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SEA 5000 Future Frigate Program: continuous shipbuilding under the spotlight

David Feeney



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The Centre of Gravity series

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About the author



David Ian Feeney was born in Adelaide, South Australia, and attended Mercedes College there before moving to Melbourne in 1987. David studied at the University of Melbourne and later completed a Masters' Degree in Public Policy and Management (MPPM) at Monash University.

David worked as a Federal Industrial Officer in the National Office of the Transport Workers Union (TWU) from 1994 to 1999. In 1999 David was elected State Secretary and Campaign Director for the Australian Labor Party (Victorian Branch). At the 2002 Victorian elections the ALP won 20 seats, holding 62 seats in the parliament of 88—the largest majority in Victorian history. In 2002 David took on the role of Director of Strategy in the Premier's Private Office. Throughout 1999-2005 David worked closely with Premier the Hon Steve Bracks MLA and the Victorian Labor Government in Victoria. In 2005, David returned to South Australia to serve as Campaign Director for SA Labor at

the March 2006 state election. The re-elected Labor Premier, Mike Rann, referred to him in his victory speech as "my Eisenhower." During the 2007 Federal election David served as Labor's Assistant National Secretary and Deputy National Campaign Director.

On 1 July 2008 David Feeney commenced his term as a Senator for Victoria. Feeney was appointed as Parliamentary Secretary for Defence on 14 September 2010 in the first ministry of Prime Minister Julia Gillard, and he was reappointed to this role in the second Gillard ministry. He maintained this position in the reshuffle when Rudd regained the Prime Ministership in June 2013.

David Feeney was elected to the House of Representatives as the Member for Batman in 2013. Opposition Leader Bill Shorten appointed Feeney as Shadow Minister for Justice and Shadow Assistant Minister for Defence. After 1 July 2014 the portfolio of Veterans Affairs and Centenary of ANZAC were added to his responsibilities.

In 2016 David was re-elected as the Member for Batman. David was not re-appointed as a Shadow Minister. As an MP, Feeney served as Deputy Chair of the Defence Sub-Committee of the Joint Standing Committee of Foreign Affairs, Defence and Trade (JSCDFAT). David was a contributing author in Peter J Dean, Stephan Fruhling and Brendan Taylor (eds.), 2016, *Australia's American Alliance* (Melbourne University Publishing, Carlton) and in Tom Frame (ed.), 2017, *The Long Road. Australia's Train, Advise and Assist Missions* (UNSW Press, Sydney).

On 1 February 2018 David Feeney resigned from the House of Representatives.

In October David became a Senior Fellow of the Australian Strategic Policy Institute (ASPI), and has been appointed to the Victorian Defence Council and the advisory board of NIOA. David is studying a PhD in ancient history and archaeology at the University of Melbourne.

David is married to Liberty Sanger, Principal Lawyer and Board member at Maurice Blackburn Lawyers, and they are parents to Ned and Matilda.

SEA 5000 Future Frigate Program: continuous shipbuilding under the spotlight

David Feeney

Executive Summary

- ✦ The Future Frigates Program SEA 5000 is the largest naval shipbuilding project in Australian history, the centrepiece of the continuous National Naval Shipbuilding Enterprise.
- ✦ While naval benchmarking is difficult, Australia will be paying nearly double per frigate as compared to the contemporary US and UK Frigate programs.
- ✦ The *Strategic Update 2020* highlights Australia's rapidly deteriorating strategic environment, yet the Government has deliberately structured the frigate program so that it delivers capability more slowly (extended to 2044) and at greater cost (an additional A\$9.3 billion).
- ✦ The key reason for this deliberate slow down in the construction rate of the frigates is to enable the "*implementation of a stable, deliberate and continuous shipbuilding drumbeat*" so as to "*end the 'boom and bust' cycle of naval shipbuilding, delivering sovereign capability and certainty for industry.*"¹

Policy recommendations

- ✦ That the National Naval Shipbuilding Enterprise provide the Parliament with an annual report, providing an update on its performance in the terms of schedule and cost, and the achievement of key milestones.
- ✦ The Government review its decision to prioritise a slow continuous shipbuilding program over the strategic risk described in the *Strategic Update 2020*. Could SEA 5000 deliver capability at a significantly faster tempo and at a lower cost-per-unit if the Navy acquired more than 9 frigates, or built additional frigates for allies such as New Zealand?

Introduction

The Future Frigate Program is a vital component in the modernisation of the Royal Australian Navy now underway. It is the largest naval shipbuilding project ever undertaken in Australia, and second only to the Future Submarine Program in terms of its cost to taxpayers.

In 2009 the Rudd Government resolved to acquire new frigates to replace Navy's existing eight ANZAC frigates, and thus began the Future Frigate Program, designated SEA 5000 by the Department of Defence ("Defence"). Navy's existing ANZAC frigates had been constructed between 1992-2004, with final assembly at Williamstown dockyard, Victoria. A notable aspect of the ANZAC's construction is that they were built under a fixed price contract by an Australian prime contractor in an Australian shipyard which achieved world-class performance in terms of both price and schedule.² In 2016 the Turnbull Government's *Integrated Investment Program* (IIP) set out that SEA 5000 would replace the ANZAC frigates "from the late 2020s by a new fleet of nine frigates, which will be more capable". Construction was to begin in South Australia in 2020. The *Integrated Investment Program* set the acquisition cost of SEA 5000 as being "greater than A\$30 billion".³

This paper explores the challenges that confront SEA 5000 and the construction of the Hunter-class frigates, and how Australia has prioritised the establishment of a continuous shipbuilding program, even when it means slower and more expensive ship construction. While policy makers assert that the continuous shipbuilding program will be cost effective over the long-term (i.e. beyond 2044), this has not been quantified, and feasible alternatives such as building a larger frigate force have not been explored.

