy’s close range weapons specialists. Maintaining and operating weapons such as the Typhoon and Mini Typhoon electro-optical remotely fired gun systems, 12.7mm heavy machine gun, Austeyr rifle and Mag 58 submachine gun. Selected BM’s also train in demolition charge preparation.

BMs undertake and provide training for the ship’s force protection and ship’s boarding team requirements, including boat and helicopter boarding insertion.

The Early Years

The Boatswain – pronounced Bo’sun, is timeless:

‘The Bo’sun has charge of the boats, rigging, anchors, and cables. It is his or her duty to turn the hands up, (summon the whole crew), whenever they are required for duty. He should be, from the nature of his duties, an active man, and a thorough seaman. The Boatswain mates assist the Bo’sun.’

The BM Category is the third largest in the RAN and over time has become one of the Navy’s most versatile. The BM Category’s traditional mariner and fighting skills (through their association with the Royal Navy) can be traced back to King Alfred; the accepted founder of the British Navy. King Alfred used (then) state-of-the-art long ships to fight the Viking raiders operating along the south coast of Wessex in the late ninth century.

By the thirteenth century, ships of the medieval fleet had developed into short squat vessels, fitted with castles at each end to increase their fighting power. These raised forecastles and aftercastles became standard features by the fourteenth century.

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century and carried the ship’s main armament of Nautical Army of Volunteer Yeoman (NAVY) armed with bows, arrows, catapults; and later, cannons.

**The Gunner**

Over the centuries these Men O’ War developed into mobile gun platforms. Indeed the Royal Navy’s successes at sea can be attributed to the daring of its Maritime Commanders and effectiveness of its gunnery.

The early Gunnery Categories, although noted for their conservative and disciplined approach to service life, produced many characters, which when coupled with its heroes, formed the nexus of a very strong tradition and espirit de corps. Gunners were then, as they are now, an integral part of Navy life. The BM category of today continues this fine tradition.

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**The Gunnery Branch’s motto**

The Gunnery Branch is the only branch to have its own patron Saint - St Barbara.

*Si Vis Pacem Para Bellum,*

‘If you desire peace prepare for war’.

**The History of the BM Category**

By 1870, the Victorian Government had established the Williamstown Naval Depot, which consisted of a naval base and a general training establishment. Located at Williamstown not far from Melbourne, it was here where gunnery, torpedo, communications and seamanship training was originally conducted for Victoria’s Colonial Navy. During the late Nineteenth Century, sailors from the colonies of Victoria, New South Wales, South Australia and Queensland were involved in assisting the British efforts in the Chinese Boxer Rebellion (1899-1901).

The State Naval Forces were transferred to the Commonwealth after Federation in 1901, but training continued at Williamstown until the new Gunnery and Seamanship Schools were completed at Flinders Naval Depot, outside Melbourne in 1920.

Flinders Naval Depot continued to expand with additional schools, and in 1922 a small arms training range was commissioned.
In 1956, the Navy acquired the Army’s 15.5 hectare West Head property and by 1959 West Head Gunnery Range (WHGR) was established as a permanent shore based gunnery range. Located in Westernport Bay, Victoria the range is still in operation today.

In 1989, a new Gunnery School was opened with modern updated facilities. The school currently trains approximately 700 seamen sailors a year.

In 1992, as part of the Seaman Career Rationalisation Study (SCRS) the Gunnery School was disestablished and most sections were placed under the control of the Seamanship School. Further training refinements occurred in 1998, when the North Battery was combined with WHGR to form the new Gunnery School. Now called the Boatswain’s Faculty it provides for Medium and Close Range Gunnery training, in addition to the weapon maintenance courses. It presently trains approximately 600 personnel a year.

**Category Badges**

The category badge for the Gunnery sailor was initially adopted from the RN, with the Gunner wearing crossed cannons to symbolise power and destruction. In the RAN the gunnery sailors were known as Gunners Mates and Quarter Master Gunners. The Quarter Master Gunner was to become the longest category to serve the RAN from creation in 1901, until 30 July 1993.
Other subcategories developed over the years within the Gunnery branch, including Radar Controllers (RC), who operated gun direction and ranging radar between the 1940s and 1960s. By 1962, with advances in fire control systems, the Fire Control (FC) category was established, with the first basic FC course completing 6 August 1965. The last Advanced FC course to complete was on 5 June 1992.

With the more sophisticated weapons entering the RAN, the Weapons Mechanic (WM) category was established as semi skilled maintainers, and to man the increasingly diverse gun systems within the Navy. The first class of Basic WMs completed training 21 August 1964. The WM branch was still in its infancy when on 1 June 1981 it was disbanded and amalgamated with the QMGs. The maintenance duties and gun manpower were undertaken by the Weapons Electrical and QMGs.
The BM category was established on 1 August 1993 and to mark this occasion the first class of Basic BMs completed basic training and were awarded the new category badge. In 1992, the BM rate badge was designed by POQMG Tony Martin. The category badge still maintains the Gunnery tradition with the crossed Guns and in addition carries Carrick bend to establish its ties to their Seamanship skills.

**Core duties of the Boatswain Mate Category**

The BM’s core duties continue to evolve, keeping pace with the requirements of new technologies and weapon systems that are resident in the Navy’s more technologically advanced ships. Their duties include part of ship work, ships husbandry, force protection, boarding party, watch on deck, lookout and quartermaster duties, and may include Ships Lifesaving Equipment maintenance, Navigator’s Yeoman duties (chart and navigation equipment maintenance) and ship ceremonial expertise.

As the BM’s career advances further, Patrol Boat specialisation training is undertaken to prepare for postings to Patrol Boats. This involves undertaking the Small Ships Navigation Course with minimum rank as LSBM. After consolidation and CO endorsement, the BM
is awarded a Limited Navigation Watchkeeping Certificate. After further navigation training at Watson in Sydney, and on successful completion of a Fleet Board, the BM will then be awarded a full Navigation Watchkeeping Certificate. This is an important milestone for those BM sailors who seek to gain an officers commission and aspire to command an Armidale-class Patrol Boat (ACPB).

**The BM Training Continuum**

The BM sailor traditionally enters the Navy through HMAS Cerberus to commence 11 weeks of Recruit School training. On successful completion of this basic training they enter the Boatswain Faculty as a Seaman Star rating and commence 14 weeks Basic Boatswains Mate training. This consists of:

- Four weeks at Seamanship School - Basic Seamanship skills, including, helmanship, rope and boat work, part of ship, line handling, berthing procedures skills and seamanship evolutions, such as Cable Party, Towing, Jackstay and Replenishment at Sea.

- Three weeks at Gunnery School/West Head Gunnery Range where the BM learns Small Arms Safety Training, Armoury duties, Command and Control for Close Range Gunnery, Lookout routines and Missile Weapon Decoy systems. Their training culminates with live firings of the 12.7mm QCB machinegun.

- Seven weeks at the Small Arms Training Section, which will qualify BMs on all in-service small arms, such as the Steyr F88, F89 light support weapon, MAG 58 machine gun, 870P shot gun, 9mm pistol and the 40 mm Grenade launcher. BMs also learn weapon maintenance procedures, safety and firing, defensive tactics, boarding operations, fast roping and Night Vision Equipment. BMs are also trained in Corrosion Control and Safety Equipment.
Generic Sea Duties and Posting Options

Warrant Officer Boatswain (WOB)

The role of Warrant Officer is multifaceted. WOBs play a significant role in the continuous improvement of the Navy’s performance by encouraging the creative involvement of all personnel. The discipline, morale, efficiency and well being of sailors are influenced by the professional commitment of WOBs and the manner in which they exercise their authority. WOBs must be self motivated, are expected to demonstrate initiative and to possess the capacity for independent action.

Employment Position: WOBs are employed within Command Warrant Officer structure, as Ships Warrant Officers and within Sea Training Group. Sea billets include HMAS Success as the Bo’sun, and XO positions in LCHs. WOBs are also employed in the Boatswain faculty at Cerberus, as Category Managers in Fleet Headquarters in Sydney, and at Fleet Base West as the Port Services Manager.

Chief Petty Officer Boatswain (CPOB)

The principal function of a Chief Petty Officer Boatswain is to perform departmental management and technical specialist duties within the Boatswain Category. They are required to demonstrate a well developed capacity for self direction and high levels of professional theoretical category knowledge.
They hold the position of the professional head of their category within that ship or unit.

CPOBs must successfully complete the Petty Officer Management course, and the advanced Boatswain category training conducted at Cerberus. All CPOBs are required to complete the Chief Boatswains Mate (CBM) pre-joining training prior to joining their ship as the CBM. In addition, CPOBs are to become actively involved within the division, as the Divisional Chief and actively promoting the Navy’s Divisional System.²

**Employment Positions:** There are 24 positions at sea for CPOBs, the majority is as the Chief Boatswains’ Mate (Buffer) of a Major Fleet Unit, however there are an additional six positions in Patrol Boats. There are approximately 50 shore positions. Shore employment for CPOBs Australia wide, in Stirling, Darwin area, Cairns, Canberra area, Harman, Sydney area, Watson, Albatross, Creswell and Cerberus.

**Petty Officer Boatswain (POB)**

Petty Officer Boatswains are responsible to perform task management and technical specialist duties within their categories consistent with departmental objectives. They are required to demonstrate developed practical ability for self directed application of category theoretical knowledge in skilled areas, including tasks which are complex and non routine. Supervisory skills are necessary and their employment involves personal accountability. They can expect to be an integral part of the Division and become involved in divisional duties.

POBs must have successfully completed the Petty Officer Management course and Advanced BM and Seamanship training. All POBs are required to supervise or undertake tasks such as, manage a ‘part of ship’, supervise seamanship evolutions, weapons use and maintenance training, corrosion control, boarding party, ceremonial and safety equipment. Selected volunteers will be required to fulfil the duties of Officer of the Watch (OOW) in minor war vessels.

**Employment Positions:** There are 50 sea positions for POBs, with approximately half serving in Major Fleet Units (MFUs), and the remainder in Minor War Vessels (MWVs). There are 85 shore positions including Stirling, Darwin area, Cairns, Canberra area, Harman, Sydney area, Watson, Albatross, Creswell and Cerberus.

**Leading Seaman Boatswains Mate (LSBM)**

The Leading Seaman Boatswains Mate is the junior NCO of the BM corps of sailors and with their subordinates, make up the company of junior sailors within the Boatswains Mate category. They are the first line of supervisors in the chain of command and as such, have a vital role in the maintenance of good order and discipline among their subordinates. They are required to provide advice and guidance to their subordinates and support to their superiors.

LSBMs must successfully complete the Leading Seaman Leadership Course (LSLC), and intermediate training. They work in a particularly dynamic environment involving the operation and supervision of small arms and close range weapons, part of ship, boarding operations, boatwork, force protection, seamanship, corrosion control, safety equipment and ceremonial activities.

**Employment Positions:** There are 124 sea positions for LSBMs and includes all classes of ships. LSBM serving in Patrol Boats now have the opportunity to undertake the Small Ships Navigation Course as part of their training. There are approximately 87 shore positions nationally including: Stirling, Darwin area, Cairns, Canberra area, Harman, Sydney area, Watson, Albatross, Creswell and Cerberus.

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**Able Seaman Boatswains Mate (ABBM)**

Able Seaman Boatswains Mates work in a particularly dynamic environment. Their duties involve the operation and maintenance of small arms and close range weapons, force protection, part of ship equipment, boat crew duties, boarding party operations (including helicopter fast rope), boat insertion corrosion control, safety equipment and ceremonial activities.

**Employment Positions:** There are approximately 325 sea positions serving in all classes of ships. There are approximately 152 Shore positions nationally including; Stirling, Darwin area, Cairns, Canberra area, Harman, Sydney area, Watson, Albatross, Creswell and Cerberus.
BM Career Model

**WOB**
- 4 years rank seniority as CPO
- 12 months sea time as a CPO
- Successful completion of CLDP and SSMC

**CPOB**
- 4 years rank seniority as PO
- 12 months sea time as PO

**POB**
- 4 years rank seniority as LS
- 12 months sea time as LS
- Successful completion of JSLMC
- Advanced BM Course
- Advanced Seamanship

**LSBM**
- 2 years rank seniority as AB
- 12 months sea time as AB
- Intermediate BM Course
- Intermediate Seamanship Course
- Intermediate Corrosion Control Course
- BM Comp Log

**ABBM**
- 12 months sea time as SMN
- BM Comp log

**SMNBM**
- Basic Seamanship
- Basic BM Course

**SMN*BM**
- Recruit School

**TOS / TOC**
Suggested Reading – Boatswains Mate Category

ABR 10 – Sailor’s Career Management Manual
Divisional Staff Handbook 2007
ABR 1043 RAN Firing Manual
ABR 1834 Vol 1 and 2 RAN Ceremonial Instructions
BR 67 – Admiralty Manual of Seamanship
Clearance Diver Category

Introduction

The Royal Australian Navy (RAN) Clearance Diver (CD) Category comprises the Australian Defence Force’s specialist divers and has, since its inception, had a primary focus of Underwater and Abovewater Explosive Ordnance Disposal (EOD). This role is conducted at sea in ships, vulnerable approaches to ports and anchorages, in port facilities and installations and in support of amphibious operations. The RAN CD community represents the largest single ADF organisation with a direct and primary interest in the conduct of EOD.

All personnel joining the category must undergo acceptance testing and complete the arduous requirements of the CD qualification course. In the present international climate of uncertainty and widespread threat of terrorism, Clearance Diving Teams (CDTs) represent a valuable and extremely flexible asset of the ADF.¹

¹ RAN Website.
A Brief History of RAN Clearance Diving

Like the fledgling RAN, the Diving Branch modelled most of its procedures on the tried and tested traditions of the Royal Navy (RN) and by the 1920s had adopted the latter’s diving equipment, regulations, pay and organisation. Responsibility for diving was vested in the Gunnery Branch and it was to the Gunnery School at HMAS Cerberus, outside of Melbourne, that the first trainees reported. From a small temporary structure on the Hanns Inlet Wharf, training was conducted using the Siebe Gorman Standard Diving Dress and Hall Rees Shallow Water Dress. By 1942 the Diving School had been established at HMAS Penguin, Balmoral in Sydney, still using Standard equipment. Responsibility for training of divers was transferred from the Gunnery Branch to the Torpedo Branch with training moved to HMAS Rushcutter, in Sydney in 1948. The Diving School remained at Rushcutter until 1968 where it was again relocated to its former location, Penguin, Balmoral in Sydney, where it remains today.²

As the EOD and underwater environment developed, the need for a category with specialised skills was realised and the Clearance Diving Category of the Royal Australian Navy was formed in 1951. The primary role of the newly formed branch was the location, identification and disposal of mines underwater. Its secondary roles included underwater maintenance, training support to Fleet units in ship’s defence against saboteurs, beach reconnaissance and minor salvage.

Although the CDs immediately adopted the new roles, it wasn’t until 1955 that the first dedicated CD course qualified, utilising rebreathing and

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² R.S. Blue Lieutenant Commander RAN, United and Undaunted The History of the Clearance Diving Branch of the RAN, The Naval Historical Society of Australia 1976.
mixture diving equipment. In 1961 the first RAN trained CD officers graduated from the dive school and 1962 saw the branch numbering 51 officers and sailors. While EOD remained a primary function, it soon became apparent that Navy divers were suited to an expanding variety of tasks.

The CD Category continued to evolve and by 1966 the RAN had introduced the concept of the Australian Clearance Diving Team (AUSCDT). In that same year AUSCDT 3 was formed and deployed to Vietnam, where they served with distinction, being awarded one Distinguished Service Cross (DSC), two Distinguished Service Medals (DSM), one British Empire Medal (BEM) and three mentions in dispatches.

**Badge History**

Prior to 1955, a cuff rate badge of the Standard Diving Helmet was sewn on the sleeve of the right forearm. In 1955, when the first CD course qualified the badge was lifted to the upper sleeve of the right arm and a ‘C’ was included under the helmet for CD. In 1958, a competition was held at Rushcutter to design a CD crest. It was won by Able Seaman Clearance Diver (ABCD) L.I. MacKay who received a prize of five pounds. It remains unchanged today.

**Recruiting and Training**

CDs may be recruited either directly or through transfer of category. For direct entry, CD training begins at Cerberus with basic recruit training of 11 weeks. Upon successful completion, candidates commence category training comprising of:

- **Basic Seamanship Course** - four weeks,
- **Small Arms Training Course** - five weeks,
- **Ships Diver Course** - three weeks,
- **Demolitions Course** – one week,
- **CD Acceptance Test** - two weeks, and
- **Basic CD Course** - 30 weeks.

The structure of the RAN Diving School (RANDS) and the training syllabus reflects the structure of the CD Team. As a consequence the basic CD course training focuses on the modules that mirror the Team elements, and consist of:

- **Underwater Battle Damage Repair (UBDR),**
- **Mine Counter Measures (MCM),**
- **Maritime Tactical Operations (MTO),** focusing on clandestine beach reconnaissance, and
- **Explosive Ordnance Disposal (EOD) and Improvised Explosive Device Disposal (IEDD).**
Equipment

The equipment used by the CD is amongst the best available in the world. The trainee will be given the skills to use the Underwater Battle Damage Repair diving equipment, incorporating the commercially available KMB MK.17 Helmet, KMB MK.18 Band-mask and a solid Australian SCUBA set.

For Maritime Tactical Operations the versatile Draeger LAR VII is used. The Draeger is a closed or semi-closed circuit re-breather (no bubbles emitted) with the capacity to be switched during operation from a mix of 60/40 Nitrox to 100% oxygen and vice versa to allow for deployment from submarines and conducting clandestine operations.

Mine Countermeasures Operations are conducted using the Australian designated A5800 (a hybrid of the USN’s MK.16), Constant Partial Pressure Closed Circuit HE/02(HELOX), N2/02(NITROX) re-breather to a current depth of 60m.

Employment

Posting cycles aim to provide rotation between AUSCDTs, sea, and shore positions, thereby endeavouring to provide some shore respite time. With the exception of Sydney, category operational requirements and limited additional employment opportunities hamper the ability for divers to achieve consecutive postings in the same geographical area.
Employment Ashore in non-operational positions

The RAN Diving School provides very rewarding work in shore positions across all ranks, filling positions as Instructors and assistant Instructors. The very nature of dive training, dictates that these positions are deployed regularly to dive training areas throughout Australia, requiring regular after hours work and additional personal commitment.

In addition there are:

- Chief Petty Officer Clearance Diver (CPOCD) and Petty Officer Clearance Diver (POCD) positions are available at HMAS Waterhen, in Sydney - generally for staff and policy work.

- One POCD and two Able Seaman Clearance Diver (ABCD) positions are available at HMAS Cairns. These positions, augmented by ‘in location’ Ship’s Divers, provide a Scuba Air Diving and Explosive Ordnance Reconnaissance (EOR) capability for Northern Australian.

- Positions to support Naval Reserve Diving Teams are also available in South Queensland, South Australia, Victoria, and Tasmania.

- Positions available at the Submarine Escape Training Facility in HMAS Stirling.
Employment in Operational Billets

The majority of operational CD positions across all ranks are located within the CD teams. Additional positions are allocated to 4th Battalion, The Royal Australian Regiment Commando (4 RAR CDO) located in Sydney, supporting the Tactical Assault Group East (TAG-E). Additional positions are as follows:

- ABCD and Leading Seaman Clearance Diver (LSCD) positions in MHCs, which also can be attached to deployable CD element in MFUs.
- POCDs can be attached to deployable CD element in MFUs and within the MCD Task Group Training Element.
- CPOCD positions in MHCs.
- Warrant Officer Clearance Diver (WOCD) positions in MCD Task Group Training element.

AUSCDT postings are classified as ‘operational shore’ for Directorate of Sailors Career and Management (DSCM) sea/shore roster purposes. Personnel posted to positions at AUSCDTs receive 10 days extra sea leave but not Sea Going CDs undertaking harbour mine clearance, Port of Umm Qasr, Iraq 2003.
Allowance (SGA). TAG (E) is classified as an operational shore posting and attracts Specialist Operations Allowances (SOA) and 10 days extra leave per year.

**Clearance Diving Teams**

There are two permanent CDTs in the RAN with a third activated as necessary for overseas deployment.

AUSCDT 1 is based in Sydney at Waterhen and AUSCDT 4 is based at Stirling in Western Australia. Both teams are identical and each contains a crew of 57 under the command of a Lieutenant Commander MCDO. The teams are split into four elements that function as independent entities within the team structure, but still retain integrated capabilities.

AUSCDT 1 and AUSCDT 4 provide the Navy with a rotational response capability to ‘go anywhere and do anything at any time’ on a 12 monthly rotation. The ‘off watch’ CDT uses the down time to replenish, rejuvenate and prepare for the next ‘High Tempo’ period.

AUSCDT 3 is formed, as required, to respond to more permanent hostile operations requirements such as Vietnam, Kuwait or Iraq or a potentially hostile theatre such as East Timor. The team draws its resources from CDT1 and CDT4. The structure of the team and its equipment fit-out are determined by the response required.

**Team Elements**

**The Training and Support Element (TSE)**

Managed by a WOCD, it comprises the non-CD personnel posted to the team. This element is responsible for some of the administrative and support functions required and manned by a Petty Officer Boatswain, Leading Seaman Writer, Leading Seaman Stores Naval, Leading Seaman Marine Technical, Leading Seaman Communications Information Systems, Leading Seaman Electrical Technician and Able Seaman Boatswains Mate.
CD conducting underwater search techniques during Maritime Tactical Operations.

**Mine Counter Measures Element (MCME)**

Managed by a Lieutenant (LEUT) MCD and comprises a CPOCD, 2 POCDs, 4 LSCDs and 9 ABCDs. Each POCD leads a team of LS and ABs conducting MCM operations. MCM operations are primarily conducted using the A5800 Closed Circuit SCUBA.

**Maritime Tactical Operations Element (MTOE)**

Managed by a LEUT MCD and comprises a CPOCD, 2 POCDs, 2 LSCDs and 7 ABCDs. Each POCD leads a team of LS and ABs for the conduct of MTO operations. Underwater MTO Element operations are conducted using the Draeger LAR VII hybrid Closed and Semi Closed Rebreather.

**Underwater Battle Damage Repair Element (UBDRE)**

Managed by a CPOCD and comprises 2 POCDs, 2 LSCDs and 8 ABCDs. Each POCD effectively leads a team of ABs and LS for the conduct of UBDR operations.

In addition to the above capabilities and equipment, each team carries its own rapid deployment ready response weapons, a comprehensive array of specialized diving and EOD equipment, and a 24m workboat for local deployments and training purposes.

**Mine Counter Measures Vessels (MCMV)**

A CD can be posted to one of the six Australian built, Italian designed Huon-class Mine Hunter Coastal (MHC) vessels. These provide the backbone of the ADF’s response to interdiction and mining of Australian littoral waters. The vessels have a crew of 39 with a minimum of six CDs posted at any one time. This can swell to eight if the CO and XO are also MCDOs. The CD element in the MHC conduct mine investigation and disposal tasks in support of the Mine Warfare (MW) operators on the vessel (See CSOMW Chapter for more details regarding mine clearance from MHCs).

**Tactical Assault Group – East (TAG-E)**

Raised on 22 July 2002, TAG-E is a joint 4RAR CDO sub unit within Special Operations Command. It is comprised of personnel primarily from 4 RAR CDO and the RAN. The Navy’s component currently consists of a Clearance Diver Assault Platoon, one team of Clearance Diver Maritime Marksmen, and an Underwater Medic.

In order to become a maritime CT assaulter posted to TAG-E, the volunteer CD sailor must successfully complete the Special Forces Entrance Test, and undertake the CD skills enhancement phase, during which the candidate will be assessed for potential to undertake the Close Quarters Battle (CQB) Course.

On successful completion the candidate will need to be recommended for employment at TAG-E. When TAG-E members reach a high degree of proficiency in land warfare skills and specialised maritime skills a select few will be nominated to conduct the
Marksmanship course. Assaulters and Marksman are required to maintain an extremely high training tempo for a duration of approximately 12–24 months ‘on line’ before returning to mainstream CD positions. There is a full career progression from ABCD through to POCD at TAG–E undertaken in conjunction with normal CD Category postings.

**Career Progression and Management**

After successful completion of the CD Category course, a CD who performs well with dedication and commitment could expect to progress along the following career progression timeline:

- Seaman to Able Seaman - 12 months after completion of employment training course.
- Able Seaman to Leading Seaman - minimum of two years.
- Leading Seaman to Petty Officer - minimum of four years.
- Petty Officer to Chief Petty Officer - minimum of four years.
- Chief Petty Officer to Warrant Officer - minimum of four years.

*Australian CDs undertaking MCT training.*

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3 “Photograph by LA Saywell, © Crown Copyright/MOD, Images from www.photos.mod.uk Reproduced with the permission of the Controller of Her Majesty’s Stationary Office”. 
Conclusion

Becoming a Clearance Diver in the RAN is challenging. The course is physically and mentally demanding and not suited to everyone. The category is built on the spirit of the CD Category’s motto of “United and Undaunted” and an attitude of ‘can do, will do, anywhere and at anytime’. However, once the tough basic dive training is behind the successful candidate, an extremely professionally rewarding, interesting and challenging career is available. There will be many opportunities to diversify into all aspects of military diving and EOD. A CD’s list of professional qualifications is impressive and unique within the RAN, and indeed, the ADF. The life of a CD is not one for the faint of heart. It requires individuals of enormous physical and mental courage, ingenuity, daring and a degree of independence in thought and action.
## CD Career Model

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<tr>
<th>Rank</th>
<th>Requirements</th>
<th>Qualifications</th>
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</thead>
<tbody>
<tr>
<td>WOCD</td>
<td>4 years seniority as CPO</td>
<td>CLDP, SSMC</td>
</tr>
<tr>
<td>CPOCD</td>
<td>4 years seniority as PO</td>
<td>CLDP, SSMC, ADV Seamanship</td>
</tr>
<tr>
<td>POC</td>
<td>4 years seniority as LS</td>
<td>JSLMC, ADV CD, EOD</td>
</tr>
<tr>
<td>LSCD</td>
<td>2 years seniority as AB</td>
<td>Scuba Air Supervisor, Demolitions Supervisor, Intermediate Seamanship</td>
</tr>
<tr>
<td>ABCD</td>
<td>12 months effective Service</td>
<td></td>
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<tr>
<td>SMNCD</td>
<td>Basic Clearance Divers</td>
<td>Basic Seamanship, CDAT, Scuba Air, Weapons User Category</td>
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<tr>
<td>SMN*CD</td>
<td>Swimming Test</td>
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</tr>
<tr>
<td>RCTCD</td>
<td></td>
<td></td>
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</tbody>
</table>

Operational time is defined as time posted to an AUSCDT, MHC, FFG or FFH while carrying out CD Duties.
Suggested Reading – Clearance Diver Category

ABR 10 – Sailor’s Career Management Manual

Divisional Staff Handbook 2007


ABR 155 RAN Diving Manual

BR 67 – Admiralty Manual of Seamanship


Communications and Information Systems Category

Introduction

Advancements in communications technology have dramatically increased the Communications and Information Systems (CIS) Category sailor’s job range and skills set over the last decade. While they continue to utilise the skills of their forebears, the Signalman and Radio Operator of the past, they now have the additional responsibilities which include administering multiple IT systems and maintaining the operational security of these systems while deployed.

With the introduction of new communications capability and future projects such as the Air Warfare Destroyer, the role of the CIS sailor will further evolve to include the management of broadband satellite technology in order to provide near continuous coalition and national networks and quality of life services to the fleet.

The CIS Sailor

Today’s CIS Category sailor is a highly trained Telecommunications and Information Systems operator, working in a dynamic and demanding communication environment.

The CIS sailor enters the Navy through HMAS Cerberus. Initial training of twelve weeks is conducted at the Recruit School, followed by 41 weeks at the Defence Force School of Signals – Maritime Communications Information Systems Wing (DFSS-MCISW). On completion, the CIS sailor will either be posted to a fleet unit or in one of a number of Defence communication stations located throughout Australia.

Communications – The Early Years

Naval signalling is rich in history and through its origins with the Royal Navy (RN), can be traced back to 1338 with the introduction of the first ‘Black Book’ of the Admiralty, a book of instructions which made some mention of signals. By 1673, the first signal book had been developed and by 1780, codes were in use, consisting of a series of numerical flags, special flags and pennants. This system finally delivered to Flag Officers, Captains and Commanders the ability to make several hundred different and discrete signals. By 1844
Morse code had been demonstrated on land, and by 1874 mechanical semaphore signalling had been adopted at sea.

