Australia's Navy Today

MAY 06

NAVY

CONTENTS

NAVY VALUES

Honour

Honesty

Courage

Integrity

Loyalty

INTRODUCTION

AUSTRALIA'S MARITIME POWER

Established:
1901 as the Commonwealth Naval Forces. The title **Royal Australian Navy** (RAN) was granted by King George V in 1911.

Vision:
A Navy with a worldwide reputation for excellence as a sea power; a well equipped, professional team of highly motivated, quality people, serving Australia with honour, supported by a nation proud of its Navy.

Mission:
To fight and win in the maritime environment as an element of a joint or combined force, to assist in maintaining Australia's sovereignty and to contribute to the security of our region.

Personnel:
Over 12 500

The Fleet:
Major Fleet Units (17)
Minor Fleet Units (31)
Submarines (6)
Aircraft (45)

Establishments (11)

The Royal Australian Navy (along with the Australian Army and the Royal Australian Air Force) is charged with the Defence of Australia and other missions that the Government requires. The primary objective of Australia's defence policy is to prevent or defeat attacks on Australia.

Maritime strategy is a cornerstone of Australia's defence. Australia's 200 nautical mile Exclusive Economic Zone contains valuable fishing stocks and immense mineral and energy reserves. With island territories extending from the tropics to the hazardous Antarctic waters of the Southern Ocean, the Royal Australian Navy patrols a total area of almost 10 per cent of the world's surface.

The Navy's greatest single strength is the calibre of its officers and sailors. Maritime operations are complex and demanding.
This complexity, combined with the growing sophistication of platforms and weapons systems requires Navy personnel who are highly skilled professionals across a variety of disciplines.

The Royal Australian Navy has a proud history and tradition of service to Australia, having served with distinction in every theatre of war during World Wars I and II, Korea (1950–53), the Malayan Emergency (1948–60), Vietnam (1962–72), Gulf War (1990–91) and currently the war in Iraq.

The Royal Australian Navy has been involved in several key peacekeeping operations in East Timor (now Timor-Leste), Bougainville, Fiji and the Solomon Islands. The Navy has also provided humanitarian assistance overseas in Somalia, Papua New Guinea, Fiji and more recently in Indonesia after the 2004 Tsunami. The Royal Australian Navy undertakes search and rescue operations and also provides relief in Australia when cyclones, floods and bushfires occur.

FFH 151 HMAS ARUNTA

ANZAC CLASS FRIGATES (FFH)

Displacement:
3600 tonnes

Length:
118 metres

Beam:
14.8 metres

Main Machinery:
1 x General Electric LM2500 gas turbine engine

2 x MTU 12V 1163 diesels driving two controllable pitch propellers

Speed:
More than 27 knots

Armament:
1 x 8 cell MK41 Vertical Launch System (Evolved Sea Sparrow short range anti-air missiles)

8 x Cannister Launch System for harpoon anti-ship missiles (being fitted)

1 x 5 inch Mk45 Mod 2 automatic rapid fire gun

4 x .50 calibre (12.7mm) Browning machine guns

2 x Mk32 Mod 5 triple mounted torpedo tubes

Nulka anti-ship missile defence system

Aircraft:
One SH-2G(A) Super Seasprite, armed with 'Penguin' anti-ship missiles or one S-70B-2 Seahawk helicopter

Crew:
174 (including flight crew)

ANZAC CLASS FRIGATES (FFH)

The ANZAC Class is based on the German Meko 200 frigate design, with the ships built by Tenix Defence Systems at Williamstown in Victoria.

ANZACs are long-range escorts that undertake roles including close range air defence, anti-submarine warfare, surface warfare, naval gunfire support, surveillance, reconnaissance and interdiction. The ships are capable of countering simultaneous threats from the air, surface and sub-surface.

ANZAC ships are powered by a combined diesel or gas (CODOG) propulsion plant that allows speeds in excess of 27 knots with an operational range of more than 6000 nautical miles at 18 knots.

They are fitted with an advanced package of air surveillance radars, omni-directional hull mounted sonar and electronic support measures which interface with state of the art combat data systems.

Main armament comprises one five inch (127mm) gun capable of firing 20 rounds per minute, ship launched torpedoes and a Mk 41 Vertical Launch System for the Evolved Sea Sparrow short range anti-air missile. Canister Launched Harpoon anti-ship missiles are currently being fitted to the ANZAC Class and will provide each ship with a potent surface warfare capability.

The SH-2G(A) Super Seasprite helicopter can be embarked to enhance anti-submarine and anti-surface warfare capabilities. The Seasprite is capable of delivering air launched torpedoes and the Penguin anti-ship missile. The S-70B-2 Seahawk helicopter can also be embarked as an alternative to the Seasprite.

The ANZAC Class frigates are based at both Fleet Base East in Sydney and Fleet Base West near Perth.

Name	No.	Builders	Laid down	Launched	Commissioned
ANZAC	150	Transfield, Williamstown, Williamstown, Aust.	5 Nov 1993	16 Sep 1994	13 May 1996
ARUNTA	151	Transfield, Williamstown, Williamstown, Aust.	22 Jul 1995	28 Jun 1996	12 Dec 1998
WARRAMUNGA	152	Tenix Defence Systems, Williamstown, Aust.	26 Jul 1997	23 May 1998	31 Mar 2001
STUART	153	Tenix Defence Systems, Williamstown, Aust.	25 Jul 1998	17 Apr 1999	17 Aug 2002
PARRAMATTA	154	Tenix Defence Systems, Williamstown, Aust.	5 Jun 1999	17 Jun 2000	4 Oct 2003
BALLARAT	155	Tenix Defence Systems, Williamstown, Aust.	4 Aug 2000	25 May 2002	26 Jun 2004
TOOWOOMBA	156	Tenix Defence Systems, Williamstown, Aust.	26 Jul 2002	16 May 2003	8 Oct 2005
PERTH	157	Tenix Defence Systems, Williamstown, Aust.	24 Jul 2003	20 Mar 2004	26 Aug 2006

FFG 04 HMAS DARWIN

ADELAIDE CLASS GUIDED MISSILE FRIGATES (FFG)

Displacement:
4,100 tonnes

Length:
138 metres

Beam:
13.7 metres

Main Machinery:
2 GE LM2500 gas turbines driving a single controllable pitch propeller

Speed:
More than 30 knots

Armament:

1 x Mk13 launcher (Harpoon anti-ship missiles and Standard surface to air missiles)

1 x 8 cell Mk41 vertical launch system (Evolved Sea Sparrow short range anti-air missiles)

1 x 76mm rapid fire gun

1 x 20mm Vulcan Phalanx Mk15 close in weapons system

4 x .50 calibre (12.7mm) Browning machine guns

2 x Mk32 mod 5 triple mounted anti-submarine torpedo tubes

Nulka anti-ship missile defence system

Aircraft:
Up to 2 x S-70B-2 Seahawk helicopters

Crew:
210

ADELAIDE CLASS GUIDED MISSILE FRIGATES (FFG)

Currently the Navy operates five ADELAIDE Class guided missile frigates (FFG) divided between Navy's two main bases; Fleet Base East in Sydney and Fleet Base West in Perth. A sixth frigate, HMAS *Canberra,* decommissioned in 2005.

The ADELAIDE Class frigates are based on the US Navy's OLIVER HAZARD PERRY design. The first four ships of the class were built in the USA with subsequent modifications undertaken in Australia. The last two were constructed in Australia with all modifications incorporated.

Each FFG is a long-range escort ship that undertakes roles including surface warfare, air defence, anti-submarine warfare, surveillance, interdiction and reconnaissance. The ship is capable of countering simultaneous threats from the air, surface and sub-surface.

They were the first RAN ships to be powered by gas turbine for main propulsion and can be underway from cold in less than 30 minutes. Two forward mounted, retractable auxiliary propulsion units provide a secondary means of propulsion plus excellent manoeuvrability in confined waters. They have a range of 4,500 nautical miles at 20 knots.

The FFG's principal weapons are the Standard medium range anti-aircraft missile and the Harpoon anti-ship missile, both of which are launched from the Mk 13 launcher on the forecastle. A Mk41 vertical launch system with the Evolved Sea Sparrow short range anti-air missile is currently being fitted. A 76mm gun to counter both aircraft and surface threats is fitted forward of the funnel and one 20mm Phalanx close-in-weapon system for anti-missile defence is located above the helicopter hanger.

For long range anti-submarine tasks, the FFG is equipped with flight deck and hangars for two S-70B-2 Seahawk helicopters. For close in anti-submarine defence, the ships are fitted with two Mk 32 triple Mod 5 torpedo tubes.

