

# SEMAPHORE

NEWSLETTER OF THE SEA POWER CENTRE - AUSTRALIA

ISSUE 4, FEBRUARY 2006

## WELCOME TO THE ARMIDALE CLASS

Patrol boats have provided an important capability to Australia since 1967, when the first *Attack* class patrol boat was accepted into naval service. The *Attack* class was subsequently replaced with the *Fremantle* class patrol boats (FCPB) from 1980; which are in turn now being replaced by the *Armidale* class patrol boats (ACPB).<sup>1</sup>

The *Attack* and *Fremantle* classes both made a significant contribution to Australia's national defence, particularly in border protection through their surveillance, patrol and response capabilities. However, the larger, more capable ACPB will provide an even higher degree of border protection capability because of their superior seakeeping, range and endurance, and state-of-the-art surveillance system.

The replacement for the FCPB had its genesis in 1993 when an initial proposal for a replacement capability took the form of a collaborative program with Malaysia (the Offshore Patrol Combatant/Joint Patrol Vessel). When the decision was subsequently made not to pursue this option, Government approved a Life of Type Extension for the FCPB. In 1999, due to the high ongoing maintenance costs of the FCPB compared with developing a new design, it was resolved to commence a Replacement Patrol Boat (RPB) program, known as Project SEA 1444.

Keen to explore innovation in financing the RPB program, the Minister for Defence agreed to the development of a Private Financing Initiative (PFI) appropriate for Project SEA 1444. Consequently, a team was formed to examine the benefits of a PFI as against a more traditional acquisition. Based on their main finding that private financing offered a potential advantage over direct acquisition, the Government agreed to test the market on the basis of a PFI strategy. Interested parties were required to bid on both a direct capital purchase and on a PFI basis. After due process the Government decided against private financing for the RPB capability, because of uncertainty as to whether the required capability could be provided on a value for money basis.

Instead of the traditional Defence process of specifying detailed requirements, such as the number of vessels of a particular weight, length and construction, the ACPB tendering strategy followed a 'performance based' model. Thus, the tender sought a patrol boat system to provide 3000 days of operational availability of specified performance, with the capacity to surge to 3600 days to meet operational contingencies in any one year. Unlike previous patrol boat programs the emphasis was on a capability at sea to meet operational requirements, not on the number of boats purchased. It was left to the tenderers to meet the 3000 sea day requirement with a reliable patrol boat force rather than a predetermined number of vessels.

The tender detailed a range of specific performance requirements, including the ability for the platform to conduct surveillance and response boarding operations at the top of Sea State 4 (wave heights of 2.5m) and to maintain surveillance to the top of Sea State 5 (wave heights of 4m). Other requirements included a significantly longer range and endurance than the FCPB: a 42 day mission period; a doubling of the number of seaboats; and a 25mm cannon capability.

The overall tendering strategy for the ACPB linked through-life support costs with the purchase of the platforms. Thus the Commonwealth divested itself of the need to maintain and support this new capability by requiring the winning tenderer to also provide the logistic support package for the 15-year life of each patrol boat.



Figure 1: HMAS Armidale, HMAS Townsville and the former Attack class patrol boat Advance  
(Mr Andrew Mackinnon)

On 17 December 2003 a contract was awarded to Defence Maritime Services Pty Ltd for the *Armidale* class patrol boat with construction undertaken by Austal Ships at its Henderson yard near Fremantle, Western Australia. The \$553m contract was for the design, construction and in service support of 12 patrol boats. During the October 2004 Federal election, the Government announced that two additional patrol boats would be purchased to conduct augmented patrols off the North-West Shelf.<sup>2</sup>

Following the naming convention that RAN ships emphasise the links between the Navy and the wider Australian community, boats of the *Armidale* class are named after Australian cities and towns with close links to our naval heritage. The first of class, HMAS *Armidale* is named after the original *Armidale*, a *Bathurst* class corvette, which served with distinction in World War II. The other 11 boats are named (alphabetically), *Albany*, *Ararat*, *Bathurst*, *Broome*, *Bundaberg*, *Childers*, *Launceston*, *Larrakia*, *Maitland*, *Pirie* and *Wollongong*, while the names of the two additional patrol boats have not yet been announced.



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The ACPB have a 25% increase in range compared to the FCPB (3000nm at a cruise speed of 12 knots), which offers greater tasking flexibility as the ACPB will have the ability to remain on task for longer periods in more areas than previous patrol boats. Consequently, the ACPB can undertake sustained operations both in the northern waters and those as far south as 50 degrees latitude. The ACPB will be able to maintain operations in Sea State 5 to 1000nm offshore, be deployed for up to 42 days and will also be capable of surviving cyclonic conditions up to Sea State 9.

