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**STRUGGLING FOR A SOLUTION:  
THE RAN AND THE ACQUISITION OF A  
SURFACE TO AIR MISSILE CAPABILITY**

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# STRUGGLING FOR A SOLUTION: THE RAN AND THE ACQUISITION OF A SURFACE TO AIR MISSILE CAPABILITY<sup>1</sup>

Peter Jones and James Goldrick

## Introduction

By the end of the 1950s, the Royal Australian Navy (RAN) was facing a number of conflicting demands on its limited resources. For the previous decade the RAN had concentrated on developing and then maintaining a small fixed wing carrier capability, first in what could be described as a 'light strike' role and latterly for anti-submarine warfare (ASW). The remainder of the active fleet was composed of a handful of destroyers and frigates, which were intended to provide escorts for the carrier and for merchant shipping in the protection of sea communications role. The duties of the RAN, broadly speaking, were to contribute towards the collective security arrangements in South East Asia in situations short of global war and, in the latter event, to contribute to the theatre capability for the protection of Australian and Allied shipping from the Soviet submarine forces.

These duties had evolved from a combination of strategic and financial realities. They reflected what were likely to be the principal strategic demands on maritime Australia in both peace and war, but they also reflected the limitations on capability that had resulted from the government's insistence on restraining defence expenditure in favour of national development. In particular, the theatre ASW role meant that higher levels of capability in other warfare areas, such as anti-air (AAW) and anti-surface, were simply not required because the Australian units would be expected to operate well away from such threats or under the US/UK maritime air umbrella.

This relatively comfortable situation was changing rapidly by the end of the 1950s. The capabilities of the Chinese submarine force seemed to be increasing substantially under Russian tutelage. The attitude of Indonesia was distinctly anti-western and tensions were rising with the Netherlands over the ownership of Dutch New Guinea. Indonesia was acquiring not only submarines but also modern surface combatants from the Soviet Union via

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<sup>1</sup> This is an expanded and developed version of a paper 'Buying the DDGs' by Peter Jones which first appeared in T.R. Frame, J.V.P. Goldrick & P.D. Jones (eds) *Reflections on the Royal Australian Navy*, Kangaroo Press, Kenthurst, 1991, pp. 316-29.

Poland, some of which carried heavier armament than any RAN surface unit.<sup>2</sup> Furthermore, the Indonesians were also on their way towards acquiring bombers configured for maritime strike operations from the Soviets.

The key difference between this situation and all the RAN's previous experience was that there was a very real prospect emerging that circumstances might require the fleet to operate under high threat conditions without any support from the United States Navy at all and with the possibility that the Royal Navy might be so occupied elsewhere within the archipelago as to be unable to provide cover for the RAN.<sup>3</sup>

There was little prospect of substantial support from the Royal Australian Air Force, whose bomber force was relatively small and in any case would have many calls on it for land strike operations. The fighter force simply did not possess the range to operate at any distance from the Australian mainland. To all these developments the RAN had few immediate answers. Its only substantial anti-surface capabilities were in the 4.5 inch gunned destroyers and the handful of SEA VENOM aircraft, which also had the major responsibility for anti-air defence of the fleet.

One solution would be the acquisition of a larger and more modern aircraft carrier, which could operate sufficient numbers of strike and attack aircraft to neutralise the Indonesians. But the scale of defence funding was such that this was unlikely to be a practicable proposition. Even the most optimistic assessment of the cost of a replacement for the MELBOURNE and her air group with a refurbished British vessel and new aircraft suggested that the cost would be 25% more than the RAN's entire annual budget.<sup>4</sup> This realisation with the Australian defence community generally was placing increasing pressure on the RAN's maintaining a carrier force at all, given the extent to which it demanded resources. The situation was acknowledged in the

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<sup>2</sup> 'Sino-Soviet Military Aid Programs', *US Office of Naval Intelligence (ONI) Review* vol. 14, no. 9, September 1959, p. 406.

<sup>3</sup> For the first internal defence appreciation of this situation, see the strategic paper cited by Commodore H.J. Donohue 'The Evolution of Australian Strategic Defense Thinking' Dora Laves (ed.), *Evolving Pacific Basin Strategies: the 1989 Pacific Symposium*, National Defense University, Washington DC, 1990, p. 286.