The FFG's sensor package includes long range radars for air and surface surveillance, electronic warfare surveillance sensors and the Australian designed and built Mulloka medium range sonar for the detection of submarines. A computer based command and control system processes information as well as target data received by data link from other ships and aircraft.

Name	No.	Builders	Laid down	Launched	Commissioned
ADELAIDE	01	Todd Pacific Shipyard Corporation, Seattle, USA	29 Jul 1977	21 June 1978	15 Nov 1980
SYDNEY	03	Todd Pacific Shipyard Corporation, Seattle, USA	16 Jan 1980	26 Sep 1980	29 Jan 1983
DARWIN	04	Todd Pacific Shipyard Corporation, Seattle, USA	3 Jul 1981	26 Mar 1982	21 July 1984
MELBOURNE	05	Australian Marine Eng (Consolidated), Williamstown, Aust.	12 Jul 1985	5 May 1989	15 Feb 1992
NEWCASTLE	06	Australian Marine Eng (Consolidated), Williamstown, Aust.	21 Jul 1989	21 Feb 1992	11 Dec 1993

LPA 51 HMAS KANIMBLA

MODIFIED NEWPORT CLASS AMPHIBIOUS LANDING SHIPS (LPA)

Displacement:
8534 tonnes

Length:
168 metres

Beam:
21.2 metres

Main Machinery:
6 x 16v ALCO 251C diesel engines,
1000 RPM driving two shafts.

Speed:
20 knots

Armament:
1 x 20mm Vulcan Phalanx close in weapons system

2 x .50 calibre (12.7mm) Browning machine guns

Crew:
220 plus,

20 ships Army detachment and up to 450 embarked forces

Cargo Capability:
2 x Army landing craft

4 x Army Black Hawk or
3 x Sea King helicopters

1 x Army Chinook helicopter

MODIFIED NEWPORT CLASS AMPHIBIOUS LANDING SHIPS (LPA)

HMAS *Manoora* and HMAS *Kanimbla* were built for the United States Navy as the USS *Fairfax County* and USS *Saginaw* respectively. Two of the 20 strong NEWPORT class of tank landing ships, *Fairfax County* and her sister ship *Saginaw* were acquired by the Royal Australian Navy in 1994.

In 1994 after commissioning into the RAN, *Manoora* and *Kanimbla* underwent extensive modifications by the 'Forgacs' Dockyard in Newcastle, New South Wales, Australia, for their new roles as helicopter capable amphibious transports.

Their primary roles are to transport, lodge ashore and support an Army contingent of 450 troops, their vehicles and equipment. *Kanimbla* and *Manoora* are fitted with a helicopter hangar capable of supporting up to four Army Black Hawk helicopters or three of the larger Navy Sea King helicopters. Two helicopters can operate simultaneously from the aft flight deck, while a third can operate from the flight deck located forward of the bridge.

Two 65 tonne Army landing craft can also be carried on the forward flight deck to provide ship to shore transport. They are lifted on and off by a 70 tonne capacity crane.

Accessed through a stern door, 810 square metres of storage space is available on the vehicle deck for Army vehicles and other large items of equipment.

For Navy and Army exercises the ships have additional operations and planning rooms that provide for both an Amphibious Task Group Commander and a Landing Force Commander.

LPAs are fitted with the largest and most comprehensive medical facilities in the Fleet and include an operating theatre and high dependency recovery ward.

Name	No.	Builders	Laid down	Launched	Commissioned	Recommissioned
KANIMBLA (ex-*Saginaw*)	L 51 (ex-1188)	National Steel & Shipbuilding, USA	24 May 1969	7 Feb 1970	23 Jan 1971	29 Aug 1994
MANOORA (ex-*Fairfax County*)	L 52 (ex-1193)	National Steel & Shipbuilding, USA	28 Mar 1970	19 Dec 1970	16 Oct 1971	25 Nov 1994

AOR 304 HMAS SUCCESS

DURANCE CLASS UNDERWAY REPLENISHMENT SHIP (AOR)

Displacement:
17 933 tonnes

Length:
157.2 metres

Beam:
21.2 metres

Main Machinery:
Two independent propulsion systems, each consisting of a 16 PC 2-5V Pielstick ono-reversing medium speed diesel engine, developing 7,640 kw at 520 RPM driving two shafts

Speed:
20 knots

Armament:
2 x 20mm Phalanx close in weapon systems

4 x .50 calibre (12.7mm) Browning machine guns

Aircraft:
1 x Sea King utility helicopter

Crew:
205

DURANCE CLASS UNDERWAY REPLENISHMENT SHIP (AOR)

The Royal Australian Navy's afloat support capability is provided by the underway replenishment ships HMAS *Success* and HMAS *Westralia*. The Afloat Support Force provides operational support for the rest of the fleet by providing fuel, food, stores and ammunition, thus significantly extending the RAN's operational reach and endurance at sea. It can also provide support to deployed Army and Air Force units.

HMAS *Success* is based on the French DURANCE Class design. She was built by Cockatoo Island Dockyard Pty Ltd in Sydney and was the largest ship constructed at this facility.

The ship is capable of day and night replenishment to ships at sea and concurrently by her embarked helicopter to other ships in company. Four main Replenishment at Sea (RAS) stations are fitted, two of which have dual functions and can be used to transfer either fuel or solids.

Success saw active service in the Gulf War as part of the Multi-National Naval Force conducting operations in support of Kuwait. She also provided valuable logistic support to INTERFET operations in East Timor.

Success is a truly dynamic vessel designed to support a naval force for extended periods in an operational environment at sea.

Name	No.	Builder	Laid down	Launched	Commissioned
SUCCESS	OR 304	Cockatoo Island Dockyard, NSW, Aust.	9 Aug 1980	3 Mar 1984	23 Apr 1986

AO 195 HMAS WESTRALIA

LEAF CLASS UNDERWAY REPLENISHMENT SHIP (AO)

Displacement:
40,870 tonnes (full)

Length:
171 metres

Beam:
26 metres

Main Machinery:
Two SEMT-Pielstick 14 PC2-2 V400 diesel engines; one shaft

Speed:
16 knots

Armament:
4 x .50 calibre (12.7mm) Browning machine guns

Crew:
84

LEAF CLASS UNDERWAY REPLENISHMENT SHIP (AO)

The Royal Australian Navy's afloat support capability is provided by the underway replenishment ships HMAS *Success* and HMAS *Westralia*. The Afloat Support Force provides operational support for the rest of the fleet by providing fuel, food, stores and ammunition, thus significantly extending the RAN's operational reach and endurance at sea. *Westralia* can also provide support to deployed Army and Air force units.

HMAS *Westralia* was built as a Stat 32 class petroleum tanker and modified for underway replenishment in 1979 with the British Royal Fleet Auxiliary as RFA *Appleleaf*. Originally leased by the RAN in 1989, *Westralia* was purchased outright in 1994 and underwent further modification including the fitting of a flight deck for helicopter vertical replenishment operations.

The ship can carry over 20,000 tonnes of diesel including several thousand tonnes of aviation fuel for Navy helicopters. *Westralia* can replenish ships at sea day or night and is capable of replenishing two ships at a time. She has transfer points for fuel, water and stores.

Westralia saw active service in the Gulf War as part of the Multi-National Naval Force conducting operations in support of Kuwait. She also provided valuable logistic support to INTERFET operations in East Timor.

Westralia is due to be replaced by the new environmentally sustainable tanker HMAS *Sirius* in 2006.

Name	No.	Builder	Laid down	Launched	Commissioned
WESTRALIA ex RFA *Appleleaf*	O 195 (ex-A 79)	Cammell Laird, Birkenhead, UK	1974	24 July 1975	9 Oct 89 (RAN) Nov 79 (RN)

LSH 50 HMAS TOBRUK

MODIFIED SIR BEDIVERE CLASS HEAVY LANDING SHIP (LSH)

Displacement:
5,800 tonnes (full)

Length:
126 metres

Beam:
18 metres

Main Machinery:
Mirrlees Blackstone KDMRS diesel (two shafts)

Speed:
18 knots

Armament:
4 x .50 calibre (12.7mm) Browning machine guns

Aircraft:
Capable of carrying two Sea King helicopters

Landing Craft:
Two LCVP on davits, two Army LCM-8s as deck cargo

Crew:
144 plus up to
520 embarked troops

MODIFIED SIR BEDIVERE CLASS HEAVY LANDING SHIP (LSH)

HMAS *Tobruk* was commissioned into the Royal Australian Navy on 23 April 1981, providing the Australian Defence Force with an amphibious ship and heavy lift capability. Constructed by Carrington Slipways Pty Ltd at Tomago, near Newcastle, her design is an update of the proven British SIR BEDIVERE Class Logistic Landing Ship (LSL).

Essentially the ship is a multi-purpose troop and roll-on/roll-off, heavy vehicle carrier. The design includes facilities for bow and stern loading, a drive through capacity and inter-deck transfers via ramps.