The Hunter class: a new design

In June 2018 the Turnbull Government selected BAE Systems Type-26 Global Combat Ship with significant modifications as Australia's Future Frigate, subsequently named the Hunter class. BAE Systems is contracted to construct eight Type-26 frigates for the United Kingdom's Royal Navy, the first to be delivered in 2023. The Hunter class will be constructed at Osborne Naval Shipyard in South Australia, and is the centrepiece of Australia's continuous National Naval Shipbuilding Enterprise.

The choice of the Type-26 surprised some observers, because it carried three big risks.

The choice of the Type-26 surprised some observers, because it carried three big risks for the Australian Government to manage: the selection of an unproven ship design, the fact that BAE had no experience integrating the Aegis system specified by Australia, and the fact that BAE Systems would be simultaneously building ships for Australia and the United Kingdom.⁴ The fact that the Government opted for an unproven design rather than a proven ship-in-service appeared to fly in the face of advice secured from the RAND Corporation in 2015.⁵

The Hunter-class will deviate from the Type 26 reference design because it will be required to include the Australian developed CEAFAR Active Phased Array Radar, the American Aegis combat system and an Australian developed combat tactical interface by SAAB.⁶


Craig Lockhart, managing director of BAE subsidiary ASC Shipbuilding, stressed in 2020 that they are "currently going through the normal naval design process" so as "to design a ship that meets Australia's capability and performance requirements" and "our team is right in the middle of a normal naval ship design process for Hunter."⁷ On 3 July 2020 Lockhart told *Jane's* "ASC Shipbuilding has embarked on a design process, using the United Kingdom's Type 26 Global Combat Ship as a reference design, to deliver a very specific capability for the RAN. While there are similarities, Australia has not purchased the Type 26 frigates. Rather, Australia's Hunter class will be a very different ship..."⁸



These remarks make plain the fact that the Hunter class will be in large part a new ship design to meet Australia's particular capability requirements, which by necessity will mean installing Australian sensors and US systems and weapons⁹ into the Type 26 reference design. While the Department of Defence characterises the program as an "Australianised Military-off-the-Shelf" (AMOTS) project¹⁰, the Hunter class is *not* a proven in-service design or even an unproven but complete ship design. The selection of a new and unproven ship design creates risk. In March 2021 the Mr Moriarty, Secretary of the Department of Defence, made the assessment that the level of risk on this project "is still high – it has always been high and the risk remains high".¹¹

Andrew Tillet reported on 26 June 2020 that the design work underway on the Hunter class has expanded the frigate from its original 8,800 to over 10,000 tons full load displacement – significantly larger than first envisaged.¹² Tillet reported that this has raised fears concerning the future frigates' performance in terms of speed, acoustic profile and its ability to conduct stealthy anti-submarine warfare operations.¹³ The design phase of SEA 5000 has been added to the Defence Department's Project of Interest list.¹⁴ A heavily redacted copy of the Defence Department's latest quarterly performance review declared: "As expected in a large complex project, there are a number of issues that are currently being managed. Numerous options of varying complexity and benefit are being explored. These range from local design changes to more global design changes". One of the key issues is weight.¹⁵ In early December Navy sources confirmed to this author that the design is now "well over 10,000 tons".

Senate Estimates in March 2021 confirmed that the design of the Hunter class was experiencing significant delays. The system definition review has been delayed from May to November 2021. Defence Secretary Moriarty advised "The reference ship in the UK, the Type 26, is also experiencing some delays. They've had some very significant COVID impacts there, but its beyond that. There are technical challenges. We are still working through at the moment what the implications of those are for our program." Moriarty made clear that there were risks to schedule here in Australia, "... and that risk is because Type 26 [in the UK] is delayed and running behind its current schedule"¹⁶



**The final ship is
due to be complete
in 2044.**

The schedule has already been delayed by two years, with construction of the Hunter class now only commencing in December 2022.¹⁷ Moriarty explained that "there have been some challenges with particular phases of delay around detailed design of the Type 26 in the UK and the work on the Hunter program".¹⁸ COVID-19 seems set to cause further delays to BAE Systems in the UK and Australia. The current indicative date for the production of the Hunter class is that the first-of-class (FOC) will take seven years to build, and that thereafter the shipyard will build one ship every five years, with two ships under construction at any one time. The final ship is due to be complete in Q3 2044.¹⁹

The cost of SEA 5000; Comparing Hunter class apples with similar apples

The true cost of SEA 5000 to the Australian taxpayer – A\$ 45.6 billion (out-turned) – was only revealed on 1 July in the *2020 Force Structure Plan*.²⁰ In Senate Estimates on 26 October 2020 the government conceded that had known the real cost of SEA 5000 since the project achieved second pass approval in 2018. The head contract between the Commonwealth and BAE Systems was signed on 14 December 2018. Nonetheless, throughout 2019 and 2020 the government referred to SEA 5000 as a A\$ 35 billion program in its press releases and public statements.²¹ When questioned on this lack of transparency, the Secretary of Defence remarked "When the government chooses to announce particular phases or particular prices is a matter for government."²² This does not augur well for the ability of Parliament or anyone else to properly scrutinise major Defence projects going forward.

Naval ship benchmarking is very difficult, for a range of reasons, including the reluctance of countries and shipbuilders to provide sensitive data, measuring differing capabilities, the widespread subsidization of shipbuilders by governments, variable exchange and inflation rates, trying to assess whether reported costs are all-inclusive, and differences in definitions.²³ Hence, the United States' Navy Constellation (FFG-62) Class Frigate (previously FFG X) Program offers Australia a unique opportunity to compare SEA 5000 with a very similar and contemporaneous program.