<sup>4</sup> Eric J. Grove, "'Advice and Assistance to a very independent people at a most crucial point': the British Admiralty and the Future of the RAN 1958-60" David Stevens (ed.), *Maritime Power in the Twentieth Century: the Australian Experience*, Allen & Unwin, Sydney, 1998, p. 137.

February 1957 Review of Defence which focused on the structure of the armed forces.<sup>5</sup>

Nevertheless, the global war requirements for theatre ASW had not disappeared completely and this role retained its force structure priorities. The possibilities of conflict with Indonesia did not mean that the threat of global war or the requirement to prepare for it had completely disappeared.

The RAN was therefore faced with the dilemma of creating new capabilities to deal with the surface and air threat at the same time as it attempted to sustain its existing commitments. The solution eventually adopted, much of which is outside the scope of this paper, proved practicable in the longer term because of a mix of improved funding and technological innovation. But this progress towards a satisfactory situation was not simple and even involved at one point (in December 1959) the government deciding on the outright abolition of the Fleet Air Arm in 1963. This, however, did not prove necessary and the ASW forces would be reinvigorated by the acquisition of the WESSEX helicopters and their operation from the MELBOURNE, together with the development of the IKARA ASW missile, which went to sea for trials in 1963. The anti-surface role would be met first by the acquisition of four submarines and then by the purchase of SKYHAWK attack fighters from the United States.

The SKYHAWKS would also prove to have considerable utility in the anti-air role, but at the end of the 1950s there was little hope of the continuation of a fixed wing fighter capability and more than a chance that the carrier borne aviation would end completely. This is a key point in understanding the urgency of the AAW problem for the RAN and its severity in 1959, 1960 and 1961. The fact that, by 1967, the Fleet Air Arm would not only have an excellent ASW fixed and rotary wing force, but be well on its way to achievement of a credible third generation fighter capability at the same time as practically every other arm of the fleet was modernising would have been almost outside the bounds of belief less than a decade before.

### **The AAW Challenge**

The December 1959 decision meant that the RAN was urgently required to improve the ASW and AAW capabilities of its escorts. Despite the continuing focus of the navy's roles on ASW, by far the most urgent problem

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<sup>5</sup> Cabinet Submission 513, 'Australian Defence Review – Composition of Australia's Armed Forces', February 1957.

was in anti-air warfare. Ignoring the older and largely obsolete frigates and sloops in second line service or low category reserve, the escort fleet in 1959 consisted of two new DARING class destroyers, with a third about to enter service, two older BATTLE class destroyers, one of which was about to pay off, and three Q Class ASW frigates, conversions from World War II destroyers, with a fourth in reserve. There were four of the new Type 12 ASW frigates under construction and these were expected to enter service in the early 1960s.

This was not a big force. It strained to meet the RAN's peacetime commitments and was well under strength for its intended war roles. In terms of ASW, its capacity was reasonable and likely to remain so, with the Type 12's potential being assessed as 'Good'. Only the DARING class, however, were assessed as possessing any real AAW capability and even in contemporary terms this was set at 'Fair'.

Thus, the principal thrust of the force modernisation effort for the RAN and the subject of this paper was the development of a surface to air guided weapon (SAGW) capability in the Australian surface fleet. The story of that process is of extreme interest because of the succession of important decisions made on the basis of judgements which were derived as much from personal impressions and professional intuition as they were from measured performance statistics and analysis.

Australian interest in the new weapons had progressively increased throughout the 1950s. There were even suggestions for modernising the old cruiser HOBART to carry guided weapons, but the design complications, strict limits on the budget and the obvious immaturity of the technology prevented such ideas from receiving serious consideration. Nevertheless, a watching brief was maintained, particularly on the activities of the Royal Navy (RN) and the work conducted at Woomera and in the trials ship GIRDLE NESS. Significantly, the first overt enquiries about American systems were initiated during United States Navy (USN)–RAN talks in 1958.<sup>6</sup>

It was early on realised that there were two levels of SAGW required, a short range or point defence capability and a long range missile which could strike at attacking aircraft before the latter were in a position to release their own weapons. This latter was the vital element in a surface force which might—and probably would—have to operate in the absence of a carrier or of

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<sup>6</sup> R.N. Wallace, 'The Australian Purchase of Three United States Guided Missile Destroyers: A Study of the Defense Aspect of Australian-American Relations', PhD Thesis, Fletcher School of Law and Diplomacy, September 1980, pp. 117-18.

