Patrol Boat Procurement Learnings

Neil James looks at half a century of capability development lessons from Australia's patrol boat acquisition decisions.

EVERY TWO YEARS a major maritime industry exhibition with associated conferences is held in Sydney.

One of these public conferences is conducted by the Royal Australian Navy (RAN) as part of its Seapower series.

As the venue for the 2006 event was the Sydney Exhibition Centre at Darling Harbour, the Navy moored three patrol boats, berthed outboard of each other, very close to the main entrance.

The smallest and oldest vessel was an Attack-class boat from the 1967-85 period borrowed from the next-door Australian Maritime Museum.

The next largest and middle vessel was one of the last Fremantle-class boats still in service from the 1980-2007 period.

The inboard, largest and newest vessel was an Armidale-class boat, which first entered service in 2005 and is still with us.

Viewed up close and above from the Exhibition Centre's veranda, the contrast in size and capacity between the three boats was striking. This was deliberate.

The first point the RAN was making by the comparison was that each class of boat was not only substantially bigger and more capable than its predecessor, but that it had needed to be.

ABOVE: The Royal Brunei Navy's Darussalam-class OPVs are very close to the baseline PV80 design selected by Australia. They are also prime examples of a vessel design able to accommodate growth in capability beyond simple patrol and constabulary missions, as evidenced by the 57mm main gun and canister-launched Exocet anti-ship missiles seen mounted amidships. The RAN now has the opportunity to cost-effectively evolve the Arafura-class OPV into a fleet capable of responding to a wider range of operational scenarios. *Image: Lürssen*

The second point addressed the political, financial and doctrinal arguments that had so limited the size and capability of each patrol boat class. This had actually resulted in short-sighted and self-defeating outcomes in strategic, operational and budgetary terms.

The third point being made, in terms even the most hidebound political, bureaucratic or "big-ship navy" fossil could hopefully grasp, was that the RAN was now a navy and not just a fleet.

RIGHT: HMAS Assail, one of 20 Attack-class patrol boats built for the RAN between August 1967 and November 1968. *Image: ADF*

And that offshore patrolling for longer and more sustainable periods, and more flexible capabilities for meeting lower-risk regional security tasking, were part of the full-spectrum maritime security response that Australia's modern strategic circumstances now required.

The RAN (and Customs) have operated small vessels for coastal patrolling tasks on and off since the 1920s. But until the late 1960s none were purpose-designed for the task, nor allocated or procured in the numbers needed.

The 33m Attack-class was built to meet the RAN's requirements for coastal patrol craft in Malaysian waters during the era of Confrontation with Indonesia. With the end of that conflict, the intended role of the new boats shifted to meet ever-growing maritime constabulary responsibilities in our territorial waters and resource zones, and minor regional responsibilities, after a long hiatus following World War Two.

While Bathurst-class corvettes had sporadically undertaken some of this tasking, they had mostly been scrapped by the late 1950s. A handful of small, very lightly armed, general purpose vessels had then picked up some of the slack.

The Attack-class boats were the first purpose-designed patrol boats but were barely warships. Whilst useful for constabulary tasks in peacetime, such as countering smuggling and resource poaching, during conflict their role would have mainly involved low-intensity tasking such as local security of harbours and their approaches.

As a contemporary example, they were nominally quite outgunned by the 12 Komar-class missile boats provided to Indonesia by the Soviet Union between 1961 and 1965. (In October 1967, two Egyptian Komars had achieved the first sinking of a ship by a guided missile when they sank the Israeli destroyer Eilat.)

RIGHT: A boarding party from a Fremantle-class patrol boat interdicts a suspected illegal fishing vessel in the Timor Sea on 30 October 2005. *Image: ADF*

RIGHT: The Armidale-class patrol boat HMAS Bathurst leaves Darwin Harbour in mid-2009. Intense and prolonged border protection operations in recent years have involved higher than anticipated rates of effort, a greater number of days at sea and long open ocean voyages from the all-aluminium Armidale-class, resulting in the design being pushed beyond its structural limits and shortening service life. *Image: ADF*

The 42m Fremantle-class boats were in service between 1980 and 2007. As far as then allowed, their design incorporated operational and sustainment lessons from the decade and a half of Attack-class experience.

Some one-third longer and of 60 per cent greater displacement (at 220 tonnes), but of similar draught, the Fremantles had a much bigger range and endurance than their predecessors. The communications and surveillance suites were far more capable but the armament and reliance on visual target acquisition was the same.

The failure of the proposed joint venture with Malaysia for offshore patrol vessels (OPV) in the mid 1990s hampered the replacement of the Fremantle-class.

Going it alone, the successor Armidale-class was designed to meet the capabilities then thought necessary, especially regarding required days at sea, endurance and seakeeping. This process occurred, however, during the stringent financial constraints of the latter 1990s and they were also built down to a price, not up to the full range of capabilities they might be called on to meet over their long service life.

Although more than a third longer at 57m and of one-third greater displacement, the original project for 12 vessels was ruthlessly capped at AUD$500 million (two more were funded in 2007-2008). The choice of an aluminium over steel hull was principally driven by lower construction costs, but purported in-service fuel efficiencies of 10-20 per cent also played some part.

Over the last decade or so this has backfired due to the eventual far higher operational tempo, often so far offshore, demanded by increasing border protection and other sovereignty security tasks. This stressed the aluminium hulls past their design limits and strained the reliability of propulsion systems.

One clear lesson learned, and to be remembered, is that more robust steel-hulled vessels would have cost far less over life-of-type.