In 1862 the RN developed their own simplified flashing light code and patented a flashing light signal system. By 1867, the signal system had been introduced into service, and for the first time ships were able to communicate during both daylight hours and at night time. By 1889 the complete Morse code was adopted for flashing light purposes and included in signal books.

In 1905 the emergence of wireless telegraphy (W/T) revolutionised naval warfare. Ships communications were no longer cut when out of Visual Signalling (V/S) range and RN senior officers became convinced that wireless communications offered great possibilities.

**Victorian Colonial Navy**

Prior to 1901 all of Australia’s Colonial Navies used some form of signalling systems and each colony had invested in communication training to varying degrees. Most notable was the Victorian Navy, which established the Williamstown Naval Depot, near Melbourne, in 1870. The Depot consisted of a Naval Base and general training establishment, and it was here that the first Signals School was founded in 1900.

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2 Kent, Signal!, p. 10.
Wireless Communications

Australian naval communications history was made in Queensland on 9 April 1903, when a successful ship-to-shore wireless telegraphy transmission was achieved. On Friday 10 April 1903, the Brisbane Courier newspaper reported that the Gayundah and Paluma were exercising in Morton Bay and, quote:

‘Last night the following message was received by pigeon post from our special representative on board the Gayundah – Gayundah and Paluma anchored one-and-a-half miles south of Tangalooma Point. Weather hot, perfect communication maintained with Marconi apparatus – Marconi pole stripped to refit as it is slightly bent.’

Royal Australian Navy

The first Naval wireless station in Australia was established when a wireless mast and station were erected at Williamstown Naval Depot (WND), then called HMAS Cerberus, located near the site of the present Williamstown Dockyard. During 1913, the RAN Signals School moved from Williamstown to Flinders Naval Depot, locate south of Melbourne on the Mornington Peninsula. Here Signalmen and Telegraphists received training based upon the RN system and provided by RN instructors.

World War I

Following the outbreak of WW I, the Wireless Telegraphy Act of 1905 was amended on 6 September 1915 to enable administration of the Act to be transferred to the Navy Department. By October 1915, the Coastal Radio Service was organised on naval lines, and local coastal radio staff were taken on naval strength. The Officer in Charge was granted the rank of Commissioned Telegraphist, the next in charge - Warrant Telegraphist, and the remainder as Petty Officers. The Officer-in-Charge was also the Radio Inspector for the Navy and was frequently called upon to investigate unauthorised stations or suspicious signalling.

This continued until disbandment of the Royal Australian Naval Radio Service, 28 October 1920 when the Postmaster General’s Department resumed control.
HMAS Cerberus

The transmitting and receiving stations were built in 1919, within the confines of Cerberus. The Signal School, in addition to its training role in Wireless Telegraphy and Visual Signalling, was also responsible for operation of the Wireless Station. The station conducted the first direct ‘fixed service’ Morse code transmission in 1920-21 to the United Kingdom, thereby linking the Australian Commonwealth Naval Board with the Admiralty in London. The wireless station remained operational as a broadcast station and link with overseas authorities until the outbreak of WW II in 1939, when it was moved to HMAS Harman in Canberra.

Prior to the commencement of WW II, Telegraphists were responsible for the maintenance and operation of their own equipment and they were trained at the Signal School in the necessary techniques to ensure that their equipment was kept serviceable. With the pressure of signal traffic, especially in shore wireless stations, generated by the war, Telegraphists did not have the time to operate and maintain their equipment and the maintenance task passed to an embryonic Electrical Branch.

World War II

On 18 September 1938, Naval Wireless/Transmitting (W/T) Station Coonawarra was established several miles south Darwin on the Stuart Highway. It was commanded by a Warrant Officer Telegraphist and came under the administrative control of the Naval Officer Commanding North Australia, located in a building called Melville in Darwin township. Upon the declaration of war all naval depots were
commissioned and on 1 August 1940, Melville’s official title was changed to HMAS Melville.

The naval wireless station at Harman near Canberra began operations on 20 April 1939 and was subsequently commissioned on 1 July 1943.

In the lead up to WW II, V/S and the tactical manoeuvring of fleet units (fleet work) had changed very little and was still used extensively across all facets of naval warfare. The RAN continued to utilise RN doctrine exclusively throughout this period. V/S and Fleet work became increasingly important, as the reliance on cryptography increased to counter the early successes of German communication signal intelligence and intercept, and the German submarine war against the Allied supply lines in the Atlantic. The need for tactical radio silence became paramount.

Following the United States’ entry into the war in 1941, and the shift in Australia’s war effort focus to counter Japan’s threat in the Pacific and South West Pacific theatres. New codes, signalling procedures and manoeuvring instructions had to be mastered by Commanders and Communications personnel. The RAN operated successfully as an element of the US Task Forces operating throughout the Pacific and continued to do so when the British Pacific Fleet arrived in Australia in February 1945.

Operations with large carrier and battleship forces, required complex manoeuvring and V/S procedures. The USN extensively used Radio Telephony (R/T) to manoeuvre the large and widespread formations by voice over early tactical communication frequencies. Successful integration of the Anglo-American fleets in the Pacific theatre contributed to the successful outcome of the war in the Pacific and a close relationship that continued after the war.

**Women’s Royal Australian Naval Service (WRANS)**

Newspaper advertisements lead to the recruitment of women operators from the Women’s Emergency Signalling Corps. With recommendations made by the Director of Signals and Communications that women be employed and final Naval Board approval eventually led to the establishment of the Women’s Royal Australian Naval Service (WRANS) and telegraphists were the first to be recruited. On 25 April 1941, 12 of the WRANS were posted to Harman.

At this point, women carried a civilian status, however in October 1942 the civilian status was removed. Virtually all of these personnel had volunteered for overseas service, but were disappointed when their duties were confined to the Commonwealth. Additionally, many WRANS volunteered for service in Darwin during the early years of the war; however, the Naval Board decided against placing them in danger. Notwithstanding these decisions, the first draft of WRANS arrived in HMAS Coonawarra outside Darwin, in March 1945.

Two hundred Telegraphists continued to serve until the WRANS were disbanded in 1948. In 1951 the WRANS were re-established.

With the extremely rapid technological advances in communications made during and after WW II, it became necessary to introduce skills previously
not required by a wireless operator. The ability to touch type became an integral part of a trainee’s prerequisites prior to passing out as a fully qualified operator. The speed required was between 35 and 40 words per minute (wpm) and this remained the standard until 1998 when it was reduced to 35wpm as a result of the increasing use of personal computers.

The next quantum leap in communications occurred in the mid 1950s when Automatic Telegraphy was introduced into ships and establishments. This led to the introduction of new equipment, requiring improved techniques which increased the job requirements of the Communications Category and the complexity of training and the responsibilities of the Communications School.

In 1945 a Telegraphist Air Gunner (TAG) was introduced into the communications branch, to allow communications from aircraft to the aircraft carrier HMAS Sydney.

By December 1955 the TEL (AIR) and were formed as part of the Communications Branch. The following year the TEL (AIR) name changed and a new subcategory emerged:

- Telegraphist (Air) became Telegraphist Flight (TF).
- Telegraphist Special (TEL [S]) branch was established as part of the Communications Branch.

In 1958 the title and abbreviations of the Communications Category had been amended to include the following sub categories:

- Telegraphist to Radio Communications Operator (RO).
- Signalman to Tactical Communications Operator (TO).
- Telegraphist (S) to Radio Operator (S).
Ranks were abbreviated. For example Leading Seaman Radio Communications Operator were LRO, Petty Officer Radio Supervisor to RS, Petty Officer Communications Yeoman to Yeoman and Chief Communications Yeoman to Chief Yeoman.

Data operators were introduced into the RAN in September 1963. These individuals were employed to operate computers for Electronic Data Processing (EDP) ashore. EDP commenced in the RAN in 1966, with the intention to operate computers when they were installed on fleet units.

On 16 September 1967, a USN communications base was opened at North West Cape, near Exmouth, WA and by 1974 the RAN shared the facilities and responsibilities for the base. Naval Communications Station Harold E Holt, through its high-frequency transmitters and receivers, tied the US and Commonwealth into naval communication worldwide. Harold E Holt became one of the most important links in the US global defence communications network, maintaining reliable communications with submarines in the Indian and Pacific Oceans and providing communications for the USN’s most powerful deterrent force, the nuclear-powered ballistic missile submarine. The communications base was the most powerful output in the US network.

On 1 January 1974, another change to the title and abbreviations of the Communications Category occurred. This change created the following sub categories of the Communications Sailor:

- Tactical Communications Operators became Signalmen.
- Radio Communications Operators became Radio Operators.
- Radio Operator (Morse) became Radio Operator (S).
- Data operators were disestablished.

With the closure of RN communications facilities at Mauritius, Singapore and Hong Kong in 1975, the Director of Naval Communications formed the Naval Communications Area Master Station Australia (NAVCAMSAUS) to coordinate fleet support communications to cover the South East

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3 ABR 27 Vol 2.
Asian and Indian Ocean areas. NAVCAMSAUS was part of a world-wide Defence communications management organisation that had counterparts in the US, Canada, NZ and the UK.

NAVCAMSAUS was based in Canberra at Harman with staff that carried out the long and short-term communications planning, maintenance of technical standards and configuration control of all shore-based assets, while Watch Officers provided a 24-hour point of contact for all users. The NAVCAMSAUS organisation controlled shore-based assets which consisted of Naval Communications Stations Darwin, Canberra and Harold E Holt, and Naval Communications Area Local Stations (NAVCALS) at Fremantle, Sydney and Cairns.

On 28 July 1978, NAVCALS Fremantle commenced operation at HMAS Stirling. The local communications station provided HF support and Local Area Teletype broadcast support to fleet units.

The Radio Operator Teletype category was disbanded in 1988, with the last of the ROT classes remaining after graduation to complete a RO conversion course before departing Cerberus. The communications branch now consisted of the Radio Operator, Signalman and ROEW specialties.

Due to the Seaman Category Rationalisation Study (SCRS) the ROEW sub department ceased to be part of the communications category in 1992 and became part of the Combat Systems Operator (CSO) category. The Communications Category now consisted of the Radio and Signalman specialties.

In 1995 a review of the maritime CIS organisation was conducted with the original report being presented in early 1996. As a result of this initial review and more detailed second phase was commenced and the RAN Communications and Information Services (RANCIS) report was delivered in April 1997. One of the major recommendations to be accepted was the amalgamation of the Radio and Signalman branches and the inclusion of Information Systems (IS) in the revised category.

The Communications School ceased teaching aural morse code in January 1996 and it was subsequently removed as a communication medium in the RAN modern communications methods had made it redundant.

In 1996, computer Local Area Networks (LANs) began appearing in fleet units, with administration falling to anyone with an interest in IS. The systems evolved to administered by an individual
of the Weapons Engineering Electrical branch, and finally in 1998 the Communications Branch assumed responsibility for the administration and management of information systems in fleet units.

On 2 December 2002, the RAN Communications and Information Systems School, the Army School of Signals, and the RAAF CIS Training Section of the RAAF School of Technical Training amalgamated to become the Defence Force School of Signals (DFSS). The RAN CIS School was renamed the DFSS – Maritime CIS Wing (M-CIS-W) and remains at Cerberus.

The Communications Category has kept pace with evolving workforce requirements and technologies. CIS sailors posting ashore are located within the Navy, Chief Information Officer Group and Army programs, and undertake an equally diverse range of employment duties.

As in the past, the communicator’s job continues to expand and change, and will challenge the CIS sailor both at sea and ashore. The communicator's job skills now include the management and operation of visual communications, fleet work, radio, Communications Security (COMSEC), Operational Security (OPSEC), multiple information system domains, boarding operation communications, combat survivability voice and board markers, military satellite communications and broadband satellite communications.

As the CIS role continues to evolve, the current training systems will be continuously reviewed to reflect these changes both in employment and technology. The CIS sailor is employed at sea on every RAN vessel and ashore, providing operational support to ADF units nationally.

Previous Rate Badges

The rate badges for the RAN's Communications Categories were adopted from the RN, with the Telegraphists wearing the wings of Mercury with the lightning bolt. Mercury is a god in Roman mythology with a winged helmet and sandals. Additionally he also carried a winged ‘caduceus’ and brought messages from the gods to mankind. The lightning bolt is said to have been thrown by Zeus and was considered an expression of supernatural power bringing fire and destruction on the earth.

The signaller's rate badge consisted of crossed signalling flags, and while the meaning of these flags has evolved, the current single meaning of flag Juliet is ‘I have a semaphore message for you’. 
CIS Category badge and history

The following article was printed in the Navy News on 24 August 1998. *In the modern Royal Australian Navy there are many ways of “communicating.” Flags are still used, so is the Aldis lamp. More convenient is radio including the signals bounced off satellites. Training in communications is now a single entity with the first class of trainees beginning their course on July 6*.4

Semaphore signalling using hand flags ceased to be used as a formal communications medium in the RAN on 24 November 2005.5 It was realised there was a need to have a uniform rate badge which reflected all facets of communications covered by the course and the specialists’ ongoing duties in the RAN. A request went out to uniformed personnel to design such a badge, and a total of 156 designs were submitted. The winning badge depicts a sphere indicating the global reach of CIS, the Southern Cross indicating uniquely Australian origin and a lightening bolt as outlined above.

The first Tier 1 class graduated on 9 April 1999, and were the first personnel to receive the new CIS Category badge.

5 Maritime Commander Australia, Semaphore as a formal fleet communications medium, MCAUST SAE/BAS 240157Z NOV 05.
Professional Training

The CIS training continuum consists of the initial training course (Tier 1) of 41 weeks duration, intermediate course (Tier 2) with a duration of 16 weeks and the 12 week Tier 3 course.

Generic Sea Duties and Posting Options

All ranks of the CIS category are required to do sea service. Sailors are either employed on Major Fleet Units home-ported at Garden Island East, NSW and Garden Island West, or on Minor Warfare Vessels located at either HMAS Cairns or Coonawarra. The main employment areas for each rank are:

a. WOCIS at sea, duties include employment in Sea Training Group (STG) and as the SCO of an LPA.

b. CPOCIS at sea, duties include employment in STG Minor Warfare Vessels (STG MWV) and employment on all Major Fleet Units.

c. POCIS at sea, duties include employment in STG Minor Warfare Vessels (STG MWV) at sea duties include employment on all Major Fleet Units.

d. LSCIS and ABCIS can be employed at sea on all vessels in the RAN.
Generic Shore Duties and Posting Options

The main locations that a CIS sailor can be posted ashore are:

- DEFCAMSAUS – located in the Network Operations Centre at Harman.
- DEFCOMMSTA Australia, located in Russell Offices, ACT.
- DEFCOMMSTA Canberra, located at Harman.
- DEFCOMMSTA Perth, located at Stirling.
- DEFCOMMSTA ACT, located at Harman.
- DEFCOMMSTA Cairns, located at Cairns.
- DEFCOMMSTA Sydney, located in Fleet Head Quarters, NSW.
- Fleet Information Systems Support Organisation, located at Garden Island, NSW, Stirling, Cairns, and Coonawarra.
- Defence Force School of Signals – Maritime Communications Information Systems Wing (DFSS-MCISW) located at Cerberus.

The CIS category has based manning of both sea and shore positions on a combination of rank and skill grade basis. While Tier courses are a prerequisite for promotions, any sailor that has reached the level of competency required can attend the courses.
CIS Career Model

**WOCIS4**
4 Years seniority as CPO
12 Months sea time as CPO
CLDP or SSMC

**CPOCIS4**
4 years seniority as PO
12 months sea time
TIER 3 CIS Competency log

**POCIS4**
Tier 3 Course

**Tier 2 CIS Competency Log**

**JSLMC**
4 years seniority as LS
12 months sea time
6 months sea time on MFU

**Tier 2 Course**

**LSCIS4**

**ABCIS3**

**LSCIS3**

**LSCIS2**
12 months sea time

**ABCIS2**
12 months seniority

**SMNCIS2**
Tier 1 CIS Competency Log

**SMNCIS1**
Initial CIS Course
The Lay of the Last Signalman

On a thickly-wooded sponson, where the last projector stands,
The museum pair of hand-flags hanging idly in my hands,
With my jargon half-forgotten, of my stock-in-trade bereft,
I wonder what’s ahead of me – the only Bunting left.
The relics of my ancient craft have vanished one by one.
The cruiser arc, the morse flag and manoeuvring lights have gone
And I hear they'd be useless in the final global war
As the helio, the foghorn and the masthead semaphore.
The mast is sprouting gadgets like a nightmare Christmas tree.
There are whips and stubs and wave-guides where my halyards used to be.
And I couldn’t hoist a tackline through the lunatic array,
For at every height and angle there’s a dipole in the way.
The alert and hawk-eyed signalman is rendered obsolete
By electrically-operated Optics of the Fleet,
And the leaping barracuda or the charging submarine
Can be sighted as blob upon a fluorescent screen.
To delete the human error, to erase a noble breed,
We rely upon a relay, and we pin our faith to Creed,
So we press a button, make a switch and spin a little wheel.
And it’s cent per cent efficient – when we’re on an even keel.
But again I may be needed, for the time will surely come
When we have to talk in silence, and the modern stuff is dumb,
When the signal lantern’s flashing or the flags are flying free –
It was good enough for Nelson, and it’s good enough for me.
Suggested Reading  
– Communications and Information Systems Category

ABR 10 – Sailor’s Career Management Manual  
Divisional Staff Handbook 2007  
ABR 1834 Vol 3 RAN Handbook of Ceremonial Procedures  
RANCP 5 - RAN Visual Signalling Handbook  

DEFCAMSAUS Webpage  
Communications and Information Systems - Submarines Category

Introduction

Advancements in both communications and submarine warfare have dramatically increased the Communications and Information Systems Submarines Category (CISSM) sailor’s job range and skills set over the last decade. While they continue to utilise the skills of their forebears, the Wireless Telegraphist and Radio Operator of the past, they now utilise and control far more sophisticated communication equipment.

With the introduction of new communications capability and Collins-class LAN and COMMCEN upgrade, the role of the CISSM sailor will be furthered enhanced bringing them more in line with their surface combatant counterparts.

Submarine Communications - The Early Years

Submarine communications is closely linked with the developments in communications within the Fleet. Much of what appears within this publication for CIS relates to the CISSM and will not be reproduced here.

The most notable Submarine message was transmitted by AE2’s Telegrapher William Falconer on the night of the Gallipoli Peninsula Anzac Cove landing. This Marconi wireless message featured in the midnight meeting aboard the flagship on whether the Anzac’s should be withdrawn. On hearing of AE2’s successful penetration of the Narrows, the Commander-in-Chief General Sir Ian Hamilton, sent out his now famous message:

“Your situation is indeed serious, but dig yourselves right in and stick it out. The Australian submarine has got up through the Narrows and torpedoed a cruiser...dig, dig, dig until you are safe”.

Submarine Wireless Communications

Submarines and wireless were invented at about the same time, and the introduction of wireless equipment into the already crowded hull posed a number of problems, not least space for the operator.

Operations of the early submarines were severely constrained by the fact that the boat was completely out of touch when submerged so the role of the submarine was immeasurably enhanced when it was discovered, in the 1920’s, that very low frequency radio transmissions penetrated the surface of the sea. Noting that the optimum operating depth for a submarine is not usually near the surface, and the search for some means of achieving reception of the broadcast at greater depths led to the idea of using a long buoyant wire aerial.

A quantum leap in communications occurred in the mid 1950s when Radio Automatic Telegraphy (RATT) was introduced into ships and establishments. The inclusion of on-line encryption to replace Morse on the submarine broadcasts did much to improve communications but message transmission from submarines remained a problem. The normal HF ship-shore organisation had to be used, requiring an aerial to be raised above the surface for the period taken to establish contact and transmit the message.

With the advent of satellites, Submarine communications improved by utilising an omnidirectional UHF aerial for both reception and transmission. Two-way communication at high speed data rates is now possible, limiting surfaced exposure time. Furthermore, the submarine can choose the time at which it calls for its traffic, rather than having to wait for the regular routines. Given the current coverage of satellites, this now gives an important alternative to the VLF broadcasts. VLF remains the primary means of communicating with submarines.

VLF in Australia

On 16 September 1967, a USN communications base was opened at North West Cape, near Exmouth, WA. The RAN shared facilities and responsibilities for the base and it was called Naval Transmitting Station Harold E Holt (HEH). Harold E Holt, through its high-frequency transmitters and receivers, tied the US and Commonwealth into naval communication worldwide. Harold E Holt became one of the most important links in the US global defence communications network, maintaining reliable communications with submarines in the Indian and Pacific Oceans and
providing communications for the USN's most powerful deterrent force, the nuclear-powered ballistic missile submarine. The communications base offers the most efficient and powerful output in the US network.

As a backup to the VLF during scheduled downtimes the LF transmitter located at the Naval Transmitting Station at Belconnen was used to provide Submarine broadcast coverage. Known affectionately as 44Khz it provided sterling support to the Submarine Squadron over many years until de-commissioning in 1995.

As a consequence the RAN purchased the former Omega Navigation Facility in Yarram Victoria, near Sale, and converted it to a VLF transmitter. This facility continues to provide backup support to the Submarine Squadron through the dedication of the operators Omega Tower Communications.
Generic Sea Duties and Posting Options

All ranks of the CISSM category are required to undertake sea service and can be employed in submarines, Major Fleet units or Minor War Vessels. The CISSM sailor is employed at sea on every Collins-class Submarine and ashore, providing operational support to ADF units nationally and undertake equally diverse range of employment duties. Like all categories, overseas postings are available and can be applied for on an as required basis. CISSM sailors will be primarily employed in Collins-class submarines which are home-ported at Fleet Base West, Stirling, Garden Island, WA. The main employment areas for each rank at sea in these submarines are:

a. WO CISSM has no at sea positions and to serve at sea must accept positions as Ships Warrant Officers in Major Fleet Units.

b. CPO CISSM duties includes employment in Sea Training Group – Submarines, and employment as Chief of the Boat (COB) on at least two of the six Collins-class submarines.

c. PO CISSM duties consist primarily of employment as Petty Officer of the Watch Submarines (POOWSM) encompassing supervision of the combat system, manoeuvring control and navigation. The POCISSM provides senior communications advice and oversight to the Command.

d. LS CISSM, AB CISSM and SMN CISSM can be employed at sea in all Collins-class submarines. Duties include service as the communications operator and signalman.

One Submarine Communicator on each boat is designated as the ‘signalman’ and undertakes the signalman’s traditional duties. They are responsible for maintaining the visual signalling equipment, ensigns, signal flags, navigational shapes and lights. In addition they undertake the lookout duties on the bridge as part of the Special Sea Duty stations, and provide visual signalling when required. In addition these sailors undertake duties as the periscope assistant in the Control Room assisting the CO.

Generic Shore Duties and Posting Options

The main locations that a CISSM sailor can be posted ashore currently are:

a. Defence Communications Station Perth, located at Stirling.
b. Training Authority Submarines (TA-SM), located at Stirling.

c. Submarine Force Element Group Headquarters (SM FEG-HQ), located at Stirling.

d. In the submarine operating authority located at Fleet Headquarters, Sydney NSW. (NOTE: Will be relocated to the new Headquarters Joint Operational Command, Bungendore NSW in 2009).

Training

The CISSM sailor enters the Navy through HMAS Cerberus. After completing twelve weeks initial training at Recruit School, followed by 41 weeks at the Defence Force School of Signals – Maritime Communications Information Systems Wing (DFSS-MCISW) All CIS training for these sailors will also enable them to undertake sea duties in any surface warship.

Once completing the initial category training, potential CISSM sailors are posted to the Submarine and Training Systems Centre (STSC) located at Stirling in Western Australia to undertake the Submarine Enhanced Selection Process (ESP) for submarines for one week. On successful completion of the ESP, the potential CISSM sailor will then undertake further training at STSC, consisting of Initial Common Collins - class Submarine training, Submarine Helmsman, Communications Systems Operator and Submarine Escape Training. They will then proceed to sea to complete on the job training in both communications and general submarine components. The at-sea component is known as Submarine Sea Qualification (SMSQ). Completion of SMSQ culminates in the award of the Submarine Qualification badge or Dolphins, and the title of CISSM.

Further category training includes an Intermediate course (Tier 2) with a duration of 16 weeks which is conducted as a Leading Seaman. At the Petty Officer rank, the 12 week Tier 3 course incorporates POCISSM training of 5 weeks duration. Further training of 4 weeks is required if selected as a CPOCISSM to be a Chief of the Boat. As a CPOCISSM, sailors may undertake tier 4 and 5 training to take up postings in surface warships.

The CISSM’s service continues to expand and change as changes in technology are accepted into service. This challenge means that the CISSM sailor both at sea and ashore must remain professionally ready and vocationally competent in modern technologies. As this role continues to evolve, the current training systems will be continuously reviewed to reflect these changes both in employment and technology.
CISSM Career Model

W0CIS4/W0CIS4SM
4 years seniority as CPO
12 months sea time
CLDP or SSMC

Promotion to CPOCIS4/CPOCIS4SM
4 years seniority as PO
12 months sea time
Tier 3 CIS Competency Log
LSCISSM Course

Promotion to POCIS4/POCIS4SM
4 years seniority as LS
12 months sea time
6 Months sea time on MFU/CC SM
Junior Sailors Leadership & Management Course

Promotion to LSCIS3/LSCIS3SM
2 years seniority as AB
12 months sea time
Tier 2 CIS Competency Log
LSCISSM Course

Promotion to POCIS2/POCIS2SM
12 months effective service
SMNCIS2/COMNCIS2SM

Awarded Submarine Qualification ‘Dolphins’
CISSM

SMSQ Achieved

Collins Class (Sea) Training (SMSQ)

Collins Class (Shore) Training

CIS Category Training
(Direct Entry Only)

Suitable for SM

Enhanced Selection Process

Recruit School

Direct Entry

TOS/TOC

Unsuitable for SM

Returned to General Service or TOC for Direct Entry

W0CIS4/W0CIS4SM
4 years seniority as CPO
12 months sea time
CLDP or SSMC

ABCIS3/ABCIS3SM
CIS Tier 2 Course
ABCIS2/ABCIS2SM

Promotion to ABCIS2/ABCIS2SM
12 months effective service
SMNCIS2/COMNCIS2SM
12 months effective service
SMNCIS1/SMNCIS1SM

Promotion to LSCIS3/LSCIS3SM
2 years seniority as AB
12 months sea time
Tier 2 CIS Competency Log
LSCISSM Course

Senior Sailors Leadership & Management Course

CLDP or SSMC
Suggested Reading –
Communications and
Information Systems Category

ABR 10 – Sailor’s Career Management Manual

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Royal Australian Navy Submarine Standing Orders (RANSSO’s)


Stoker’s Submarine, Fred & Elizabeth Brenchley, Harper Collins Australia, 2001

Semaphore, Newsletter of the Sea Power Centre Australia, Issue 8, April 2006
PART TWO - Chapter 7

Combat System Operator Category

Introduction

Combat Systems Operators (CSO) are responsible for the collection, correlation and dissemination of sensor information, in order to create an accurate and timely tactical picture that enables the Command to make sound tactical decisions. Sensors such as Radar, Sonar and Electronic Warfare (EW) systems are used by the CSO to differentiate between threats such as Surface, Sub-Surface and Air in benign and multi threat environments.

CSOs are an integral component of the Action Information Organisation (AIO) and as such, are required to operate an intricate array of Command and Control (C2) Systems that communicate operational and administrative data within a task group or as part of a larger coalition task force. The equipment operated is complex and challenging for the CSO to master.

For the CSO, the maritime warfare environment encompasses an ever broadening range of skills requiring CSO Category Sailors to sub-specialise. All CSOs undertake a core skills training component, which includes the operation of Radars, identification sensors, information display and computer systems and their associated equipment. CSOs are then required to specialise in either Anti-Submarine Warfare or EW, which are referred as either CSO(U) – Underwater or CSO(A) - Above Water. The CSO can then be posted to a variety of positions around the world.

As part of the Executive Department, the CSO is also required to be skilled in aspects of seamanship, small boat handling and small arms. Ancillary duties also include corrosion control, force protection and communal responsibilities.

Painting of HMAS Nepal’s Plotting Room June 1945.
Aircraft Control

Air Controllers (AC) are drawn from both the CSO(U) and CSO(A) streams on a volunteer basis. There are three different types of ACs in the RAN. They are:

Procedural Aircraft Controller (PAC)

The function of the PAC qualified CSO is to conduct the safe control of a single aircraft for fleet support. This includes Ships Surveillance Radar Approaches (SSRA), Emergency Low Visibility Approaches (ELVA) and Personnel Transfers. PACs do not perform any form of tactical control or Air Safety Cell functions.