land based air cover. The RAN early on decided that at least 50% of the surface combatants would require SAGW.<sup>7</sup> The basis for this decision is uncertain. There is no evidence that any formal analysis or modelling was undertaken and the figure probably resulted from a simple judgement by the naval staff that the specialisation of escorts should be half for anti-submarine warfare and half for anti-air warfare. The RAN made public its intentions to acquire guided weapons—and soon—early in 1959.<sup>8</sup>

There was a complication. In the wake of the decision to abolish the Fleet Air Arm, Navy Office worked hard to find alternative approaches which would justify the retention of the carrier at least in an ASW role. Helicopters fitted with dipping sonar appeared to have tremendous potential, but their operational effectiveness remained to be proven, particularly in relation to their operation from a very expensive aircraft carrier. If the MELBOURNE's retention could not be justified, then any new escorts would need to have substantial ASW capability which would probably need to include a medium range weapon and the capacity for at least one helicopter. With a gun armament as a 'given', the Australian staff requirement was therefore for a truly general-purpose escort, ambitious in itself. At the same time, the RAN was conscious of the limitations on its budget and the need to maximise the numbers in its escort force. This meant that the thinking of the naval staff was—perhaps inevitably—somewhat wishful in its desire to restrain the design selected to one that was around the 3,000 ton mark. These ideas would soon have to change.

The fundamental challenge was to find the right AAW systems and match them to the right platforms. There seems to have been little argument over the short range weapon, perhaps most probably because the British SEA CAT was a relatively cheap weapon system that could be fitted in smaller escorts and, more to the point, was not matched by anything else overseas. It would go into the Type 12s. What the other units such as the DARINGS and BATTLES should carry would have to depend upon the resolution of the issues relating to the long range system and the balance which the RAN could afford between the higher and lower capabilities.

It was the long range weapon that was to prove the greatest challenge. There were practically only two choices open to the RAN at the beginning of 1960, the British SEA SLUG or one of the new American missiles. The first problem was one of size. Given the RAN's desire for a smallish ship, the

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<sup>7</sup> Australian Naval Board Paper, 'Consequences of the Loss of Voyager and Damage to Melbourne', 15 February 1964.

<sup>8</sup> *Sydney Morning Herald*, 4 February 1959.

existing options might not do at all. However, it was also true that the technology was moving so quickly, particularly in America, that a breakthrough might come at any time and it soon appeared as though the smallest of the American systems, TARTAR, might be that breakthrough.

The next difficulty was that neither the British nor the smallest American weapon had yet entered operational service. There had been extensive firing trials for both, but the first SEA SLUG destroyer would not commission until November 1962 (the DEVONSHIRE) and the first TARTAR destroyer not until September 1960 (CHARLES F ADAMS). This was a critical factor because both systems reflected essentially new technology and there was little real expertise in their employment or understanding of their likely true capabilities and limitations in front line service.

The sort of difficulty which this represented is apparent in hindsight from the bitter experience which the United States Navy was gaining with TARTAR and the other new missile systems (the larger TERRIER and larger still TALOS) which were going to sea in large numbers in new construction between 1960 and 1962. The hype surrounding these systems was initially considerable. The United States Navy formally informed the Australian Naval Attache in 1960 that the hit probability of a single TARTAR was 85%. This figure did not specify the type of target or any other significant operational parameters. It was viewed with considerable scepticism by the Australian naval staff.<sup>9</sup>

They were quite right to be suspicious. The first Operational Evaluation planned for the CHARLES F ADAMS in 1961 had to be cut off incomplete because of 'recurring difficulties in maintenance, particularly the fire control system.'<sup>10</sup> A cynical observer recorded that the fire control radar, SPG-51 had 'set new records of unreliability'.<sup>11</sup> This was only the tip of the iceberg. The systems did not perform well in the sea environment, with electronics suffering badly from salt water ingress. The missiles proved to be vulnerable to electronic countermeasures and there was increasing evidence that the warm up time required by the vacuum tube electronics of the missiles, together with the limitations of the systems in controlling multiple missiles in the air, meant

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<sup>9</sup> D.W. Minute, 'Implications of the Acquisition of US DDGs of the *Charles F. Adams* Class for the RAN', Navy Office File 1211/207/3, 20 December 1960.

<sup>10</sup> Norman Friedman, *US Naval Weapons*, Conway Maritime Press, London, 1983, p. 154.