Tobruk is capable of transporting 18 Leopard Main Battle Tanks in the Tank Deck and 40 Armoured Personnel Carriers (APC) on the Vehicle Deck. The Vehicle Deck has been reinforced to enable the transportation of two Landing Craft Mechanised-8 (LCM-8) on specially designed cradles. In addition, davits on either side of the superstructure secure two Landing Craft Vehicle and Personnel (LCVP) units.

There are also facilities for helicopter and landing craft operations and a 70 tonne capacity derrick. The upper deck forward of the bridge and the after deck can serve as helicopter flight decks. Up to two Sea King helicopters can be embarked.

The landing force carried by HMAS *Tobruk* can vary with a capacity to accommodate up to 315 troops for extended duration. In an overloaded state, the ship can provide accommodation for up to 520 troops for short periods of time.

Tobruk provides the Australian Defence Force with a heavy lift capability not available in any other Australian owned ship.

Name	No.	Builder	Laid down	Launched	Commissioned
TOBRUK	L 50	Carrington Slipways Pty Ltd	7 Feb 1978	1 Mar 1980	23 Apr 1981

SSG 77 HMAS SHEEAN

COLLINS CLASS SUBMARINES (SSG)

Displacement:
3350 tonnes (submerged)
3050 tonnes (surfaced)

Length:
77.8 metres

Beam:
7.8 metres

Main Machinery:
Diesel Electric. One 5.4 MW Jeumont Schneider main motor; three Hedemora VB 210 18 cylinder diesels; three Jeumont Schneider generators; single shaft

Speed:
In excess of 20 knots (submerged)

In excess of 10 knots (surfaced or snorting)

Armament:
Six forward tubes for Mk48 wireguided torpedoes and Sub harpoon anti-ship missiles

Crew:
42 (6 officers and 36 sailors) plus trainees

COLLINS CLASS SUBMARINES (SSG)

AUSTRALIA'S UNSEEN POWER

The operational characteristics and range of COLLINS Class submarines have been tailored specifically for its defence and two-ocean surveillance role in the Royal Australian Navy.

Designed to be as quiet as advanced technology can achieve, COLLINS Class submarines have been developed from five generations of submarines built by the Swedish Navy.

One of the first submarines to be totally designed by computers, the COLLINS Class boasts a vast range of features. They include a high performance hull form, highly automated controls, low indiscretion rates, high shock resistance, optimal noise suppression, efficient weapons handling and discharge, and an optional air-independent propulsion system.

This single propeller submarine will move silently on electric power supplied to the propulsion motor by banks of new technology batteries. The batteries are charged by three on board diesel generator sets.

The sophisticated combat system gathers intelligence from its sensors, computes the input and then launches and directs weapons.

Based at HMAS *Stirling*, in Western Australia, the Australian Submarine Squadron is a formidable element in Australia's defence capability.

Name	No.	Builders	Laid down	Launched	Commissioned
COLLINS	73	Australian Submarine Corp, Adelaide, Aust.	14 Feb 1990	28 Aug 1993	27 Jul 1996
FARNCOMB	74	Australian Submarine Corp, Adelaide, Aust.	1 Mar 1991	15 Dec 1995	31 Jan 1998
WALLER	75	Australian Submarine Corp, Adelaide, Aust.	19 Mar 1992	14 Mar 1997	10 Jul 1999
DECHAINEUX	76	Australian Submarine Corp, Adelaide, Aust.	4 Mar 1993	12 Mar 1998	24 Feb 2001
SHEEAN	77	Australian Submarine Corp, Adelaide, Aust.	17 Feb 1994	3 May 1999	24 Feb 2001
RANKIN	78	Australian Submarine Corp, Adelaide, Aust.	12 May 1995	7 Nov 2001	26 Mar 2003

FCPB 212 HMAS GAWLER

FREMANTLE CLASS PATROL BOATS (FCPB)

Displacement:
245 tonnes

Length:
42 metres

Beam:
7.15 metres

Main Machinery:
2 MTU 538 series 16 cylinder main propulsion engines driving two shafts

Speed:
30 knots

Armament:
1 x 40mm Bofors general purpose gun

2 x .50 calibre (12.7mm) Browning machine guns

Crew:
24

FREMANTLE CLASS PATROL BOATS (FCPB)

Navy's FREMANTLE Class Patrol Boats (FCPB) predominantly patrol the northern waters of Australia and are based in Darwin and Cairns.

FCPBs have served Australia for a quarter of a century and are the Navy's principal contribution to the national task of fisheries protection and immigration, customs and drug law enforcement operations. The vessels work hand in hand with other Government agencies and each year they provide up to 1800 patrol days as part of the Coastwatch managed national surveillance effort. In the event of war they would be tasked for operations in the waters close to the Australian mainland. The vessels are well prepared for their patrol duties and other operational requirements.

In addition, FCPBs are central to Australia's engagement with countries in the South West Pacific region and deploy throughout Southeast Asia and the Pacific in support of Australia's strategic interests. Patrol Boats also support Special Forces operations and provide a useful transport capability, particularly in disaster relief and humanitarian assistance operations.

FCPBs are equipped with high definition navigational radar, high and ultra high frequency communications equipment, gyro-compasses and echo sounder. They are also fitted with a satellite navigation system, which enables the ship's position to be determined with great accuracy.

FREMANTLE Class Patrol Boats have a range of 2,360 nautical miles at 12 knots and a maximum speed of almost 30 knots.

The FCPBs are being replaced by the ARMIDALE Class Patrol Boats (ACPB) during 2005-08.

Name	No.	Builders	Commissioned	Decommissioning
FREMANTLE	203	Brooke Marine, Lowestoft, UK.	17 Mar 1980	Aug 2006
WARRNAMBOOL	204	NQEA Australia, Cairns, Aust.	14 Mar 1981	29 Nov 2005
TOWNSVILLE	205	NQEA Australia, Cairns, Aust.	18 Jul 1981	May 2007
WOLLONGONG	206	NQEA Australia, Cairns, Aust.	28 Nov 1981	11 Feb 2006
LAUNCESTON	207	NQEA Australia, Cairns, Aust.	1 Mar 1982	Sep 2006
WHYALLA	208	NQEA Australia, Cairns, Aust.	3 Jul 1982	2 Sep 2005
IPSWICH	209	NQEA Australia, Cairns, Aust.	13 Nov 1982	May 2007
CESSNOCK	210	NQEA Australia, Cairns, Aust.	5 Mar 1983	23 Jun 2005
BENDIGO	211	NQEA Australia, Cairns, Aust.	28 May 1983	Sep 2006
GAWLER	212	NQEA Australia, Cairns, Aust.	27 Aug 1983	Jul 2006
GERALDTON	213	NQEA Australia, Cairns, Aust.	10 Dec 1983	Oct 2006
DUBBO	214	NQEA Australia, Cairns, Aust.	10 Mar 1984	Jan 2007
GEELONG	215	NQEA Australia, Cairns, Aust.	2 Jun 1984	Jul 2006
GLADSTONE	216	NQEA Australia, Cairns, Aust.	8 Sep 1984	Feb 2007
BUNBURY	217	NQEA Australia, Cairns, Aust.	15 Dec 1984	11 Feb 2006

ACPB 83 HMAS ARMIDALE

ARMIDALE CLASS PATROL BOATS (ACPB)

Displacement:
300 tonnes

Length:
56.8 metres

Beam:
9.5 metres

Main Machinery:
2 x MTU 16V 4000 M70 diesels, 2 x Shafts

Speed:
25 knots

Armament:
1 x 25mm rapid fire cannon

2 x .50 calibre (12.7mm) Browning Machine Guns

Crew:
21 (+ extra accommodation for 20)

ARMIDALE CLASS PATROL BOATS (ACPB)

The Royal Australian Navy's new patrol boat force, 14 ARMIDALE Class Patrol Boats (ACPB) will be brought into service from 2005 - 2008. The ACPB's primary role is to undertake sustained patrol and response operations both in the northern waters of Australia and as far south as 50 degrees, in the Southwest Pacific and into South East Asia.

The ARMIDALE Class is designed and constructed to combined commercial and naval standards and is fitted with state of the art systems optimised for its surveillance, patrol and response tasking. The superior communications system complements the onboard organic sensors by providing both long and short-range connectivity.

Crew accommodation consists of modern, satellite TV equipped, ensuite cabins. The ship also has the capacity to embark an additional 20 personnel for specific missions. This significantly increases the flexibility of the platform and adds to the range of tasking variables that can be met by ACPB.