The Constellation (FFG-62) Frigate program is a United States' Navy (USN) program to build a class of 20 guided-missile frigates. On 30 April 2020 the USN announced that it had awarded the FFG-62 contract to Fincantieri/Marienette Marine (F/MM). F/MM was awarded a fixed-price incentive contract for Detail Design and Construction for up to ten ships – the lead ship plus nine option ships.²⁴ Fincantieri were an unsuccessful bidder for the SEA 5000 program.

TABLE 1: Ship Characteristics

Class	Displacement (tons) (full load)	Length	VLS Tubes	Gun	Crew	Helicopters
Destroyers						
USN Arleigh Burke	9700	155 m	96	127 mm	323	2
RAN Hobart	7000	147 m	48	127 mm	234	1
Frigates						
FFG-62	6700	151.4 m	32	127 mm	200	1
Type-26	7800	151.4 m	32	57 mm	208	1
Hunter	8800-10,400	149.9 m	32	127 mm	208	1
Canadian Surface Combantant	7800	151.4 m	32	127 mm	204	1

The USN's capability requirements for the FFG-62 are similar to Australia's SEA 5000: the ship is to be a multi-mission combatant capable of conducting anti-submarine warfare, anti-air warfare, anti-surface warfare and electromagnetic warfare, capable of operating in both blue water and littoral areas, and capable of operating either independently or as part of larger Navy formations. Like the Hunter-class, the FFG-62 will have 32 Mark 41 VLS tubes. The FFG-62 will have an estimated full-load displacement of around 6,700 tons.²⁵

Naval ship benchmarking is very difficult.

In contrast to SEA 5000, the USN avoided developing a completely new design, and so the FFG-62 will be a modified version of an existing ship design – namely Fincantieri's FREMM (Fregata Europea Multi-Missione) frigate, a ship that has been built for the Italian and French navies. In this way, the USN intended to reduce design time, design cost, and cost, schedule and technical risk. The USN envisages developing no new technologies or systems for the FFG-62 – instead it will use US systems and technologies that already exist.



The SEA 5000: the price of apples

The United States Navy (USN) estimates that construction of ten frigates will cost US\$ 8.7 billion, an average of US\$ 870 million per ship in 2020 constant dollars.²⁶ The Congressional Budget Office has estimated the cost of construction to be 40% greater, on the basis of its own weight-based cost model, with an overall program cost of US\$ 12.3 billion or about US\$ 1.2 billion per ship.²⁷

SEA 5000 has a program budget of A\$45.6 billion (2020 out-turned to 2044) for nine frigates. In Senate Estimates on 26 October the Department of Defence advised that A\$6.27 billion of this was now under contract to pay for “the design and productionisation phase”.²⁸ The term “productionisation” presumably refers to the usual process of determining how to build a ship design in a particular shipyard, in this case Osborne in South Australia. A\$6.27 billion for only the design and production plans would be a fantastic sum, given that the Hunter class is a variant of the reference design Type-26, and BAE Systems uses a digital design and shipyard system so as to mitigate such costs. The FFG-62 program does not include any distinct budget for “design and productionisation”. The 2019-2020 Major Projects Report states that the A\$ 6.27 billion will also enable the “procurement of Long Lead Time Items for Batch 1 Build”, that is, the first three frigates.²⁹ This might help explain the magnitude of the sum.

Unlike in the United States or the UK, the Australian SEA 5000 Project cost of A\$ 45.6 billion “includes facilities costs, FMS costs, project management office costs and test and evaluation costs”.³⁰ These additional costs are considerable. The Defence Statement of Evidence to the Parliamentary Standing Committee on Public Works in 2019 suggests that the cost for improved infrastructure and facilities related to SEA 5000 may be up to A\$ 2 billion.³¹ Further, a project such as SEA 5000, deemed high risk by Defence, may have a contingency of up to 20% of the overall project budget. Hence, up to A\$ 11 billion of the project’s A\$ 45.6 billion may not be allocated to ship construction.

In the United Kingdom, the Type-26 program has a funding envelope of £8 billion GBP (in 2016) for eight ships³², around A\$ 1.981 billion per ship in 2020 dollars. It would seem that UK taxpayers are paying much less for the Type-26 than Australian taxpayers are for the Hunter class. Similarly, it seems the Hunter class is significantly more expensive than the USN FFG-62. The Hunter class is a larger ship than both the FFG-62 and Type-26, and it seems that it will possess more powerful sensors and systems (i.e. Aegis, CEAFAR 2 Active Phased Array Radar, and a more powerful 127 mm main gun).³³ Nonetheless, these factors cannot entirely account for the apparent price differential.

It would seem that UK taxpayers are paying much less for the Type-26 than Australian taxpayers.

TABLE 2: Ship Costs (Author’s Estimate)

	Cost (Open Source)	Approximate Cost per ship (A\$ 2020)
FFG-62	US\$ 12.3 billion in 2020 dollars for ten ships ³⁴	1.658 billion
Type-26	£8 billion in 2016 GBP for eight ships	1.981 billion
Hunter class	A\$ 34.6 billion (in 2020 out-turned dollars) for nine ships (with an additional \$11 billion allocated for non-acquisition costs such as infrastructure, facilities and contingency).	3.844 billion (out-turned 2020 to 2044)

The Department of Defence advised Senate Estimates on 26 October: “We have estimated the cost per tonnage and it is substantially less than the air warfare destroyer per tonnage in terms of cost.”³⁵ The Air Warfare Destroyers were the most expensive destroyers ever built, with a cost per ton of A\$ 365,000 (i.e. A\$ 9.1 billion for three ships).³⁶ In September 2020 Defence advised the Senate Economics Reference Committee that the cost per ton for the first three frigates would be A\$ 257,000.³⁷ Why is the Hunter class significantly more expensive when compared to the cost of acquisition for the Royal Navy and USN?