<sup>11</sup> Malcolm Muir, Jr, *Black Shoes and Blue Water: Surface Warfare in the United States Navy, 1945-1975*, Naval Historical Center, US Navy, Washington DC, 1996, p. 105.

that the ships' defences could be readily overwhelmed by multiple attackers. A missile officer in the guided missile frigate KING wrote eloquently of the experience:

The Navy had failed utterly to anticipate the risks and pitfalls of rushing quantities of unproved missile ships into the fleet. While components of the systems usually had been tested individually (computers, directors, fire-control radars, weapon direction systems, air-search radars, gyroscopes, switchboards, generators, telemetry, launching systems, and the missiles themselves), they had not been integrated and tested as an entity before being installed in the ships themselves....when the magnitude of the technological catastrophe ultimately became apparent, the remedy remained elusive. Meanwhile, the momentum of the shipbuilding program repeatedly incorporated unresolved defects into successive ships, until an entire generation of warships had entered the fleet with weapon systems unable to function.<sup>12</sup>

The British were not in much better a state. The development of the perhaps aptly named SEA SLUG missile had been 'expensive and protracted'<sup>13</sup>. Although the RAN had not been directly involved in the development effort, many of the firings for this weapon had taken place at Woomera and there is much evidence that the Navy was reasonably well aware of its limitations. Vice Admiral Henry Burrell, the RAN's Chief of Naval Staff (CNS), was—perhaps with the benefit of hindsight in his memoirs—uncompromising in his assessment:

It was an embarrassment to have to say to the Admiralty that our authorities were not impressed with the weapon then undergoing trials at our testing station at Woomera. I knew that I had no hope of obtaining approval to acquire 'County' class ships with the weapon fitted, nor would I have made such a recommendation.<sup>14</sup>

Despite this, not all of the concerns seem to have been directly related to the weapon's capability as such and it is notable that the Australian naval staff made few attempts at analytical comparisons between the British and American designs. Although SEA SLUG was a beam rider, primarily designed against the subsonic high flying bomber with considerable limitations against

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<sup>12</sup> Commander Thomas B. Buell, 'When the Birds Didn't Fly', *USNI Proceedings*, January 1999, vol. 125, no. 1, p. 77.

<sup>13</sup> Eric J. Grove, *Vanguard to Trident: British Naval Policy Since World War Two*, United States Naval Institute, Annapolis, Maryland, 1987, p. 204.

<sup>14</sup> Henry Burrell, *Mermaids do Exist*, Macmillan, Melbourne, 1986, pp. 254-5.

fast or manoeuvring targets, particularly at low level, such constraints also applied to several of the American missiles.<sup>15</sup> The first key problem for the RAN was one of the cost of the missile system and, equally to the point, the size and cost of the platform which could take it to sea. The British had only recently moved down from a project involving 18,000 ton cruisers to a smaller 'fleet escort'. Even this weighed in at nearly 6,000 tons displacement<sup>16</sup>, largely because of over-strict magazine arrangements which meant that the handling and stowage facilities took up much of the hull. Significantly, when it came to naval staff discussions, the British themselves were unenthusiastic about the design for Australian requirements.<sup>17</sup> This was not entirely altruistic, since the RAN's possession of large numbers of ASW escorts would meet British strategic requirements in the Far East better than a handful of more capable ships. But it also reflected some realism as to the cost implications because, at best, the RAN would have been able to afford only one or two units.

There was, however, another subtext concerning the Australian opinion of SEA SLUG. In 1960, the confirmed British program consisted only of four ships under construction or on order. There were plans for two more to be ordered under the 1961-62 programme and the intent of a further two in later years.<sup>18</sup> There were also plans for a modernised SEA SLUG II system, with improved range and low level capabilities. This would be fitted in the later ships and—so the intention went—backfitted to the original quartet.<sup>19</sup> But that retrofit never occurred. The bulk of British effort was soon devoted to a much more capable and wholly different missile system, SEA DART, which went on to arm the next generation of AAW escorts. While SEA DART obviously benefited considerably from the experience gained with SEA SLUG, it was in conception and construction a wholly different system, rather than an evolutionary development. SEA DART would thus require either new ships or the complete reconstruction of existing units to carry it. This was a fundamental problem for the Australian naval staff.

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<sup>15</sup> Norman Friedman, *The Naval Institute Guide to World Naval Weapon Systems 1991/92*, United States Naval Institute, 1991, pp. 397-8.

<sup>16</sup> Eric J. Grove, *Vanguard to Trident*, *Op. Cit.*, p. 204.