Another clear lesson is that larger, more capable and more flexibly configured vessels would have resulted in both operational and financial efficiencies. And increased the circumstances under which such vessels can be used more effectively across a range of climatic and sea state conditions.

Moreover, a more capable OPV with appropriate self-protection could perform the roles that the RAN's frigates have been undertaking over the last few Middle East deployments.

The Armidale's replacement, the new 80m Arafura-class OPV, have by and large incorporated these experiences and lessons, and will enter service from 2022 onwards.

At around 80m in length and 1,700 tonnes displacement, with a range up to 4,000nm, they also incorporate a flight deck for landing and refuelling helicopters and launching and recovering unmanned aerial vehicles. Plus modular-based capability add-ons to cater for specific tasks over a much wider operational spectrum.

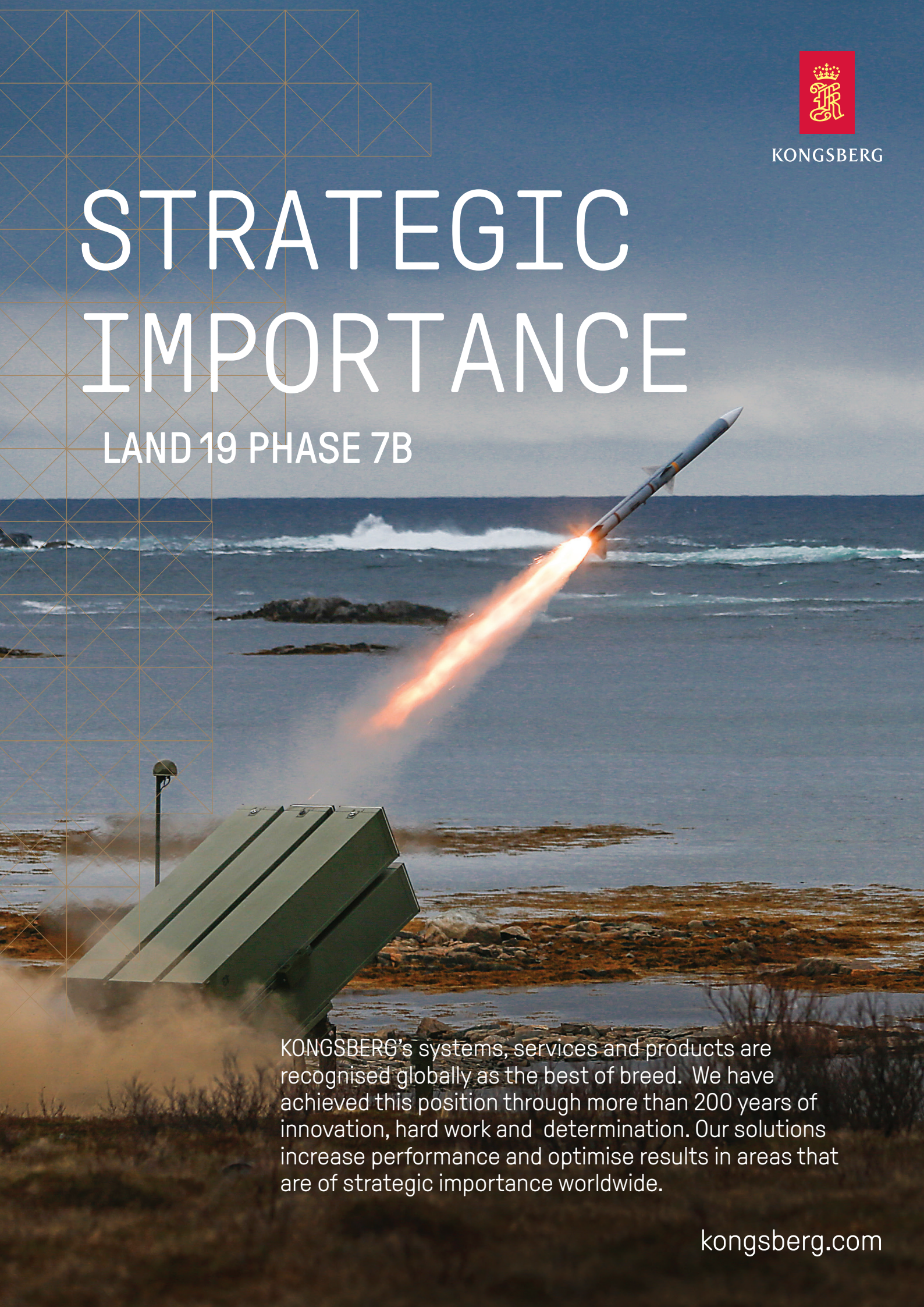
Assuming the intention is to progressively upgrade armament and systems with each subsequent batch, the Arufura-class will evolve into warships truly capable of much more than constabulary or only minor combat tasks. As an historical comparison, they will be about 70 per cent bigger than a World War II Bathurst-class corvette.

It is very early in this project's construction stage. They will cost much more to build in real terms than the Attack, Fremantle and Armidale-class boats.

But the OPV's through-life costs are likely to be comparatively lower when their increased flexibility is factored in. Just as importantly, the operational capability versus cost trade-off is much better balanced and will probably be far more efficient in terms of strategic need, operational dexterity and long-term financial investment.

The enduring lesson from Australia's patrol boat saga over half a century is that it's better to build up to a capability, not down to a cost based on a very limited concept of employment. This is the case when considering even lower-scale conflict contingencies. It is especially true when this also meets broader maritime security challenges short of war.

Neil James is executive director of the Australia Defence Association (ADA). For more information about the ADA or to become a member go to www.ada.asn.au or email austdef@bigpond.net.au **DTR**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