Anti-Submarine/Anti-Surface Aircraft Controller (ASAC)

The function of the ASAC qualified CSO is to implement the tactical employment of Anti-Submarine/Anti-Surface aircraft as required by Command in both the operational and training environment. The ASACs highest function is the safe tactical employment of aircraft involved in Anti-Submarine or Anti-Surface Warfare and the recovery of rotary wing aircraft in adverse weather conditions. The ASAC sailor relays tactical information to and from the aircraft, provides navigational and emergency assistance to aircraft under his control and informing aircraft under his control of the movement of other aircraft.

Air Intercept Controller (AIC)

The function of the AIC qualified Senior Sailor is to tactically control Combat Air Patrol (CAP) aircraft in support of maritime forces. The AIC is responsible to the Air Warfare Officer for the effective interception of designated targets and directing CAP aircraft to their CAP stations. The AIC is also expected to advise and recommend to Command the most effective way to tactically employ all available air defence assets. The AIC is also responsible for the safety of all air defence aircraft under their control, the coordination of fighter defence assets with ships missile and gunnery defence systems and the coordination of airspace between all users within their area of operation. AIC qualified Senior Sailors also have the opportunity to serve in Airborne Early Warning and Control (AEW&C) aircraft.
Formation of the CSO Category

In January 1992, the Seaman Categories Rationalisation Study (SCRS) was established to develop a cost effective seaman manpower structure to meet the RAN’s future requirements.

One of the recommendations from this study was to amalgamate the Radar Plot (RP), Underwater Control (UC), Electronic Warfare (EW) and Meteorological Observer (MET) Categories to form the Combat System Operator Category. This recommendation was endorsed by Chief of Navy in October 1992 and the Combat System Operator Branch was formally established on 1 August 1993.

As part of the implementation phase of SCRS, submissions for a new category badge design were sought from sailors and officers of the seaman specialisation. The design at the introduction above included representation of the RP, UC and EW categories and was approved by the then Chief of Naval Staff, Vice Admiral MacDougall.
History of the CSO Category

Prior to 1993 the Operations Room was manned and operated by a number of independent categories. These categories comprised of the UC, RP and EW sailors who collectively worked in unison to develop the tactical picture. These independent categories each had a proud heritage that was invaluable to the creation of our branch as it is today. A brief history below helps visualise the importance of each category.

Radar Plot (RP)

In 1938, the first radars and associated equipment were introduced in HM Ships Rodney and Sheffield, known as Radio Detection Finding (RDF) and was operated by Wireless Telegraphy (WT) sailors. At the onset of WW II large numbers of Radars were being fitted to ships of the Fleet, it became evident that the WT Branch could not manage these new additions to their already extensive responsibilities. In 1941 the RAN began a RDF School in order to train officers and sailors in the operation and maintain the RDF equipment. The inaugural instructors were selected from Signal/WT Officers corps.
In February 1942 the Branch was transferred to HMAS Rushcutter in Sydney, and by June of that year the RDF School relocated to South Head, Watson’s Bay and was commissioned HMAS Air Rest.¹

Three important innovations took place in 1944. Firstly, the Branch was confined to seaman category sailors only, whose non-substantiative rate consisted of the Radar qualification. Secondly, the RDF Branch was divided into two specialisations; Radar Plot and Radar Control. Thirdly, the emphasis upon “user aspect” was introduced into training, and with it, the need for a definitive system of reporting and plotting was identified.

HMAS Watson was commissioned in 1945 as the Navigation and Direction (ND) Training Establishment, a role it has proudly portrayed ever since. Practical training was developed and undertaken by visiting Fleet Units until 1952, when the Action Information Training Centre was established. For the first time officers and sailors benefited from practical experience in detection and interception of an enemy under conditions similar to those met at sea. As fully trained officers and sailors, these individuals readily took their place within the AIO.

With the expansion of the Fleet Air Arm and the close connection between the use of Radar and the integration of air direction tasks, the need for a separate specialisation for the controlling of Air Assets was determined. This led to the formation of the Aircraft Control (AC) sub-specialisation in 1968. Initial roles of ACs included the responsibilities of tactical employment and safety of aircraft in direct support to meet operational requirements.

**The Radar Plot Category duties and responsibilities included:**

- Compiling and maintaining the surface, air and action plots.
- Operating devices that supported the air, surface and action picture compilation.
- Compiling and maintaining a general operations plot.
- Providing aircraft control functions.
- Participating in seamanship and watch on deck evolutions.
- General seamanship, ships husbandry/maintenance and whole ship duties.

¹ ABR 27 Vol 2 (ORDRP) (1964) page 1.
The potency of submarine warfare was demonstrated by its effectiveness in trade interdiction during WW I. Post WW I, established navies invested in Anti-Submarine Warfare (ASW) sensors and tactics which were considered necessary but were (initially) given a low priority due to the perceived lack of threat. In 1922 the RN commenced specialist training in ASW at HMS Osprey.

The RAN Anti-Submarine Branch was first established in 1938 at the old RANR depot at Rushcutters Bay Sydney (later to be commissioned as Rushcutter), where training staff from Osprey initiated the pilot training course. On 16 November 1938, a notice was placed in the Sydney Morning Herald under the following heading:

‘Anti-Submarine Branch Navy, Seeks Volunteers’.

Over 400 personnel applied to join this new branch of the RAN. The initial requirement was for 66 ASW officers and 168 sailors. Volunteers for the sailor positions were drawn from members of the RAN and RAN Reserve. By the outbreak of WW II, 32 sailors were qualified as Submarine Detectors (SD).

The demand for ASW officers and SD sailors grew beyond expectations. The British Admiralty requested as many ASW officers as possible and asked that the supply of SD sailors be increased to 20 each month to meet the growing demands. About one fifth of the RN’s Anti-Submarine personnel were supplied by the RAN. The following signal was received from their Lordships in the Admiralty by the Naval Board;

‘The value of RAN trained officers and sailors is held in such esteem that Admiralty would be glad to have more of them’.

Underwater Control Category badge. Underwater Weapons Category badge.
Following WW II, two significant events occurred to the Anti-Submarine Branch. In 1956, Rushutter decommissioned, the school transferred to Watson with the SD branch splitting into two separate categories. These new categories were Underwater Control (UC), who operated the ships sonars and Underwater Weapons (UW) who controlled the ASW weapon systems.

**The Underwater Control Category duties and responsibilities included:**

- Compiling and maintaining the sub-surface picture in conjunction with the RP Category.
- Operating devices that supported sub-surface picture compilation.
- Participating in seamanship and watch on deck evolutions.
- General seamanship, ships husbandry/maintenance and whole ship duties.

**Electronic Warfare (EW)**

At the close of the nineteenth century, particularly in the period prior to the outbreak of WW I, new naval technologies increased the fighting effectiveness of ships. This resulted in a pressing need for a longer range, all weather, day or night communications system. This was met by the development of radio as a means of communication between platforms. Corresponding with this new technology was a need to develop the ability to intercept an adversary’s communications. Traditionally, this intelligence collection was conducted by specialist radio operators. By 1938, radar was fitted to ships, and with its unique transmission characteristics, the ability to conduct electronic intelligence collection also developed across the electromagnet spectrum, and the start of EW.

Expansion of radar and communication technologies required for a specialised sailor who was trained in the interception and analysis of electronic emissions. In 1973 the Radio Operator Electronic Warfare (ROEW) category was created to fulfill this function.
Initially ROEWs at sea operated a combination of Electronic Support (ES) equipment used for:

- Radar detection.
- Radar jammers used to counter radar detection capability. (known as Electronic Counter Measures (ECM)).
- High Frequency Direction Finding (HFDF) equipment enabling interception of voice communications. ROEW’s were also trained in Anti-Ship Missile Defence (ASMD) tactics.

The EW Category duties and responsibilities included:

- Surveillance above and on the sea surface, and over land.
- Detection, identification and localisation of electromagnetic emissions.
- Force and platform self defence, including tactical deception and attacking enemy emitters.
- Tactical and Strategic Intelligence collection across the electromagnetic spectrum.
- Provision of EW training services, including the EW equipment fitted to the HS-748 aircraft.

**Meteorological Observer Branch (MET)**

The MET Branch was formed in 1949 when Petty Officers Henry Hall (later Lieutenant Commander Hall MBE RAN R’d) and Dan McGreath were selected to travel to England to complete the basic MET Course. On return to Australia they set up the first Basic MET course under the guidance of Lieutenant Commander T W Smith RN who, as the Senior MET Officer at the time, established the RAN School of Meteorology (RANSOM). Between then and before its closure in 1993, RANSOM trained some 280 sailors.

In 1950 the Bureau of Meteorology appointed Naval Air Station Nowra as a member of their Australian network of Observation Stations. This meant 3-hourly observations were compiled and telexed into their network. These observations consisted of wind speed and direction, temperature, dew point cloud pressure and visibility.

During the mid 1950s Nowra became an Upper Air Station, releasing balloons with a Radiosonde attached to them. The Radiosonde would in turn transmit a signal back to the station giving
readings of temperature and humidity as it passed through the upper atmosphere. Theodolites were used to track the balloons aloft and readings were obtained and converted into upper air wind speeds and velocity.

During the 1960s the Upper Air Section was moved from Nowra Hill to the western side of the Airfield, and in 1968 a new wind finding radar was acquired from the Bureau of Meteorology, which greatly improved the ability of manual tracking of balloons. Fitted with a reflector, it could track through cloud, rain echoes and to a range of 130kms.

The MET office went through many changes over the years, including the introduction of automatic plotting of weather charts, which cut the time of plotting a chart from 2 hours to 10 minutes. Additionally, semi-automatic observations are linked to equipment that is constantly monitoring the wind speed and direction, temperature, pressure, dew point, rainfall and cloud height. Thus the level and number of staff needed to keep the MET office running was reduced to only two observers to staff the office and the upper air.

MET sailors were also trained as Navigator’s Yeoman and were posted to a variety of ships from Minesweepers to MFUs.

In October 1998 the Nowra MET office became fully civilianized when the Bureau of Meteorology assumed responsibility for weather forecasting.

### Professional Training – CSO

The training of the CSO is a progressive system conducted at Watson with additional training conducted at Stirling. The training is aligned with promotion and is designed to increase the knowledge and professional skills of a sailor throughout their career.

Coupled with the CSO training continuum is the Navy’s leadership training continuum, which is undertaken by all sailors in the RAN, and runs concurrently throughout a sailor’s career.

On completion of Basic Training at Cerberus SMN*CSOs are posted to Watson or Stirling to conduct either a Basic CSO(A) or (U) course. These different courses provide the specialisation in either EW or Sonar Operation. CSOs are then given a competency log for their respective streaming to consolidate and provide further on the job training (OJT).

Once the sailor has completed their Able Seaman Competency Log, has two years seniority with a minimum of twelve months sea service, and successfully completed the Intermediate CSO course, they may become competitive for promotion. The Intermediate CSO course provides specialist training in CSO core, stream and specialist equipment found in the Operations Room. It is at this stage in a sailor’s career that they can volunteer to become an Aircraft Controller and branch out into the third stream of CSOs, the AC.
On promotion to Leading Seaman (LS) the sailor will be issued with a LS competency log to consolidate training.

Once the sailor has completed their LS competency log and has four years seniority with a minimum of twelve months sea service, and successfully completed the Combat Systems Supervisor (CSS) Course, they may become competitive for promotion. The CSS course provides sailors with the knowledge needed to be able to competently supervise the Operations Room, including sensor and communications management. It is also a requirement of all Leading Seaman to have completed the Junior Sailors Leadership and Management Course (JSLMC) prior to being considered for promotion to Petty Officer (PO). On promotion to POCSS, the sailor is issued with a PO competency log to consolidate training.

Once the sailor has completed their PO competency log and has four years seniority with a minimum of twelve months sea service, selected sailors will be eligible for promotion to Chief Petty Officer (CPO). Promotion is also dependant on successful selection at the CPO’s Selection Panel.

Promotion to Warrant Officer (WO) is dependant on the sailor completing four years as a CPO with twelve months service at sea, coupled with the remaining leadership continuum training courses, Senior Sailors Management Course (SSMC) and the CPO Leadership and Development Program (CLDP). Promotion is also dependant on successful selection at the WO Promotion Board.

**Warfare Sailor Employment- Combat System Operator**

**Warrant Officer Combat Systems Manager (WOCSM)**

The principal function of a WOCSM is to perform managerial and specialist professional duties in a manner consistent with operational, support, training or staff requirements. They are required to demonstrate a highly developed capacity for self directed application and independent use of a high degree of professional knowledge. They may undertake planning, creative research and problem solving activities. WOCSMs may be employed in duties other than those of their specialisation and are expected to play an active part in the divisional system.

WOCSMs can be employed as Command and Ships Warrant Officers, within Sea Training Group, Training Organisation, Staff Officer Category Sponsor, FHQ-Deployed Joint Forces Headquarters – (Maritime) and Career Management.
Chief Petty Officer Combat Systems Manager (CPOCSM)

CPOCSMs manage the AIO in the dynamic ship operations environment. This involves the management of a constantly changing tactical picture that includes the surface, sub-surface, air and electronic environments. They also coordinate the information flow within the ship and from external agencies. CPOCSMs require a highly developed sense of situational awareness, the ability to conduct multiple tasks and high levels of initiative and management. The CPOCSM must develop an atmosphere of cooperation, teamwork and trust from all members of the operations team, and be able to take timely and decisive action to ensure that this atmosphere does not break down during periods critical to the ship’s survival.

There is one CPOCSM posted to each of the Major Fleet Units (FFHs and FFGs). Shore employment for CPOCSMs include Headquarters, Training Organisations, Intelligence Organisations and Career Management.

Petty Officer Combat Systems Supervisor (POCSS)

POCSSs perform the duties as an Operations Room Supervisor while at sea. This involves the compilation of a constantly changing tactical picture covering the surface, sub-surface and air environments, and requires the coordination of information flow within the ship and from external agencies. They require well developed situational awareness, the ability to conduct multiple tasks simultaneously and high levels of initiative.

The POCSS must develop an atmosphere of cooperation, trust and teamwork from all members of the operations team and be able to take timely and decisive action to ensure that this atmosphere does not break down during periods critical to the ship’s survival.

POCSSs are posted to Major Fleet Units (FFHs and FFGs), replenishment and amphibious ships. Shore employment for POCSSs include Headquarters, Training Organisations, Intelligence Organisations and Career Management.

Leading Seaman Combat System Operator (LSCSO)

LSCSOs are responsible for directing the compilation of the Sonar, EW and Radar sensors to produce an overall tactical picture. They are also responsible for competent and safe supervision of the operations room in times of lower states of operational readiness. LSCSO(AC) are responsible for the tactical and safe control of aircraft under ship control.

LSCSO’s are posted to Major Fleet Units (FFHs and FFGs), replenishment and amphibious ships. Shore employment for LSCSOs include Headquarters, Training Organisations, Intelligence Organisations, Career Management and general administration functions.
Able Seaman Combat Systems Operator (ABCSO)

ABCSOs operate the specific sensors that provide the data to produce the tactical picture. Their work involves the compilation of a constantly changing tactical picture that encompasses the surface, sub-surface and air environments and requires the coordination of information flow from within the ship and from external sources.

ABCSOs are posted to Major Fleet Units (FFHs and FFGs), replenishment and amphibious ships. Shore employment for ABCSOs includes Headquarters, Training Organisations, Intelligence Organisations, Career Management and general administration functions.
# CSO Career Model

## WOCSM
4 years Rank seniority as CPO  
12 months sea time as a CPO  
Successful Completion of CLDP and SSMC

## CPOCSM
4 years Rank seniority as PO  
12 months sea time as PO  
Completion of POCSS Competency Log

## POCSS
4 years Rank seniority as LS  
12 months sea time as LS  
Successful Completion of JSLMC  
Successful Completion of Combat Systems Supervisors Course

### LSCSO(A)
- 2 years seniority as AB  
- 12 months sea time as AB  
- Int CSO Common Course  
- Int CSO(A) Course  
- Track Supervisor Course  
- ABCSO(A) Comp Log

### LSCSO(AC)
- 2 years seniority as AB  
- 12 months sea time as AB  
- Int CSO Common Course  
- ASAC Course  
- Track Supervisor Course  
- ABCSO Core Comp Log

### LSCSO(U)
- 2 years seniority as AB  
- 12 months sea time as AB  
- Int CSO Common Course  
- Int CSO(U) Course  
- Track Supervisor Course  
- ABCSO(U) Comp Log

### ABCSO(A)
- 12 months effective service as SMN

### ABCSO(A)
- 12 months effective service as SMN

### SMNCSO(A)
- Initial Seamanship  
- Initial CSO Common  
- Initial CSO(A)

### SMNCSO(A)
- Initial Seamanship  
- Initial CSO Common  
- Initial CSO(A)

### SMN*
- Swimming Test  
- General Entry Recruit Course

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THE COMBAT SYSTEM OPERATOR CATEGORY 127
Suggested Reading – Combat Systems Operator Category

ABR 10 – Sailor’s Career Management Manual

Divisional Staff Handbook 2007


ABR 5273 Action Information Organisation’s User Instructions

AFTP 12 RAN ASW Firing Manual

BR 67 Admiralty Manual of Seamanship
PART TWO - Chapter 8

Combat Systems Operator Mine Warfare Category

Introduction

'A significant proportion of our whole war effort had to be devoted to combating the mine. A vast output of material and money was diverted from other tasks, and many thousands of men risked their lives night and day in mine countermeasures.'

Winston Churchill

The CSOMW category is the RAN’s nucleus of Mine Warfare (MW) and Clearance Diving (CD) capability. A Mine Counter Measure (MCM) force is a key enabler to littoral maritime operations. The CSOMW sailor will receive extensive training throughout a challenging and dynamic career in a wide variety of MW related equipment and sensor systems. He or she will become experienced and skilled in the operation of ROVs, precise navigation and computer systems, as well as becoming an adept weapon handler and knowledgeable seaman. As a trained member of a small but elite team, the CSOMW sailor will find that responsibility, leadership and opportunities to advance come rapidly. Over all they will become the MW specialists that ensure the RAN maintains a world class MCM capability.

Over the course of the two World Wars more shipping was lost to the sea mine than from any other form of warfare attrition, including shipping sunk by submarine action. Winston Churchill summed it up succinctly in the above quote. This relatively cheap weapon has the capability of bringing a sea dependant nation to its knees and as such huge resources have been expended by these countries developing technologies to defeat the sea mine. Australia is no exception, and with thousands of miles of coast to defend, the sea mine is as much of a threat today as it has ever been. The mine detonations beneath US Ships Samuel B Roberts, Tripoli and Princetown during Alliance operations in the Persian Gulf 1988 -1991 were a modern reminder. While fortunately these mine strikes caused no loss of life, they did lead to a huge USS counter mine research and development program that is still going strong today.

A Brief History of Mine Warfare

In 1776, during the American independence war David Bushnell developed and used the earliest recorded sea mine, the ‘Bushnell’s Keg’. This simple mine was filled with black powder and set adrift up-tide of anchored shipping. It fired when it came into contact with a ship’s hull by the tripping of a flintlock mechanism. Over time, mine technology inevitably advanced and by WW I mines were being laid with a variety of switch type firing mechanisms. Further advances in mine technology included the employment of innovations such as magnetic, acoustic or pressure induction influence firing mechanisms. These mines did not need to be struck to cause destruction. By WW II huge ‘ground’ mines were being laid on the seabed that did not require direct contact with the target ship or submarine to cause them to explode and cause significant damage or sinkings.

The relative ease and low cost with which these weapons can be manufactured and deployed, makes them an ideal weapon of choice for any nation with direct access to the sea or ocean. This has been aptly demonstrated by countries such as Iran and Iraq in the last decades of the twentieth century. Both these nations mass produced and laid indigenously designed, basic but effective, ‘buoyant’ moored sea mines. Iraq also developed sophisticated ground mines and laid these alongside imported weapons procured through the international arms market. The mere threat that mines have been laid can cause a hugely disproportionate amount of effort to be expended to clear them or, at the very least, confirm that they are not there. In 1984, the then rogue Libyan President Gaddafi ordered his agents to lay mines in the Northern Red Sea. As a result, a huge international effort was applied to the clearance of a minefield of less than 10 mines. It took over three months of intensive combined USN and RN MCM operations to declare the area safe for navigation.
Mines today can still be unsophisticated, but the modern inventory includes intelligent mines with logic ‘circuitry’, mines that can relocate themselves, mines that self-bury, mines that act as torpedoes and mines designed to be stealthy and hard to detect with modern MCM techniques. Some mines may have all these features! The RAN is staying abreast of this new technological threat and is developing highly advanced sonar and sweeping systems to counter it. Of course these systems are of little use without the men or women to operate those systems; hence the need for the CSOMW Category in today’s Twenty-First Century Navy.

Mine Warfare in the RAN

Mine sweeping for the RAN began in earnest in the early stages of WW II, with the commissioning of HMAS Bathurst in August 1940. Bathurst was the first of 60 minesweepers (commonly known as Corvettes) built in Australian shipyards as part of the Commonwealth Government’s wartime ship building program. 20, including Bathurst, were built under Admiralty order, manned and commissioned by the RAN. A further 36 were built for the RAN and the remaining 4 for the Royal Indian Navy. The Corvettes saw service in every theatre of war, providing service as convoy escorts, and undertaking patrol, mine sweeping, survey, and salvage and rescue work. These little, sturdy vessels delivered extraordinary service, which seemed out of proportion to their size and design.
The Ton - Class

It wasn’t until the 1960s, when the RAN commissioned six Coniston-class (Ton) Mine Sweepers: HMA Ships Teal, Ibis, Snipe, Gull, Hawk, and Curlew, that MW techniques in the RAN evolved from the rudimentary sweeping techniques to early mine hunting techniques in use today. These six ships became the 16th Minesweeping Squadron and eventually saw service during the 1964 Malayan Confrontation. was the last decommissioned at HMAS Waterhen in 1988.

COOPS

In 1989, as an interim measure after the decommissioning of the Ton-class, the RAN purchased seven fishing trawlers or Craft of Opportunity (COOPS), which were converted to a mine sweeping role. This concept was successfully used by the Royal Navy for mine clearance operations during the 1982 Falklands War. The Coops, later referred to as Mine Sweeper Auxiliaries (MSAs), were known as the Interim Mine Sweeping Force (IMFOR). These MSAs were initially commanded by commissioned officers;
however the majority were eventually commanded by Chief Petty Officers of the MW Category, with the seventh, MSA Brolga, commanded by a senior MW and CD Officer appointed as Commander of the IMFOR. The MSAs were modified and capable of being retro fitted with a specially designed hydraulic mine sweeping winch and power pack. This was an extremely effective method of rapidly deploying a low value asset to counter a possible sea mine threat.

The MHI

However, physically hunting a mine and knowing its exact location is the only sure way to ensure its disposal. The RAN continued to develop a mine hunter to replace the Ton sweeper / hunters. In November 1996, the RAN commissioned HMAS Rushcutter, the first of six planned catamaran Bay -class Mine Hunter Inshore (MHI). HMAS Shoalwater followed 12 months later. The MHIs were fitted with state of the art hull mounted sonar and combat systems, coupled with its fibreglass sandwich foam construction, 1.6m draft, low magnetic and acoustic signature and very low pressure ‘foot print’ were revolutionary in design. This also enabled the class to operate in very shallow water.

Waterhen remained the home base for the Australian MW and Patrol Boat forces until December 1988, when the Patrol Boat forces were relocated to HMAS Stirling, Darwin, and HMAS Cairns. Shortly thereafter, the Navy’s MW forces became known as the Mine Warfare and Clearance Diving Force Element Group (MCDFEG). The MSAs, MHIs and Clearance Diving Teams formed the core of Australia’s MW Force until the commissioning of the first of six Huon-class Mine Hunter Coastal (MHC) in May 1999.
The MHCs

The MHC’s are HMA Ships Huon, Hawkesbury, Gascoyne, Norman, Diamantina, and Yarra. Originally designed in Italy as the Gaeta-class for the Italian Navy, the RAN Huon-class has been modified to suit Australian conditions and includes improved accommodation and mine hunting capabilities. Like the MHI, the MHC contains state-of-the-art technologies and features a unique fibreglass hull design, outstanding shock resistance and an inherently low magnetic signature, allowing the ships to operate in hostile influence mine environments. Each single skin monocoque hull has been designed with no ribs, frames or stiffeners, avoiding local stress points that could separate under shock conditions.

For mine hunting operations the ships are fitted with a British designed Variable Depth Sonar (VDS) capable of detection ranges in excess of 1,000 metres. When a mine is detected, the ship will ‘hover’ about 200 metres from the contact. A mine disposal vehicle or CDs will then be sent to investigate and neutralise the mine threat with an explosive charge if required. Each ship is fitted with a pair of electrically powered remotely operated mine disposal vehicles equipped with a searchlight, closed-circuit low light television camera and an on-board close range identification sonar. Commands are relayed via a fibre optic link inside the vehicle’s tether, which also relays sensor images for display on the ship’s multifunction console in the operations room. Each vehicle is fitted with either a 31 kg disposal charge or an explosive / mechanical cutter designed to sever the wire rope or chain holding moored mines.

The Formation of the RAN’s MW Category

In the past MW specialists in the RAN undertook on the job training with ad hoc courses conducted by seaman category sailors at Waterhen. MW specialists were drawn from Seaman Categories such as Underwater Weapons, (UW) Underwater Control (UC), Fire control (FC), and Quarter Master Gunners (QMG). They were instructed in the deployment/recovery of a variety of sweeping systems and consolidated the training at sea.

During the early 1980s the RAN sent selected officers and senior sailors to HMS Vernon in the UK to undertake the Advanced MW course. On successful completion of the course, some of these personnel served for a further 12 months in Hunt-class Mine Hunter/sweepers to further enhance their skills sets. They were to become competent operators and supervisors of the mine hunting sonar and surface picture management system, as well as adept at mechanical and influence mine sweeping. On return from the UK, the senior sailors came wearing the RN’s MW Category badge, which was eventually adopted by the fledgling RAN MW Category.

In 1993, the RAN conducted a rationalisation of all Seaman Categories. Many of the seaman categories were amalgamated to form the majority of the Warfare Categories as they are today, with the Combat Systems Operator Mine Warfare (CSOMW) being one. The establishment of the CSOMW category thrust the discipline of MW in the RAN into the Twenty-First Century. Not only would CSOMW sailors be trained in sonar and mine sweeping operations; they would also be trained in aspects of the Action Information Organisation (AIO) and gain an appreciation of the bigger tactical picture.
Training

The RAN’s training framework is three tiered, with Initial Entry, Basic Seamanship and Weapon training courses are conducted at Cerberus. All subsequent MW instruction is conducted at Waterhen. Further training undertaken by the CSOMW is generally career progression and equipment application/familiarisation training as illustrated by the career model diagram at the end of this chapter.

Employment

Due to the nature of the platforms and the skills that the CSOMW sailor acquires whilst undertaking career courses, the CSOMW sailor is required to be a skilled Sonar Operator, operate small arms weapons and a competent seaman. Moreover, the modern MW sailor will work in a technological environment unique to the MW ships of the RAN.

Primarily, CSOMW employment opportunities are in the Sydney area. Wherever he or she may be employed, a CSOMW sailor can expect diverse and challenge employment at sea and ashore.

At Sea

The ability to integrate into a small team is essential for a cohesive MW ship’s company as a relatively high level of responsibility is placed on CSOMW junior sailors at an early stage in their careers. For consolidation training, the initial posting will be to a MHC. Follow on postings to MSAs will occur on completion of respite posting ashore.

The CSOMW sailor’s role is to operate in a multi faceted warfare environment operating the sensor 2093 Variable Depth Sonar (VDS), an integral part of the command’s tactical picture. The CSOMW sailor is also a seaman and is expected to maintain a higher proficiency in weapons handling. The CSOMW undertake the following roles:

- **Mine Hunting** - using the combat systems and sensor equipment to detect, identify and dispose of mines. This includes operating the Mine Disposal Vehicle.
- **Mine Sweeping** - using mechanical and influence equipment towed behind a vessel to dislodge or prematurely detonate mines.
- **Route Surveillance** - the use of the MHC’s sensors to map the sea bed, detecting any changes to underwater features and recording them to a data base.
- **Mining** - mine laying and recovery.
- **Seamanship** – full range of general seamanship duties, such as crew and coxswain for the ship’s boats, stream equipment, berthing duties etc.
Employment Ashore

Ashore the CSOMW sailor can be employed in one of the MCD Group’s five MCM elements listed as follows:

- The Mine Sweeping Drone Element (MSDE),
- Operational Support Unit,
- Mine Sweeping Auxiliary Systems Element (MSASE),
- MW/CD Task Group and
- Stonefish Exercise Mine Cell (SEM Cell).