<sup>17</sup> Eric J. Grove, "Advice and assistance to a very independent people at a most crucial point": the British Admiralty and the future of the RAN 1958-60", in David Stevens (ed.), *Maritime Power in the Twentieth Century: the Australian Experience*, Allen & Unwin, Sydney, 1998, p. 147.

<sup>18</sup> Which turned out to be the 1964-65 programme. Raymond Blackman (ed.), *Jane's Fighting Ships 1967-68*, Sampson Low, Marston & Co. London, 1967, p. 300.

<sup>19</sup> Norman Friedman, *Naval World Weapons Systems 1991/92*, *Op. Cit.*, p. 398.

The American programme was on a vastly different scale to the British one. Even though the dimensions of the TALOS and TERRIER missiles would be too large for the RAN, the programme for the much more compact TARTAR on its own was already much bigger than the Royal Navy's entire effort and promised, in 1960, to become bigger still. Although the United States Navy's ambitions for more than a hundred SAM escorts were to be constrained by inflation and the effects of the Vietnam war, some 41 operational TARTAR installations eventually went to sea in the USN in 38 ships.<sup>20</sup> Italy was already building two TARTAR equipped destroyers<sup>21</sup> and France was on the brink of re-equipping at least four destroyers with the American system.<sup>22</sup> Norman Friedman's estimate is that by 1962 the United States had invested nearly four and a half billion dollars in ship and missile system construction, with another two billion already having been invested in research and development.<sup>23</sup>

Investment on this scale meant that the USN was effectively forced to make the missile systems work. It is not known whether the RAN was aware of the fact that a Tartar Reliability Improvement Program (TRIP) had already been started in 1959, but the rapid development of the system and the considerable advances that were achieved in moving the system effectively from an enhanced point defence to a limited area capability must have already been evident in the 1960-61 period.<sup>24</sup> This optimism was certainly conveyed to Admiral Burrell when he came to visit the United States, whatever the accuracy of the details.<sup>25</sup> Thus, while the American Three-T programme was to suffer a series of increasingly public and embarrassing failures, culminating in a failed demonstration of the TERRIER to President Kennedy in 1962<sup>26</sup>, it was also clear that the Americans had to be committed to a substantial 'get well' programme in order to make their surface fleet work.

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<sup>20</sup> The cruisers ALBANY, CHICAGO and COLUMBUS each carried two twin TARTAR installations as their secondary SAM armament. See Raymond Blackman, *Jane's Fighting Ships 1969-70*, Jane's Yearbooks, London, 1969, pp. 406-31.

<sup>21</sup> *Ibid.*, p. 168.

<sup>22</sup> A decision announced in 1961. See Raymond Blackman, *Jane's Fighting Ships 1961-62*, Sampson Low, Marston & Co, London, 1961, p. 80.

<sup>23</sup> Norman Friedman, *U.S. Destroyers: an Illustrated Design History*, US Naval Institute, Annapolis, 1982, p. 294. See also Peter Jones, 'Buying the DDGs', *Op. Cit.*, p. 321.

<sup>24</sup> Norman Friedman, *U.S. Naval Weapons Systems*, *Op. Cit.*, p. 154.

<sup>25</sup> Henry Burrell, *Mermaids do Exist*, *Op. Cit.*, p. 258.

<sup>26</sup> Malcolm Muir, Jr, *Black Shoes and Blue Water*, *Op. Cit.*, p. 138.

That same assurance of improvement could not be applied to the British SEA SLUG, which would involve only eight ships at the most and which, given the fact that SEA DART development was formally initiated in 1962<sup>27</sup>, would effectively be an orphan, once the SEA SLUG II programme had been completed. It thus represented a technological cul de sac, something from which the very limited resources available to the RAN would not give the navy the capability to extract itself without heavy cost.