The ARMIDALE Class will be multi-crewed by 21 crews of 21 personnel. The crews will be divided into three divisions with two divisions located in Darwin and one in Cairns. Ten ARMIDALE Class will be homeported in Darwin and four boats will be home ported in Cairns. Two of the ACPBs will be forward deployed to Dampier in support of maritime security of Australia's North West Shelf off-shore facilities. The ability to multi-crew the ARMIDALE patrol boats facilitates the maximum use of the platforms to meet the required 3000 sea day (plus surge) capability, while providing adequate crew rest and recreation.

ACPBs are state of the art in design and technology, underpinning a formidable new patrol, surveillance and response capability for the RAN. Its design, compared to the FREMANTLE Class Patrol Boat, has superior sea-keeping together with enhanced endurance and surveillance technology, which will enable them to effectively conduct their roles in the required areas of operation. The hull is made from aluminium and the ship has an operating speed of at least 25 knots.

Name	No.	Commissioning Date
ARMIDALE	83	24 Jun 2005
LARRAKIA	84	11 Feb 2006
BATHURST	85	11 Feb 2006
ALBANY	86	Jul 2006
PIRIE	87	Jul 2006
MAITLAND	88	Sep 2006
ARARAT	89	Oct 2006
BROOME	90	Feb 2007
BUNDABERG	91	Feb 2007
WOLLONGONG	92	Jun 2007
CHILDERS	93	May 2007
LAUNCESTON	94	Sep 2007
TBA	TBA	TBA
TBA	TBA	TBA

MHC 86 HMAS DIAMANTINA

HUON CLASS COASTAL MINEHUNTERS (MHC)

Displacement:
720 tonnes full load

Length:
52.5 metres

Beam:
9.9 metres

Speed:
14 knots

Propulsion:
1 x 1460kw Fincantieri GMT diesel (single shaft)
3 x 124kw electro hydraulic motors for minehunting operations

Armament:
1 x 30mm DS30B rapid fire cannon,
2 x .50 calibre (12.7mm) Browning machine guns

Mine Disposal System:
1. SUTEC Double-Eagle Mk 2 Mine Disposal Vehicle (MDV), with DAMDIC mine disposal charge

2. ADI double Orepesa mechanical sweep Sonar: GEC - Marconi type 2093 Variable Depth Sonar (VDS)

Crew:
38 plus 11 spare/training bunks

HUON CLASS COASTAL MINEHUNTERS (MHC)

The RAN has six HUON Class Coastal Minehunters (MHC). The principal task of the MHCs is to keep the nation's focal points for trade, the harbours and ports, free from the threat of mines.

Originally designed in Italy as the GAETA Class for the Italian Navy, the HUON Class has been modified to suit Australian conditions, including improved accommodation and mine hunting capabilities.

The HUON Class feature a unique hull design, outstanding shock resistance and an inherently low magnetic signature, allowing the ships to operate in hostile mine environments. Each single skin monocoque hull has been designed with no ribs, frames or stiffeners, avoiding local stress points that could cause separation under shock conditions. To protect the power plant and provide an enhanced resistance to shock damage, all machinery is mounted on cradles, suspended from the bulkheads and deckheads.

For their mine countermeasure operations, the HUON Class is fitted with the 2093 Variable Depth Sonar (VDS) capable of detection ranges in excess of 1,000 metres ahead of the ship. When a mine is detected in a water column or on the seabed, the ship will "hover" about 200 metres from the contact. A mine disposal vehicle or clearance divers will then be sent to investigate and neutralise the mine threat.

Each of the HUON Class are fitted with a pair of electrically powered Bofors Underwater Systems Double Eagle mine disposal vehicles (MDVs) equipped with a searchlight, closed-circuit low light television camera and an onboard close range identification sonar. To control the Double Eagle, 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, located in the Operations Room.

To counter the hostile mines, each Double Eagle vehicle is fitted with either a disposal charge slung beneath or an explosive or mechanical cutter designed to sever the wire rope or chain holding the moored mines. Each MHC carries Clearance Diving specialists who may also be used in the disposal of the mines.

Name	No.	Builders	Laid down	Launched	Commissioned
HUON	M82	Australian Defence Industries, Newcastle, Australia	n/a	25 Jul 1997	15 May 1999
HAWKESBURY	M83	Australian Defence Industries, Newcastle, Australia	12 Sep 1995	24 Apr 1998	12 Feb 2000
NORMAN	M84	Australian Defence Industries, Newcastle, Australia	16 Sep 1996	3 May 1999	26 Aug 2000
GASCOYNE	M85	Australian Defence Industries, Newcastle, Australia	13 Sep 1997	11 Mar 2000	2 Jun 2001
DIAMANTINA	M86	Australian Defence Industries, Newcastle, Australia	4 Aug 1998	18 Nov 2000	4 May 2002
YARRA	M87	Australian Defence Industries, Newcastle, Australia	12 Jun 1999	29 Sep 2001	1 Mar 2003

AGS 245 HMAS MELVILLE

LEEUWIN CLASS HYDROGRAPHIC SURVEY SHIPS (AGS)

Displacement:
2550 tonnes

Length:
71.1 metres

Beam:
15.2 metres

Main Machinery:
Four Ruston diesel generators, two electric propulsion motors, two shafts

Cruising Speed:
in excess of 12 knots

Armament:
2 x 50 calibre (12.7mm) Browning machine guns

Aircraft:
1 x Squirrel helicopter (as required by operations)

Crew:
46

LEEUWIN CLASS HYDROGRAPHIC SURVEY SHIPS (AGS)

The Royal Australian Navy's Hydrographic Service has the responsibility for charting more than one-eighth of the world's water surface and Australia's coastline of more than 30,000 kilometres. This includes key shipping routes, channels and approaches to ports used by some of the world's largest and deepest draft ships, the bulk ore carriers. The nautical charts developed from data gathered by the Hydrographic Service are essential for safe navigation at sea. Accurate charting protects human life, valuable cargo and our precious marine environment, as well as providing our Naval forces with freedom of operation when conducting patrol, surveillance and interdiction duties in the waters that surround us.

Around Australia, less than half of the sea has been surveyed to acceptable modern standards. The Navy's two LEEUWIN Class Hydrographic Ships (HS), HMAS *Leeuwin* and HMAS *Melville*, with multi-beam echo sounders, will greatly reduce this figure, making passage of vessels safer and further protect Australia's ocean environment.

Both ships were built in Cairns, Queensland by North Queensland Engineers and Agents (NQEA) and are home ported in Cairns.

HMA Ships *Leeuwin* and *Melville* operate independently, supported by the three Survey Motor Boats (SMB) carried on each ship. These ships are fitted with the latest multi-beam and single beam echo sounders plus towed and forward-looking sonars. Satellite and terrestrial position fixing equipment plus other navigation and survey sensors are integrated to form a complex hydrographic survey system in each ship.

Their operational range is around 8,000 nautical miles. Each ship is designed to operate for up to 300 days a year at sea, carrying out operational surveying tasks.
To maximise the productivity of the vessels, the Navy operates the ships with three crews, rotating through the two ships.

Name	No.	Builders	Launched	Commissioned
LEEUWIN	A 245	NQEA, Cairns, Aust	19 Jul 1997	27 May 2000
MELVILLE	A 246	NQEA, Cairns, Aust	23 Jun 1998	27 May 2000

SML 01 HMAS PALUMA

PALUMA CLASS SURVEY MOTOR LAUNCH (SML)

Displacement:
320 tonnes (full load)

Length:
36.6 metres overall

Beam:
13.7 metres

Main Machinery:
Twin Detroit V12 diesels driving two shafts

Speed:
12 knots

Crew:
14

PALUMA CLASS SURVEY MOTOR LAUNCH (SML)

The science of Hydrography originated from the need for the production of maps specifically designed for use by the mariner. Nothing has been more important to the foundation and expansion of seaborne trade among nations than the production of such charts - the end result of the hydrographic surveyor's work.

By any standards the task facing the Australian Hydrographic Service is a daunting one. The Australian area of charting responsibility covers some 11.5 million square nautical miles of oceans and seas, including the waters of Papua New Guinea. Between 1945 and 2001 only 30 per cent of the continental shelf had been surveyed to an adequate standard, with a further 20 per cent to a temporary adequate standard. The remaining area accounts for much of the Navy's current survey work. The Survey Motor Launches (SML) are examples of the resources devoted to this enormous task by the Royal Australian Navy.

HMA Ships *Paluma*, *Mermaid*, *Shepparton* and *Benalla*, were built by Eglo Engineering of Adelaide, South Australia and were based on the PRINCE Class of roll-on/roll-off passenger ferries.

The SML's generally operate in pairs, and are designed for tasking in the shallow waters of northern Australia. Their twin hulls, with bulbous bows and raked transom, provide good stability in heavy conditions, along with good living room and space below the main deck. In addition, the catamaran hull sits well out of the water, the ship drawing only 2.2 metres, a favourable characteristic in shoaling and reef waters where the ships are required to operate.