These elements deploy for all major MCM exercises and undertake trials. Other postings ashore for CSOMW sailors include duties in the Mine Warfare Faculty (MWF), in Sydney, and a variety of administration support positions. By remaining within mainstream category business, the CSOMW sailor can enjoy posting geographic stability throughout their career.

3 ABCOSMW Image supplied by ABCSOMW P.J.Thompson.
CSOMW Career Model

**RCTCSOMW**
- General Entry Recruitment (11wks)

**SMNCOSMW**
- Swimming Test
- General Entry Recruitment (11wks)

**SMNCSOMW**
- Basic CSOMW Course (18 weeks)
- Basic Seamanship (4 weeks)
- CSOMW/CD Weapons Cse (7 weeks)

**ABCOSMW**
- Skill Grade 1 PG 3
- 12 months effective service
- Helmsman Certificate

**LCSOMW**
- Skill Grade 2 PG 4
- 2 years seniority as AB
- AB SOMW Competency Log
- 12 months sea time as AB
- Intermediate Seamanship (3 weeks)
- Intermediate CSOMW Cse (8 weeks)

**POCSSMW**
- Skill Grade 3 PG 5
- 4 years seniority as LS
- 12 months sea time as LS
- LSCOMW Competency Log
- JSLMC (3 weeks)
- Adv Seamanship (3 weeks)
- POCSSMW Cse (16 weeks)

**CPOCSMMW**
- 4 years seniority as PO
- 12 months sea time as PO
- POCSSMW Competency Log

**WOCSMMW**
- 4 years seniority as CPO
- 12 months sea time as CPO
- CLDP (3 weeks)
- SSMC (12 months Distance Education)

Completion is mandatory for sailors not promoted to PO WEF 31 Aug 2007

Completion is mandatory for sailors not promoted to LS WEF 31 Aug 2007

Completion is mandatory for sailors not promoted to CPO WEF 31 Aug 2008
**Suggested Reading – Combat Systems Operator Category Mine Warfare**

ABR 10 – Sailor’s Career Management Manual

Divisional Staff Handbook 2007


ABR 5273 Action Information Organisation’s User Instructions

BR 67 Admiralty Manual of Seamanship
PART TWO - Chapter 9

Cryptologic Linguist/Systems Category

Introduction

Cryptologic Linguist / Systems sailors are a major component of the Action Information Organisation (AIO) at sea and are responsible for collecting communications and electronic intelligence from various sources and providing tactical Indications and Warnings (IW) to Command. While ashore their collection activities play a significant role in the Defence contribution to the Australian Intelligence Community.

History

The RAN’s involvement with Signals Intelligence commenced in the opening weeks of WW I when the RAN captured a number of German merchant ships carrying codebooks and other secret papers. As well as decrypting messages derived from the intercepted codebooks, the RAN monitored the movements of German ships by using the Australian Coastal Wireless Service. ¹ Thus the RAN’s fledgling Intelligence Community began.

In 1938, radar started to be fitted to naval units and along with its unique transmissions came the requirement to conduct electronic intelligence collection. The function of Electronic Warfare (EW) was created. 1956 saw the formal establishment of the Telegraphist (Special) category as part of the communications branch, which was renamed Radio Operator Special (RO(S)) in 1958.

Whilst development of both radio communications and electronic intelligence collection progressed hand in hand for several decades following WW II. By the 1970s improvements of modern electronic equipment deemed it necessary that a specialist RAN category capable of conducting all forms of EW was required. In 1973 the Radio Operator Electronic Warfare (ROEW) category was born, primarily comprising sailors from the ROS category.

ROEW and ROS sailors did their initial training with Radio Operators at the RAN Communications School at HMAS Cerberus outside of Melbourne, then specialist training at the EW Faculty, HMAS Watson in Sydney, and Bonshaw Receiving Station, HMAS Harman in Canberra respectively. In 1986 ROS training was transferred from Bonshaw to the

newly formed tri-service Joint Telecommunications School (JTS) at Borneo Barracks, Cabarlah outside Ipswich QLD.

In 1987, it was announced that the ROEW category would be introduced into RAN submarines. Volunteers were sought from existing ROEW sailors and the Radio Operator Electronic Special (ROES) category was created in 1981.

Due to steadily declining numbers, the ROES category was disbanded in 1990 and its remaining members were amalgamated with the ROS and ROEW categories to form the EW Category. At this time there were three sub categories designated Electronic Warfare Operator (EWO), Electronic Warfare Processor (EWP) and Electronic Warfare Systems (EWS,) and new entry sailors were recruited as Recruit Electronic Warfare Operators (RCTEWO) and proceeded directly to JTS on completion of Recruit School training.

In 1992 after the Seaman Category Rationalisation Study, the EW Category underwent further restructure and was subsequently sub categorised into just two streams ; Electronic Warfare Linguist (EWL) and Electronic Warfare Technical (EWT). The EWS stream, which was primarily comprised of ex ROEW sailors, was absorbed into the new Combat System Operator (CSO) Category as CSO(A)s, however, any EWS sailors who

ABCTL Sam McConville operating training equipment at RANTEWSS.
had joined as RCTEWOs or had completed the Joint Telecommunications Operator Course - Supplemental (JTOC Supp) course were given the choice to choose from the EWL, EWT, or CSO(EW) streams. Submariner EW sailors were officially streamed as Electronic Warfare Analyst Submarines (EWASM) in 2001.

To avoid confusion regarding the definition of EW in the RAN, it was decided that the Category would undergo a name change to better reflect its roles and responsibilities. On 1 July 2007, the EWL, EWT and EWASM streams became Cryptologic Linguist (CTL), Cryptologic Systems (CTS) and Cryptologic Systems Submarines (CTSSM) respectively.

**CTs Today**

CTs may be recruited directly or through a category transfer. There are 143 CTL and 83 CTS positions in various locations throughout Australia and overseas, with the majority being located in Canberra or at the RAN Tactical Electronic Warfare Support Section (RANTEWSS), HMAS Albatross, south of Nowra NSW.

CTL/S sailors are employed in a tactical environment when at sea. They provide the fullest possible picture to Commanders, in the form of early warning information regarding threats that can then be avoided or neutralised, in order to help to assure a winning edge in combat. The information is derived by conducting Signals Intelligence (SIGINT), which is the interception and exploitation of radio and communications transmissions. When serving ashore, they will be either remotely supporting maritime forces, wider ADF operations or assisting with strategic requirements.

**Warfare Sailors Employment**

**Warrant Officer Cryptologic Linguist/Systems (WOCTL/S)**

The primary function of a WOCTL/S is to perform managerial and specialist duties as dictated by operational, support, training or staff requirements. WOCTL/S can also be employed within Command Warrant Officer positions, Ships Warrant Officer positions, Sea Training Group, Training Organisations, Category Sponsorship, FHQ, Deployed Joint Forces Headquarters (Maritime) and Career Management. They are expected to play an active part in the divisional system.

**Chief Petty Officer Cryptologic Linguist/Systems (CPOCTL/S)**

The principal function of CPOCTL/S is to perform departmental management and technical specialist duties in a manner consistent with unit objectives. As the Team Leader of a deployed Direct Support Element, a highly developed sense of situational awareness, the ability to multi-task and high levels of initiative and management are required. Postings for CPOCTL/S include RANTEWSS, Headquarters, Training Organisations, Intelligence Organisations and Career Management. They may be employed in non-category specific duties and are expected to play an active part in the divisional system.

**Petty Officer Cryptologic Linguist/Systems (POCTL/S)**

The principal function of POCTL/S is to perform task management and technical specialist duties in a manner consistent with unit objectives. Postings
for POCTL/Ss include RANTEWSS, In Albatross, Headquarters, Training Organisations and Intelligence Organisations. They may be employed in non-category specific duties and can expect to play an active part in the divisional system.

Leading Seaman Cryptologic Linguist / Systems (LSCTL/S)

The principal function of LSCTL/S is to perform technical specialist duties in a manner consistent with unit objectives. Postings for LSCTL/S include RANTEWSS, FFHs, Headquarters, Training Organisations and Intelligence Organisations. They may be employed in non-category specific duties and are the first step in the divisional system.

Able Seaman Cryptologic Linguist / Systems (ABCTL/S)

The principal function of ABCTL/S is to perform category duties in a manner consistent with unit objectives. Postings for ABCTL/S include the RANTEWSS, FFH’s and Intelligence Organisations.

Professional Development

The training of CTL/S is a progressive continuum which is conducted at a variety of Units:

- Defence Signals Directorate (DSD), Canberra.
- RAN Tactical Electronic Warfare Support Section (RANTEWSS), Nowra.
- Headquarters Joint Operations Command (HQJOC), Sydney.
- Defence Intelligence Training Centre (DIntTC), Canungra.
- ADF Warfare Centre (ADFWC), Williamstown.
- ADF School of Languages, Melbourne.

Coupled with the CTS/L professional training continuum is the Navy’s leadership training continuum, which is undertaken by all sailors in the RAN, and runs concurrently throughout a sailor’s career.
CTL/S Career Progression

**Promotion to Petty Officer**
- 4 Years seniority as LS
- 12 months sea time as LS
- LS Leadership Course
- CTL General Competency Log or CTS General and Advanced Competency Logs

**Promotion to Chief Petty Officer**
- 4 years seniority as PO

**POCTL/S**
- Skill Grade 4

**LSCTL/S**
- Skill Grade 3

**ABCTL/S**
- Skill Grade 2
- 12 months effective service

**SMNCTL/S***
- IET Training

**Recruit School**

**Direct Entry**

**Promotion to Warrant Officer**
- 4 years seniority as CPO
- Aggregate of 24 months sea time from PO
- CLDP/SSMC

**TOS/TOC**
Once a CT sailor has graduated from Recruit School they must undergo category training, which is conducted in two phases. SMN*CTL sailors are posted to the Defence Force School of Languages to learn a language, then to DFSS-EW Wing for basic SIGINT operator training. SMN*CTS sailors are posted to DFSS-EW Wing for basic Technical Operator training, and then are further sub-divided and streamed into one of the CTS sub-categories of Technical Signals (TechSigs) or Electronic Intelligence (ELINT) for further training. TechSig sailors remain at DFSS-EW Wing for their phase two training, whereas ELINT sailors are posted to RANTEWSS to undergo their second phase of training.

On completion of basic category training, all CTs are given a Basic Competency Log for their speciality to consolidate what they have already learnt and provide further on the job training (OJT).

On completion of the Basic Competency Log and after having served at least 12 months at sea and provided they have two years seniority, a sailor may be promoted to Leading Seaman (LS) and issued with another competency log to consolidate training and provide further OJT.

It is a requirement of all LS to have completed the Junior Sailors Leadership and Management Course prior to being considered for promotion to Petty Officer (PO). Upon completion of LS Competency Logs and 12 months sea service and provided they have four years seniority a sailor may be promoted to PO.

To be promoted to Chief Petty Officer (CPO) and Warrant Officer (WO) a sailor must have an aggregated sea service of 24 months and four years seniority as a PO and CPO respectively. Completion of the remaining leadership continuum courses, Senior Sailors Management Course (SSMC) and the Chief Petty Officer Leadership and Development Program (CLDP) are prerequisites for promotion to WO.
Suggested Reading – Cryptologic Linguist / Systems-Categories

ABR 10 – Sailor’s Career Management Manual

Divisional Staff Handbook 2007


Australian Defence Doctrine Publication 2.0 - Intelligence (ADDP 2.0)

Australian Defence Doctrine Publication 3.5 - Electronic Warfare (ADDP 3.5)

Australian Defence Doctrine Publication 3.7 - Collection Operations (ADDP 3.7)

Royal Australian Navy Submarine Standard Orders (RANSSOs)
Cryptologic Systems - Submarines

Introduction

The CTSSM Category is a critical link in the war fighting capability of the Collins Class submarine, and is responsible for the operation of state-of-the-art electromagnetic (EM) sensors to provide above water target data. This data is used by the submarine Command team to maintain a situational awareness of potential threats around it.

History

The RAN’s Oberon - class submarines were fitted with a Radar Warning System designated UA-4, which was operated by Underwater Control Submarine Category sailors (UCSM) and Radar Plot Submarine Category sailors (RPSM) prior to a weapon systems upgrade in the 1980s. The UA-4 monitored the Electro-Magnetic Spectrum for radar emissions.

The UA-4 was used for WARNER (Radar Warning Receiver) purposes only as no analysis was conducted by the UC or RP operators. As EW technology progressed, the Microwave and Video Integrated System – Operator Display Unit (MAVIS ODU) was developed for operational deployments and later fitted to all Oberons. It proved to be a very successful and popular system with operators.

With EW becoming more important in the RAN, it was announced in 1987 that the Radio Operator Electronic Warfare (ROEW) category was to be introduced to submarines as permanent crew members. The first ROEWs subsequently joined submarines in 1989. To reflect the importance of EW, in 1990 the Navy decided that ROEWs were going to be trained to the same standard as the ROES / ROS categories. Subsequently, all ROEWs had to complete the Joint Telecommunications Operators Course – Supplemental, of which only two were ever held (1991-1992).
The Seaman Category Rationalisation Study (SCRS) was implemented in 1992 and the ROEW Category was amalgamated within the Combat Systems Operator (CSO) Category. ROEWs became either Electronic Warfare Specialists, Processors or Operators (EWS, EWP or EWO), with the exception of submariners who became known as Electronic Warfare Submarines (EWSM), although this was not a formally endorsed category. The 1990s saw many operational deployments, the EWSM profile increased and the category after finding itself in a dire personnel predicament early on, was flourishing by the late 1990s. The EW Submariner pay case of 2001 saw the birth of the EWASM at which stage the submarine community finally had its own dedicated EW category.

CTSSM Today

On 1 July 2007, the EWASM/EWT/EWL categories changed their name to CTSSM/CTS/CTL. This change was brought about to better reflect our role in the RAN and to align us with our counterparts in allied Navies.

The Category has 67 positions in various places around Australia, although most positions are at Stirling.

The CTSSM category exists to meet the capability requirements of the Collins-class submarine. The main strength of the submarine is its stealth, and this is heavily dependent upon the CTSSM. Their skills permit the submarine to operate safely and undetected by providing an indication of an adversary’s intentions through the exploitation of the Radio Frequency (RF) spectrum. The submarine Command Team relies on those responsible for gathering and analysing this information in order to remain undetected.
Entry Method

Entry to the Submarine arm is generally via Transfer of Category (TOC) from the Surface Fleet and any Category may apply; however, a Direct Entry Recruiting Scheme was recently introduced to supplement numbers. Prospective CTSSMs need passes in year 10 Maths, Science and English, with a good knowledge of Physics. Prospective Submariners must also pass additional psychological testing as well as the Submariner Enhanced Selection Process (ESP). The ESP exposes a potential Submariner to life on board a Submarine, enabling applicants to make an educated commitment to a career wearing the ‘Dolphins’.

CTSSM Category Core Duties

Warrant Officers Cryptologic Systems Submarine (WOCTSSM)

- CTSSM Capability and Development – Stirling.

Chief Petty Officers Cryptologic Systems Submarines (CPOCTSSM)

At Sea

- Chief of the Boat (COB).
- Ships Medical Officer.
- Manoeuvring Control Console (MCC) operator/Track manager.
- The Senior Petty Officer of the Watch.
- Coordinate the work of the executive department.
- Divisional Senior Sailor for Supply, AWA, CIS and CTS sailors.
- Whole Ships Coordinator.
- Member of the Submarine Safety Committee.
- Oversee and monitor key aspects of the Supply Branch.
- Physical Security Officer.

Ashore

- Category Manager Harman – Campbell Park.
- Chief Instructor Submarine Training and Systems Centre (STSC) – Stirling.
- Royal Australian Navy Tactical Electronic Warfare Support Section West (RANTEWSS Det West) – Stirling.
- Submarine Sea Training Group (SSTG) – Stirling.

Petty Officers Cryptologic Systems Submarines (POCTSSM)

At Sea

- Provision of Intelligence advice and recommended courses of action to the command.
- Advance analysis and research of threats in and beyond the area of Submarine Operations.
- Liaison with Intelligence organisations.
• Supervise submarine casing and seamanship evolutions.
• CT supervisor and departmental regulator.
• Assistant Explosive Ordnance Custodian.
• Officer In Charge of Practice (OIC Weapons Practice).
• Workplace Assessor.
• Senior control room watch keeper including Track Motion analysis, Contact Evaluation, Track Management and Dived Planesman.
• Surfaced Navigator.
• In Charge Weapons Embarkation/ Disembarkation (Torpedoes/Missiles).
• Understudy to the Chief of the Boat.

**Ashore**

• STSC Instructor, SMFEG – Stirling.


**Leading Seaman Cryptologic Systems Submarines (LSCTSSM)**

**At Sea**

• Detect, localise, analyse, classify and report emissions throughout the electromagnetic spectrum covered by the CT suite.
• Disseminate Tactical Information to Command.
• Second In Charge of CT Department.
• Maintaining and Firing Small Arms Munitions and Pyrotechnics.
• Maintaining Onboard Safety Equipment.
• Prepare/Conduct Seamanship Evolutions.

*HMAS Rankin entering Peal Harbour 2004.*
• Conduct Ships Cleaning and Maintenance activities.

• Operation of Submarine Combat Systems.

• Control Room Watch keeping including Helm and Lookout duties.

• Embark/Disembark Weapons (Torpedoes/Missiles).

• Maintain Registered/Non-Registered EW publications.

Ashore

• Senior EW Watchkeeper – STSC, SMFEG, RANTEWSS West – Stirling.

• Recruit School Instructor – Cerberus.

• ELINT Analyst – RAAF Edinburgh – JEWOSU.

• Operations Assistant – Fleet Headquarters, Submarine Operations.

Able Seaman Cryptologic Systems Submarines (ABCTSSM)

At Sea

• Detect, localise, analyse, classify and report emissions throughout the electromagnetic spectrum covered by the CT suite.

• Maintaining and Firing Small Arms Munitions and Pyrotechnics.

• Maintaining Onboard Safety Equipment.

• Prepare/Conduct Seamanship Evolutions.

• Conduct Ships Husbandry activities.

• Control Room Watch keeping including Helm and Lookout duties.

• Embark/Disembark Weapons (Torpedoes/Missiles).

• Maintain Registered/Non-Registered EW publications.

Ashore

• EW Watchkeeper – STSC, SMFEG, RANTEWSS West – Stirling.

• ELINT Analyst – RAAF Edinburgh – JEWOSU.

• Intelligence Analyst – Harman DIO.

• Operations Assistant – Fleet Headquarters, Submarine Operations.

Training and Education

The CTSSM training continuum is configured to allow the SMN*CT sailor the possibility of posting to sea within 18 weeks of finishing recruit school. Awarding of both your ‘Rate’ and ‘Dolphins’ simultaneously on completion of your SMSQ (Submarine Sea Qualification) is an early highlight of a rewarding CTSSM career. Upon achieving this milestone, a Sailor then undertakes the single largest course in their career - Signals Intelligence Technical- to gain advanced analysis skills. Relevant advancement training continues throughout your career with a focus on ELINT and reporting skills. Ancillary training includes advanced weapons training and The Ships Intelligence Officer Course. All training has been carefully evolved over a period of time to provide the SMFEG with the best trained, most capable CTSSM available.
CTSSM Career Progression

**Promotion to Petty Officer**
- 2 years seniority as LS
- 12 months sea time as LS
- LS Leadership Course
- Seaman Supervisors
- Competency Log

**Promotion to Leading Seaman**
- 2 years seniority as AB
- 12 months sea time as AB
- Small Boat Coxswain
- Collins Helmsman Certificate
  - *Awarded after successful completion of Competency Log*

**Promotion to Chief Petty Officer**
- 4 years seniority as PO
- 12 months sea time as PO
- POOW Qualified Dived & Surfaced

**Promotion to Warrant Officer**
- 4 years seniority as CPO
- 12 months sea time as CPO
- CLDP/SSMC

**Promotion to Able Seaman**
- Skill Grade 2*
- 12 months Effective Service

**SMSQ Not Achieved**

**TOS/TOC**

**Unsuitable for SM**

**Returned to General Entry**

**If Direct Entry TOC**

**Suitable for SM**

**Collins Class (Sea) Training**

**Collins Class (Shore) Training**

**Enhanced Selection Process**

**Recruit School**

**Direct Entry**

**LSCTSSM**
- Skill Grade 4

**SmSQ Achieved**

**LSCTSSM**
- Skill Grade 3*

**SMNCTSSM**
- Skill Grade 1

**SMSQ Achieved**

**TOS/TOC**

**SMSQ Not Achieved**

**TOS/TOC**

**TOS/TOC**
Suggested Reading – Cryptologic Systems - Submarine Category

ABR 10 – Sailor’s Career Management Manual

Divisional Staff Handbook 2007


Australian Defence Doctrine Publication 2.0 - Intelligence (ADDP 2.0)

Australian Defence Doctrine Publication 3.5 - Electronic Warfare (ADDP 3.5)

Australian Defence Doctrine Publication 3.7 - Collection Operations (ADDP 3.7)

Royal Australian Navy Submarine Standard Orders (RANSSOs)

BR 67 Admiralty Manual of Seamanship
2007 marks the centenary of the Royal Navy (RN) Survey Recorder Branch, which was created in January 1907. The RAN Survey Recorder Branch, once known as the Marine Science category and now known as the Hydrographic Systems (HS) Category, has its genesis in the RN Survey Recorder Branch. The HSO Category’s traditional yet distinctive rate badge shows a mariner’s quadrant. The quadrant came into widespread use for navigation around 1450, though its use can be traced back at least to the Thirteenth Century. A simple instrument constructed of wood or brass, the quadrant measures vertical angles of separation (i.e. it is used for measuring the angle between the horizon and the sun or other celestial body). This angle is then used to determine latitude. The first brave mariners that dared leave the sight of land in their sailing ships did so with the help of these important instruments, making it possible for them to determine their position on the earth to within a few degrees of accuracy. Understandably then, in 1920 the quadrant became the emblem on the Survey Recorder’s rate badge as a link with maritime history and the enduring efforts and endeavours of past explorers and hydrographers.

‘A third flash of lightning confirmed our fears as to the dangerous situation we were in ... We were evidently passing the line of breakers very quickly; but our escape appeared to be only possible through the interposition of a Divine Providence, for ... the extremity of the reef was seen within ten yards from our lee bow ... Fortunately we had a brave man and a good seaman [surveyor] at the helm, for instantly recovering the tiller, he obeyed my orders with such attention and alacrity that the sails were kept ... we had passed the extremity of the rocks and were in safety.’


d Phillipp Parker King, HMS Mermaid, December 1820
The Australian Hydrographic Service (AHS)

The Australian Hydrographic Service (AHS) has its origins in the British Admiralty Hydrographic Office, which was established in 1795. The Admiralty carried out surveys and published charts of the Australian coast throughout the Nineteenth Century in support of the defence and commercial development of the colonies. The RAN assumed responsibility for hydrographic surveys in 1920 and for the publication of charts in 1942. In 1946, Federal Cabinet made the Commonwealth Naval Board responsible for the surveying and charting of Australian waters. This responsibility was confirmed in 1988 after a review of Commonwealth mapping activities and today includes the publication of Australia’s official nautical charts, publications and electronic navigation media.

The AHS is embedded within the RAN Hydrographic, Meteorological & Oceanographic Force Element Group (HMFEG), which is the agency responsible for the provision of operational maritime military geospatial information in support of the ADF. It enables the ADF to exploit the above and below water physical operating environment for strategic operational and tactical advantage. HMFEG tasks include the production of military geospatial information, combat support, and operational hydrographic surveys.
Hydrographic Assets and Capabilities

The HMFEG headquarters are located at the Australian Hydrographic Office in the coastal city of Wollongong, NSW. The current hydrographic survey priority remains focused on Australia’s northern approaches, including the northwest coast and the waters of the Great Barrier Reef region. As a result, all of the HMFEG’s ships and aircraft are home-ported in Cairns, except the Deployable Geospatial Support Team capability, which is based at the Australian Hydrographic Office.

The AHS has a varied range of assets that provide a survey capability to meet both the national charting task and for military operations. Current hydrographic assets/platforms include:

- Leeuwin Class Hydrographic Ships (HS).
- HMAS Leeuwin.
- HMAS Melville.
- Paluma Class Survey Motor Launches (SML).
- HMAS Paluma.
- HMAS Mermaid.
- HMAS Shepparton.
- HMAS Benalla.
- Laser Airborne Depth Sounder (LADS).
- Deployable Geospatial Support Team (DGST).
- Survey Motor Boats (SMB).
  (Embarked in the HS and employed at the RAN Hydrographic School, Penguin.)
- Antarctic Survey Vessel (ASV).

The Hydrographic Survey Force gathers hydrographic data using the latest state of the art survey equipment and computer-based technology. Techniques have evolved from the days of gathering soundings using lead lines and
then single beam echo sounders. In 2007, the hydrographic sailor is required to gather data using advanced multi-beam echo sounders and sonar equipment, laser-based sensors and sophisticated data visualisation and processing systems capable of managing vast amounts of digital data. The HS category is increasingly becoming an IT-based scientific discipline.

Almost two hundred years ago, a young British sailor inscribed his ship’s name, ‘HMC Mermaid 1820’ into a large Boab tree, 200 metres from the shoreline at Careening Bay, Port Nelson on the Kimberley coast. It is still there today. It also marked the beginning of an extraordinary period of optimism and adventure in Australia’s history. The race to survey and settle Australia’s west and northern coastlines was the equivalent of Nineteenth Century’s ‘space race’, as France, Britain and Holland competed commercially for antipodean bases after the end of the Napoleonic Wars.

Crew of HMAS Mermaid visiting the ‘Mermaid’ Boab tree in May 2006.

A Brief History of Hydrography in the RAN

Hydrographic surveys of Australian waters commenced with European discovery of the continent and were undertaken by some of the greatest navigators of the age whose deeds are well recorded. Mathew Flinders, John Lort Stokes in HMS Beagle between 1837 and 1843, Owen Stanley in HMS Rattlesnake, Phillip Parker King in Mermaid, and Nicholas Baudin with his two ships Le Géographe and Le Naturaliste in 1801, retain a special status in Australian maritime history. Some of their hydrographic data remains in use today and virtually unaltered on certain charts.

The first ship commissioned into the RAN to undertake surveying duties was HMAS Geranium (1920). She was acquired from the RN and assigned to survey the economic trade routes through the Great Barrier Reef and Torres Strait regions. The survey operations conducted by Geranium were supported by HMAS Moresby and HMS Herald (the latter on loan from the RN during 1925-26).
**Geranium** was fitted with an A10-2 aircraft, which was the first recorded use of an aircraft for hydrographic surveying purposes. In 1926, *Supermarine Seagull* IIIs were loaned for hydrographic support prior to the completion of HMAS Albatross for which they had originally been purchased. Later *Supermarine Seagull* Vs, constructed to Australian specifications and also ordered for Albatross, were used for survey operations.

The survey branch was disbanded in 1939, then re-established in 1942 when the inadequate state of charts in the island waters to the north became evident. With the Navy on a wartime footing, survey tasks were now in the front line and were increasingly undertaken in advance of operations. During the New Guinea campaign, ships of the Hydrographic Service operated in all weathers and under frequent attack.

Surveying and beach reconnaissance are two elements of advance force operations in which the RAN has a distinguished history. As part of Task group 75.0, a mixed RAN/USN force under Australian command between 1942 and 1945, the RAN’s hydrographic surveyors conducted a series of surveys and lead-through operations, often within range of enemy batteries and frequently under fire. These were vital to the success of the amphibious campaigns in New Guinea and the South West Pacific theatres. The Survey Branch was awarded 2 Order of the British Empire (OBE), 13 Distinguished Service Cross (DSC), 4 Distinguished Service Medal (DSM) and 14 Mentioned-in-Dispatches during WW II.

Amphibious landings then, as now, require knowledge of navigational hazards. Landings in the Hopei and Lae regions in 1943 were dependent on rapid surveys of the area by the RAN hydrographic service, as were recent operational landings in 2006 in Timor-Leste some 63 years later.