The Australian selection process centred around a 1960 tour of the Canada, the United Kingdom and the United States by Vice Admiral Burrell, and the Third Naval Member, Rear Admiral K. McK. Urquhart, the RAN's senior technical officer. Canada provided the Australian delegation with many useful insights into another small nation's approach to warship acquisition and indigenous design and construction as well as helicopter operations from small ships, but it was the visits to the UK and USA that were critical. The discussions with the British in particular were complex and lengthy. Some Australian illusions were dispelled, notably the idea that a smaller ship than the COUNTY class could be produced to carry the SEA SLUG missile. Furthermore, the Admiralty did not have the capacity to redesign the COUNTY to take the TARTAR missile—an option which would probably have been the RAN's initial preference, given the other logistic and training compatibilities which remaining with British designs would have sustained. Although Vickers, the commercial ship builders, suggested informally to Burrell that they could manage the redesign of the COUNTY to take TARTAR, the CNS was not willing to take up this offer.<sup>28</sup>

The American picture proved to be much rosier. Not only was the first ADAMS class nearing completion, but the whole concept of the DDG (guided missile destroyer) 2 type, with its five inch guns, multiple channels of fire and compact design, was much closer at around 4,000 tons to the dimensions that the Australians believed were practicable for their navy. It was also 15% cheaper than the COUNTY class. The overall capabilities of the ADAMS were such that the RAN devoted little time to assessing the alternative offered by the USN, the smaller—and considerably less capable—BROOKE class guided

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<sup>27</sup> Norman Friedman, *Naval World Weapons Systems 1991/92*, *Op. Cit.*, p. 397.

<sup>28</sup> It is interesting that Burrell chose to visit Vickers, which was not involved in the COUNTY class programme. Although the firm's involvement in British submarine construction was reason enough, it was also putting the finishing touches to two unique British designed large destroyers for the Chilean Navy. At approximately 3,000 tons, these ships, RIVEROS and WILLIAMS, were very much on the scale and (exclusive of SAGW) capability envisaged as desirable for the RAN in a new destroyer.

missile destroyer escort. Apart from its limitations relative to the ADAMS class, the first BROOKE would not even be laid down until 1962 and would not commission until 1965. Although only three quarters of the cost of an ADAMS, the price of the BROOKE was obviously a much 'softer' figure in an era of substantial cost increases. The inclusion of a number of untried features sealed the fate of the design in Australian eyes.<sup>29</sup>

Given the American production rates, there was every indication that ADAMS class for the RAN could be produced more quickly than would be possible either in Britain or in Australia. There was even more to it than that. The Americans might be prepared to make the ships available on highly advantageous credit terms, which would spread payments over a number of years on an effectively interest free basis. Deferred payments were new to the Australian Defence and Navy Departments, but the Navy Minister, Senator John Gorton, enthusiastically endorsed the concept.<sup>30</sup> As a result, payments for the two DDGs that were delivered in 1965 were actually spread over eight years, completing in 1969.<sup>31</sup>

The reason for this support was not only to encourage the development of Australia's naval capabilities - although this was certainly of importance for the United States Navy in its search for alliance partners in the Pacific. Rather, the favourable terms granted the Australians would do much to create the right atmosphere for the United States to establish a strategic very low frequency (VLF) communications base in Australia, one of the best sites from the purposes of both radio propagation and domestic political stability. VLF communications were a key element of the emerging organisation for the control and direction of the new fleet of POLARIS ballistic missile equipped submarines and as such one of America's major defence priorities. The USN had reached the judgement as early as August 1959 that Australia would be the best site to meet Western Pacific and Indian Ocean requirements<sup>32</sup>.

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<sup>29</sup> Vice Admiral Burrell letter to Admiral Arleigh Burke USN, (Chief of Naval Operations) 13 July 1961. Cited in R.N. Wallace, 'The Purchase of Three United States Guided Missile Destroyers', *Op. Cit.*, p. 178.

<sup>30</sup> Sir John Gorton interview with Robert Hyslop, 20 April 1988.

<sup>31</sup> The unit price for the first two DDGs would be US\$39,300,000 each, with ammunition costed at US\$8,160,000 and spares at US\$3,240,000 for a total package of \$US90,000,000. Payments were spread over eight years – with a down payment of US\$1,562,000 in November 1961 on initial order, a second payment twelve months later of US\$6,697,000 and seven more annual payments varying from US\$11,651,000 to the final sum of US\$11,838,000 in November 1969.

<sup>32</sup> R.N. Wallace, 'The Australian Purchase of Three United States Guided Missile Destroyers', *Op. Cit.*, p. 131.

Discussions with Australia were soon initiated and, in September 1960, the Australian Minister for Defence made the first public announcement of the existence of the scheme.<sup>33</sup>

But all these ‘sweeteners’ must be seen in retrospect as elements that made the transition to an American design built in America easier for the RAN and Australia. The financial and strategic elements only emerged as discussions proceeded and moved to higher levels within each government. They were not the decisive points for the Royal Australian Navy’s choice of ship. Discussions with Admiral Burrell before he died and the written evidence which exists indicates that it was the missile system and the requirement for a capability to provide anti-air defence of the fleet which alone determined the initial path that the naval staff took.