Each SML carries the latest in survey and computerised hydrographic data processing equipment. The class is also fitted with the latest navigation aids. SMLs have a range of 3,500 nautical miles.

The SMLs are based in Cairns, Queensland and have been deployed to East Timor and Bougainville in support of Australian Defence Force and United Nations operations. They have demonstrated an ongoing capability to contribute to both peacetime and operational activities.

Name	No.	Builders	Commissioned
PALUMA	A 01	Eglo, Adelaide, Aust	27 Feb 1989
MERMAID	A 02	Eglo, Adelaide, Aust	4 Dec 1989
SHEPPARTON	A 03	Eglo, Adelaide, Aust	24 Jan 1990
BENALLA	A 04	Eglo, Adelaide, Aust	20 Mar 1990

LADS FLIGHT

Laser Airborne Depth Sounder

Aircraft:
Fokker F27-500

Maximum Weight:
20 tonnes

Maximum Speed:
220 knots

Survey Speed:
145 knots

Endurance:
In excess of 7 hours

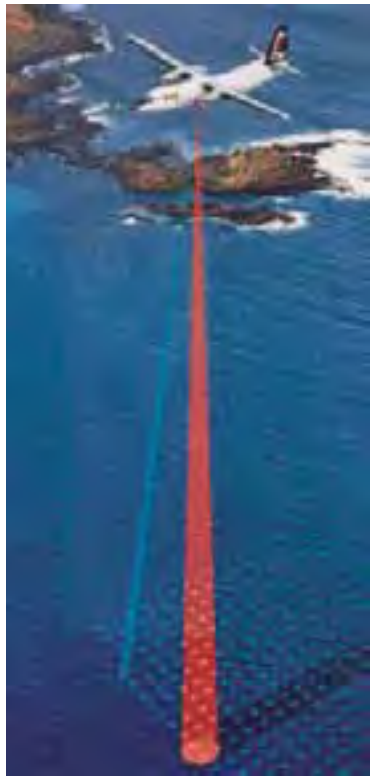
Crew:
2 pilots and
2 flight system operators

LASER AIRBORNE DEPTH SOUNDER (LADS) FLIGHT

In addition to the six survey ships, the RAN Hydrographic Service also employs an extremely capable and effective airborne unit.
The Navy's Laser Airborne Depth Sounder (LADS) Flight was formed in 1992 after more than 20 years of research and development. The LADS aircraft is a Fokker F27-500 'Friendship' acquired from East West Airlines and extensively modified to incorporate bay doors under the fuselage, additional fuel tanks, precise navigation systems, and a stabilised platform for the laser.

The heart of the survey system is a powerful laser that transmits both infrared and visible green beams from under the aircraft. The fixed infrared beam provides precise height information above the sea surface whilst the green beam produces a 240 metre wide scan recording depths to 50 metres. During survey operations the LADS aircraft flies at 500 metres altitude and surveys up to 40 square nautical miles per day. With more than seven hours endurance and flying nine days per fortnight the LADS aircraft totals over 150 sorties and 1100 hours flown annually.

The LADS Flight is based at Cairns airport in Far North Queensland, however the entire unit can be deployed for up to three months. In recent years these deployments have included Mackay, Darwin and Broome. The LADS survey team consists of seven RAN Hydrographic specialists: two officers, two senior sailors and three junior sailors. Specialist support is provided under contract by LADS Tenix Corporation and includes pilots, aircraft engineers, systems technicians and a field manager. Together, the Navy and civilian personnel form a highly specialised team ensuring the RAN remains at the forefront of surveying capability.



LCH 126 HMAS BALIKPAPAN

BALIKPAPAN CLASS HEAVY LANDING CRAFT (LCH)

Displacement:
316 tonnes

Length:
44.5 metres

Beam:
10.1 metres

Main Machinery:
2 x GM diesel engines driving two shafts

Speed:
In excess of 9 knots

Armament:
2 x .50 calibre (12.7mm) Browning machine guns

Crew:
13

BALIKPAPAN CLASS HEAVY LANDING CRAFT (LCH)

The Royal Australian Navy Heavy Landing Craft (LCH) is an extremely important vessel, capable of moving large amounts of cargo, personnel and equipment from larger ships such as the LSH (HMAS *Tobruk*) or LPAs (HMA Ships *Kanimbla* and *Manoora*), or from civilian ships to shore. A very shallow draft allows LCHs to deliver troops and equipment to areas otherwise unreachable.

Six LCHs form part of the Navy's Amphibious Force. HMAS *Brunei* commissioned into the Fleet in January 1973 while HMAS *Balikpapan*, the prototype LCH, was originally operated by Army Water Transport. She transferred to the RAN in September 1974.

The LCH is an all-welded twin-screw vessel, able to transport cargo and supplies from ships lying offshore to water terminals or across the beach. Maximum cargo load varies between 140 and 180 tonnes. A typical load of 175 tonnes gives the LCH a range of 1300 nautical miles, increasing to 2280 nautical miles for a load of 150 tonnes.

A typical Army equipment lift can comprise three battle tanks, 23 quarter-tonne trucks or 13 armoured personnel carriers.

All six LCHs are currently active, with four based in Cairns and two in Darwin.

Name	No.	Builders	Laid down	Launched	Commissioned
BALIKPAPAN	L126	Walker Ltd, Maryborough, Queensland, Australia	May 1971	15 Aug 1971	8 Dec 1971
BRUNEI	L127	Walker Ltd, Maryborough, Queensland, Australia	Jul 1971	15 Oct 1971	5 Jan 1973
LABUAN	L128	Walker Ltd, Maryborough, Queensland, Australia	Oct 1971	29 Dec 1971	9 Mar 1973
TARAKAN	L129	Walker Ltd, Maryborough, Queensland, Australia	Dec 1971	16 Mar 1972	15 Jun 1973
WEWAK	L130	Walker Ltd, Maryborough, Queensland, Australia	Mar 1972	18 May 1972	10 Aug 1973
BETANO	L133	Walker Ltd, Maryborough, Queensland, Australia	Sep 1972	5 Dec 1972	8 Feb 1974

SH-2G(A) SUPER SEASPRITE

SH-2G(A) SUPER SEASPRITE

In service:
11

Length:
16 metres (rotors spread)

Height:
4.6 metres

Width:
13.5 metres (rotors spread)

Weight:
6440 kg

Engines:
Two 1723 shp GE T-700 turboshaft

Speed:
150 knots (maximum)

Range:
540 nautical miles

Armament:
2 x Kongsberg AGM119 Mk2 Mod 7 'Penguin' anti-ship missiles

4 x Mk46 torpedoes

4 x ADI Mk11 Depth Charges

1 x MAG58
7.62mm Machine Gun

Crew:
2 (pilot and tactical officer),
5 passengers

805 SQUADRON
SH-2G(A) SUPER SEASPRITE

805 Squadron is the primary operating unit for the Navy's fleet of 11 SH-2G(A) Super Seasprite maritime attack helicopters were designed and manufactured for the Royal Australian Navy by Kaman Aerospace of Connecticut, USA.

The SH-2G(A) provides the primary anti-surface weapon system for the ANZAC Class frigates with up to six aircraft deployed to sea at any one time. They are equipped with a sophisticated imaging radar, an infra-red camera and a state of the art electronic surveillance suite. These are all driven through an advanced sensor fusion software system that presents the key tactical information in clear and unambiguous formats on four large colour cockpit displays. Armed with up to two AGM-119 Penguin anti-ship missiles, the SH-2G(A) is a formidable warfare system.

Operating the SH-2G(A) continues 805 Squadron's rich tradition of fielding attack aircraft at sea.

Originally formed as one of the first two RAN Air Squadrons in 1948, 805 Squadron flew Sea Fury fighter/bombers from the aircraft carrier HMAS *Sydney* until 1958. The Squadron then operated the Sea Venom all-weather attack fighter between 1958 and 1963 and the A-4G Skyhawk fighter/bomber between 1968 and 1982 from the aircraft carrier HMAS *Melbourne*. 805 Squadron was commissioned for the fourth time in February 2001 to operate the SH-2G(A).

Embarked aircraft undertake the following roles at sea:

- Surface Surveillance
- Surface Attack
- Anti-Submarine Weapons Carrier
- Visit, Board, Search and Seize Operations
- Naval Gunfire Support Missions
- Search and Rescue Operations
- Utility (winching and load lifting) Operations

*The operational future of the SH-2G(A) Super Seasprite helicopters is subject to review by the Government at the time of printing.