The RAN Hydrographic Service’s role of providing a national hydrographic capability continued after WW II. The frigates HMAS Barcoo and HMAS Warrego were assigned to survey duties from 1952 onwards. HMA Ships Diamantina and Gascoyne were recommissioned from the Reserve Fleet to replace them as oceanographic research and survey ships in 1959.
Motor Stores Lighter (MSL) No 252 was taken out of reserve, converted to a Coastal Survey Ship and commissioned as HMAS *Paluma* (III) in February 1958. This remarkable little ship remained on survey duties, mainly in northern waters, until March 1973, by which time the hull and machinery were 28 years old.

HMAS *Moresby* (II) was completed as a purpose designed survey ship in 1964 in Newcastle. She was the first Australian warship fully designed and built in Australia and was considered the most visually elegant ship afloat in the RAN at the time. *Gascoyne* was decommissioned in 1966 and *Flinders* commissioned in 1973, replacing *Paluma*.

The main priorities for survey work were the newly developing ore ports and shipping routes on the north-west coast of Australia, along with the perennial requirements of surveying in the Great Barrier Reef and the Torres Strait. Discovery of natural gas deposits, along with dramatically increasing bulk carrier sizes, also placed great pressure on survey and charting requirements.

**Additional tasks in the RAN today**

Survey work often precedes military operations and the AHS (now HMFEG) has a proud history of combat support. The ships and units of the HMFEG are very flexible and can undertake a broad range of tasks in addition to surveying as and when required. For example the two Hydrographic Ships periodically support mine warfare operations by embarking the MCM Tasking Authority as part of dedicated ADF exercises such as Exercise Talisman Sabre.

Moreover, the vessels are capable of carrying rotary wing aircraft and are especially adaptable to roles associated with constabulary and diplomatic tasks, including border protection duties, military surveillance, Search and Rescue (SAR), disaster relief and Defence assistance to the civil community. Hydrographic vessels were the first into Darwin Harbour after Cyclone Tracey in 1974 and the Deployable Geospatial Support Team (DGST) was required to chart safe passages...
DGST is involved in most major amphibious exercises by providing up to date survey data to support amphibious operations. The team can be called upon at short notice to deploy in support of joint operations; most recently this has included operations in Timor-Leste, Banda Aceh, and Solomon Islands. DGST also conducts large-scale surveys in areas that cannot be safely surveyed by larger vessels. DGST periodically deploys to Antarctica during the summer months for dedicated survey operations and activities in support of the Australian Antarctic Research Expedition. For many sailors, such deployments represent a unique opportunity available to no other category.

The Laser Airborne Depth Sounder (LADS) aircraft is based in Cairns and is the only fixed wing aircraft owned by the RAN. The aircraft uses red and green lasers to determine water depth to 50 metres in clear water from a flying height of 500 metres. Soundings are collected at a nominal spacing of 10 metres over a 240 metre swathe at a survey speed of approximately 145 knots. One sounding run from the aircraft would take a surface ship up to three months of continuous work, operating twenty-four hours a day.

The RAN Hydrographic School at Penguin in Sydney has some resources that can undertake large-scale surveys in the local area if required. The school’s primary task is to train all hydrographic surveyors, from SMNHSO* undertaking their Basic Course, to the H2 International Category B Surveying Course for selected Leading Seaman (LS) and officers. The H2 course is the only course in the RAN where sailors and officers undertake the
same course and receive the same qualifications on completion. Successful students, both officers and sailors, are awarded the Military Geospatial Warfare specialisation badge on completion.

In time, HSO sailors undergo Intermediate and H2 hydrographic surveying courses at Penguin. These courses are pre-requisites for promotion to Leading Seaman and Petty Officer respectively. Like the officer corps, those sailors that successfully complete the H2 Course receive an internationally recognised qualification as a hydrographic surveyor.

Hydrographic sailors need not have tertiary education but must have a pass in Year 10 English, Maths and Science as the nature of the specialisation requires a solid understanding and knowledge of mathematics and associated sciences.

**Hydrographic Systems Operators Courses and Qualifications**

All Seaman General Entry (GE) sailors undergo an initial 15 week training period at Cerberus in Victoria. Those who join specifically as Hydrographic Systems Operator sailors then undergo a 10 week Basic Hydrographic Systems Operator Course (BHSO) at Penguin, where subjects include the theoretical and practical operation of survey equipment including satellite position fixing, depth measurement, hydrographic data logging and processing, field work ashore and afloat, and the operation of small survey craft. Successful graduates will then be posted to sea in one of the Hydrographic Survey Force ships to consolidate the technical and professional knowledge gained during the course. Sailors who join another branch such as the Boatswains Mate Category, may apply to transfer to the HSO category later in their careers.
Duties of a Hydrographic Sailor

Hydrographic sailors undertake a range of duties in the collection and collation of data and in the creation and development of navigational products in support of maritime operations. The Hydrographic category produces the fundamental underpinning information for all naval activity and while doing so, employing all the core skills of the mariner.

Hydrographic Systems Category sailors experience a varied work environment both ashore and at sea. Much of the work is outdoors, often in the remote areas of Australia’s north but as far north as Papua New Guinea and as far south as Antarctica. HSO sailors are part of the seaman department in any ship. As well as their specialist duties, they participate in all general seamanship activities.

Survey Systems Operator (SSO)

Survey sailors are required to monitor digital data logging systems that are at the centre of a modern hydrographic survey. The systems operator monitors numerous ship sensors including echo sounders, towed sonar, GPS, and other navigation systems. An appreciation of the intricate systems used and general computer operation is required.

Survey Motor Boats (SMBs)

HS category sailors provide the personnel to crew the SMB. SMBs generally work close inshore with a four-man crew. Able Seamen fulfil the duties of the bowman who works the deck of the boat and operates the onboard hydrographic survey system/sensors. Leading Seamen are usually called upon to act as the coxswain of an SMB where they are responsible for the overall operation of the boat, supervising the bowman and the boat’s technician/engineer, and ensuring the boat is maintained and ready to fulfil the survey mission on a day-to-day basis.

Senior sailors also work with SMBs in overall charge of the boat and are responsible for the full conduct of survey operations.

Survey Operations Ashore

Assisting with establishing the position of survey sites ashore using theodolites and electronic distance meters, establishing differential GPS reference stations and erecting tide poles are a few of the typical duties HSO sailors will be called upon to conduct ashore. Sailors are also regularly engaged in surveying beach landing sites and wharf areas as part of various ADF amphibious operations.
Hydrographic/Seamanship Evolutions

HS sailors assist with survey-related seamanship tasks including seabed sampling, observing water clarity and deploying and recovering current meters, tide gauges and other over-the-side equipment from the ship.

Detached Survey Camp/Parties

Camps are often set up in areas where SMBs need to work independently of their ship. On these occasions, hydrographic survey sailors may spend many weeks working under canvas from camps ashore on remote islands, where data from the day’s survey work is processed each night and collated over a period of weeks or months before returning to the ship.

Sea Duty

Survey ships usually operate well away from their home port for periods of up to three months at a time and many surveys take place in the more remote areas of Australia rarely visited by RAN ships. However, regardless of the task or the ship, hydrographic sailors still only spend a maximum of 150 days away from home port. Survey sailors can expect to maintain a sea-shore ratio of three years at sea to two years ashore to allow for promotion courses and to provide adequate shore respite from the demands of survey operations.
Considering a Hydrographic Branch Career?

A sailor who considers hydrographic surveying as a warfare specialisation has many challenges to meet as part of a rewarding and increasingly satisfying career. It is a specialisation which has a proud history of discovery and one upon which both the ADF and the wider maritime community depend for safe navigation, freedom of manoeuvre, and ultimately the safety of the seafarer.

The primary role of a surveying sailor is to gather the necessary information that is required to produce a navigational product, be it a traditional paper chart, a nautical publication such as Tide Tables, or a digital product such as an Electronic Navigational Chart, all of which help make navigation at sea safe. Duties include hydrographic survey system watchkeeping on the Bridge of survey ships or in the LADS aircraft, undertaking field work both afloat and ashore in some of the most remote, challenging yet captivating areas of Australia’s coastal margins, and assessing and compiling survey information for rendering to the Australian Hydrographic Office. It is a career of opportunity, satisfaction and fulfilment.

Happily, it is a profession of volunteers ... [and] ... in no branch of the public service can the juniors be more anxious to do their duty, not only to the letter, but to the utmost of the spirit, and to such as these that no day seems long enough. To them, the interest is constantly kept up. Every day has its incidents. The accuracy of the work of each assistant, when proved, is an infinite gratification to him, and he also has the continual satisfaction of feeling that of all he does a permanent record will remain, in the chart which is to guide hundreds of his fellow seamen on their way.

_Rear Admiral Sir W.J.L Wharton, (Wharton’s Preliminary), 1920._
Quality control of hydrographic data is fundamental to, and effectively underpins, a hydrographic sailor’s work. To this end, care and a meticulous nature are required at all times. When hydrographic sailors sail for deployment, particularly in those parts of Australia, Papua New Guinea (PNG) and Antarctica where the waters are either unsurveyed or inadequately charted, they do their job, add value and contribute to Australia’s maritime infrastructure and history by producing a tangible result. Such a sense of achievement and accomplishment makes the branch one of the more challenging yet rewarding careers within the warfare community.

HMA Ships Leeuwin and Melville employ a unique three-crew (multi-crew) rotation system to provide a 300-day operational availability for the ships, while at the same time allowing crew members the appropriate amount of time off. This means that each of the three crews (RED, WHITE and BLUE) gain respite from serving at sea through dedicated off-watch periods during which personnel have ample opportunity to undertake professional and development courses, meet pre requisite training and acquit leave. Ship deployments are generally to northern waters, although deployments to PNG and southern Australia are possible depending on the survey and charting program. HSF units can expect to conduct at least one overseas port visit each year.

**Generic Hydrographic Sea and Shore Positions**

As previously mentioned, the majority of hydrographic assets are based in Cairns and by association, so are most of the postings for hydrographic sailors. Shore positions are primarily located at Penguin and in the AHO (including DGST). Senior sailors may also be posted to Waterhen in support of the Mine Warfare Group.

Hydrographic sailors typically fill the following positions/billets at sea:

**Hydrographic Ships**

- **Chief Petty Officers Hydrographic Systems Manager (CPOHSM)** - The CPOHSM is responsible to the CO for the administration of the Hydrographic Department and is responsible for the maintenance and serviceability of all hydrographic equipment and stores onboard the ship.

- **Petty Officers Hydrographic Systems Manager (POHSM)** - The Chartroom Petty Officer is directly responsible for managing the daily processing of hydrographic data, using the offline Hydrographic Survey System, and for the day-to-day management of all survey records.
• **POHSM** - The SMB Petty Officer is responsible for managing the three SMBs embarked on each Hydrographic Ship.

• Senior Sailors in HMA Ships *Leeuwin* and *Melville* may also be required to undertake Officer of the Watch duties on a periodic basis.

• **Leading Seaman Hydrographic Operator (LSHSO)** - The Survey Hold Leading Seaman is responsible for ensuring that equipment is ready for deployment ashore and for the ordering and accounting of all survey and survey-related stores.

• **LSHSO** - Three LSHSOs are employed as SMB coxswains. They are responsible to the Boat’s Petty Officer for the daily maintenance of the SMB and for supervising the SMB bowman and engineer/technical sailor.

• **LSHSO** - Two LSHSOs are employed as data processing supervisors, ensuring that all data is processed in accordance with specifications.

• **Able Seaman Hydrographic Operator (ABHSO)** - Three ABHSOs are employed as SMB bowman. Their job is to ensure the cleanliness of their respective SMBs and to ensure there are sufficient stores embarked to effectively conduct daily survey operations. The SMB bowman is also the Survey System Watchkeeper when SMBs are collecting data.

• **ABHSO** - The remaining seven ABHSOs undertake survey processing duties together with bridge watch-keeping and part of ship duties.

Survey Motor Launches

• **CPOHSM/POHSM** - The CPO or POHSM is the survey data and logistics manager in an SML. They also undertake duties as Officer of the Watch.

• **LSHSO** - LSHSOs undertake the role of Buffer or Chief Bosun’s Mate, where they also perform duties as bathymetric data process supervisors. They may also undertake duties as the Assistant Officer of the Watch.

• **ABHSO** - There are two billets for ABHSO sailors in SMLs. Both positions have a specialist requirement outside normal survey and watch keeping requirements. Each SML requires a Gunner’s Yeoman (responsible for the maintenance of the ship’s small arms) and a Safety Equipment (SE) Yeoman (responsible for ensuring that all of the ship’s lifesaving and safety equipment remains serviceable).

Hydrographic sailors can typically fill the following positions ashore:

Australian Hydrographic Office/HMFEG HQ

• **WOHSM** - As Staff Officer Category Management, the WO is responsible to the Chief of Staff HMFEG (COS HM) for future training requirements and for assisting in the future development of the HS category.
• **CPOHSM** - The Assistant Quality Control Manager is responsible for checking and quality assessing hydrographic survey data from the Hydrographic Survey Force before it is used in the AHO’s Digital Hydrographic database for eventual compilation into charts and other navigational products.

• **POHSM** - The Personnel and Training Assistant is responsible for updating Navy’s and the HMFEG’s personnel databases in order to manage and maintain accurate information on required manning levels.

• **LSHSO** - The Personnel Management Assistant works closely with the WOHS and manages the day-to-day administrative requirements of the HMFEG HQ.

• **LSHSO** - The Tides Assistant is responsible for maintaining geodetic records within the Tides Section of the AHO.

• **ABHSO** - The Nautical Information Officer is responsible for inputting data into the nautical publications database and for managing Australia’s shipwreck database.

• **ABHSO** - The Operations Yeoman manages all HMFEG HQ signal traffic and assists in the compilation and promulgation of Hydrographic Instructions which provide the detailed survey requirements for the Hydrographic Survey Force.

**Deployable Geospatial Support Unit**

• **POHSM** - As 2I/C of DGST, the Petty Officer is responsible for the management and deployment of specialist equipment whenever the unit is required to undertake surveys. These surveys are often undertaken in support of joint ADF amphibious operations or exercises or as part of the national survey and charting program.

• **LSHSO** - As the boat coxswain and data processing sailor, the LSHSO is responsible for ensuring the unit’s SMB and equipment is serviceable and ready for deployment at short notice.

**Hydrographic Cell Cairns**

• **WOHSM** - The Hydrographic Survey Logistics Manager is responsible for managing the Hydrographic Cell in Cairns. The WOHS can also be expected to undertake large-scale surveys utilising local resources when required as part of the overall DGST capability.

• **CPOHSM/POHSM** - The Survey Support Officer is responsible for the maintenance and serviceability of all rotatable pool equipment at the Hydrographic Cell.

• **LSHSO** - The Survey Support Assistant carries out maintenance tracking of equipment under repair by contractors.

• **CPOHSM** - The Hydrographic Support area manages and provides technical advice and information on various professional and personal development training courses.
• **ABHSO** - This sailor’s focus is on the data management of information relating to course completion and the programming of courses for HSF personnel.

### Laser Airborne Depth Sounder

• **CPOHSM** - The Flight Survey Coordinator is responsible for data management and the correct processing of all collected bathymetric data.

• **POHSM** - Two POHSM Flight Survey Operators are responsible for the correct collection of data during flying operations/sorties.

• **LSHSO** - The LSHSO Flight Survey Operator is responsible for the correct collection of data during flying operations/sorties.

• **ABHSO** - The LADS Survey Assistant is responsible for the collation and dispatch of processed data.

### RAN Hydrographic School

• **CPOHSM** - The Training and Development Officer is responsible for ensuring the quality and development of all courses conducted at the RAN Hydrographic School.

• **POHSM** - Training and Development Officer Assistant.

• **POHSM** - Primary Instructor of the Basic Hydrographic Course.

• **LSHSO** - SMB Coxswain and Training Support.

• **LSHSO** - Training Support.

• **ABHSO** - The ABHSO is the Hydrographic School storeman responsible for ensuring that equipment required for training is available and serviceable.

### Out of Branch Positions

There are also a number of out of branch positions/billets which are managed by the HMFEG HQ:

• **CPOHSM** - *Waterhen* - hydrographic advisor to the MCD FEG.

• **CPOHSM/POHSM** - Training and Education Officer Assistant at Cairns.

• **ABHSO** - Training and Education Office Staff at Cairns.

• **ABHSO** - Accommodation Clerk at Cairns.

• **ABHSO** - Three positions in the Bosun’s Party at Cairns.

• **CPOHSM** - Defence Force Recruiting Office at Parramatta (nominally a rotational billet).

### HSO CAREER MODEL

Promotion to Leading Seaman requires a minimum of two years service as an Able Seaman and completion of the Intermediate Hydrographic Systems Operator Category Course an eight week course at *Penguin*), together with a number of other professional naval courses. Promotion to Petty Officer requires a minimum of four years service as a Leading Seaman and completion of the H2 Hydrographic Surveying Course (25 weeks) and other professional naval courses. Promotion is competitive and determined primarily on merit.
Hydrographic Career Model

**WOHSM**
- SSMC 1 & 2
- 12 months sea time
- 4 years Seniority as CPO

**B/LEUT 0/3**
- SSMC 1 & 2
- 12 months sea time
- 4 years Seniority as CPO

**CPOHSM**
- 4 years seniority as PO
- 12 months sea time
- H2 Competency Log

**B/LEUT 0/1**
- 4 years seniority as PO
- 12 months sea time
- H2 Competency Log

**POHSM**
- H2 Course
- PRE H2 Maths Exam
- 4 years seniority as a LS
- 12 months sea time
- LSHSO Competency Log

**B/LEUT 0/P**
- H2 Course
- PRE H2 Maths Exam
- 4 years seniority as a LS
- 12 months sea time
- LSHSO Competency Log

**LSHSO**
- Intermediate HSO Course
- PRE Intermediate Course Maths Exam
- Completion of ABHSO Competency Log
- 2 years Seniority
- 12 months sea time

**ABHSO**
- Helmsman’s Certificate
- 12 months effective service

**SMNHSO**
- Basic HSO Course
- Basic Seamanship

**SNM*HSO**
- Recruit Training
- Swimming Test
**Future Hydrographic Developments**

The Hydrographic Survey Force employs state of the art hydrographic survey systems, including multi-beam echo sounders, moving vessel profilers and towed side scan sonar technology. The category is facing some exciting times ahead with personnel increasingly being exposed to significant technology and IT developments.

The current SML fleet will remain in service until 2015; each ship will undergo an evolutionary upgrade to its onboard IT and survey suite commencing in 2008 with the last ship to be completed in early 2010. This will provide the four ships with the latest survey and data processing equipment to enable each vessel to gather hydrographic data more efficiently and to the latest international standards using ‘best practice’ technology and surveying techniques.

The Leeuwin-class HS will continue to serve the RAN until at least 2020 and will also undergo progressive upgrades to ensure that their leading-edge technology remains current and is able to manage the ever-increasing amounts of bathymetric and related hydrographic data that is now required and which is routinely being collected.

The LADS aircraft will undergo a sensor upgrade in 2008; employing contemporary laser bathymetry technology and processing systems to facilitate an even greater rate of effort. This will ensure a key hydrographic capability until at least 2018. Ashore, the Australian Hydrographic Office is continuing to update its production and database systems to facilitate the production of world-class nautical charts and services to international standards and to meet ever-increasing demands.

**Maritime Geospatial Information and Services**

Possession of environmental information has, on many occasions, shown itself to be a key factor in the success or failure of naval operations. The development of the Rapid Environmental Assessment (REA) concept and the provision of Military Geospatial Information (MGI) are set to increase in importance. In 1999, the RAN’s Detached Survey Unit embarked in Success enroute to Dili for Operation Warden/Stabilise. Before any RAN vessels entered Dili Harbour, the team conducted a preliminary survey of the harbour environs and passages through the adjacent reef. The team determined that the reef areas fringing the approach channel were incorrectly charted; they also discovered a number of uncharted...
dangers. At the same time, LADS was deployed to Darwin for survey tasks on the south coast of Timor-Leste. Five ports and beaching areas were fully surveyed in six days. Within 36 hours of completion, each survey was being used to enhance the situational awareness/freedom of manoeuvre for the command elements of various RAN Fleet units en route to Dili.

Without nautical charts and the necessary associated hydrographic knowledge, ships cannot operate safely, efficiently, or flexibly. Together with meteorological and oceanographic data, hydrographic information is a fundamental enabler of maritime operations. Knowledge of the prevailing environmental conditions, together with knowledge of one’s own forces, can provide a decisive edge in military operations.

The future is bright for both the RAN Hydrographic Service and for the HS category as new technologies are introduced, new concepts are embraced and developments made. To realise such a future will require a certain kind of sailor, a sailor who appreciates, acknowledges and is committed to the Hydrographic Service’s enduring motto: ‘No Day Too Long, No Task Too Arduous’.

Beach survey observations, Shoalwater Bay.

Mariners are warned! A seaman with charts and Sailing Directions is never alone, for at his elbow stand other mariners, perhaps long dead. They tell him “Shoals in this vicinity”... No survey of these waters”...They call to him “Beware!”, “Watch out!”, “Take care!”...And heeding these voices from the past, he is guided safely through the sea ...

Marsden Hordern, Author, 1989
Suggested Reading - Hydrography

ABR 10 – Sailor’s Career Management Manual

Goodman, Jordan ‘The Rattlesnake – A Voyage of Discovery to the Coral Sea’ Faber and Faber, 2005

HMFEG Hydroscheme and HMFEG Military Hydroscheme

Hordern, Marsden, King of the Australian Coast – The Work of Phillip Parker King in the Mermaid and Bathurst 1817-1822’, Melbourne University Press, 2002

Hordern, Marsden, ‘Mariners are Warned – John Lort Stokes and HMS Beagle in Australia 1837-1843’ Melbourne University Press, 2002


Australian Hydrographic Service website www.hydro.gov.au
Naval Police Coxswain Category

Introduction

The Naval Police Coxswain Category is responsible for policing, seamanship and navigation, whole ship coordination, and providing advice on force protection.

Prior to 1969, for the maintenance of good order and discipline as well as the prevention of crime the RAN relied on three categories, the Regulating Branch, Coxswains, and Naval Dockyard Police.

Regulating Branch

The principal organisation responsible for general policing and the discipline of sailors was the Regulating Branch, members of which were recognised by the crown they wore on their right arm. Regulators were posted to all establishments and major warships where they exercised the specific powers they held under Section 45 of the Naval Discipline Act 1964.

Commissioned Officers within the Regulating Branch were called Regulating Officers and served in most Naval Establishments as the senior discipline officer. A Chief Petty Officer in the Branch was called the Master at Arms; a title handed down from the days of sail when the Master at Arms was the custodian of a ship’s armoury and small arms. He had the unique privilege for a sailor of being permitted to carry a sword on ceremonial occasions and, in days long gone, was responsible for delivering the lash or the cat of nine tails. Petty Officers were called Regulating Petty Officers and Leading Seaman were Leading Patrolmen.

In his realm, the Master at Arms and his staff reigned supreme: in essence, Leading Patrolmen could give directions to Chief Petty Officers of other categories. A further indication of the Branch’s status was that Leading Patrolmen were accommodated and messed with Petty Officers in shore establishments. It is fair to mention that the Regulating Branch was perhaps the least popular Branch in the RAN with members usually referred to as Crushers, while the Master at Arms was known as the Jaunty or Joss Man.
Coxswains

The term Coxswain (pronounced - kswan; often called Coxs’n or Swain) literally means ‘boat servant’, since it comes from cock, a cockboat or other small vessel kept aboard a ship, and swain, which means boy, servant or attendant. In the Royal Navy, during the days of sail, the Coxswain was a Petty Officer or Chief Petty Officer who commanded a Captain’s or Admiral’s Barge.

Later he was the senior Chief Petty Officer in a smaller vessels such as a corvette or submarine, who was responsible for steering the ship and also assumed the duties usually performed by the Chief Boatswain’s Mate or Master at Arms in larger vessels.

With the passage of time, Coxswains became responsible for coordinating the activities of the ship’s company, looking after the welfare and discipline of sailors and answering directly to the Executive Officer. The basic difference between a Regulator and Coxswain was that a Coxswain was able to act as quartermaster of the ship. A good Coxswain usually made for a happy ship; a bad one usually meant some tough times for those embarked.

Amalgamations

Noting the similarity in their jobs, a 1967 Fleet Work Study report recommended that the Regulators and Coxswains amalgamate. The amalgamation took place 1 July 1969. However, unlike the RN and the RNZN, the amalgamated branch adopted the name of the smaller branch, that is, Coxswains, to reflect the job performed at sea.

WRANs

The Women’s Royal Australian Navy Service (WRANS) were a separate entity within the RAN until 1981 and managed their own people, discipline and policing through the WRAN Regulators. The rank structure and duties within the WRAN Regulators were much the same as their male counterpart, with the exception that the WRANS were mostly segregated from sailors and did not serve at sea. WRAN Regulators continued to serve in the Royal Australian Navy until 1981 when they merged with the Coxswain Category and females were allowed to join the ranks of the Naval Police. Female Coxswains had no sea service obligation until 1984 and female Naval Police had no sea service obligation until the amalgamation with the Coxswain Category in 1991.
Naval Police

The Naval Dockyard Police were formed on 1 July 1913, when command and control of the establishments in the Sydney area passed to Navy control.

The Naval Dockyard Police were established as a civilian organisation and relieved the Royal Marine Light Infantry of their responsibility for guarding and policing Garden Island, Spectacle Island and the Royal Edward Victualling Yard, a duty the Marines had held since 1867. As the Commonwealth Government also acquired the Cockatoo Island Dockyard from the N.S.W. Government on 31 January 1913, Naval Dockyard Police also took over policing duties from the six civilian Special Constables who had been employed by the NSW Public Works Department in that location.

WW I created several problems that would change the direction of the Naval Dockyard Police. The Navy had an increased demand for guards and a need for a counter-espionage service that could carry out investigations into such concerns as sabotage and the location of enemy agents. The Naval Board determined that the additional guarding services would be provided by Royal Australian Naval Brigade members who were unfit for active service. The task of counter-espionage fell to the Naval Dockyard Police. The latter ceased to be a civilian organisation on 31 August 1923, when they entered the Auxiliary Services of the RAN.

With the transfer of a police force into the Navy, many amendments were required to documents such as the Consolidated Orders and Regulations,
Naval Finance Regulations, *Naval Defence Act 1910*. During consideration of these many changes, it was proposed the Force be given its own statutory powers of arrest, search and detention. After causing considerable debate and receiving endorsement from the Attorney General’s Department, Naval Establishment Regulation 101 received Royal Assent on 26 July 1934. This Regulation made the Naval Dockyard Police a Statutory Force with policing powers over civilian and Defence personnel on Commonwealth land.

Although a number of changes to uniform, complement and pay rates occurred during and after WW II, it was not until 21 January 1972 that any major change to the Force’s structure occurred. It was on this date that the Force became a branch of the RAN and thereby no longer existed as part of the Auxiliary Services. It was also at this time that the branch was re-titled Naval Police, and the ranks of Warrant Officer and Senior Constable were introduced.

Other functions of the Naval Police included providing a Dockyard Fire Service and a Police guard dog capability.

Currently there are Naval Police Coxswains serving in all classes of naval vessel and in all naval establishments. A Naval Police Coxswain of any rank, whether at sea or ashore, can be expected to be involved in:

- Matters of discipline and law enforcement.
- Investigations of Service offences.
- Prosecuting at Summary Trials;
- Navigational duties in Patrol Boats, SML, LCH and HS.
- Helmsman’s duties.
• Human Resource Management.
• Primary health care provision in Minor Fleet Units.
• Random Breath Testing.
• Prohibited Substance Testing.

**Enlistment Naval Police Coxswain**

In 1991, as the result of yet another reorganisation, the Naval Police and the Coxswain category were amalgamated to form the Naval Police Coxswain (NPC) Category. The category as we now know it is responsible for policing, seamanship and navigation, whole ship coordination, and providing advice on force protection.

Given the responsibilities that go with the job, the minimum rank for an NPC is Leading Seaman and the NPC Category mainly draws its personnel from other categories within the RAN. Once a member expresses an interest in a transfer of category they undertake a four week assessment period working within an NPC office either ashore or afloat. If they are assessed as suitable, personnel are normally nominated for the next available Service Police Basic Course (SPBC).

The NPC Category may also draw its personnel through transfers from the Naval Reserves, State and Federal Police agencies, the Army and RAAF. Additionally, a direct recruiting process is being developed whereby recruits may be able to join the RAN with a clear career pathway to becoming an NPC available to them from the outset.
Training and Promotion

The SPBC is conducted at Lamia Barracks, Holsworthy, on the outskirts of Sydney. It is a tri-service policing course which lasts 11 weeks and includes five weeks of training specifically for Navy students. The course includes subjects such as Discipline and Law Enforcement, Investigations, Force Protection, Whole Ship Coordination, Leave and Movements.