The decision was not an easy one. The merits of the various options were still sufficiently unclear in October 1960 that the Minister for Defence would not recommend a decision to Cabinet and suggested further study.<sup>34</sup> Over the following months, Navy Office went over the issues once again. Within this critical period there were further exchanges with the United States<sup>35</sup> and the USN made clear that it was prepared to make arranging the sale as easy as possible for Australia.<sup>36</sup>

Given all the links with the Royal Navy—and it is important to remember that the financial, economic and industrial ties were still very strong on a nation to nation basis—it is unlikely that the selection of the British ship would have been questioned externally to the Navy. The pressures of custom and sentiment are demonstrated by the fact that, even after the British had confirmed their inability to modify the COUNTY class, the Chairman of the Chiefs of Staff Committee, Vice Admiral Sir Roy Dowling<sup>37</sup>, declared that he saw no alternative to the British ships.<sup>38</sup> That there would have been considerable disquiet about the SEA SLUG is likely, given the considerable

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<sup>33</sup> *Ibid.*, p. 160.

<sup>34</sup> Cabinet Submission 898, ‘The Navy Programme: Summary of Recommendations by Minister for Defence’, 25 October 1960.

<sup>35</sup> Vice Admiral Burrell letter to Admiral Burke, 18 November 1960, cited R.N. Wallace, ‘The Purchase of Three United States Guided Missile Destroyers’, *Op. Cit.*, pp. 165-7.

<sup>36</sup> Admiral Burke letter to Admiral Burrell 23 December 1960, *Ibid.*, p. 170.

<sup>37</sup> Dowling had himself been CNS 1955-59 and should have been as well informed of the issues as any authority outside the Navy Department.

<sup>38</sup> CCS comments on Cabinet Submission 898, ‘The Navy Programme: Summary of Recommendations by Minister for Defence’, 25 October 1960.

‘on site’ knowledge within the Australian defence and supply organisation relating to the missile’s trials performance, but this would probably not have carried over to the platform or its other systems. There would have been considerable debate as to whether the new destroyers could or should have been built in Australia, but the actual choice of hull would not have been questioned. As it was, when the order for two ships from the United States was announced in June 1961, there was considerable disquiet and commentary. Much of it was legitimately centred on the decision to purchase ships overseas when escort construction had been sustained in country for the previous twenty years, but there was also debate on the decision to break the hitherto permanent connection with British designs.<sup>39</sup>

Within Navy Office itself there was much discord about the decision to build overseas. Rear Admiral Urquhart was convinced that the COUNTY class, without gas turbines, could and should be built in Australia. By 1962, for the first time since the late 1930s, there would be no escort hulls on Australian slipways and Urquhart was obviously disturbed by the implications for Australian shipbuilding. His views were overborne by a mix of technical, financial and timing considerations. Australian built COUNTIES would not have gone to sea before 1968 and they would have cost even more than the United Kingdom version. Whilst technology transfer from the United Kingdom would be much less difficult than from the United States, the extensive redesign effort would probably have been beyond the capacity of the drawing offices of both Britain and Australia. And, when all was said and done, the missile system remained the fundamental issue. Significantly, in retirement Urquhart would criticise the RAN’s lack of commitment to Australian shipbuilding in the Australian Navy League’s journal *The Navy*.

Matters were simplified for the naval staff in one regard. Although the strategic situation continued to deteriorate in the early 1960s, the Government’s acceptance of a scheme to acquire ASW helicopters for the MELBOURNE reduced the requirement for the new ships to include a helicopter capability. Cabinet’s approval of an order for two American guided missile destroyers in February 1961 included the possibility of their being modified during build to take either one or two helicopters as well as variable depth sonar and the IKARA missile<sup>40</sup>, but there was no longer the need to take the risks involved with such changes. This was first recognised by the Minister for the Navy, Gorton, and at his urging—perhaps also influenced by concerns

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<sup>39</sup> Peter Jones, ‘Buying the DDGs’ *Op. Cit.*, pp. 321-2 and p. 326.