Continuous shipbuilding

The 2015 RAND Corporation report into the Australian shipbuilding industry concluded that “Australian shipbuilding is significantly more expensive with respect to cost and slightly longer with respect to schedule”.³⁸ RAND suggested a cost premium for shipbuilding in Australia of around 30-40% when compared to US benchmarks. However, RAND also identified how this premium could be reduced by half, with better productivity achieved through a sustained build program and the consequent retention of skilled workers. RAND also identified other productivity-boosting factors such as “better integration between designers, builders and suppliers; a mature design at the start of the build; and control of requirements and design changes once building begins”.³⁹

The 2017 *Naval Shipbuilding Plan*, released by the Turnbull Government declared “The Defence budget could not afford to pay that premium and still deliver the naval capabilities so necessary for the Royal Australian Navy’s future”.⁴⁰ As a consequence, the Government made “the necessary investment in strategic national capability for naval shipbuilding and sustainment” to boost the productivity of Australian shipyards and ensure that previous mistakes were not repeated. The predictable stream of naval shipbuilding projects, the sustainment of a skilled workforce, modern shipbuilding infrastructure, the recognition of defence industry as a fundamental input to capability, and a continuous shipbuilding program were supposed to realize better performance in terms of price and schedule. In *The Navy and the Nation*, former Chief of Navy Tim Barrett wrote “at the heart of Navy’s transition... to a partner in high-tech manufacturing are the continuous and rolling shipbuilding programs, whereby industry and the Navy combine to deliver a more efficient and more effective maritime defence system”.⁴¹

It seems that Defence has surrendered much of these productivity benefits so as establish a slow rate of shipbuilding.



A “Shipbuilding Plan Update” within the *2020 Force Structure Plan* noted: “In its decision to approve the Hunter class frigate program, the Government allocated additional funding to enable construction of ships at a deliberate drumbeat over a longer period of time than originally planned to achieve a continuous shipbuilding program”.⁴² Defence has admitted that the total acquisition cost for SEA 5000 grew from A\$ 35 billion in the 2017 *Naval Shipbuilding Plan* to A\$ 44.3 billion in December 2018 when the project was approved by Government because “it factored in implementing a continuous shipbuilding program”.⁴³ By slowing the “drumbeat” of ship construction down to one frigate every five years the Australian taxpayer is paying a significant cost.

Government is constructing the nine Hunter class frigates at a tempo that is tailored to sustain a continuous build between 2022-2044. This extended schedule means the shipyard will not be working at a tempo that enables the most efficient and productive utilisation of the infrastructure and workforce. The Department of Defence admits that extending the shipbuilding schedule out to 2044 was a A\$ 9.3 billion decision.⁴⁴

The *raison d'être* of a continuous shipbuilding program is to achieve higher productivity that realises better outcomes in terms of price, quality and schedule. It seems that Defence has surrendered much of these productivity benefits so as establish a slow rate of shipbuilding. While Australia is producing the Hunter class at a rate of approximately one ship every 2.55 years, a single shipyard in the United States will build the FFG-62 at a tempo of one or two ships per year. The first Hunter class frigate will be delivered in 2029 and the third in 2032.⁴⁵ By then the USN will have ten FFG-62 frigates.⁴⁶ As Dr Marcus Hellyer observed “we’re spending more to get capability slower”.⁴⁷ The Government’s approach to continuous shipbuilding would appear to undermine the economic case for its very existence.

It is important to note that SEA 5000 is modernising the Australian Navy's surface fleet, not expanding it: the number of major surface combatants remains constant at 12, the same size it has been since the 1970s. We are left to wonder whether building additional frigates over the period 2022-2044 might have proved to be both a more strategically prudent and more economic choice. In the context of the Government's grim conclusions in its *2020 Defence Strategic Update*⁴⁸, the decision to slow down rather than accelerate the acquisition of the Hunter class seems counter-intuitive.

Misery loves company: Canada and the Type-26

In 2019 Canada selected the Type-26 ship design offered by of BAE/Lockheed Martin for its Canadian Surface Combatant (CSC) program. The CSC will build 15 frigates to replace its Navy's existing frigates.⁴⁹ The CSC is the centre piece of Canada's National Shipbuilding Strategy (NSS), launched in 2010 to renew the Royal Canadian Navy and Coast Guard, and provide thousands of jobs in a revitalised domestic shipbuilding industry. The NSS aimed "to create a stable shipbuilding-industrial base and avoid the boom-and-bust cycles of previous national shipbuilding efforts."⁵⁰ Sound familiar?

Construction of the Canadian frigates is expected to commence sometime in 2024, meaning the project will be roughly contemporaneous with SEA 5000. Since 2019 the cost of the CSC has steadily grown, to a current PBO estimate of CA \$77.3 billion (A\$ 75.29 billion), more than double the original estimate of CA \$26 billion for the program in 2008. That's around A\$ 5 billion per frigate, although if one makes allowance for infrastructure, project management and contingency, the cost per frigate starts to look very similar to the SEA 5000 project.

Like Australia, Canada required the Type-26 reference design to be significantly changed to accommodate its unique capability requirements, such as Lockheed Martin's SPY-7 radar and 32 VLS cells.⁵¹ As a consequence, the ship is now heavier than originally intended, projected to displace 9,400 tons fully loaded.⁵² Like Australia, the Canadians opted for an unproven design, then made significant design alternations, and loaded the ship with high-end and cutting-edge radar and weapons systems. The result is a highly capable, spectacularly expensive frigate.