On successful completion of the SPBC, a newly graduated NPC is usually posted to a naval establishment for approximately 12 months in order to consolidate training and progress their task book. Following this, they are normally posted to a ship or boat for 18 months. The range of seagoing opportunities for Leading Seaman includes:

- Armidale-class Patrol Boats and Survey Motor Launches, both of which require Senior Sailors Nav course leading to the limited Navigations Watchkeeping certificate (LNWC) and Navigation Watchkeeping Certificate (NWC) and Minor War Vessel Medical course.
- Anzac-class Frigates.
- Adelaide-class Frigates.
- Auxiliary Ships, such as HMAS Success or HMAS Tobruk.

On, or prior to, promotion to Petty Officer an NPC is required to undertake the Service Police Investigator’s Course (SPIC), which is a four week tri-service course conducted at Lamia Barracks. The course entails the studying detection of offences and methods of investigation. On completion of

the course an NPC is qualified to investigate minor criminal incidents.

NPC Petty Officers serve in all shore based establishments and have a sea service commitment for the same range of vessels available to Leading Seamen, though with increased levels of responsibility. In addition, if qualified, they can be posted to the Australian Defence Force Investigative Service (ADFIS).

On, or prior to, promotion to Chief Petty Officer an NPC is required to undertake the Australian Defence Force Investigator’s Course (ADFI), a 12 week tri-Service course conducted at Lamia Barracks. On successful completion of this course a Chief Petty Officer is qualified to conduct investigations into Major and Complex criminal matters.

NPC Chief Petty Officers have a sea service commitment and serve in all major surface ships, including Hydrographic survey ships. They also serve in all naval establishments and the ADFIS.

No additional qualifications or courses are required for NPCs to be promoted to Warrant Officer. There are four Warrant Officers within the NPC category and they serve as the Category Sponsor, the Coxswain Cerberus, the Coxswain Stirling and the Fleet Whole Ship coordinator with Sea Training Group (STG).

In addition to the police courses already mentioned, there are a number of specialist courses available to NPCs including:

- The Adult Sexual Assault Course, conducted by NSW Police at Westmead Campus.
• The Forensic Document Examiners Course, conducted by the Australian Federal Police (AFP).

• A Scene of Crime Officers Course, which can be conducted externally at the NSW Police Academy, Goulburn or on campus at Lamia Barracks.

• An Investigations Managers Course, conducted by the AFP.

Further to this, there are a number of secondments to civilian policing agencies, both State and Federal, in which NPCs can further enhance their skills.

Australian Defence Force Investigative Service

Following The Report on the Effectiveness of Australia’s Military Justice System, by the Foreign Affairs, Defence and Trade References Committee of the Senate, and a subsequent audit of the investigative capability of the ADF, the ADF Investigative Service (ADFIS) was formed in 2007 under the command of the Provost Marshal ADF (PM-ADF). The ADFIS is a tri service organisation which absorbed the Naval Investigative Agencies and most of the NPC positions associated with them.

The ADFIS is responsible to CDF for investigating all complex and major criminal incidents within the ADF. NPC officers and sailors are an integral part of the organization, which has offices throughout Australia, and detachments deployed in support of ADF operations worldwide.

The NPC category has a long and important history within the RAN and carries out duties that are central to the efficient functioning of the Navy as a disciplined fighting service. The Chief of Navy’s vision for the category is that they are to be the stalwarts of Navy values, encouraging others to achieve the highest standards of conduct possible.
NPC Career Model

WONPC
- 4 years seniority as CPO
- 12 months sea time as CPONPC
- CLDP/SSMC

CPONPC
- 4 years seniority as PO
- 12 months sea time as PONPC
- ADF Investigator Course

PONPC
- 4 years seniority as LS
- 12 months sea time as LSNPC
- Service Police Investigator Course
- Junior Sailors Leadership & Management Course
- 24 months as an NPC (for Lateral, Direct Entry)

LSNPC
- Service Police Basic Course
- Basic Seamanship Course
- Helmsman Certificate
- 2 years seniority as Able Seaman
- 4 week suitability assessment
Suggested Reading – Naval Police Coxswain

ABR 10 – Sailor’s Career Management Manual

Divisional Staff Handbook 2007


BR 67 Admiralty Manual of Seamanship
Photographic Category

The Photographic Category sailor (PHOT) has a rewarding and challenging job in support of the RAN’s war fighting, intelligence and public relations capabilities. The PHOT can be involved in many aspects of photography, video and analysis with image analysis directly impacting the Australian Defence Force’s (ADF) strategic and operational imagery requirements.

Photographers are employed on duties associated with the capture and processing of visual information for dissemination to the Navy, Defence, commercial organisations and the media. Photographers work with an extensive range of professional equipment, not least of which is state of the art digital cameras.

Photographic Category History

Formed in 1948, the PHOT Category was an integral part of the Fleet Air Arm and at the time the badge was an aircraft with PH below it. Most of the PHOTs were stationed at HMAS Albatross just outside of Nowra and at the Gunnery Instructional Centre (GIC) at Woolloomooloo in Sydney. Whenever the Fleet Air Arm deployed in the carrier HMAS Melbourne the photographers deployed as well.

PHOTs also deployed onboard the troop carrier HMAS Sydney III and in DDGs when they deployed to Vietnam during the Vietnam War. Nearly all of the photographs taken in those days were taken with a large format camera called a “Linhof”. This was a very reliable camera, but cumbersome and the film was 5x4in. Movie film cameras were also used, including the ever reliable Bell and Howell 16mm movie camera. All of these cameras were film based and required wet processing and editing.

Melbourne had a photographic section comprising Lieutenant PHOT, CPOPHOT, POPHOT and LSPHOT and 4 ABPHOTS. The main role onboard was flight deck duties and Public Relations. These duties included two photographers on the flight deck during flying stations between the hours of sunrise and sunset. One phot Bell and Howell 16mm movie camera documenting launches and recoveries while the other used a 35mm Nikon motorised camera to take still images as required.
The Nikon F1 was introduced into the Navy PHOT Category in 1970 and it featured a 250 shot magazine attached to the back of the camera and was useful for flight deck duties in *Melbourne*.

PHOTs based at GIC would sail onboard in the tug ‘Bronswing’ to record target gunnery exercises off the NSW coast. The PHOT and the Gunnery Staff were required to film and provide caption details of the ships firing at the towed target.

The Fleet Air Arm-based category badge remained until the early 1980’s. However, after *Melbourne* was decommissioned, a more traditional type badge depicting a camera with bellows - the ‘Linhof’ camera was introduced. This is still the ‘camera’ category badge in use today and has been the topic of several reviews over the past 30 years.

It was however, the demise of fixed wing aviation and the Carrier *Melbourne* in 1982 which was the biggest challenge for the PHOT Category. The loss of the largest floating photographic unit meant refocusing on Intelligence and Public Relations as a means of providing operational support to the RAN.

The eventual loss of permanent positions at sea, has means that PHOTS now deploying to sea, do so on an ‘as required’ basis. The PHOT of today is most likely to join a ship for a portion of its deployment that is deemed most relevant on a fly – in/fly-out basis, although lengthy deployments are still conducted. Specialised photographic support is often asked for by ships and tasking authorities to join fleet units. Often the PHOT is tasked to provide images of foreign ships or ports of interest and even provide images for ship, Navy and Defence Public Affairs requirements.

The PHOT Category has always been a relatively small category, with no more than 50 personnel at any one time. The PHOT roles have developed over the years from supporting flying operations as part of the Fleet Air Arm to photography across the fields of intelligence, industrial, public relations, medicine, legal investigation and imagery analysis.

Trainee Navy PHOTs are now selected from sailors who have completed training, and sea time in another branch before undergoing photography training with the Royal Australian Air Force (RAAF) at RAAF Base East Sale, Victoria.

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Photographer Sea Duties

While the PHOTs Category does not have a formal sea liability, all PHOT sailors, mainly from the ABPO level, are expected to deploy in support of fleet operations. They are regularly called upon to provide various types of imagery including Imagery Intelligence (IMINT) as well as operational and public affairs support in both digital video and digital stills format. PHOTs may need to integrate fully with a ships crew while on extended deployments. PHOTs are also required to carry out secondary duties while onboard. Depending on imagery tasking these duties may include watch on deck, mess decks or even gangway duties when the ship is alongside.

The primary function of the Photographic Category is to collect, process, analyse and disseminate imagery to support maritime operations. The category fulfils this function by separating it into three distinct roles and can be captured using either still or video cameras.

Imagery Intelligence (IMINT)

IMINT involves the collection, processing, dissemination and analysis of imagery upon which tactical, operational and strategic decisions can be based. Typical tasks involve the use of imaging systems to collect imagery of military or civilian equipment and infrastructure for subsequent analysis and exploitation.
Combat Imagery

Combat Imagery involves the collection, processing, analysis, and dissemination of all available forms of imagery involved in a hostile or potentially hostile environment. This form of imagery should not be confused with IMINT, as the resultant product does not undergo detailed analysis upon which operational or strategic decisions are based.

Examples of Combat Imagery are the recording of own battle damage for the provision of technical assessment and repair, recording of maritime activity during periods of tension which may be used at subsequent inquiries or legal proceedings, and the recording of combat images for historical purposes and record keeping. Combat imagery includes the provision of photographic support in combat zones or peacekeeping activities as tasked for public relations, photojournalism and psychological operations.

Naval General Imagery

General Imagery involves photographic services in support of other approved programs. Typical tasks for photography include:

- Aerial imagery.
- Ceremonial events.
- Public relations imagery.
- Technical defect and engineering reports.
- First of class flight trials.
- Supply of images for briefing aids.
- Personnel photography (eg portraits of Officers of Flag Rank and Commanding Officers).
- Legal investigation.
- Medicine.
- Scientific research.

PHOT Career Progression

The method of transfer to the PHOT Category is in response to a request from DSCM for volunteers, via signal. There is no direct entry method for the PHOTS; they are drawn from sailors of other categories. A member wishing to volunteer should be a mature, responsible and highly motivated individual, able to communicate with all ranks diplomatically and work independently.
**Candidates must:**

- Hold the minimum rank of Able Seaman; however, sailors of the Seaman rank may be considered if they hold formal photographic qualification or have advanced photographic skills.
- Have a minimum of a Year 10 education certificate.
- Provide a divisional officers report and recommendation.
- Undergo a psychological easement on applicant’s suitability for transfer to PHOT Category.
- Confirmation of medical fitness for sea service including a colour blindness test.
- Be a volunteer to extend/convert enlistment to cover the three years Return of Service Obligation (ROSO).
- Hold a current open drivers license.
- A minimum 12 months sea service is desirable.
- Complete a one week trial period in a PHOT environment at either the Naval Imagery Units East, West or at Albatross.

On successful completion of the Basic Photographer Course you will be posted to either NIU-E, Kuttabul or NIU-W, Stirling to continue with competency log progression.

**Photographer Shore Duties**

Typically, a photographic unit will acquire imagery for intelligence, of ceremonial events, public relations, technical defects and engineering reports, briefing aids, portraits, accident investigation, medical investigation, scientific and aerial imagery to name a few. Some of these tasks are as simple as recording the event or situation; however, investigations and accidents involve an extraordinary amount of time and attention to detail.
**PHOT Category Core Duties**

**Warrant Officer Photography (WOPH)**
- Perform the duties of Photographic Category Sponsor Staff Officer.
- Manage human resources for the PHOT Category.
- Provide specialist imagery advice to command.
- Update imagery policy.
- Co-ordinate the purchase of photographic equipment for the category.
- Co-ordinate financial allocations for all sections.
- Co-ordinate the provision of photographers for deployments.
- Manage career advancement and training of photographers.

**Posting** – HMAS Harman – Campbell Park, ACT.

**Chief Petty Officer Photography (CPOPH)**
- Manage a Navy Imagery Unit (NIU).
- Provide advice on policies, procedures, equipment and techniques.
- Provide specialist photographic services as required.
- Manage unit funding.
- Co-ordinate Transfer of Category applicants.
- Liaise with Defence authorities on imagery matters.
- Undertake duties of Divisional Senor Sailor.

**Postings** – NIU-West, Stirling NIU-East Kuttabul in Sydney and Albatross south of Nowra.

**Petty Officer Photography (POPH)**
- Act as an Imagery supervisor or instructor.
- Coordinate workflow and allocate tasks.
- Provide technical advice.
- Collect, Process and dispatch imagery for IMINT, Public information and Public Relations purposes.
- Carry out video photography and basic editing.
- Deploy as tasked.
- Liaise with Defence authorities on imagery matters.
- Perform the duties of an Imagery Analyst.
- Act as a Work Place Assessor.
- Undertake duties of Divisional Senor Sailor.

**Leading Seaman Photography (LSPH)**

- Provide technical advice to subordinates.
- Collect, process and dispatch imagery for IMINT, public information and Public Relations purposes.
- Carry out video photography.
- Obtain photographic stores as required.
- Deploy as tasked.
- Perform the duties of an Imagery Analyst.
- Act as a Work Place Assessor.


**Able Seaman Photography (ABPH)**

- Deploy as tasked.
- Collect, Process and dispatch imagery for IMINT, Public information and Public Relations purposes.
- Carry out video photography.
- Perform the duties of an Imagery Analyst.
- Operate photographic/Video cameras and associated equipment.

**Postings** - NIU-W, NIU-E, DIGO, JPAU, Coonawarra, Albatross and Cerberus.
PHOT Career Model

- **WOPH**
  - 4 years seniority as CPO
  - CLDP + SSMC

- **CPOPH**
  - 4 years seniority as PO

- **POPH**
  - 4 years seniority as LS
  - Junior Sailors Leadership and Management Course

- **LSPH**
  - Image Production Managers Course – 2 weeks
  - Competency log part 3

- **ABPH**
  - Skill Grade 2
  - Competency log part 2
  - Competency log part 1

- **ABPH**
  - Skill Grade 1
  - Basic Photography Course – 33 weeks

- **Transfer of Category**
Suggested Reading – Photographic Category

ABR 10 – Sailor’s Career Management Manual

Divisional Staff Handbook 2007


BR 67 Admiralty Manual of Seamanship

DI(N) Admin 50-1 - Imagery in the Royal Australian Navy - Policy and Responsibilities

Navy Imagery Management and Collection Guide 2005
Physical Trainer Category

Introduction

PTs are responsible for the development, implementation and conduct of physical fitness programs, sports activities, adventure and recreation training. They assist in ensuring all Naval personnel meet minimum fitness standards, thus achieving the Navy's operational readiness physical objectives.

PTs play an important role within a ship’s company, both ashore and at sea. They primarily assist Command in maintaining a high level of morale and offer the ship’s Company a variety of ways to improve and maintain fitness levels.

The RAN Physical Training Category is sponsored by Training Authority-Maritime Warfare (TA-MW). TA-MW is responsible for the development and maintenance of RAN PT policy through Category Advisory Group (CAG) meetings. The conduit between TAMW and the PT Category is Staff Officer Physical Training (SOPT). SOPT administers the category’s future direction, is responsible for the ongoing maintenance of current policy and is the advocate through whom the Category’s concerns may be expressed and actioned.

The Category Badge

Club swinging is believed to have originated in India by soldiers as a method of improving strength, agility, balance and physical ability. During the annexation of India, British officers witnessed the graceful motions and essential property of expanding the chest and exercising every muscle of the body. The British brought the Indian clubs to Europe and adopted the physical training systems into the RN. The RAN adopted the training from visiting British sailors. The clubs are made of wood and can be varied in weight according to the strength of the user by removing the wooden stopper in the bottom and filling the club with lead shot. The method of Indian club swinging was used at sea by RAN sailors until it lost popularity in the 1920s in exchange for sports and games. Therefore the Indian club is used as the Category Badge for today's PTs.
History

The School of Physical Training was not created in the until 1923, but there is earlier mention of Physical Training.

Instructors in old ships such as HMAS Encounter and two RN Physical Training Instructors joined the staff of the Royal Australian Navy College at Geelong when the college opened in 1913. As far as can be ascertained, the RAN School of Physical Training was the first recognised institution to conduct formal physical training in Australia.

RANPTS adopted the Swedish method of Physical Training from the RN, who had used the method since 1902. The method was aimed at ‘harmonious and progressive development of the body, through balanced and enjoyable exercise’. The aim is to produce men and women who are physically fit and thus able to perform their duties more efficiently; and also to foster team spirit, an essential part of everyday life in the service.

The first class graduated in 1924 and one of the class members was Leading Seaman Alan Saltmarsh who later became the first Australian Physical Trainer sailor to be promoted to officer rank and later to be Officer in Charge of the PT School. To date there have been 14 other PTs who have reached this milestone. This opportunity has provided excellent career progression for PT sailors through to commissioned ranks.

The Physical Training Display Team was first introduced in late 1930 and coordinated by the RAN PT School at Cerberus until 1985, when the coordination responsibilities were moved to the Fleet Gymnasium at Garden Island, Sydney. The Fleet Sports Officer (WOPT) would co-ordinate the training of PT sailors and organise school visits, RAN open days and country fairs.

Today

The RANPTS no longer exists in its original form. In 1989, the Australian Defence Force Physical Training School (ADFPTS) was established and is managed by a Lieutenant Commander PT, with the RAN appointed as the single Service manager for the training of all three Services. This is still
in existence today and the training methodology currently applied is both complex in nature and diverse in requirements. Instead of utilising one training method the trainers are multi-skilled across a wide variety of training disciplines.

The RAN Physical Fitness Test (RANPFT) was introduced in 1999. Coordinating and conducting the RANPFT is a core component of a PT’s duties. The implementation of the PFT has encouraged personnel within the Navy to achieve and maintain a level of physical fitness that enables them to perform safely and expeditiously, whatever task is asked of them.

Military Fitness Leaders (MFL) were introduced in 2000 to assist PT sailors in meeting training requirements. In addition they are responsible for the supervision of less complex physical fitness training but are unqualified to provide specialised individual training guidance. The MFL remains subordinate to the PT sailor in the course of performing all PT functions.

Physical Trainers provide the following functions, both ashore and at sea:

- Development of health and fitness programs.
- Conduct of fitness training.
- Conduct of ADF Fitness Testing.
- Conduct of physical conditioning and developmental training.
- Conduct of sport, adventure training and recreation activities.
- Conduct of team building training.
- Implementation of injury prevention and rehabilitation techniques.
- Management of aquatic fitness and recreation facilities.

**PT Duties**

There are 74 positions within the PT Category; one Lieutenant Commander, one Lieutenant, one Warrant Officer, 13 Chief Petty Officers, 23 Petty Officers and 36 Leading Seaman.
When posted to a ship, Physical Trainers fall under the Executive and Seamanship Department. In addition to their core PT role, many trainers find the following functions incorporated into their day-to-day roles and responsibilities (rank dependant):

- Watch on Deck.
- Helmsman and Special Sea duties (eg Aft Steering), as determined by the Whole Ship Coordinator.
- Part of Ship supervision as determined by the Chief Boatswains Mate.
- Mess Deck and Main Café management.
- Boarding Party.
- Flight Deck Marshaller responsibilities.
- Training Administration Officer Duties (CPOPT on LPAs).
- XO’s Writer.
- Other duties as required by the Executive Officer.

PTs provide benefits in not only physical health but Ship’s Company mental health. Morale management is a critical element in assisting Command with the maintenance of a motivated and contented crew. Example activities (as endorsed by Command and Welfare Committees), which assist in doing this are as follows:

- Games nights (Trivia, Tombola, Cards etc).
- Charity Bike rides.
- Melbourne Cup activities.
- Arm wrestling competitions.
- Fishing competitions.
- Intra-ship minor team sports afternoons.
- Ships radio and Television programs.
- Assistance with Ship’s Ball.
PT Training

The PT Category is unique in that all PT sailors hail from other branches and are nominated and carefully selected through a very competitive suitability process. Sailors with a strong desire to transfer to the PT Category are required to demonstrate a high commitment to sport, recreational and adventure training in their ship or establishment either as a participant, coach or official. In addition to having a passion for sport, Physical Trainers must be able to work autonomously, have highly refined administrative skills and be able to work at a high level with minimal supervision and direction. There are also specific category requirements that must be attained to prove eligibility for transfer:

- must be a Leading Seaman or Able Seaman with the required seniority for promotion to LS within their Category.
- previous attainment of a Royal Life Saving Award Bronze Medallion.
- recommendation from Unit Physical Trainer after completion of the PT Transfer Task Book.
- Divisional Officer and Command recommendation.
- positive recommendation from the PT School on receiving a pass on completion of the PT Suitability Course.

After attaining a successful recommendation, the candidate attends a five day PT Suitability Course at the ADFPTS. The sailor is tested in a variety of sport, fitness and strength components, in both written and practical examinations in order to ascertain their suitability for transfer. Having completed the course successfully and upon being recommended for transfer, the sailor’s Divisional Staff will then be required to process Transfer of Category (TOC) documentation through Dictorate of Sailors Career Management (DSCM).

Once the TOC request is approved by DSCM, the candidate is panelled for the next available PT Course. The PT Course is conducted at the ADFPTS over a 24 week period. The course incorporates several modules including the following:

- Develop and Conduct Physical Training Lessons.
- Introduction to Anatomy and Physiology.
- Circuit Training.
- ADF Sport Rules/Laws and Refereeing/Umpiring.
- Aust Swim.
- Sports Strapping.
- Plan Outdoor Recreation Activities.
- Facility Management.
- Facilitation and Leadership Skills.

On completion of the PT Course the Sailor will most likely be posted to a Training Establishment for a 12 month period of consolidation, prior to being posted to a position at sea.

PTs attend the PT Supervisors Course (formerly Advanced PT Course) as a senior LS or Junior PO. The course is conducted over a four week period at the ADFPTS. The course modules are designed to assist the PT for future supervisory roles.
The Future of the PT Category

The PT Category in the past was primarily structured for peacetime activities, and not recognised as even being capable of adapting for war. When considering the formalisation of roles, tasks and duties that are either existing, or have been developed within the PT category, core skills and competencies have evolved and developed to a much higher level.

PT training has now aligned itself under the Competency Based Training and Assessment format to meet Australian National Standards within the fitness industry. There have been significant changes to the branch with increased responsibilities and roles for the PT such as the introduction of the RANPFT, Boarding Party Training and management of Individual Readiness.

PTs now perform increasingly complex and varied tasks, at higher technical skill levels, in a more diverse operating environment. They are now integrated into ships and fully recognised as crew, irrespective of the operational status. The category directly contributes to unit effectiveness, readiness and morale. This will continue to be displayed in the years to come with new classes of ships coming online.
# PT Career Model

<table>
<thead>
<tr>
<th>Rank</th>
<th>Requirements</th>
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| **LSPT** | 2 years rank seniority as AB  
Bronze Medallion  
4 Performance Reports as a Junior Sailor  
CO & DO and PT Recommendation  
Medical & Psychologists report  
Pass PT Suitability course  
Successful Completion of ADFPT Course  
12 months at sea as an AB |
| **WOPT** | 4 years rank seniority as CPO  
Successful completion of CLDP and SSMC |
| **CPOPT** | 4 years rank seniority as PO |
| **POPT** | 4 years rank seniority as LS  
Successful completion of JSLMC  
Successful completion of Advanced PT Course |
| **LEUT** | 18 months seniority as WOPT  
Successful completion of WO Entry Officer Course  
Successful completion of WO Leadership Course |
| **LCDR** | 5 years seniority as Lieutenant  
Successful completion of JOMSSC |
**Suggested Reading – Physical Trainer Category**

ABR 10 – Sailor’s Career Management Manual

Divisional Staff Handbook 2007


ABR 1043 RAN Firing Manual

ABR 1834 Vol 1 and 2 RAN Ceremonial Instructions

BR 67 – Admiralty Manual of Seamanship
ADF members are provided with a range of financial and non-financial conditions of employment that suitably remunerate the member, taking into account the role of the ADF and the range of jobs members undertake.

Sailors can enter as a General Entry (Sailor) and receive the best technical or non-technical trade training available. If they have already completed a formal apprenticeship or equivalent training, which is recognised by the National Training Board, they may be eligible for entry as a Qualified Entry Sailor. For those people who cannot provide full-time service in the Navy, the Naval Reserve provides an excellent opportunity to learn new skills, while receiving tax-free pay and allowances.

Information of conditions of engagement is available to all new candidates through the Defence Force Recruiting Website (www.defencejobs.gov.au) and the link to Careers Explorer. This website should be used as the first point of reference for information pertaining to a career in the Navy as it is regularly updated with current information on conditions of service and detailed enlistment requirements. Information on salary may be also obtained through this website.

Screening Process

Medical and Physical Fitness

Medical fitness is a fundamental requirement for entry to, and retention in, the ADF, since all members may be called upon to perform operational service, often at short notice. To be able to fulfil these duties, personnel are required to undertake, to varying degrees, arduous training, both during initial entry courses and on an ongoing basis throughout their career. For such activities, the highest level of medical fitness is required. Those who cannot meet these standards may jeopardise the safety of others or unfairly cause their duties to be performed by others.

Pre-entry Medical Examination

During the selection process, medical fitness will be assessed and candidates will be required to meet ADF medical and fitness standards before an offer of appointment or enlistment will be made. Any offer is subject to maintaining medical fitness and passing a final medical examination on the day they are appointed or enlisted.

HIV (AIDS) and other Viral Testing

If candidates are successful in gaining entry to the ADF, an offer of enlistment will be subject to being tested for HIV (the AIDS virus) and other viral infections including Hepatitis B and C before enlistment. If candidates have personal objections to HIV or Hepatitis testing, they have the right to
withdraw their application at any time prior to being appointed or enlisted. ADF personnel must maintain medical and dental fitness. After entry into the ADF, all Service personnel are required to undergo regular dental treatment, inoculation, HIV and Hepatitis testing, re-vaccination and any surgical treatment that may be required as determined by competent medical authorities.

Security

A security assessment, conducted by ASIO, will be obtained to determine suitability for access to national security information and/or a secure area. Personal information provided by candidates, will be treated in strict confidence and will only be used for the purpose outlined.

Age Restriction

The ADF observes a minimum voluntary recruitment age of 17 years. The exception to this rule is entrants to military schools and members of Service Cadet schemes. The recruitment of all minors must be with parental/guardian consent. As evidence of proof of age, all persons wishing to join the ADF must present an original or certified copy of their full birth certificate to their recruiting officer. All minors (under 18 years of age) must have the written consent of their parent or their guardian to join the Services, prior to enlistment or appointment.

The ADF will take all feasible measures to ensure that minors do not participate in hostilities; however there will be times that this will not be possible.

Adverse Assessment

A criminal record and/or an adverse or qualified assessment are but two factors taken into account when assessing a person’s suitability for entry into the ADF. If rejection of an application is being considered because of a criminal record, then the candidate will be given the opportunity to fully discuss the matter and make any representations before any final decision is made.
Career Management

Introduction

The Royal Australian Navy and more specifically the Warfare Community offers individuals a diverse range of career paths, all of which provide numerous unique and challenging employment opportunities. In deciding which career path represents the best fit and to ensure that every person is given ample opportunity to explore options within their chosen field, there are a number of key agencies, systems and resources available to every sailor including the Divisional system, Command and the Career Management Agency.

Ultimately individuals need to take full responsibility for their own career, ensuring they make every effort to keep abreast of personnel initiatives within their own category and broader Navy personnel policy, as well as actively seeking advice on promotion, professional development and conditions of service from their Command, Career Manager or the many online tools available. Equally important is the responsibility that every Leading Seaman, Senior Sailor and Warrant Officer has in mentoring their subordinates, providing advice and guidance where appropriate and ensuring that their personnel have appropriate access to Command, Career Managers and other personnel agencies.

Sailors are directed to ABR 10 (RAN Sailors’ Career Management Manual) as the primary source of advice on all matters pertaining to career management and promotion. Not only does this publication provide detail on the career management process, it clearly articulates the roles and responsibilities of personnel in each rank within the RAN.

Key Participants in Career Management

It is imperative that individuals take an active interest in their own careers, keeping well informed of policy and clearly articulating their individual goals, employment and geographic preferences to their divisional staff and career manager.

Divisional staff and Command have a number of roles and responsibilities in the management of individual sailors’ careers. As a ready source of experience and professional knowledge they provide mentoring in the guise of informal advice derived from the personnel experience of the individuals that make up the divisional staff, structured guidance such as that resulting from the Sailor Performance Appraisal Report (SPAR) process and through formal advice and training. To ensure that sailors are able to establish realistic expectations it is imperative that divisional staff and command always provide frank and fearless guidance on career management, promotion and performance feedback. Divisional staff and command are also responsible for providing administrative support and acting for and on behalf of sailors when dealing with external agencies.
This includes ensuring sailors are provided opportunities to complete promotion and skill enhancing opportunities including promotion pre-requisite courses. The role of command and divisional staff can not be overstated and it is important that they value add to their sailors’ career manager and not just act as a conduit between the sailor and the career management agency.