	<b>Attack</b>	<b>Fremantle</b>	<b>Armidale</b>
<b>Length (m)</b>	32.76	42	56.8
<b>Beam (m)</b>	6.2	7.15	9.5
<b>Draught (m)</b>	1.9	1.8	2.25
<b>Weight (t)</b>	146	230	270
<b>Speed (kt)</b>	24	28	25

Table 1: comparison of patrol boat classes

Increased range and seakeeping ability will enable the ACPB to conduct extended patrols further into Australia's exclusive economic zone (EEZ) than was possible with earlier patrol boats. As well as continuing with traditional tasking in the EEZ, the South West Pacific and into South East Asia, the ACPB will provide a sustained patrol and response capability around Christmas and Cocos Islands.

The ACPB are built to combined commercial and naval standards, has an aluminium hull, and is fitted with state-of-the-art systems optimised for its surveillance, patrol and response tasks. Propulsion is provided by two MTU 16V M70 diesel engines, giving the ship an operating speed of at least 25 knots and the capacity to conduct all surveillance and response tasking (including all boarding related evolutions) to the top of Sea State 4. Its two diesel jet propelled 7.2m Rigid Hull Inflatable Boats (RHIB), rapidly launched and recovered using the Vest davit system, essentially double the boarding and response capability of the FCPB. The fact that the RHIB are over-the-horizon capable, with stand-alone communications and safety systems, is a significant force multiplier for the ACPB.

The ACPB have an onboard surveillance and communications suite that underpins its patrol and response capability. This system comprises twin radars, a radar warning system (PRISM III), and an electro-optical detection system (TOPLITE) for short-range detection. The ACPB are also fitted with a fully calibrated and integrated Direction Finding system (WARRLOCK). A state of the art communications system complements the onboard organic sensors by providing both strategic and tactical communications capabilities in the HF, VHF and UHF bands. Utilising networked satellites to gain access to the wider Defence common operating picture, the crew of an ACPB will have greater situational awareness than the crew of a FCPB.

In terms of armament, the ACPB are equipped with a Raphael Typhoon 25mm automated cannon, made in Australia by General Dynamics Land Systems in Adelaide, and two 12.7mm machine guns. The cannon has a rate of fire of 200 rounds per minute, and the weapon is interfaced with the Electro Optics Surveillance

System and is controlled from the bridge. The cannon is the same as that fitted to the Australian Army's Bushmaster armoured personnel carriers, offering value for money maintenance benefits to the Australian Defence Force.

The ACPB will be multi-crewed with 21 crews each of 21 personnel rotating through 14 hulls. The crews will be divided into four Divisions with six crews each in three Divisions (two Red, White and Blue crews) and three crews in the 4<sup>th</sup> Division (one Red, White and Blue crew). Three of the Divisions will be located in Darwin and one in Cairns, to complement the homeporting of ten boats in Darwin and four in Cairns.<sup>3</sup> Crews will remain together and will not be rotated through Divisions other than the one to which they are assigned. A single crew will man each of the first three ACPB until the fourth vessel is commissioned in June 2006. Six crews will then each be rotated through the four hulls.

At any given time, two of the crews in a Division will not be attached to an ACPB hull; during their non-operational time, crew will either be on leave, undergoing training or standing by to act as operational relief for another crew. In a mature state, the Patrol Boat Force Element Group will have between one and two crews changing out each week. It is envisaged that the multi-crewing concept will facilitate both maximum use of the ACPB in line with the 3000 sea day (plus surge) capability, while providing for adequate crew rest and balanced work/life commitments. In essence the multi-crewing model provides a 21-ship capability using 14 hulls.

Crew accommodation consists of modern two, three and four berth ensuite cabins - substantially better than the mess-deck style of the FCPB. The ACPB also have the capacity to embark an additional 20 personnel for specific missions, which significantly increases the flexibility and range of tasks that may be undertaken.

Construction of *Armidale* commenced in April 2004, she was launched on 5 January 2005, arriving later in Darwin on 10 May after completing most of her trials, and was commissioned into the RAN on 24 June 2005. After completing her Mission Readiness Evaluation on 16 October 2005, *Armidale* commenced patrolling and protecting Australia's coastline. HMA Ships *Larrakia* and *Bathurst* were commissioned on 10 February 2006, and the last of the 14 ACPB is scheduled for delivery to the RAN at the end of 2007.

The ACPB represent a significant improvement to the RAN's patrol boat capability and will greatly improve conduct of the range of constabulary tasks necessary to protect Australia's maritime interests, particularly its natural resources and energy infrastructure.

<sup>1</sup> See 'Farewell to the Fremantle Class', *Semaphore No. 17*, October 2005; and SEA 1444 - ARMIDALE CLASS PATROL BOAT, Internet <defence.gov.au/dmo/msd/sea1444/sea1444.cfm> (22 February 2006).

<sup>2</sup> *Securing Australia's North West Shelf*, The Howard Government Election 2004 Policy, 16 September 2004. Internet <liberal.org.au/2004\_policy/Securing\_Australias\_North\_West\_Shelf\_Policy.pdf> (21 November 2005).

<sup>3</sup> *Armidale, Larrakia, Bathurst, Albany, Pirie, Maitland, Ararat, Broome* and the two additional patrol boats will be based in Darwin; and *Bundaberg, Wollongong, Childers* and *Launceston* will be based in Cairns.