Failures in governance and transparency

In October 2016 the Morrison Government announced the establishment of the Naval Shipbuilding Advisory Board (NSAB) chaired by Professor Don Winter. On 22 October the then Minister for Defence, the Hon Christopher Pyne MP, stated: "The Advisory Board will provide expert, independent advice to Government on all aspects of naval shipbuilding as plans are finalised for establishing and sustaining a viable, continuous shipbuilding capability in Australia."⁵³ However, in Senate Estimates on 26 October Winter stated: "One aspect of the Naval Shipbuilding Advisory Board that I'd like to make sure you're aware of is that our remit does not include the detailed view of cost and schedule. We have neither structure nor staff to be able to do that."⁵⁴

To not consider issues of price and schedule meant the entire point of the NSAB was questionable.⁵⁵ The NSAB never emerged as a 'red team' able to ask difficult questions of Defence and its shipbuilding programs.⁵⁶ If the NSAB never played this role, then who did? The answer seems to be no one.

Senate Estimates in recent times has demonstrated of how key Defence programs and costings are opaque at best, and concealed at worst. The fact that the A\$ 89 billion shipbuilding programs had blown out to A\$ 130 billion was known to the Government for some two years before it was admitted to the Parliament and the public. Further, the Government's shipbuilding enterprise has a number of moving parts that only sporadically (and sometimes reluctantly) disclose information in a wide range of reports (i.e. Defence, ANAO, Australian Naval Infrastructure Pty Ltd), Parliamentary hearings, and Government and industry press releases (as the footnotes herein demonstrate). This means that proper scrutiny of programs such as SEA 5000 by parliament, think tanks or the wider media is extremely challenging. Dr Hellyer's suggestion that there should be an annual report on the entire shipbuilding enterprise is compelling.



Proper scrutiny of programs such as SEA 5000 by parliament, think tanks or the wider media is extremely challenging.



Prime Ministerial intervention

In March 2021, amid deepening concerns about the Government's Naval Shipbuilding Plan, including SEA 5000, Prime Minister Scott Morrison moved to establish more direct oversight of the frigate project.⁵⁷

A new Cabinet committee has been formed to oversee the Naval Shipbuilding Plan. The Naval Shipbuilding Enterprise Governance Committee (NSEGC), working under the auspices of the National Security Committee (NSC), will be chaired by the Prime Minister, and include the Defence and Foreign Affairs Ministers.⁵⁸

As a part of this shakeup, the NSAB was abolished, and replaced with a new panel that would report to the new NSEGC rather than to the Defence Minister. The former Chair of the NSAB, Professor Winter, was retained as a special adviser to the Prime Minister. In this manner, Winter moved from the Defence to Prime Ministerial portfolios.

These changes underline the fact that the PM is now directly engaged in the oversight of Australia's shipbuilding programs, and that he has sought to secure sources of advice that are independent of the Department of Defence. Further, the leadership of the Defence Minister in matters concerning the Naval Shipbuilding Plan has now been replaced with that of a Cabinet Committee.

On 29 March 2021 the PM completed his shake up by appointing a new Minister for Defence: Peter Dutton became Australia's sixth Defence Minister in eight years. Senior and experienced, Peter Dutton is both a veteran of the NSC and familiar with the Government's national security apparatus and its agencies. It is widely believed that Dutton's most urgent and complex challenge is to restore confidence in the nation's Naval Shipbuilding Plan.⁵⁹

In the lead up to the 2019 Federal Election, the Defence portfolio was a rich source of positive announcements for the Morrison Government, not least the Naval Shipbuilding Plan. However, since then, the submarine, frigate and OPV programs have been bedevilled by schedule delays, cost

overruns and increasing Australian industry criticism. The Auditor-General advised the Parliament on 30 March 2021 that following a request from the Labor Opposition, he had included Defence's *Integrated Investment Plan* in his program for 2021. The Auditor-General detailed that the "proposed performance audit would examine the Department of Defence's management of the IIP since its implementation in 2016, including the framework underpinning the program and the governance arrangements in place."⁶⁰ The Auditor-General has conducted several scathing audits into Defence's shipbuilding programs already⁶¹, and their importance has been amplified because of the Government's failure to regularly update parliament or the public. For this reason, the upcoming audit concerning some \$270 billion will be of singular importance in shaping the defence debate in Australia in the lead up to the next Federal Election (likely to be held *circa* early 2022).

Dutton's most urgent and complex challenge is to restore confidence in the nation's Naval Shipbuilding Plan.

Conclusion

Australia (and Canada) are both building a new generation of frigates based on the Type-26 design. The Hunter class frigate that will ultimately be delivered to the Royal Australian Navy will be large (twice as large as the ANZAC class it replaces), highly capable, and spectacularly expensive. In contrast, the USN selected a proven ship design and a more modest capability suite for its next generation frigate. The result is that the USN will have its frigate force much faster for less cost than either Australia or Canada.

In terms of weight and size the Hunter class will be approximately the same as the USN Arleigh Burke class destroyer (see Table 1). Australia's Hunter class "frigate" has the systems, size and price tag of a "destroyer", but not the punch. At around \$US 1.83 billion per ship, the Arleigh Burke is a cheaper warship than the Hunter class but, importantly, has 96 VLS tubes as compared to the Hunter class' 32, and can carry two helicopters rather than just one. Why has Australia opted for a warship that has all the characteristics of a US destroyer except lethality? The Arleigh Burke delivers three-times the missile load for a crew only one-third larger than an Australian Navy frigate, so we can only hope that workforce concerns were not a factor.

While the *Strategic Update 2020* highlights Australia's rapidly deteriorating strategic environment, SEA 5000 is delivering capability more slowly at greater cost. At a cost of A\$ 45.6 billion, the last Hunter class frigate is scheduled to be delivered in Q3 2024.⁶² Isn't Australia's requirement for the Hunter class more urgent than SEA 5000 contemplates?

In 2018 the Government "factored in implementing a continuous shipbuilding program" for SEA 5000 at the cost of A\$ 9.3 billion.⁶³ Could the Government have instead built additional surface ships between 2022-2044 without increasing the overall cost of SEA 5000? Has there been any consideration of a requirement for not only a more capable surface fleet, but also a more numerous one?