The Directorate of Sailors’ Career Management (DSCM) is the Career Management Agency for all sailors in the RAN and is charged with ‘delivering employment and advancement opportunities that balance the career management aspirations of our sailors with the requirements of the Service’. It achieves this through the development and implementation of career management policy for all PN and NR sailors, including the posting and promotion of sailors up to and including WO.

DSCM consists of a central Directorate in Canberra and five Local Career Management Centres (LCMC) located at Fleet Base East, Fleet Base West, Darwin Naval Base, HMAS Cairns and in Canberra (which is responsible for personnel in South East Queensland, Nowra, Wagga Wagga, Victoria, Tasmania, South Australia, Canberra and any other sailors not represented by the other four LCMC). DSCM Canberra is responsible for strategic manning across the whole RAN workforce and achieves this through long term career planning utilising the Five Year Career Plan (FYCP), the career management of all WO, all aspects of promotion, management of transfer of categories and service, and the authorisation of compassionate, compelling, representational, overseas and exchange postings.

The LCMCs provide ‘shop front’ advice to sailors and commands, manage manning requirements of commands within their area of responsibility and posting of personnel based on approved FYCP.

In essence, the LCMC is responsible for the short term career management (current and next position) of all sailors of the rank of CPO and below, whilst DSCM Canberra looks after sailors’ longer term career management (represented by the FYCP), promotion and overall workforce numbers and skill set balance across the entire navy workforce.

**Career Planning and Development**

Different people are motivated by different things. Where posting location may be the driving factor for some people; promotion, specific employment opportunities or attaining certain skill sets may motivate others. All of these factors and many others are relevant, when career planning it is the emphasis that an individual places on each factor that will influence individual career plans. Each sailor has a career manager in Canberra and a poster at the LCMC. The role of the career manager in Canberra is to provide sailors with a longer term career plan which normally extends out to five years. It identifies the geographical location an individual will be employed in and what broad type of employment they will be under taking (eg, sea or shore service). Examples of other areas that may be included in a FYCP are promotion and advancement courses, civilian education opportunities, periods of extended leave (eg LSL, LWOP, PTLWOP) and out of category job opportunities. This long term plan enables sailors
to better plan their lives and that of their family as well as ensuring they have achieved all necessary pre-requisites to place them in the best position for future promotion or employment opportunities such as overseas postings. This long term outlook also enables DSCM to better manage strategic workforce issues. The FYCP is an agreed plan that should be reviewed every three years or at significant junctures of a sailor’s career such as promotion or when approved for a compassionate posting. A sailor can renegotiate it at any time and there may be occurrences when DSCM will be required to renegotiate it to meet service specific requirements.

Once a FYCP has been developed, the LCMC for the area that the sailor is located is responsible for determining the sailor’s actual posting. A posting is the process by which personnel are officially allocated to fill positions at sea and ashore to enable the RAN to fulfil its assigned functions, roles and tasks. Postings are primarily motivated by the sea/shore rosters, discharges, promotions and workforce requirements, including training and operational circumstances. Sailors are able to provide preferences for certain postings using the Form AD 148—ADF Employment Preferences and Restrictions. Every sailor should seek to conduct an interview with their respective LCMC at least once, but preferably twice, in every 12 month period. Although every effort is made to meet the desires of individuals when creating a long term career plan or taking shorter term posting action, it is important to remember that the Navy has an obligation to provide government with certain capabilities and postings will be made to meet these requirements. To avoid disappointment, individuals need to be cognisant of service requirements when formulating their career plans and ensure that they provide realistic goals and preferences to DSCM. Di(G) Pers 36-3 ‘Inherent requirements of service in the Australian Defence Force’ provides clear guidance on inherent service requirements.

**Balancing Career and Family**

The Navy understands that a Warfare Sailor’s circumstances will change throughout their career and at certain times there will be personal demands that require specific management. It is in the Navy’s best interest to support its people, particularly if given the opportunity to resolve these personal circumstances, most sailors will continue to provide valuable service. Circumstances may include illness in the family, pregnancy or the desire to spend more time with children or support a partner’s career goals, to name just a few scenarios. To facilitate a flexible working environment and enable a sailor to continue their career in the RAN during these times, there are a number of options ranging from a compassionate posting to a particular location, Part or Full Time Leave Without Pay, flexible working opportunities such as watch keeping routines ashore and working from home or a remote locality. To take advantage of these and other options, sailors should discuss their specific circumstances with their Command, Divisional staff and DSCM and ensure they are fully appraised of restrictions and impacts on conditions of service that may result from these types of service.
Mobility

A Warfare Sailor’s role and acceptance of the desirability of advancement carries with it an obligation to accept postings that may necessitate relocation of family. The Navy understands the implications of relocation and considerable resources are devoted to minimising the less tasteful aspects. Nevertheless, geographic relocations are an unavoidable consequence of the effective professional development of sailors as they progress to more senior and responsible positions. Fairness in posting depends on all sailors acknowledging and accepting their mobility obligation liability. There is a limit to the extent to which each sailor’s location preferences can be accommodated by the Navy and a person’s willingness to adapt to the mobility requirement will be a determinant in achieving a consensus between that person’s aspirations and the Navy’s staffing requirement.

Volunteers to Forego Shore Service

The facility for sailors to volunteer to forego shore service (VTFSS) serves two purposes. First, it enables those sailors who would rather serve at sea than ashore to clearly indicate their preference, and second, it provides a degree of flexibility to DSCM to increase the length of shore service for sailors in categories which have unfavourable sea-to-shore ratios. A request to VTFSS does not confer any right or entitlement for a sailor to be posted to, or remain at sea.

Transfer of Category/Stream/Platform

There are a number of reasons a Sailor or the Navy may wish a member to transfer category/stream/platform including:

- DSCM call for volunteers for a particular category (eg NPC, PT, Aircrew, Phot).
- administrative reasons such as category amalgamation/restructuring/redundancy.
- inability to remain in a category due to a medical condition not warranting discharge.
- a sailor desiring a change in career direction by transferring to a different category, stream or platform.
- failure to reach initial category training standards.
- a sailor proving to be unsuitable or incompetent (but only in special circumstances).

To be effective for the individual and the NAVY, Transfer of Category (TOC) requires joint collaboration by ships or establishments and DSCM. COs of ships or establishments must establish the reasons why a transfer will be in the best interests of the RAN and the sailor. TOC is not a right for any individual and will depend on:

- their past and present performance.
- the CO determining that transfer is more pertinent than other possible management or administrative actions, eg discharge retention not in the interest of the Navy (RNIN).
• a sailor’s sea service obligation.
• any extant ROSO.
• a sailor’s availability to attend mandatory selection procedures.
• the manning state of the categories affected by the proposed transfer.

A PN sailor of SMN rank or above whose transfer is approved will be posted to the appropriate training school as early as possible after acceptance of condition of service associated with the TOC, subject to the availability of a relief and the first available vacancy on the new category course. For further details on TOC you are referred to ABR 10 Chapter 16.

Transfer to Submarines

All sailors who wish to transfer to Submarines are first required to undertake the Enhanced Selection Process (ESP) in accordance with DI (N) PERS 75–41—Submarine Selection and Initial Training to ascertain their suitability for service in Submarines.

On completion of ESP those sailors receiving a recommendation for service in Submarines may then apply for transfer to Submarines through the divisional system.

Transfer to Submarines is only regarded as a TOC for personnel transferring to the AWA or CTS SM categories. For all other categories it will be considered as a Transfer of Stream (TOS). For further details refer to ABR 10 chapter 17.
PART THREE - Chapter 3

Promotion

The sailor promotion system utilised in the RAN is a system based on eligibility and suitability criteria. There are many promotion pre-requisites that are considered when determining a warfare sailor’s eligibility for promotion, which include seniority, qualifications, individual readiness, performance and conduct. The Commanding Officer is the authority for promotion from Seaman to Able Seaman. DSCM is the authority for promotion from the rank of Able Seaman up to Chief Petty Officer. The following information is provided as guidance and should be read in conjunction with ABR 10 – Sailors’ Career Management Manual.

Promotion pre-requisites are required to be completed or attained to be promoted to the next rank. Details of promotion pre-requisites are provided in the form of a category promotion matrix/flowchart. Category specific pre-requisites are determined and monitored by the Category Sponsor. There are two types of promotion qualifications; discretionary and non-discretionary. Discretionary qualifications are those that sailors are required to gain at their own pace. Non-discretionary qualifications are those where sailors are selected and posted to courses by DSCM.

Provisional Protection may be approved by DSCM for non-discretionary qualifications and individual readiness (IR). Approval for non-discretionary qualifications may be given by DSCM where, for service reasons, a sailor is unable to attend a course. Approval for IR may be given by DSCM where issues beyond the member’s control have resulted or precluded the sailor from maintaining IR. Sailors can only be promoted provisionally by DSCM and this will be for a specified timeframe. To be promoted substantively, all outstanding pre-requisites need to be completed. Failure to achieve outstanding pre-requisites may result in revocation of provisional status and the sailor will be reverted back to their previous rank.

The ADF Performance Appraisal System is used by Navy to record and maintain a history of a sailors’ performance. A Sailor Performance Appraisal Report (SPAR) is raised annually on each sailor. The responsibility to ensure performance appraisal is conducted is equally share between the sailor and their supervisor. The SPAR is forwarded to DSCM where the score, comments and recommendations are used to determine suitability for promotion. A Moving Average Total (MAT) score is an average of the SPAR scores received over the last two or four years depending on rank. The MAT score is used to establish an order of merit list for sailors who are being considered for promotion.

Promotion from Seaman to Able Seaman is effected by the Commanding Officer subject to the sailor meeting all promotion pre-requisites and serving a minimum of 12 months in the rank of Seaman.

Promotion from AB to LS and LS to PO is determined by a promotion board which is conducted by the DSCM Promotion Cell. Once a MAT score
order of merit list has been determined for each category, all sailors are placed into one of four promotion bands (A, B, C or D). The allocation of promotion bands is determined by promotion prerequisites competitiveness. Specific information on promotion bands and how they are allocated can be found in ABR 10.

On the actual promotion date a sailor is required to be ready in all respects for promotion. To achieve this sailors have to be Individually Ready (IR) in all components and must have been recommended and found suitable by the Commanding Officer. Failure to achieve recommendation from the CO will result in promotion being deferred or in some circumstances being cancelled. Specific information on the promotion process is contained in ABR 10.

A Status Advice Note (SAN) is forwarded for each promotion list to all eligible sailors on completion of a promotion board. The SAN includes the promotion list dates, allocated promotion band and other relevant information. The SAN is forwarded in duplicate, one copy for the sailor and one copy for the Divisional Officer.

Temporary promotion is another form of promotion used in the Navy. Temporary promotion may be approved by DSCM for command, status or discipline on the basis a vacant position cannot be filled by posting a qualified sailor of the higher rank. The same criteria for substantive/provisional promotion must be met for eligibility for temporary rank. Further information on temporary promotion can be found in DI (G) PERS 10-7.

A Chief Petty Officer Selection panel (CPOSP) is held to determine competitiveness for promotion from PO to CPO. The CPOSP comprises of three Warrant Officers – DSCM representative as Chairman, Category Sponsor and a third voting member. In addition, a promotion cell representative (non-voting) is present to provide policy advice. The CPOSP is initially presented with a MAT score order of merit list and a promotion file on each eligible sailor. The panel then reviews all sailors’ files and revises the order of merit list before allocating promotion bands. A Warrant Officer Promotion Board (WOPB) is held to determine competitiveness for promotion from CPO to WO. This board is panelled by a Navy Captain, the Category Sponsor and the Warrant Officer Career Manager. The WOPB process is very similar to that of the CPOSP. ABR 10 contains further information on the CPOSP and WOPB process.

Enhancing Your Promotion Prospects

Read ABR 10 Chap 6 to familiarise yourself with the promotion system and understand how the promotion system applies to you. Make sure you take all necessary steps to complete promotion prerequisites for your category. Discuss and develop your career aspirations/goals with your Divisional Staff. Discuss and develop a five year career plan with your career manager which incorporates these aspirations/goals.

Ensure qualifications are recorded correctly in PMKeyS. Discretionary qualifications (the ones you’re responsible for) must be completed by a specific date for you to be eligible to be considered
for Band A. Information on discretionary qualification cut off dates applicable for each rank can be found in ABR 10 Chap 6.

Read ABR 10 Chap 7 to familiarise yourself with the Sailors Performance Appraisal System. Ensure you have an annual report raised at the required reporting date (or received a minimum of one during the reporting period) and it is submitted/received in DSCM by the required submission date. Information on reporting and submission dates can be found in ABR 10 Chap 6 and 7.

Ensure you maintain your Individual Readiness. A snapshot of your Individual Readiness status will be taken on a specific date (dates vary depending on rank) prior to promotion boards being run. You will be ineligible to be considered for a Band A if you are not ready in all components on this date. If you are authorised for promotion you must also be ready in all components on the date of promotion (a waiver doesn’t qualify). Further information on Individual Readiness snapshot dates and effects to promotion can be found in ABR 10 Chap 6.

Sailors who are eligible (or will become eligible) for promotion to CPO and WO are invited to submit a Member Statement. This is your opportunity to provide additional information to be considered by the CPOSP or WOPB. Although voluntary, the CPOSP and WOPB find the Member Statement very useful and sailors are encouraged to submit one. You must ensure the Member Statement is submitted/received in DSCM by the required date. Further information on the Member Statement and submission dates can be found in ABR 10 Chap 6.
Training

Navy training exists to ensure that Officers and Sailors have the essential knowledge, skills and attitudes to enable Navy to achieve its mission, goals and objectives in peace and war.

Navy training and career management is based upon the identified needs of the Navy and its workforce from entry, through career progression and operational postings, including the development and maintenance of Navy culture. The traditions, values and vision of the Navy set the foundations for Navy training and career management.

The Navy operates as a Registered Training Organisation within the National Training Framework for Vocational Education and Training, by meeting national standards. The purpose of the Navy operating as a Registered Training Organisation is to provide a mechanism for mutual recognition of nationally accredited qualifications and training packages, to allow for streamlined recruitment and a potentially reduced training liability. It also gives the Navy a means of assisting Officers and Sailors to gain civilian qualifications related to experience, knowledge and skills gained on the job throughout their careers.
Personal Development Training

As a Warfare Sailor your time at sea shouldn’t deter you from undertaking professional development training. The Navy offers funded study opportunities for personnel of all rank levels, including studies via distance education. The Defence Assisted Study Scheme (DASS) allows members to undertake training in preferred subject areas or courses that are relevant to Defence. Refer to DI(G) PERS 20-5 and the DASS Operating Guidelines for further information. DASS can be used for vocational education and training courses, short courses, and tertiary courses. For example, postgraduate study at the Australian Defence Force Academy is available to all members who meet the criteria for admission to the University of New South Wales. In addition to this, the Civil Schooling Scheme (CSS) allows members to undertake training at civil institutions that is of prime long-term benefit to the Navy (refer to DI(G) PERS 20-4). For more information on the Education Assistance Schemes see your nearest Ship or Base Education Officer.
Civilian Accreditation

Civilian Accreditation is the process by which Navy-provided training is mapped against Nationally Recognised Qualifications where appropriate. At this stage, all initial category training has been mapped into the relevant national qualifications. However, there are some Navy courses that are not mapped into Nationally Recognised Qualifications due to the nature of the training and, more importantly, the outcomes from that particular training. ABR 27 Chapter 10 will provide you with the information required regarding the accreditation process, and annex A to this chapter lists all qualifications and pathways to them that the Navy can issue to its members. For the most up-to-date copy of this ABR you should consult the following website:


Click on the accreditation button on the left hand side of this page and find the link to ABR 27 Chap 10.
Navy Leadership Ethics and Values

Introduction

The Royal Australian Navy (RAN) seeks a new generation of young men and women to assume the yoke of responsibility for shaping the future direction and leadership of our great institution.

The Navy needs enthusiastic people who value the democratic freedoms, secured through the sacrifice by our forebears, now enjoyed by our country. We seek people prepared to make a personal sacrifice to ensure the preservation of these freedoms for future generations of Australians.

Leadership

Navy’s people, whatever their rank, are entitled and deserve to be lead and inspired by informed, tough but compassionate, team oriented, professionally competent leaders. Good leadership is not a responsibility to be undertaken lightly or frivolously. It is a responsibility that, even for the most gifted and intuitive of natural leaders, requires hard work, a capacity for self reflection, and a degree of humility. Ultimately, leadership is a responsibility assumed and not an authority granted.

If you were to lay every book written on leadership end to end you could walk across the country on them, such has been the effort to capture in words the essence of good leadership. Some authors claim great leaders are born and not made through training and instruction while others will contend great leadership lies dormant in some awaiting a culmination of specific conditions or circumstances to bring it to the fore. Whatever the reality, strong leadership is at the core of the Navy’s culture, because, like every teamwork focused organisation, it relies on strong leadership to achieve mission outcomes.

Responsible Leadership

In a modern military force like the Royal Australian Navy, belonging to a democratic and freedom loving citizenry, each individual, regardless of rank, status or qualification has a position of leadership and responsibility. In the final analysis, the kind of leadership and environment of accountability we promote depends upon how we fulfil our individual and collective responsibilities. We, the members of this Navy, are its conscience and soul and we get the kind of leadership, be it good, bad or indifferent, that we demand and deserve.

Stylized theme based on the writings of John F Kennedy

Many senior naval leaders today subscribe, to a large degree, with the view that leadership, in its most simplistic form, is about motivating people and shaping the work environment to ensure each member can excel. In its most advanced form it is about inspiring otherwise ordinary people to accomplish extraordinary feats of accomplishment in the face of overwhelming adversity.
Our recent history of operations abounds with accounts of young men and women in the Navy undertaking complex and difficult missions under adverse conditions, in a confident and professional manner. Their success has its genesis in the quality of our junior and senior sailors and their dedication toward those sailors for whom they have responsibility. These accomplishments, many of which go unrecognised, characterise the consequence of the quintessential leader within the Royal Australian Navy.

The Navy’s accomplished leaders have, amongst their many character traits, the unique ability to quickly assess the relative strengths and weaknesses of their team members and structure the collective contribution of each to a mission such that each component of the team works in their respective area of strength to accomplish great things.

The ability to nurture teams forms the basis of Navy leadership training. The Navy’s Training Authority - Initial Training and Leadership Management (TA-ITLM), at HMAS Creswell, is dedicated to providing leadership courses for new recruits, and more seasoned Navy people, that promotes a values based, team oriented approach to leadership and human communication. Through team building activities, leadership trainers demonstrate the power of a shared sense of purpose, respect for the strengths of each team member, and the importance of team cohesion and mateship within a framework of disciplined decision making. The product they seek is a leader, at all levels of command, who is also open to new concepts and ideas, a morale and team builder, motivator and compassionate and honest counsellor, a tough decision taker, an individual who understands and accepts accountability, a strong communicator and an individual who openly delegates to their team the accolades of success but withholds for their own exclusive remit the consequences of failure; pray such occurrences be very few.

**Ethics**

One of the Australian Defence Forces’ most recently celebrated former military leaders, General Peter John Cosgrove, AC, MC (Rtd), was once asked to describe what it was like to command a group of Defence Force personnel on a major operation. His response was both humble and insightful in terms of the analogy he used. In effect he likened such command responsibility to a boy riding a mature elephant. While the boy thinks he is in control of the beast, in fact, he merely influences the direction of the animal which may, of its own volition, pursue its own path irrespective of the directions of the boy. This parable rings true in terms of the ethics and values base that underpins any organisation. Irrespective of the virtue, morality and correctness of the guidance provided by the leader, if the fundamental ethical and values base of the organisation is compromised, then the direction that organisation takes may not be in alignment with the direction of the leader. It is for this reason that truly great leaders, from the outset, infuse their respective organisations with a culture based upon sound values and ethical principles.
Ethics

Ethical dilemmas and pitfalls surround most significant decisions that a leader makes. Sometimes these issues are moral, sometimes legal, and sometimes personal. Often the most significant challenge in dealing with ethical dilemmas is recognising them to begin with and then confronting them in decisions.

Most organisations have clear statements of values and ethical codes of conduct that their employees must sign or formally acknowledge. In spite of these declarations, neither the organisation’s nor its leaders’ ethical practices are established until they are tested under difficult conditions. How leaders, at all levels, respond to these challenges, as painful as they may be, sets the ethical tone for the entire organisation and establishes the organisation’s true values, much more than written statements, compliance documents and training sessions.

Bill George
Former CEO
Medtronics Corp USA

In the Navy this is especially important as Commanders often rely upon people to exercise individual judgment and, at times, take difficult and complex decisions independently to accomplish a mission. The Commander must therefore be comfortable that the sailor assigned the task can be relied upon to execute it in accordance with those ethics and values that the Navy holds dear.
Values of the Royal Australian Navy

The culture of the RAN is defined by its history of accomplishments and tragedies, the quality of our forebears and, above all, the values set that we strive to inculcate within our serving personnel. These values shape our decision making, conduct, attitude toward other nations and their peoples, and most importantly, the manner in which we are perceived by the Australian Government and the broader Australian public whose continued support is fundamental to our existence and which gives credence to our purpose and mission.

Navy’s five core values:

Honour
Honesty
Courage
Integrity
Loyalty

Honour

Is the fundamental value upon which the Navy and each person’s reputation depends. To demonstrate honour demands the application of the four prime values of the Navy and to consistently behave in a way that is becoming and worthwhile.

Honesty

Is always being truthful, knowing and doing what is right for the Navy and ourselves.

Courage

Is the strength of character to do what is right in the face of personal adversity, danger and threat.

Integrity

Is the display of truth, honesty and fairness that gains respect and trust from others.

Loyalty

Is being committed to each other and to our duty of service to Australia.

Our Navy values provide a basis for our personal and professional conduct and shape the manner in which our people respond to new and challenging situations. They guide how we behave and how we treat each other. Our values determine what is important to us and they act as a unifying factor.

Importantly, though these values become merely words if our people and leaders fail to be guided by them in their decisions and actions and our culture can be subverted by conduct devoid of any association with these values that is allowed to go unchallenged or unquestioned by leaders and managers within the organisation.

Respect is one value that, although not listed within the declared set of Navy values, is nonetheless a condition that Navy people, at all levels, need to understand and embrace if they are to succeed within the team environment that is required to make a warship function smoothly. People will always have there differences and disagreements, but the seagoing Navy, more than any other profession of arms, places the health, safety and well-being of each crew member in one another’s
Discourse on Courage

The courage of men and women who have died in battles should never be dismissed lightly but in considering their example we should not neglect those acts of courage with which men and women have lived. The courage of life is often a less dramatic spectacle than the courage of a final moment; but it is no less a magnificent mixture of triumph and tragedy. Men and women do what they must — in spite of personal consequences, in spite of obstacles, dangers and pressures — and that is the basis of all human morality.

To be courageous requires no exceptional qualifications, no magic formula, no special combination of time, place and circumstance. It is an opportunity that sooner or later is presented to us all. The Navy merely furnishes one arena which imposes special tests of courage. In whatever arena of life one may meet the challenge of courage, whatever may be the sacrifices one faces if they follow their conscience — loss of friends, fortune, contentment, and even the esteem of one’s fellow men and women — each individual must decide for themselves the course they will follow. The stories of past courage can define that ingredient — they can teach, they can offer hope, they can provide inspiration; but they cannot provide courage itself. For this each individual must look into their own soul.

John F Kennedy
Honour, Leadership and Courage

Chief Petty Officer Jonathon Rogers, GC, DSM

Chief Petty Officer Jonathon Rogers was born on 16 September 1920 at Vroncysylite, near Llangollen, Denbighshire, Wales, the fifth of seven children of Jonathan Rogers, labourer, and his wife Sarah Ellen. Leaving Acrefair Central School at the age of 14, he worked at the Ruabon brickyard, boxed and played soccer.

On 22 November 1938 he enlisted in the Royal Navy (RN). Jonathon spent most of World War II serving at sea in three coastal vessels: Motor Anti-Submarine Boat No. 62 (1940-41), Motor Launch No. 204 (1942-43) and Motor Torpedo Boat No. 698 (1943-45). Promoted Petty Officer in 1943, he was awarded the Distinguished Service Medal for his ‘coolness and leadership’ under enemy fire during an action off Dunkirk, France, on the night of 23-24 May 1944. He was discharged from the RN on 23 January 1946.

After the war he worked above ground at a local colliery and built pre-fabricated houses. In 1950 he was successful in applying to join the Royal Australian Navy (RAN) and he migrated with his family to Australia. He initially served at sea in the aircraft carrier HMAS Sydney and the frigate HMAS Burdekin in consecutive postings. Rogers served in the destroyer HMAS Tobruk during the Korean War and he was promoted to Chief Petty Officer Coxswain in 1956. His subsequent postings included HMA Ships Junee (1956-57), Anzac (1957-58), Warramunga (1959) and Barcoo (1959-61), and the shore establishments Cerberus (1958-59), Westernport, Victoria, and Rushcutter (1961-62), Sydney. The family finally settled at Ettalong Beach, New South Wales.
In January 1963 ‘Buck’ Rogers as he was affectionately known, joined the destroyer HMAS Voyager which was commanded by Captain D.H. Stevens. As her coxswain, Buck was the senior rating of the lower deck and responsible for the ‘good order and discipline’ of the ship’s company. On 10 February 1964 Voyager was participating in exercises with the aircraft carrier HMAS Melbourne off the south coast of New South Wales. That evening Buck presided over a game of tombola being played by about sixty men in the ship’s forward cafeteria. At 8.56 pm, 20 nautical miles south-east of Jervis Bay, Voyager collided with Melbourne and was cut in two. Voyager’s severed forward section immediately heeled sharply to starboard and about five minutes later turned upside down. Water began pouring into the cafeteria. Within another five minutes the forward section sank. Buck was one of the eighty-two men who died.

His wife, son and three daughters survived him.

Sailors who escaped from the cafeteria later told how the Swain had taken charge of the situation. He had calmed terrified shipmates, attempted to control the flooding, tried to free a jammed escape hatch with a length of pipe and a spanner, and organised men to move into other compartments with functioning emergency exits. Meanwhile, he knew that he was probably too large to fit through an escape hatch himself. When it was obvious that some of his comrades would not get out in time, he led them in prayer and a hymn, ‘encouraging them to meet death’ beside him ‘with dignity and honour’. His wife remarked: ‘It was typical of him, he never thought of himself’. For his conspicuous display of courage he was posthumously awarded the George Cross.
On 12 June 1935 Ron Taylor joined the RAN as an ordinary seaman beginning his training at Flinders Naval Depot (FND), Westernport, Victoria. In April 1936 he was posted to the cruiser HMAS Australia and in 1938 he trained and qualified as a gunner. Postings to the destroyer HMAS Vampire and the cruiser HMAS Adelaide followed before he joined the sloop HMAS Yarra, in August 1939.

Following the declaration of World War II in September 1939, Yarra served in Australian waters until August 1940 when she was dispatched to Aden to join the Red Sea Force. Here she took part in operations against Iraq in May 1941 and against Persia in August. ‘Buck’ Taylor, as he was now known, was promoted acting Leading Seaman and given command of one of Yarra’s four-inch guns. Yarra served in the Mediterranean during November-December, escorting convoys which ferried supplies and troops to the allied garrison at Tobruk, Libya. On each of the four trips the sloop made, Taylor’s gun was active in beating off enemy air attacks.

**Courage**

**Acting Leading Seaman Ronald ‘Buck’ Taylor**

Ronald Taylor was born on 29 April 1918 at Carlton, Melbourne, the fourth of ten children of Collingwood-born parents George Taylor and his wife Elsie. Raised at Carlton and Port Melbourne, Ron was a typical boy of the time: he played cricket and Australian Rules football, went fishing and rode billycarts. He developed an interest in the Royal Australian Navy (RAN) through watching warships entering port and from talking to sailors about life in the service. At the age of seven he became the mascot of the sloop HMAS Marguerite and was given his own uniform to wear on special occasions.