S-70B-2 SEAHAWK

S-70B-2 SEAHAWK

In service:
16

Length:
19.8 metres (rotors spread)

Height:
5.2 metres

Width:
16.4 metres (rotors spread)

Weight:
9,947kg

Engines:
2 T700-GE-401C front drive turboshaft delivering up to 1940 SHP

Speed:
180 knots (maximum)

Range:
600 nautical miles

Armament:
2 x MK 46 torpedoes and
1 x 7.62mm MAG 58 Machine Gun

Crew:
3 (pilot, tactical coordinator and sensor operator)

816 SQUADRON
S-70B-2 SEAHAWK

816 Squadron operates 16 Sikorsky S-70B-2 Seahawk helicopters.
The primary role of the Seahawk is to embark in the Navy's frigates and provide anti-submarine warfare and anti-surface surveillance.
With its unique sensor suite and integrated weapons systems, the Seahawk extends the combat radius of the ship by finding, localising and attacking where appropriate, surface or submarine targets either independently or in conjunction with other forces.
A typical Seahawk mission involves up to four hours of low-level operations over the sea, by day or night in all weather, often recovering to a ship's deck that pitches and rolls dramatically in heavy seas and is often wet with spray.

The Seahawk carries a highly capable navigation, communication and sensor suite making it a formidable helicopter in anti-submarine and anti-surface warfare. The sensors include: the Super Searcher radar, magnetic anomaly detector, sonics processing for both active and passive sonobuoys, forward-looking infra-red (FLIR) and electronic support measures. The Seahawk's main weapon is the MK 46 torpedo and it can also be fitted with a 7.62 mm door mounted general purpose machine gun.

In addition to the Seahawk's primary roles, its comprehensive sensors and excellent performance make it an ideal helicopter for performing a number of secondary roles including: search and rescue, troop lift and tactical insertion, utility operations (winching and external load lift) and fire bombing.

817 SQUADRON WESTLAND SEA KING

817 SQUADRON WESTLAND SEA KING

In service:
6

Length:
28.63 metres (rotors spread)

Height:
5.13 metres

Width:
24.42 metres (rotors spread)

Weight:
9525kg

Engines:
2 Rolls Royce Gnome H1400-1 gas turbines

Speed:
100 knots (maximum)

Range:
630 nautical miles

Armament:
2 Mk 46 torpedoes or two Mk 11 depth charges

1 door mounted 7.62mm MAG 58 machine gun

Crew:
4 (2 pilots, 1 tactical coordinator/navigator and 1 aircrewman), 23 troops

817 SQUADRON WESTLAND SEA KING

817 Squadron, part of the Royal Australian Navy's (RAN) Aviation Force Element Group, is based at the RAN Air Station, Nowra, NSW. The Squadron has been serving the Australian public since it commissioned on 25 April 1950. From the Squadron's earliest days it has been sent overseas to protect Australia's interests by supporting Australian Defence Force (ADF) operations. The Squadron's first experience was being sent to Korea in 1950 shortly after the Squadron commissioned. 817 Squadron has continued that proud tradition and has battle honours from Korea and Vietnam.

817 Squadron's job is to move people and provisions between ships and from ships to the shore, conduct search and rescue day and night in all weather conditions, detect and report hostile shipping, deliver torpedoes and depth charges and support the Army when it moves from ships to the shore. The Sea King is a Sikorsky designed helicopter, produced under licence by the British aircraft manufacturer KGN Westland Helicopters. The aircraft entered service with 817 Squadron on 2 February 1976.

The Sea King can operate from the supply ship HMAS *Success*, the heavy landing ship HMAS *Tobruk* and the amphibious landing ships HMAS *Manoora* and *Kanimbla*. The introduction of the amphibious ships saw 817 Squadron and the Sea King's tasks grow in supporting ADF operations from ships to the shore. The aircraft was heavily involved in East Timor.

In more recent times, 817 Squadron has deployed Sea King helicopters onboard RAN ships as part of Defence's contribution to United Nations missions to Somalia in 1993, Bougainville in 1995 and 1997, East Timor in 1999, the Solomon Islands 2000 - 2003 and the Persian Gulf for the war in Iraq in 2003. Recently 817 Squadron has provided substantial support to the people of Aceh, Indonesia after the devastating Boxing Day 2004 tsunami. The Squadron is also regularly called upon to directly support the Australian community. Recent examples of disaster relief and search and rescue (SAR) support are the Sydney's bush fires in 1993-94 and 2001-02 and the Sydney to Hobart Yacht Race rescues in 1998.

The aircraft is a large and very versatile helicopter. With its ability to pick up loads heavier than a Land Rover, the aircraft is the workhorse of the RAN's fleet. Powered by two Rolls Royce Gnome H1400-1 jet engines each producing a maximum of 1650 shaft horsepower, the Sea King is crewed by two pilots, one observer (tactical coordinator/ navigator) and one aircrewman.

AS 350BA SQUIRREL

AS 350BA SQUIRREL

In service:
12

Length:
12.99 metres (rotors spread)

Height:
3.5 metres

Width:
10.69 metres (rotors spread)

Weight:
2,100kg

Engines:
Aerospatiale Trubomeca Arriel 1B

Speed:
155 knots (maximum)

Range:
390 nautical miles

Crew:
2 to 4

723 SQUADRON AS 350BA SQUIRREL

723 Squadron currently operates twelve AS 350BA Squirrel helicopters, which were purchased in 1982 to provide an interim aviation capability for the Royal Australian Navy's Guided Missile Frigates. 723 Squadron Squirrels served with all helicopter capable RAN ships during the 1991 Gulf War. The aircraft, fitted with updated avionics and a door-mounted machine gun, were used for shipping surveillance, top cover for merchant ship boardings, mine searches and light logistics support.

The Squirrels were upgraded to AS 350BA models in 1995 providing capability and performance improvements. Replaced by the more capable S-70B-2 Seahawk aboard the frigates in 1997, the Squirrel ceased dedicated embarked operations in 1997. However, their services were retained in 723 Squadron at the Naval Air Station (NAS) Nowra to conduct the new role of lead in helicopter training, where pilots are prepared for the rigours of operational flying training. During September 1999 an AS 350BA was again embarked at sea, this time in HMAS *Anzac* as part of the Navy's contingent for the East Timor crisis.

Today, the Squadron's primary focus is on training. This includes the conversion of all RAN pilots to rotary wing flying, preparation of pilots for operational flying training and flying observers and aircrewmen for their basic utility training. The aircraft also provides training support for ship's flight deck teams. Squirrel helicopters can be embarked in hydrographic ships as operations dictate.

The Squadron has also recently developed a helicopter aerobatic pairs display team which participates in all major airshows and local public events.

CLEARANCE DIVING TEAMS

CLEARANCE DIVING TEAMS

The Royal Australian Navy (RAN) established its Clearance Diving Branch in 1951 and adopted the motto: UNITED and UNDAUNTED. The introduction of the Clearance Diving Breathing Apparatus (CDBA) in 1955 marked the true beginning of the clearance diver and the start of an era for the new branch.

Since then the RAN Clearance Diving Branch has kept up with world diving technology. The equipment used is state of the art and their techniques are regarded as world leading.

The RAN has two operational Australian Clearance Diving Teams (AUSCDTs) which incorporate local Australian Naval Reserve (ANR) divers. AUSCDT ONE is based at HMAS *Waterhen* in Sydney and AUSCDT FOUR is based at HMAS *Stirling* in Western Australia.

The AUSCDTs are under the operational command of the Maritime Commander Australia. Administrative control is delegated to Commander Australian Navy Mine Warfare and Clearance Diving Group (COMAUSNAVMCDGRP).

AUSCDTs ONE and FOUR have an identical structure that is organised into four Task Elements capable of deploying separately or in combination with the other elements.

AUSCDT HEADQUARTERS (AUSCDT HQ) ELEMENT

The AUSCDT HQ comprises Command, Communications, Support, Logistics and Maintenance personnel. Depending upon the nature of the deployment or operation, AUSCDT HQ will consist of approximately ten personnel and can be staged ashore or from a suitable surface platform.

MINE COUNTER MEASURES (MCM) ELEMENT

MCM Operations include:

- location and disposal of sea mines in shallow waters;
- rendering safe and recovering enemy mines;
- the search for and disposal of ordnance below the high water mark; and
- clearance of surface ordnance in port or on naval facilities.

MARITIME TACTICAL OPERATIONS (MTO)

The MTO element undertake very shallow water mine countermeasure missions including:

- clandestine Hydrographic Survey of beaches intended for amphibious landings;
- covert clearance or demolition of sea/land mines or obstacles; and
- stealth placement of charges, demolitions for the purpose of diversion or demonstration.

UNDERWATER BATTLE DAMAGE REPAIR (UBDR)

UBDR Element's wartime role is to effect temporary underwater repairs to Fleet units utilising patching, plugging, and a limited underwater cutting and welding capability. UBDR Elements train for their wartime role by performing Fleet support tasks that include underwater fitting, stabiliser and propeller maintenance/replacement and a limited salvage capability.