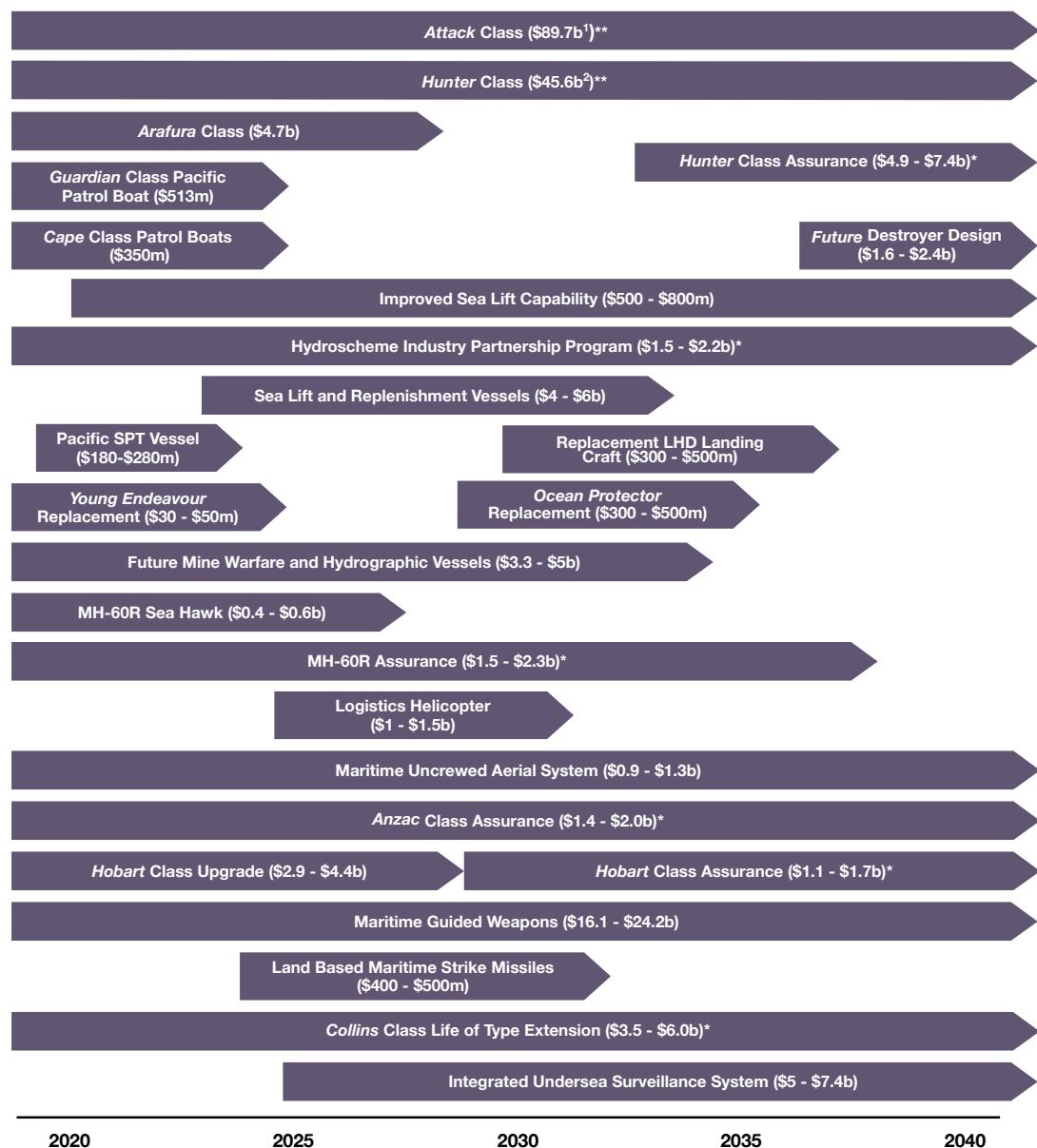
The *2020 Force Structure Plan* sets out the fact that in the period 2021-2040 the greater part of the Australian Navy will be in dockyards rather than available for service at sea. The future fleet – the Attack class submarines and Hunter class frigates – will be undergoing design and construction. Meanwhile, the existing fleet is scheduled for ANZAC class Assurance (A\$ 1.4-2b), Hobart class Upgrade (A\$ 2.9-4.4 b) followed by Hobart class Assurance (A\$ 1.1-1.7 b), and Collins class Life-of-Type Extension (A\$ 3.5-6 b), as well as several other critical procurement or upgrade activities (see p. 45, 2020 Force Structure Plan). The implications for what Navy assets are actually available for any serious contingencies in the years 2021-2040 must be profound.

Transparency and accountability will be crucial to delivering better outcomes. The United States' Congress and the USN are far more informative about their procurement projects than are their Australian equivalents. I would contend that the inadequate reporting of Defence major projects enables rather than crushes criticism; ignorance is a good environment for rumour, speculation and inaccurate guesswork. Australia's continuous shipbuilding programs and the enormous investment it represents requires strong advocacy and public support. Vice Admiral Barrett described the Navy and its modernisation as "a national enterprise" which relies on trust and respect.⁶⁴ The present inadequate state of reporting on Defence major projects to the Parliament and public needs urgent reform to foster that trust and respect.



I would contend that the inadequate reporting of Defence major projects enables rather than crushes criticism.

FIGURE: Key Maritime Domain Investments 2020-2040: A fleet in the dockyard?



Source: Page 45, 2020 Force Structure Plan

Policy recommendations

- ✦ That the National Naval Shipbuilding Enterprise provide the Parliament with an annual report, providing an update on its performance in the terms of schedule and cost, and the achievement of key milestones.
- ✦ The Government review its decision to prioritise a slow continuous shipbuilding program over the strategic risk described in the *Strategic Update 2020*. Could SEA 5000 deliver capability at a significantly faster tempo and at a lower cost-per-unit if the Navy acquired more than 9 frigates, or built additional frigates for allies such as New Zealand?