In 1930, during the Great Depression, George Taylor abandoned his family. The two eldest boys went to Queensland to work on a sugar-cane plantation and the eldest girl found a job on a farm; Ron and his brother Ray stayed at home; the five youngest children were placed in institutions. Ron left school at the end of Grade 8 to work as a labourer.
In early 1942 Yarra was employed on escort duties between Java and Singapore and on 5 February she rescued 1804 people from the burning troop-ship Empress of Asia which had been crippled by an air attack near Singapore. Yarra’s commanding officer Lieutenant Commander (later Vice Admiral) Hastings Harrington later reported that Taylor had controlled his gun ‘on this occasion, as on many others’, with ‘judgment and determination’, and added that his ‘keenness and courage’ set a good example to those around him.

On 27 February 1942 Yarra received orders to escort three auxiliary vessels from Java to Fremantle, Western Australia. Five Japanese warships intercepted the convoy on 4 March. Despite Yarra’s gallant defence, all four allied vessels were destroyed, with the sloop the last to be sunk. Taylor ignored the order to abandon ship and stayed alone at his gun, firing slowly and defiantly at the enemy until he was killed shortly before the ship went down.

**Loyalty**

**Captain Hector (Hec) Macdonald Laws Waller, DSO, RAN**

“HMAS Stuart had to shut down her engines for repair while in the Mediterranean and sit idle in broad daylight for 14 hours in seas known to contain patrolling German and Italian submarines. Stuart was a sitting duck. Having been told by his engine room staff that the problem would take a day to fix, Captain Hector Waller waited patiently for his engineers to finish their work. Not once did Hec send to know how much longer they were going to be before he could get under way. When the job was done, he thanked them publicly over the ship’s main broadcast and then rung on maximum revolutions, confident that his engines were now repaired.”
Courage

Leading Seaman Air Crewman
Noel Ervin Shipp

Leading Air Crewman Noel Ervin Shipp was born in Queensland, Australia on 24 December 1944. He was educated at Julia Creek, North Queensland and joined the Royal Australian Navy on 10 January 1963 as an Underwater Control rating. Noel transferred to the Air Crewman Category in July 1967 and the following year was posted to the Royal Australian Navy Helicopter Flight Vietnam (RANHFV).

The RANHFV was integrated with the United States Army 135th Assault Helicopter Company, flying Iroquois helicopters in both the utility and gunship configurations. Flying combat missions in Vietnam was a far cry from the normal role of a Fleet Air Arm air crewman, and Noel soon found himself flying as a helicopter door-gunner with the ‘Taipans’, the 135th’s gunship platoon. In this role he flew numerous missions providing suppression fire for troop lift helicopters and he also participated in frequent ground assaults on enemy positions and troop concentrations.

On 31 May 1969, aircraft of the 135th were extracting elements of the 7th ARVN Infantry Division from a pickup zone in Dinh Tuong Province when they came under intense fire from automatic weapons. Three aircraft were damaged and one pilot was injured necessitating his immediate medical evacuation. The aircraft in which Noel was flying immediately proceeded to the pickup zone and began making rocket runs on the enemy position. With complete disregard for his own safety, Aircrewman Shipp hung half outside his aircraft, exposing himself to rocket back blast and intense enemy automatic weapons fire in order to bring more effective fire to bear on the target. At this point of the action Noel’s pilot was hit and the gunship rapidly lost altitude before crashing and exploding in the jungle below. All four crew members perished. During the entire run, up until the moment of impact, Noel was observed to be delivering devastating fire into the enemy positions.

Aircrewman Shipp was awarded the United States Air Medal for Valour for his service with the 135th Assault Helicopter Company and was also recommended for the United States ‘Silver Star’ for his selfless display of valour during his final action.
Initiative

Vice Admiral Sir John Augustine Collins, KBE, CB, RAN

Captain Collins’ intuition and initiative caused him to depart from his orders while in the Aegean Sea. As CO of HMAS Sydney, he was under verbal instructions from the Commander-in-Chief to support a destroyer sweep in the Kaso Strait east of Crete and then to proceed north with the destroyer HMS Havock and conduct anti-contraband operations off Piraeus. The rest of the destroyer squadron was to sweep the north coast of Crete and return to Alexandria via the west end of the island.

Captain Collins considered that the absence of written instructions gave him discretion and he decided to steam west instead of north to provide support to the destroyer squadron until dawn. Obliged to maintain radio silence, Captain Collins was unable to seek approval for his departure from instructions. The destroyer squadron was also unaware that Sydney and Havock had stayed in the near area.

Shortly after 7 AM Captain Nicholson, commanding the destroyer squadron, reported contact with two cruisers who were later identified as Bartolomeo Colleoni and Banda Nere. Sydney maintained radio silence to avoid alerting the enemy to his presence. He closed Captain Nicholson who was still unaware Sydney and Havock were near Crete - he thought them 200 nm to the north.

Thus began the battle of Cape Spada and the sinking of Bartolomeo Colleoni by Sydney.

On return to Alexandria the Commander-in-Chief met Captain Collins with the inquiry: “Well done. I was very relieved when your enemy report showed you were on the spot, but how did you get there?” Side stepping his departure from orders, Captain Collins replied: “Providence guided me, Sir”. “Well in future you can continue to take your orders from Providence”, said the Admiral.

VADM Collins: As Luck Would Have It, A&R 1965, ps 84-88
Loyalty and Courage

Chief Petty Officer Harry Francis Knight, DSM

CPO Harry Knight was a Telegraphist serving in HMAS Perth when she commissioned in England in June 1939. He remained in Perth following the commencement of hostilities against the AXIS forces in September 1939 and saw action in the Mediterranean theatre.

At the time of Japan’s entry into World War II, Perth was operating in and around Australian waters, however, the ship was soon sent to the Java Station to help counter the Japanese threat. During the night of 27-28 February an eleven ship American, British, Dutch and Australian (ABDA) force engaged Japanese forces in the disastrous Battle of the Java Sea, which only Perth and Houston survived.

The two ships returned to Tandjung Priok to fuel on 28 February but depleted fuel stocks prevented them from receiving their full capacity. At the same time preparations were made to destroy all warehouses and harbour installations to prevent them from falling into Japanese hands.

Orders were soon received by Perth to sail in company with Houston and the Dutch destroyer Evertsen through Sunda Strait to Tjilatjap, but Evertsen, having received no orders to sail, remained behind with instructions to obtain the necessary clearance and follow as soon as possible.

At 2306, a vessel was sighted about five miles close to St Nicholas Point. When challenged she proved to be a Japanese destroyer and was immediately engaged. Shortly afterwards, other destroyers were sighted to the north and the armament split so as to engage the multiple targets. The Japanese warships were protecting an invasion convoy of approximately 50 ships destined to land in Banten Bay, Java

During the action a large number of enemy destroyers attacked from all directions, and it was impossible to engage all targets at once, some of which eventually closed to a very short range.

Little damage was caused to Perth until the very end of the action when she was low on ammunition. Her Captain, Hec Waller, decided to attempt to force a passage through Sunda Strait and head for Toppers Island. Perth had barely steadied on course when she was struck on the starboard side by a torpedo. The order to prepare to abandon ship was given and a few moments later another torpedo struck. Perth’s crew took to the water and a third and fourth torpedo hit followed shortly afterwards causing the cruiser to heel over to port and sink at about 0025 on 1 March 1942.

Most of Perth’s crew abandoned ship between the second and third torpedo hits, but it is doubtful if any of her boats were successfully launched. During the abandon ship operation Perth came under fire from several destroyers at close range causing many further casualties.
Many of her crew were also killed or wounded in the water by the explosion of the last two torpedoes and by shells exploding nearby.

At the time of her loss Perth’s ship’s company totaled 681, comprising 671 naval personnel, six RAAF personnel (for operating and servicing the aircraft) and four civilian canteen staff. Three hundred and fifty naval personnel (including Captain Waller) and three civilians did not survive the sinking. Four naval personnel died ashore without having been taken prisoner while a further 106 men died in Japanese captivity.

Following the sinking of Perth, Harry was one of those captured and he spent the next two and a half years as a prisoner of war in Java, working on the Thai-Burma railway and in the coal mines of Japan.

As a POW, Harry became the senior allied officer’s (Lt. Col. Weary Dunlop) ear for outside news by operating a radio receiver built in the false bottom of an old coffee tin. He faced the constant threat of instant execution if his Japanese guards discovered his receiver and what was more incredible was that his mates never knew he had it. Every night he would lie with a string headphone pressed to his ear, memorizing broadcasts from London, Tokyo and Radio Australia which he would then relate to Dunlop. CPO Knight was eventually liberated following the Japanese capitulation and he returned to Australia in October 1945. He was awarded the Distinguished Service Medal for his gallantry and resolution on 3 June 1946, at Government House, Adelaide.
Integrity

Frances Betty Provan – WRANS

Frances Betty Provan was born on 17 November 1911 at Spring Hill, Brisbane. She was educated at Toowoomba, at the Glennie Preparatory School, Fairholme Presbyterian Girls’ College, and the Glennie Memorial School. After Frances’ father died during her final year at school, she worked in turn as a trainee-teacher, nurse and governess. In about 1939 she moved to Sydney. Believing war to be imminent, Provan began training with the Women’s Emergency Signalling Corps which had been founded in Sydney by Florence McKenzie. By 1941 the RAN needed more wireless telegraphists. The availability of women who had learned these skills in the Women’s Emergency Signalling Corps led to a decision to recruit twelve female telegraphists as the initial members of the Women’s Royal Australian Naval Service (WRANS). Enlisting as a telegraphist on 28 April 1941, Provan was given the official number WR/1 and posted to HMAS Harman, the communications station in Canberra. She and her colleagues relayed messages to the fleet and maintained contact with many wireless-stations around the world. The number of female telegraphists increased rapidly, and women were recruited to serve in other branches of the Navy. By 1945 there were 2590 WRANS working in shore establishments throughout Australia.

Promoted leading telegraphist (September 1941) and Petty Officer Telegraphist (December 1942), Provan attended the first WRANS officers’ training course at Flinders Naval Depot, Westernport, Victoria. She was appointed third officer on 15 February 1943 and returned to Harman in August. In June 1945 she was posted as officer-in-charge of the only draft of WRANS to serve in an operational zone, in Darwin: her standards of behaviour and appearance led her contingent to be referred to as ‘Miss Provan’s Academy for Young Ladies’. She served briefly at bases in New South Wales and Queensland before being demobilised from the Navy in October 1946 in Melbourne.
Courage and Integrity

Ordinary Seaman Edward ‘Teddy’ Sheean

EDWARD SHEEAN was born on 28 December 1923 at Lower Barrington, Tasmania, fourteenth child of James Sheean, labourer, and his wife Mary Jane. Soon afterwards the family moved to Latrobe. Teddy was educated at the local Catholic school and later took on casual work on farms between Latrobe and Merseylea. In Hobart on 21 April 1941 he enlisted in the Royal Australian Naval Reserve as an ordinary seaman, following in the footsteps of five of his brothers who had joined the armed forces (four of them were in the Army and one in the Navy). On completing his initial training Sheean was posted to Sydney where he was billeted at Garden Island in the requisitioned ferry Kuttabul, prior to joining his first ship as an Oerlikon anti-aircraft gun-loader. Granted home leave, he was fortunate not to be on board Kuttabul when Japanese midget submarines raided the harbour and sank her on 31 May 1942. Eleven days later he returned to Sydney to help commission the new corvette HMAS Armidale, which soon began carrying out escort duties along the eastern Australian coast and in New Guinea waters.

On 29 November 1942 Armidale sailed for Japanese-occupied Timor-in company with the corvette HMAS Castlemaine-to withdraw the exhausted Australian 2nd/2nd Independent Company, evacuate about 150 Portuguese civilians and 190 Dutch troops, and land soldiers to reinforce Dutch guerrillas on the island. Arriving off Betano before dawn on 1 December, the ships rendezvoused with the naval tender HMAS Kuru, which had already taken the civilians on board. When these people were transferred to Castlemaine, she sailed for Darwin, leaving the other two vessels to carry out the rest of the operation. From 12.28 pm Armidale and Kuru came under repeated attack from Japanese aircraft. Despite requests for air cover, none was received.

Shortly before 2 pm on 1 December 1942 Armidale, by then separated from Kuru, was attacked by no less than thirteen aircraft. The corvette manoeuvred frantically as it attempted to beat off the attacks, however, at 3.15 pm a torpedo struck her port side and another hit the engineering spaces; finally a bomb struck aft. As the vessel listed heavily to port, the order was given to abandon ship. The survivors leapt into the sea where they were machine gunned by the Japanese. Onboard, Teddy helped to free a life raft, and then scrambled back to his gun on the sinking ship. Although wounded in the chest and back, the 18-year-old sailor shot down one bomber and kept other aircraft away from his comrades in the water. He was seen to be still firing his gun as Armidale slipped below the waves. Only forty-nine of the 149 souls who had been on board survived the sinking and the ensuing days in life rafts. Sheean was mentioned in dispatches for his bravery.
Loyalty

Leading Seaman Clearance Diver
Philip C. Kember, DSM

LSCD Phil Kember was a member of the first Clearance Diving Team (CDT) to deploy to South Vietnam, serving in country from 5 February until 29 August 1967 with CDT3.

On 20 May 1967 CDT3 was called upon to help salvage a crashed helicopter from the Suoi Giai River near Phu Loi, 25 miles north-north-east of Saigon. As part of a team of three, Kember was flown to the US Army base at Phu Loi and then by helicopter gunship to the crash site. The area was insecure and protection for the recovery team was provided by two battalions from the US Army’s 1st Infantry Division. The recovery of the aircraft from ten feet of water was conducted in extremely hazardous conditions. Kember was instrumental in the recovery of two bodies from the wreckage and in rendering safe all of the ordnance and weapons still in the helicopter. Strops were later rigged to the fuselage which enabled a Chinook helicopter to airlift the wreckage to Phu Loi. Kember was later decorated with the Distinguished Service Medal for his involvement in this and other hazardous operations in Vietnam.
Suggested Reading

D I (N) PERS 14-1

Australian Defence Doctrine Publication 00.6 Leadership in the ADF.

RAN’s Divisional Staff Handbook 2007


Appendix One

Warfare Category Badges

- Aircrewman Category
- Acoustic Warfare Analysis Submarines Category
- Boatswains Mate Category
- Clearance Diver Category
- Communications and Information Systems Category
- Communications and Information Systems Submarines Category
Combat System Operator Category

Combat System Operator Mine Warfare Category

Cryptologic Linguist / Systems Category

Cryptologic Linguist Submarines Category

Naval Police Coxswain Category

Photographic Category

Physical Trainer Category
Appendix Two

Establishment and Element Group Badges
Appendix Three

Royal Australian Navy - Units and Establishments

Royal Australian Navy


Navy Headquarters
Russell ACT

Fleet Command
HMAS Kuttabul Garden Island NSW

Navy Systems Command
Systems Command Campbell ACT

Surface Combatants

<table>
<thead>
<tr>
<th>5 x Guided Missile Frigates (FFG)</th>
<th>HMAS Sydney 03</th>
<th>Garden Island NSW</th>
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<tbody>
<tr>
<td></td>
<td>HMAS Darwin 04</td>
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<tr>
<td></td>
<td>HMAS Melbourne 05</td>
<td></td>
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<td></td>
<td>HMAS Newcastle 06</td>
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<table>
<thead>
<tr>
<th>8 x Anzac-Class Frigates (FFH)</th>
<th>HMAS Anzac 150</th>
<th>HMAS Stirling, Garden Island WA</th>
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<tbody>
<tr>
<td></td>
<td>HMAS Arunta 151</td>
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<tr>
<td></td>
<td>HMAS Warramunga 152</td>
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<td></td>
<td>HMAS Perth 157</td>
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<tr>
<td></td>
<td>HMAS Toowoomba 156</td>
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<tr>
<td></td>
<td>HMAS Stuart 153</td>
<td>Garden Island NSW</td>
</tr>
<tr>
<td></td>
<td>HMAS Parramatta 154</td>
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<tr>
<td></td>
<td>HMAS Ballart 155</td>
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### Mine Countermeasures

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<thead>
<tr>
<th>6 x Coastal Mine Hunters (MHC)</th>
<th>HMAS <em>Huon</em> M82</th>
<th>HMAS <em>Waterhen</em>, Waverton NSW</th>
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</thead>
<tbody>
<tr>
<td>HMAS <em>Hawkesbury</em> M83</td>
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<td></td>
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<tr>
<td>HMAS <em>Norman</em> M84</td>
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<tr>
<td>HMAS <em>Gascoyne</em> M85</td>
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<tr>
<td>HMAS <em>Diamantina</em> M86</td>
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<tr>
<td>HMAS <em>Yarra</em> M87</td>
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<table>
<thead>
<tr>
<th>2 x Clearance Diving Teams (CDT)</th>
<th>AUST CDT 1</th>
<th>HMAS <em>Stirling</em>, Garden Island WA</th>
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</thead>
<tbody>
<tr>
<td>AUST CDT 4</td>
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<td>HMAS <em>Waterhen</em>, Waverton NSW</td>
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</table>

<table>
<thead>
<tr>
<th>2 x Auxiliary Minesweepers (MSA)</th>
<th>MSA <em>Bandicoot</em> Y298</th>
<th>HMAS <em>Waterhen</em>, Waverton NSW</th>
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<tbody>
<tr>
<td>MSA <em>Wallaroo</em> Y299</td>
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### Amphibious and Afloat Support

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<tr>
<th>1 x Oil Tanker (AO)</th>
<th>HMAS <em>Sirius</em> O 266</th>
<th>HMAS <em>Stirling</em>, Garden Island WA</th>
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<tbody>
<tr>
<td>1 x Replenishment ship (AOR)</td>
<td>HMAS <em>Success</em> OR 304</td>
<td>Garden Island NSW</td>
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<tr>
<td>1 x Heavy Landing Ship (LSH)</td>
<td>HMAS <em>Tobruk</em> L50</td>
<td>Garden Island NSW</td>
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<tr>
<td>2 x Amphibious Landing Ships (LPA)</td>
<td>HMAS <em>Kanimbla</em> L51</td>
<td>Garden Island NSW</td>
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<tr>
<td>HMAS <em>Manoora</em> L52</td>
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<table>
<thead>
<tr>
<th>6 x Heavy Landing Craft (LCH)</th>
<th>HMAS <em>Balikpapan</em> L126</th>
<th>Larrakeyah NT</th>
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<tbody>
<tr>
<td>HMAS <em>Betano</em> L133</td>
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<tr>
<td>HMAS <em>Brunei</em> L127</td>
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<td>Cairns QLD</td>
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<tr>
<td>HMAS <em>Labuan</em> L128</td>
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<td>HMAS <em>Tarakan</em> L129</td>
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<td>HMAS <em>Wewak</em> L130</td>
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### Patrol Boat

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<thead>
<tr>
<th>14 x Armidale-Class Patrol Boats (ACPB)</th>
<th>HMAS <em>Armidale</em></th>
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<th>Larrakeyah NT</th>
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<tbody>
<tr>
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<td>HMAS <em>Larrakia</em></td>
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<td>HMAS <em>Bathurst</em></td>
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<td>HMAS <em>Albany</em></td>
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<td>HMAS <em>Pirie</em></td>
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<td>HMAS <em>Maitland</em></td>
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<td>HMAS <em>Ararat</em></td>
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<td>HMAS <em>Maryborough</em></td>
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<td>HMAS <em>Glenelg</em></td>
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<td>HMAS <em>Broome</em></td>
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<td>HMAS <em>Bundaberg</em></td>
<td>91</td>
<td>Cairns QLD</td>
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<td>HMAS <em>Wollongong</em></td>
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<td>HMAS <em>Children</em></td>
<td>93</td>
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<td>HMAS <em>Launceston</em></td>
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### Submarine

<table>
<thead>
<tr>
<th>6 x Collins-Class Submarines (SSG)</th>
<th>HMAS <em>Collins</em></th>
<th>73</th>
<th>HMAS <em>Stirling</em>, Garden Island WA</th>
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<tbody>
<tr>
<td></td>
<td>HMAS <em>Farncomb</em></td>
<td>74</td>
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<td>HMAS <em>Waller</em></td>
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<td>HMAS <em>Dechaineux</em></td>
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<td>HMAS <em>Sheean</em></td>
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<td>HMAS <em>Rankin</em></td>
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# Hydrographic

<table>
<thead>
<tr>
<th>2 x Hydrographic Ships (HS)</th>
<th>HMAS Leeuwin A245 Cairns QLD</th>
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</thead>
<tbody>
<tr>
<td>HMAS Melville A246</td>
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<tr>
<td>4 x Survey Motor Launches (SML)</td>
<td>HMAS Benalla A04 Cairns QLD</td>
</tr>
<tr>
<td>HMAS Mermaid A02</td>
<td></td>
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<tr>
<td>HMAS Paluma A01</td>
<td></td>
</tr>
<tr>
<td>HMAS Shepparton A03</td>
<td></td>
</tr>
<tr>
<td>1 x Laser Airborne Depth Sounder (LADS) Aircraft</td>
<td>LADS Flight Cairns QLD</td>
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</tbody>
</table>

# Aviation Squadron

<table>
<thead>
<tr>
<th>723 SQN Helicopter Training Squadron</th>
<th>13 AS350BA Squirrel Nowra NSW</th>
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</thead>
<tbody>
<tr>
<td>805 SQN Anti-Surface Helicopter Squadron</td>
<td>10 SH-2G(A) Super Seasprite Nowra NSW</td>
</tr>
<tr>
<td>816 SQN Anti-Submarine Helicopter Squadron</td>
<td>16 S-70B-2 Seahawk Nowra NSW</td>
</tr>
<tr>
<td>817 SQN Maritime Support Helicopter Squadron</td>
<td>6 SK50 Sea King Nowra NSW</td>
</tr>
</tbody>
</table>

# Non-Defence Administered Activity

| 1 x Youth Sail Training Ship | STS Young Endeavour Garden Island NSW |

# Commissioned Establishments

<table>
<thead>
<tr>
<th>Ship Base (Fleet Base East)/ Headquarters /Area Administration</th>
<th>HMAS Kuttabul HMAS Kuttabul Garden Island NSW</th>
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</thead>
<tbody>
<tr>
<td>Naval Air Station</td>
<td>HMAS Albatross Nowra NSW</td>
</tr>
</tbody>
</table>
**Commissioned Establishments cont.**

<table>
<thead>
<tr>
<th>Facility/Unit</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>Ship and Submarine Base (Fleet Base West)/Area Administration</td>
<td>HMAS Stirling, Garden Island WA</td>
</tr>
<tr>
<td>Patrol Boat and Survey Base</td>
<td>HMAS Cairns, Cairns QLD</td>
</tr>
<tr>
<td>Patrol Boat Base/Area Administration</td>
<td>HMAS Coonawarra, Larrakeya NT</td>
</tr>
<tr>
<td>Mine Warfare</td>
<td>HMAS Waterhen, Waverton NSW</td>
</tr>
<tr>
<td>Communications Station/Area Administration</td>
<td>HMAS Harman, Canberra ACT</td>
</tr>
<tr>
<td>Training establishments</td>
<td>HMAS Cerberus, Crib Point Vic</td>
</tr>
<tr>
<td></td>
<td>HMAS Creswell, Jervis Bay NSW</td>
</tr>
<tr>
<td></td>
<td>HMAS Penguin, Middle Head NSW</td>
</tr>
<tr>
<td></td>
<td>HMAS Watson, Watson’s Bay NSW</td>
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</table>

**Facility/Unit**

| Australian Navy Cadets | National HQ ANC | East Fremantle WA |

**Non-Commissioned Establishments**

<table>
<thead>
<tr>
<th>Facility/Unit</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>Jervis Bay Range Facility</td>
<td>Jervis Bay NSW</td>
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<tr>
<td>Naval Headquarters South Queensland</td>
<td>Bulimba QLD</td>
</tr>
<tr>
<td>Naval Headquarters South Australia</td>
<td>Keswick SA</td>
</tr>
<tr>
<td>Naval Headquarters Tasmania</td>
<td>Battery Point Tas</td>
</tr>
<tr>
<td>West Head Gunnery Range</td>
<td>Flinders Vic</td>
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**Australian Defence Force Establishments**

<table>
<thead>
<tr>
<th>Facility/Unit</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>Australian Defence Force Warfare Centre</td>
<td>Williamtown NSW</td>
</tr>
<tr>
<td>Headquarters Northern Command</td>
<td>Larrakeya NT</td>
</tr>
<tr>
<td>Australian Defence College</td>
<td>Western Creek ACT</td>
</tr>
<tr>
<td>Australian Defence Force Academy</td>
<td>Russell ACT</td>
</tr>
</tbody>
</table>
Appendix Four

Australian Honours and Awards

- Victoria Cross for Australia (VC)
- George Cross (GC)
- Cross of Valor (CV)
- Companion of the Order of Australia (AC)
- Officer of the Order of Australia (AO)
- Star of Gallantry (SG)
Star of Courage (SC)

Distinguished Service Cross (DSC)

Member of the Order of Australia (AM)

Conspicuous Service Cross (CSC)

Nursing Service Cross (NSC)

Medal for Gallantry (MG)
<table>
<thead>
<tr>
<th>Medal Type</th>
<th>Description</th>
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<tbody>
<tr>
<td>Distinguished Service Medal (DSM)</td>
<td>Distinguished Service Medal (DSM)</td>
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<tr>
<td>Bravery Medal (BM)</td>
<td>Bravery Medal (BM)</td>
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<tr>
<td>Public Service Medal (PSM)</td>
<td>Public Service Medal (PSM)</td>
</tr>
<tr>
<td>Australian Police Medal (APM)</td>
<td>Australian Police Medal (APM)</td>
</tr>
<tr>
<td>Australian Fire Service Medal (AFSM)</td>
<td>Australian Fire Service Medal (AFSM)</td>
</tr>
<tr>
<td>Ambulance Service Medal (ASM)</td>
<td>Ambulance Service Medal (ASM)</td>
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</tbody>
</table>
Emergency Services Medal (ESM)

Medal of the Order of Australia (OAM)

Conspicuous Service Medal (CSM)

Australian Antarctic Medal (AAM)

Commendation for Gallantry

Commendation for Brave Conduct
Commendation for Distinguished Service

Australian Service Medal 1939-45

Australian Active Service Medal 1945-75

The Vietnam Medal

Vietnam Logistic and Support Medal

Australian Active Service Medal
Police Overseas Service Medal

Humanitarian Overseas Service Medal

Civilian Service Medal 1939-45

80th Anniversary Armistice Remembrance Medal

Australian Sports Medal

Centenary Medal
Australian Cadet Forces Service Medal

Anniversary of National Service 1951-72 Medal

Unit Citation for Gallantry

Champion Shots Medal

Group Bravery Citation

Meritorious Unit Citation
Appendix Five

Naval Community Associations

**Australian Defence Association**
http://www.ada.asn.au/links.htm

**Australian Naval Institute**

Business Manager ANI
PO Box 29
RED HILL ACT 2603
Ph: (02) 6295 0065
http://www.navalinstitute.com.au
Email: a_n_i@bigpond.com

**Ex-Women’s Royal Australian Naval Service (NSW) (1968 - )**

Honorary Secretary
NSW ex-WRANS
City of Sydney RSL
3rd Floor
565 George St
Sydney
Ph: (02) 9588 2748
Meetings held the second Friday of each month at 1300. Any ex-WRAN, or serving personnel are most welcome.

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**Victoria Division**
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Ph: (03) 9439 9736
Email: geoff805@optusnet.com.au

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Ph: (08) 9274 8063
Mob: 0412 082 601
Email: pwelsh@arach.net.au

Naval Association of Australia

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Naval Association Web Page: www.navalassoc.org.au

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1300 780 054

**State: National Executive**
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Email: nationalpresident@navalassoc.org.au
Secretary: CMDR Peter Cooke-Russell RAN Rtd
GPO Box 711
CANBERRA ACT 2601
Ph: 1300 780 054
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Secretary: Mr Graham Don
Email: grahdon@bigpond.com
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Ph: 03 9540 8924 fax

South Australia
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Secretary: Mr David Kerr
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Ph: 08 8242 3034

Western Australia
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Email: mrrhughes@iinet.net.au
Secretary: Mr Philip Steele
Email: philip@southwest.com.au
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Ph: 08 9592 7071 Office

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Secretary: Mr Andrew Neilson
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Email: Latrobe@westnet.com.au

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Email: jophil1@optusnet.com.au
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Submarines Association of Australia
http://submarinesaustralia.com/index.htm

Royal Australian Navy Communication’s Branch Association
Contact through
http://www.rancba.org.au

White Ensign Magazine
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Royal Australian Navy Clearance Diving Branch Association
Contact through
http://www.rancd-association.com
## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AB</td>
<td>Able Seaman</td>
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<tr>
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<td>Nautical Mile (Equivalent to 1.86km)</td>
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Appendix Seven

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