EXPLOSIVE ORDNANCE DISPOSAL (EOD)

The EOD element renders safe and disposes of all explosive ordnance including Improvised Explosive Devices, a core skill across all AUSCDT Elements.

STS YOUNG ENDEAVOUR

STS *YOUNG ENDEAVOUR*

Displacement:
239 tonnes

Length:
44 metres (overall)

Length on deck 35 metres

Beam:
7.8 metres

Rig:
Brigantine

Total sail area:
740.6 square metres

Machinery:
2 x 215 h.p turbo-charged diesel engines, twin fixed pitch 0.8m diameter propellers

Speed:
Under sail 14 knots maximum

Under power 10 knots maximum

Crew:
9 RAN members and 24 trainees

SAIL TRAINING SHIP YOUNG ENDEAVOUR

STS Young Endeavour is an impressive 44 metre long tall ship purpose-built for sail training, with modern technology and world-standard safety and navigation equipment.

Young Endeavour is fully capable of sailing any ocean on earth and staffed by an expert Navy crew.

The *Young Endeavour* Youth Scheme, funded by the Commonwealth Government, manages the program with the operational support of the Royal Australian Navy.

The brigantine *Young Endeavour* was the United Kingdom's Bicentennial gift to Australia, accepted by the Prime Minister of Australia on 25 January 1988. Operated by the Royal Australian Navy on behalf of the *Young Endeavour* Youth Scheme, the ship has a Navy crew of nine who conduct the training program and who are responsible for the safety and efficiency of operations.

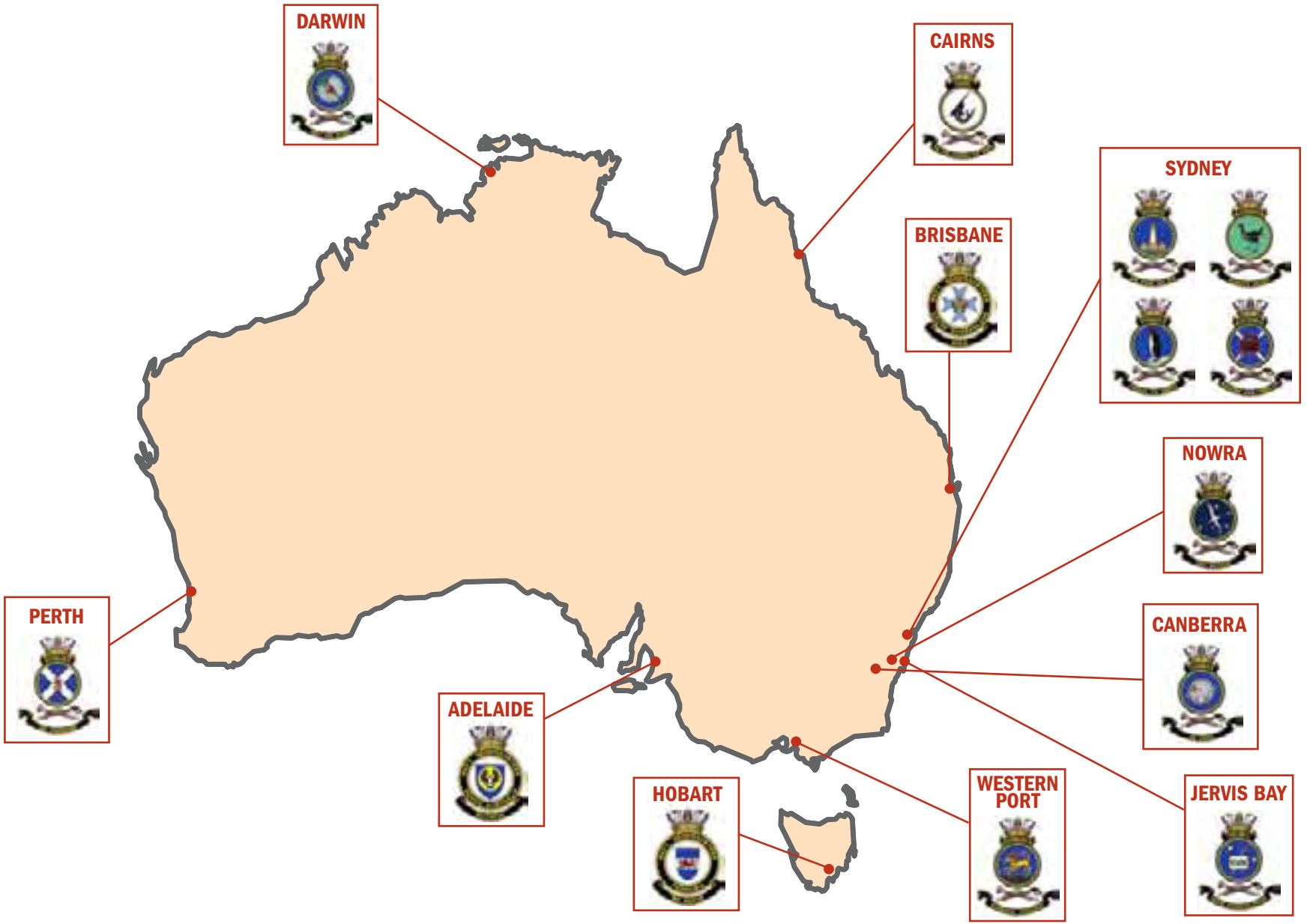
Voyages on *Young Endeavour* are open to young men and women between the ages of 16 and 23. Many young Australians have already experienced this unique and rewarding challenge. The brigantine conducts an average of 20 sailing training voyages annually.

Designed specifically for sail training by British naval architect and yacht designer Colin Mudie, *Young Endeavour* has a fully welded steel hull with plywood decks covered in teak. With a cut-away external ballast keel and a separate skeg mounted rudder, the ship has a yacht-like form underwater. Her aluminium masts are more than 30 metres high and can carry a total sail area of 707.1 square metres or 7,547 square feet, giving a maximum speed under sail of 14 knots.

Name	Builder	Launched	Commissioned
YOUNG ENDEAVOUR	Brooke Yachts, Lowestoft, UK	2 Jun 1987	25 Jan 1988

www.youngendeavour.gov.au

ESTABLISHMENTS



SHORE ESTABLISHMENTS

HMAS *Albatross*

HMAS *Albatross* was commissioned on 31 August 1948, and is the Royal Australian Navy's only Air Station. There are over 1600 personnel at the base, from a mixture of Service, Defence civilian, and Defence industry groups. The primary role of HMAS *Albatross* is to provide an operational airfield (Naval Air Station, Nowra) for use by various Australian Defence Force elements. The base also provides administrative, logistic and operational support to Squadrons and other lodger units.

HMAS *Albatross* is home to Navy's four Air Squadrons which provide aircraft and air support to the fleet. The Squadrons and the aircraft they operate are:

- 723 Squadron (AS 350BA Squirrel helicopters);
- 816 Squadron (S-70B-2 Seahawk helicopters);
- 817 Squadron (SK50 Westland Sea King helicopters); and
- 805 Squadron (SH2G(A) Super Seasprite helicopters).

HMAS *Cairns*

HMAS *Cairns*, commissioned in 1974, provides operational, administrative and logistics support (including maintenance and training) to homeported ships and lodger units, and to visiting ships. With a responsibility extending from Rockhampton to Thursday Island, HMAS *Cairns* supports 800 naval and civilian personnel. HMAS *Cairns* provides support to:

- FREMANTLE Class Patrol Boats;
- Survey Motor Launches;
- Heavy Landing Craft;
- Hydrographic Survey Ships; and
- ARMIDALE Class Patrol Boats (when commissioned).

HMAS *Cairns* also provides refit support for minor Navy vessels and PACIFIC Class Patrol Boats from neighbouring Pacific Island nations when required.

HMAS *Cerberus*

Flinders Naval Depot was established in 1911 and commissioned as HMAS *Cerberus* ten years later. HMAS *Cerberus* is Navy's foremost and largest training establishment and is home of the Recruit School, where sailors first make contact with life in the Navy.

The primary role of HMAS *Cerberus* since inception has been the training of Navy personnel, however, with the establishment of four tri-service schools over the last 13 years, this role has been extended to the delivery of training to personnel from Army and Air Force. Training is provided for about 6000 personnel annually, averaging 800 trainees onboard at any one time. There are six training organisations/faculties located within the establishment:

- Engineering Faculty;
- Supply and Health Faculty (including ADF School of Catering and ADFPT School);
- Gunnery (including West Head Gunnery Range), Seamanship and Survivability Faculty;
- RAN Recruit School;
- Defence Force School of Signals - Maritime Communications Information Systems Wing; and
- Training Services Faculty.