Endnotes

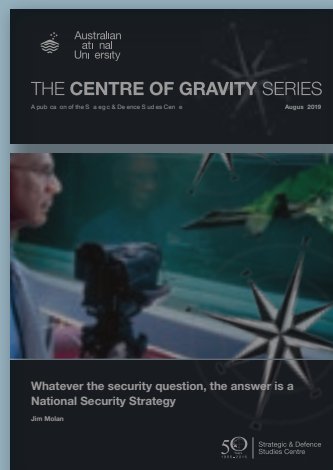
- 1 Senate Economics References Committee, Inquiry into Australia's sovereign naval shipbuilding capability – 07 September 2020, ANSWER TO QUESTION ON NOTICE, Department of Defence.
- 2 [Tenix delivers the final Anzac frigate - Australian Defence Magazine](#) The ten ships of the ANZAC class (2 for the NZDF) were built for A\$3.93 in 1988 dollars. HMAS Anzac (FOC) was built for \$192.8 million and HMAS Perth (LOC) was built for \$144.8 million. Overall, the program was on schedule and on budget.
- 3 *2016 Integrated Investment Plan*, Australian Government, Department of Defence, p. 77 and p. 85. All figures in the IIP “are calculated on an out-turned price basis”.
- 4 [\\$35 billion on frigates: BAE wins – has Australia won too? | The Strategist \(aspistrategist.org.au\)](#)
- 5 [Australia's Naval Shipbuilding Enterprise: Preparing for the 21st Century | RAND](#)
- 6 Other changes will include increasing the number of Mk 41 VLS cells from 24 to 32, reconfiguration of the ship's aviation capabilities to allow embarkation of the Navy's Sikorsky MH-60R Seahawk helicopter, and the integration of Harris Corporation's Hawklink Ku-band data link, as used by US Navy major surface combatants.
- 7 [BAE sets the record straight on Hunter Class concerns - Defence Connect](#)
- 8 [ASC Shipbuilding dismisses concerns about design of RAN's future Hunter-class frigates \(janes.com\)](#); also Letters to the Editor in the *AFR*, 9 July 2020 [Letters: Frigate design a work in progress \(afr.com\)](#)
- 9 Such as the Raytheon RIM-162 Evolved Sea Sparrow Missile (ESSM) and Standard Missile 2 (SM-2).
- 10 For example, see the *2019-2020 Major Projects Report Department of Defence*, The Auditor-General, Auditor-General Report No. 19 2020-2021.
- 11 Wednesday, 24 March 2021 Defence Senate Estimates, p. 65.
- 12 By comparison, the US Navy's Arleigh Burke DDG-51 (Flight III) have a full load displacement of approximately 9.700 tons.
- 13 [Sinking feeling: frigate heads back to drawing board \(afr.com\)](#)
- 14 *“Future Frigates – due to size, complexity, risk-profile and media interest. The QPR notes that all scheduled activities have been progressing as planned, although some will need to be reassessed in light of COVID-19 restrictions”*: *2019-2020 Major Projects Report Department of Defence*, The Auditor-General, Auditor-General Report No. 19 2020-2021, p. 23.
- 15 [Frigates added to Defence watch list of troubled projects \(afr.com\)](#)
- 16 Wednesday, 24 March 2021 Defence Senate Estimates, p. 65.
- 17 Monday 26 October 2020 Defence Senate Estimates, p. 8; [BAE sets the record straight on Hunter Class concerns - Defence Connect](#)
- 18 Monday 26 October 2020 Defence Senate Estimates, p. 12.
- 19 Senate Economics Reference Committee, Answer to Question of Notice, Question reference number 17, 21 September 2020.
- 20 *2020 Force Structure Plan*, Australian Government, Department of Defence.
- 21 Monday 26 October 2020 Defence Senate Estimates, p. 46.
- 22 Monday 26 October 2020 Defence Senate Estimates, p. 45.
- 23 John Birkler et. al., 2015, *Australia's Naval Shipbuilding Enterprise. Preparing for the 21st Century*, RAND Corporation.
- 24 <https://crsreports.congress.gov/product/details?prodcode=R44972>
- 25 7,400 'short tons': <https://crsreports.congress.gov/product/details?prodcode=R44972>, p. 14.
- 26 This is the average cost of the ships; the production of the ten FFG-62 will vary as the effect of the Norden-Raleigh curve takes effect and production becomes increasingly efficient. The FOC will be more expensive than the follow-on ships because the lead ship's procurement cost incorporates the detailed design and nonrecurring engineering costs for the class. <https://crsreports.congress.gov/product/details?prodcode=R44972>; [Navy's Big Frigate Risks an Oversized \\$1.4 Billion Cost Per Ship \(bloombergquint.com\)](#)
- 27 [The Cost of the Navy's New Frigate | Congressional Budget Office \(cbo.gov\)](#). <https://crsreports.congress.gov/product/details?prodcode=R44972>; [Navy's Big Frigate Risks an Oversized \\$1.4 Billion Cost Per Ship \(bloombergquint.com\)](#)
- 28 Monday 26 October 2020 Defence Senate Estimates, p. 44.
- 29 *2019-2020 Major Projects Report Department of Defence*, The Auditor-General, Auditor-General Report No. 19 2020-2021, pp. 151-158.
- 30 Monday 26 October 2020 Defence Senate Estimates, p. 47.
- 31 2019, *Navy Capability Infrastructure Sub-Program: Facilities and Infrastructure to Support New Navy Capabilities*, Statement of Evidence to the Parliamentary Standing Committee on Public Works, Department of Defence, Australian Government: see [Submissions – Parliament of Australia \(aph.gov.au\)](#) The Statement of Evidence states: “The estimated total capital out-turned cost of the Project is \$1.8 billion including Defence contingency. This estimate excludes the Goods and Services Tax, except for the proposed living in accommodation project elements at HMAS Stirling. It includes project management, contract management and design fees; other professional services fees related to the design or construction activities; construction costs; active information and communications technology; furniture, fittings and equipment costs; and provisions for risk and escalation” (pp. 35-36). Not all the A\$ 1.8 billion is attributable to the SEA 5000 program, as it includes infrastructure upgrades to accommodate the 12 new Arafura class OPVs, and these costs are not disaggregated from the A\$ 1.8 billion. Nor does this report make clear whether the \$1.8 billion is expressed in out-turned or 2019 constant dollars. These matters are not clarified in the final report, *Report 6/2019*, released in November of 2019 [Report 6/2019 – Parliament of Australia \(aph.gov.au\)](#)
- 32 [Oral evidence - Naval Procurement: Type 26 and Type 45 - 20 Jul 2016 \(parliament.uk\)](#)
- 33 The differences in the combat system between the Hunter class and FFG-62 are probably marginal. The FFG-62 combat system is COMBATSS21, which is developed from Aegis. Thanks to the ANAO we know that the three Aegis systems purchased for the AWD cost A\$ 1.3 billion in 2014 dollars: see [Air Warfare Destroyer Program | Australian National Audit Office \(anao.gov.au\)](#)
- 34 The higher estimate from the Congressional Budget Office (CBO).
- 35 Monday 26 October 2020 Defence Senate Estimates, p. 47.
- 36 Monday 26 October 2020 Defence Senate Estimates, p. 23.
- 37 Senate Economics Reference Committee, Answer to Question of Notice, Question reference number 17, 21 September 2020.
- 38 John Birkler et. al., 2015, *Australia's Naval Shipbuilding Enterprise. Preparing for the 21st Century*, RAND Corporation, p. 131. Also see John F Schank et. al., 2014, *Keeping Major Naval Ship Acquisitions on Course. Considerations for Managing Australia's SEA 5000*, RAND Corporation.