<sup>40</sup> Cabinet Decision 1215 Submission 994 – The Navy Programme. Cabinet Meeting of 16 Feb 61.

from the United States<sup>41</sup>—the RAN decided to limit its modifications to structural alterations to take the IKARA alone. As Gorton insisted, both officially and publicly, cost and the need to get the ships at sea as soon as possible were key drivers. Again, the priority placed upon the AAW capabilities involved was obvious.

## Conclusion

HMA Ships PERTH and HOBART commissioned in 1965, a third of the class, BRISBANE, would enter service two years later.<sup>42</sup> The timeliness of the initial 1961 order, and the merits of the insistence by Gorton and others upon acquiring the ships as quickly and as cheaply as possible were soon demonstrated. Less than sixteen months after HOBART commissioned, she had begun her first operational deployment to Vietnam. In six months the ship proved her ‘tactical capability, general effectiveness and flexibility’ in no uncertain terms.<sup>43</sup> Her sisters would soon emulate her performance.

That the ADAMS was demonstrably the right choice can thus be shown by the operational record of the Australian DDGs. It is also apparent from their capacity for Australian modernisation within the context of the overall American effort compared with that of the COUNTY class and the Royal Navy. The latter ships received only limited improvements and, despite the fact that the last quartet was only completed in 1970, were starting to leave service by the late 1970s. None were left in the British order of battle after

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<sup>41</sup> R.N. Wallace, ‘The Purchase of Three United States Guided Missile Destroyers’, *Op. Cit.*, pp. 180-181.

<sup>42</sup> It should be noted that Cabinet rejected a proposal for a fourth DDG in November 1964. The proposal came about because the Chiefs of Staff Committee (COSC) had assessed that the regional air threat did not justify the modernisation of the DARINGS with TARTAR. The Navy had already rejected that of the BATTLES as uneconomic. The RAN sought a fourth DDG as a compromise for the limitation of the DARING modernisation to an ASW focus with IKARA and SEA CAT. Although COSC endorsed this approach, the Cabinet did not. When the RAN tried again in 1966 and was once more rebuffed, the Fleet air defence problem had been simplified by the approval to buy ten A4 SKYHAWK for the carrier and the naval staff priorities soon turned to newer designs. Ironically, the cost of modernising the DARINGS forced the cancellation of the IKARA and SEA CAT fit – VAMPIRE and VENDETTA were eventually refitted, but with their existing gun armament.

<sup>43</sup> Rear Admiral Guy Griffiths, ‘DDGs in Vietnam: HMAS HOBART 7 March – 27 September 1967’ in Frame, Goldrick & Jones, *Reflections on the Royal Australian Navy*, *Op. Cit.*, p. 337.

1987.<sup>44</sup> By comparison—and remember it is the missile system which is key to all this—the DDGs were able to undergo two major modernisation programmes and transition progressively through a series of improvements and modifications from the TARTAR system and missile to the new SM-1, designed to be compatible with the launcher and guidance system which had evolved with TARTAR.<sup>45</sup> The SM-1 and its associated systems have continued to undergo progressive improvement. Although the first of the DDGs, the PERTH, finally paid off in October 1999, her withdrawal from service was not caused by the obsolescence of her missile systems.

It is clear that the acquisition of the three DDGs was achieved through an unusual combination of high-level consultations, personal connections, and a pervading sense of urgency in a time of strategic uncertainty. The small band of senior officers and public servants involved in the project, supported and directed by Senator John Gorton, relied on their professional judgement supplemented by a ‘feeling in the water’ where the former fell short. In determining the best course of action, large project offices, exhaustive evaluations and the committee system were but a feature of the future. In this case, concentration on the key requirement—the air defence of the fleet—and getting that requirement right proved to be the best way to solve the problem of new destroyers. If there was the issue of cost and the financial sweeteners which could be offered by the Americans in support of the decision to go for TARTAR, the distractions inherent in the proven record of association with the Royal Navy and its infrastructure must not be under-estimated. The selection of the DDGs was nothing short of a revolution for the Royal Australian Navy but it was a necessary revolution if the RAN was to sustain the combat power it needed in the missile age. Furthermore, unlike many revolutions, it was one in which those who were leading it did possess some realisation of the magnitude of the changes they were ringing in. They took the risks they could not avoid achieving what was vital for the Navy’s future.

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<sup>44</sup> Captain Richard Sharpe, *Jane’s Fighting Ships 1996-97*, Jane’s, London, 1996, p. 105.

<sup>45</sup> *Ibid.*, p. 25.