HMAS *Coonawarra*

Darwin is a strategically important Navy port - a gateway to our northern neighbours and a key location for mounting operations across Australia's northern approaches. Darwin plays host to a range of major RAN and multi-national maritime exercises and operations involving around 100 Australian and foreign major warships visiting the region each year.

HMAS *Coonawarra* supports visiting ships and provides port facilities for Navy Minor War Vessels (MWV) undertaking patrol and amphibious activities in the North and Northwest of Australia. This includes berthing, docking, maintenance and cyclone protection to support these vessels.

Navy has nearly 600 uniformed personnel in Darwin, who mostly either function within, or are supported by, HMAS *Coonawarra*. HMAS *Coonawarra* is a key operational, logistic and maintenance support base and will be the homeport for 10 of the new ARMIDALE Class Patrol Boats.

HMAS *Coonawarra* currently provides support to:

- FREMANTLE Class Patrol Boats;
- ARMIDALE Class Patrol Boats; and
- Landing Craft Heavy vessels.

HMAS *Creswell*

A site of heritage significance resulting from 90 years of Navy presence, HMAS *Creswell* is located on the south-western shores of Jervis Bay in the Jervis Bay Territory, 180 kilometres south of Sydney. In addition to its major training role, the base operates as a major Fleet Support Base for ships operating in the nearby East Australia Exercise Area or utilising the Beecroft Weapons Range.

The Royal Australian Naval College forms a major part of HMAS *Creswell* where all Naval Officers undertake initial training. Key functions of HMAS *Creswell* are to:

- act as the RAN Training Authority for initial entry training and leadership and management training;
- conduct initial entry training for officers of the RAN, RAN Reserves and some foreign navies;
- conduct leadership, management and personal development training for RAN Junior Officers, Senior and Junior Sailors and foreign Officers; and
- provide administrative support to the RAN School of Survivability and Ships Safety.

HMAS *Harman*

HMAS *Harman's* primary function is to support Navy Command elements in the Canberra region, plus several Tri-Service, Joint and single Service lodger units located in the Base. HMAS *Harman* provides administration and support to personnel in overseas positions as well as all personnel in the Canberra area. This includes leave and movements, weapons and fitness training and support to Navy divisional staff.

HMAS *Harman* is also home to a Navy Communications facility which coordinates Naval Communications within Australia and around the world.

SHORE ESTABLISHMENTS

HMAS *Kuttabul*/Fleet Base East

HMAS *Kuttabul* was commissioned on 1 January 1943 and essentially provides administrative and other support to the adjoining Fleet Base and lodger units located on Garden Island, including ships undergoing refit. RAN vessels homeported at Fleet Base East are:

- ADELAIDE Class guided missile frigates;
- ANZAC Class frigates;
- Amphibious Ships HMAS *Manoora, Kanimbla* and *Tobruk*; and
- HMAS *Success* (underway replenishment ship).

As the largest Naval Establishment in the Sydney area, HMAS *Kuttabul* administers several other properties external to the precinct, including Chowder Bay Oil Fuel Installation and various accommodation complexes. The base also provides support to other Defence elements in the Sydney area, including:

- Headquarters Joint Operations Command and Australian Theatre Joint Intelligence Centre;
- Maritime Headquarters;
- Navy Health Centre and Navy Psychology;
- Naval Investigative Service;
- National Port Services Organisation;
- Surface Combatant FEG, Amphibious and Afloat Support FEG;
- RAN Test and Evaluation and Acceptance Authority;
- Fleet Intermediate Maintenance Authority;
- Fleet Information Systems Support Organisation;
- Navy Personnel and Training Centre East;
- Leadership and Management School;
- Combat Systems Maintenance School; and
- Directorate of Oceanography and Meteorology.

HMAS *Penguin*

HMAS *Penguin* is a compact establishment situated in the suburb of Balmoral on Middle Head in Sydney Harbour, and provides accommodation and other support to the following functions:

- Balmoral Naval Hospital;
- Medical Training School;
- Submarine and Underwater Medicine Unit;
- Diving School;
- Hydrographic School;
- Sydney Area Health Service; and
- Navy Reserve Cadets in New South Wales.

HMAS *Penguin* remains the Navy's main hospital and medical facility, with a number of personnel designated as standby for deployment to provide afloat medical support within Primary Care Reception Facilities onboard HMA Ships *Kanimbla* and *Manoora*.

HMAS *Stirling*/Fleet Base West

HMAS *Stirling* is located on Garden Island, Western Australia, some 45 kilometres by road south of Fremantle. The facility was originally designed as a forward operating base to support surface combatant, submarine, afloat support, marine science and patrol boat operations. In the mid 1980s the concept progressively expanded with decisions to permanently base major fleet units in the west. Ultimately, Government decided in 1987 that half the RAN's major surface fleet and all submarines would be based in the west.

Now known as Fleet Base West, HMAS *Stirling* is homeport to a range of RAN ships and support craft, including:

- ADELAIDE Class guided missile frigates;
- ANZAC Class frigates;
- Collins Class Submarines;
- HMAS *Westralia* (underway replenishment ship); and
- Clearance Diving Team 4.

A detachment of Super Seasprite helicopters will also be located at HMAS *Stirling*'s Helicopter Support facility to support operations from WA-based ships. The base also provides support for visiting naval and foreign warships, including nuclear powered vessels.

HMAS *Waterhen*

HMAS *Waterhen* is Navy's lead establishment for Mine Warfare and home to the Mine Warfare and Clearance Diving Group, comprising some of the most advanced Mine Countermeasure equipment and technology. HMAS *Waterhen* provides operational, maintenance, training and administrative support to homeported ships and lodger units including:

- Commander Australian Minewarfare and Clearance Diving Group;
- Huon Class Minehunters;
- Auxiliary Minesweeping vessels and various support craft;
- Australian Clearance Diving Team 1;
- Mine Warfare School;
- Mine Warfare Task Force; and
- MCD Sustainment Management Office.

HMAS *Watson*

HMAS *Watson* is Navy's principal warfare and navigation training establishment, and is home to the Training Authority - Maritime Warfare. The base provides a wide range of specialist courses for Principal Warfare Officers through to Combat System Operator training. HMAS *Watson* also provides tactical training for ship's command teams and bridge staff in a suite of sophisticated training simulators.

HMAS *Watson* hosts the following functions:

- Training Authority-Maritime Warfare;
- Principal Warfare Officer Faculty;
- Combat Systems Faculty;
- Navigation and Maritime Trade Faculty;
- Tactical training Faculty;
- Commanding Officer/Executive Officer Designate Faculty; and
- Bridge Training Faculty.

SHORE ESTABLISHMENTS

Navy Headquarters - South Australia

Navy Headquarters - South Australia provides operational, administrative and logistic support for naval activities in South Australia. This includes support for lodger units, RAN and allied warships, naval aircraft and other naval elements visiting South Australia, including the provision of personnel services for all permanent and reserve Navy personnel and their families. Its role also includes representing Navy in the local community and provides support to various RAN Reserve elements including Diving Team Nine and the South Australian Detachment of the Royal Australian Navy Band.

Navy Headquarters - South Queensland

The Royal Australian Navy (RAN) maintains a significant presence in South Queensland through its Navy Headquarters situated at Bulimba on the Brisbane River.

Navy Headquarters - South Queensland (NHQ-SQ) is formally responsible for the coordination and administration of all RAN activity in Queensland south of the Tropic of Capricorn (near Rockhampton) including the organisation of ship visits by Royal Australian Navy and foreign naval vessels to Brisbane, Gladstone and Southport. NHQ-SQ also hosts visiting Minor War Vessels at the Navy's wharf at Bulimba including FREMANTLE Class Patrol Boats, Heavy Landing Craft (LCH's), and Coastal Minehunters.

NHQ-SQ includes the highly respected Queensland detachment of the Royal Australian Navy Band, Australian Naval Reserve Dive Team Eight, and Australian Naval Cadet Headquarters as lodgers. It administers a large number of Navy Reserve personnel who work throughout the Fleet during operational taskings. NHQ-SQ also provides authority and support to the 19 Naval Cadet Units throughout Queensland.

Navy Headquarters - Tasmania

The functions of Navy Headquarters - Tasmania (NHQ-TAS) are to provide operational, administrative and logistic support for naval activities in Tasmania. These include support for NHQ lodger units, support for Royal Australian Navy and allied warships, naval aircraft and other naval elements visiting Tasmania, and provision of personnel services for all permanent and reserve Navy personnel and their families. NHQ-TAS also acts as the Local Naval Authority, provides administrative support for Naval Reserve Cadets and represents the Chief of Navy and the RAN in Tasmania.