- 39 John Birkler *et. al.*, 2015, *Australia's Naval Shipbuilding Enterprise. Preparing for the 21st Century*, RAND Corporation, p. 131.
- 40 *Naval Shipbuilding Plan*, 2017, Australian Government, Department of Defence, p. 12.
- 41 Vice Admiral Tim Barrett, 2017, *The Navy and the Nation*, Melbourne University Press, p. 59.
- 42 *2020 Force Structure Plan*, Australian Government, Department of Defence, p. 43. [Home : Strategic Update 2020 : Department of Defence](#)
- 43 Senate Economics Reference Committee, Answer to Question of Notice, Question reference number 17, 21 September 2020.
- 44 Senate Economics Reference Committee, Answer to Question of Notice, Question reference number 17, 21 September 2020.
- 45 Senate Economics Reference Committee, Answer to Question of Notice, Question reference number 17, 21 September 2020.
- 46 <https://crsreports.congress.gov/product/details?prodcode=R44972>; *Navy's Big Frigate Risks an Oversized \$1.4 Billion Cost Per Ship* (bloombergquint.com), p. 6.
- 47 Dr Marcus Hellyer, 2020, *The Cost of Defence 2020-2021, Part 2: ASPI 2020-2021 Defence Budget Brief*, Australian Strategic Policy Institute, p. 51.
- 48 *2020 Defence Strategic Update*, Australian Government, Department of Defence. [Home : Strategic Update 2020 : Department of Defence](#)
- 49 *Canada Confirms Type 26 Design for Surface Combatant Program After Legal Tussle* - USNI News
- 50 *Canada's new frigate is getting heavier and more expensive* (defensenews.com)
- 51 *Royal Canadian Navy Unveils New Details on CSC Frigates* - Naval News
- 52 *Canada's new frigate is getting heavier and more expensive* (defensenews.com)
- 53 *Naval Shipbuilding Plan*, 2017, Australian Government, Department of Defence, p. 107.
- 54 Monday 26 October 2020 Defence Senate Estimates, p. 6.
- 55 *PM turns focus to shipbuilding amid growing alarm* (afr.com) Note the board earned A\$9 million over three years.
- 56 *Defence must offset massive risk in naval shipbuilding program* | The Strategist (aspistrategist.org.au)
- 57 *Shake-up of naval shipbuilding as concerns grow over future submarines, frigates* - ABC News
- 58 *Naval Shipbuilding Enterprise Governance Committee* | Government Online Directory
- 59 *'Mercy killing': challenges ahead for new defence, security ministers* (afr.com)
- 60 *Defence to face audit over new weapons purchases* (afr.com)
- 61 *\$50b future submarine sinking in a sea of delays* (afr.com)
- 62 Senate Economics Reference Committee, Answer to Question of Notice, Question reference number 17, 21 September 2020.
- 63 Senate Economics Reference Committee, Answer to Question of Notice, Question reference number 17, 21 September 2020.
- 64 Vice Admiral Tim Barrett, 2017, *The Navy and the Nation*, Melbourne University Press, p. 5.

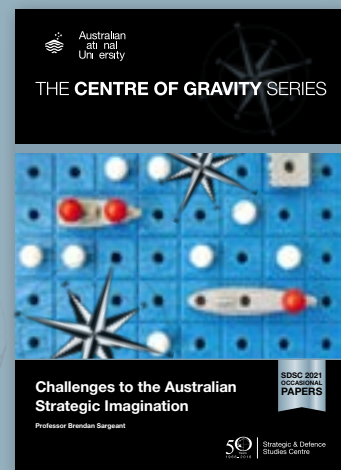
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