



Australian Government

ENHANCED LETHALITY SURFACE COMBATANT FLEET

INDEPENDENT ANALYSIS OF NAVY'S
SURFACE COMBATANT FLEET



20
24

Defence acknowledges the Traditional Custodians of Country throughout Australia. Defence recognises their continuing connection to traditional lands and waters and would like to pay respect to their Elders both past and present.

Defence would also like to pay respect to the Aboriginal and Torres Strait Islander people who have contributed to the defence of Australia in times of peace and war.

© Commonwealth of Australia 2024

ISBN: 978-1-925890-81-5

This work is copyright. Apart from any use as permitted under the *Copyright Act 1968* (Cwth), no part may be reproduced by any process without prior written permission from the Department of Defence.



Australian Government

ENHANCED LETHALITY SURFACE COMBATANT FLEET

INDEPENDENT ANALYSIS OF NAVY'S
SURFACE COMBATANT FLEET

'An independent analysis of Navy's surface combatant fleet capability should be conducted in Quarter 3 2023 to ensure its size, structure and composition complement the capabilities of the forthcoming conventionally-armed, nuclear-powered submarines. The analysis must assess: the capability requirements to meet our current strategic circumstances as outlined in the Review, as well as the cost, schedule, risks and the continuous shipbuilding potential of each option.'



Contents

Part A

Enhanced Lethality Surface Combatant Fleet 3

Surface combatant fleet review 3

The way forward 4

Part B

Independent Analysis 7

Surface combatant fleet design 8

Implementation 10

Continuous Australian naval shipbuilding 11

Cost, schedule and workforce 12

Other considerations 12

Part C

The Albanese Government’s Response to the Independent Analysis Recommendations 15

PART

A



Enhanced Lethality Surface Combatant Fleet

The 2023 Defence Strategic Review (DSR) identified that Australia's strategic circumstances now require that our naval capability contributes effectively to the Australian Defence Force's (ADF's) ability to shape our strategic environment, deter potential adversaries and deny their ability to achieve objectives contrary to our national interests.

In light of our changed strategic environment, the DSR found that the current plan for the surface combatant fleet is not fit for purpose and that an enhanced lethality surface combatant fleet is now essential.

Australia's Navy must be optimised for operating in Australia's immediate region and for the security of our sea lines of communication and maritime trade.

Surface combatant fleet review

The Government directed an independent analysis to assess the Royal Australian Navy's surface combatant fleet capability to ensure its size, structure and composition complemented the capabilities of the forthcoming conventionally-armed, nuclear-powered submarines.

The independent analysis was led by United States Navy Vice Admiral (Ret'd) William Hilarides, assisted by the former Secretary of the Australian Department of Finance, Rosemary Huxtable, and former Commander Australian Fleet Vice Admiral Stuart Mayer. I extend my sincere and personal thanks to the Independent Analysis Team for their comprehensive and meticulous analysis of this complex and consequential subject.

The independent analysis included an assessment of capability requirements, cost, workforce, schedule, risk and continuous Australian naval shipbuilding. It concurred with the DSR's findings that the current and planned surface combatant fleet is not appropriate for the strategic environment we face, noting it is the oldest fleet Navy has operated in its history. It made clear that we need a surface fleet of warships with greater capability in integrated air and missile defence, multi-domain strike and undersea warfare. These are the capabilities needed to support critical activities, including patrolling our northern approaches, close escort and theatre sea lift missions.

The independent analysis also found in excess of \$25 billion in unfunded cost pressures in the surface fleet acquisition and sustainment program.

The Independent Analysis Team's report is a classified document containing extensive capability and operational analysis and includes 18 recommendations to government. Part B of this document contains an unclassified section of the Executive Summary from that report.

The Albanese Government supports the direction and key findings set out in the independent analysis.

The way forward

The independent analysis emphasised immediate and timely action is necessary to remediate Navy's surface combatant capability and support Australia's continuous naval shipbuilding and sustainment industry.

In responding to the DSR, the Albanese Government confirmed its commitment to continuous naval shipbuilding in Australia. The independent analysis and its recommendations support this commitment.

Implementation of the independent analysis is aimed at responding to Australia's complex strategic circumstances, reducing strategic risk, and investing in Navy's future capability and sovereign naval shipbuilding and sustainment enterprise.

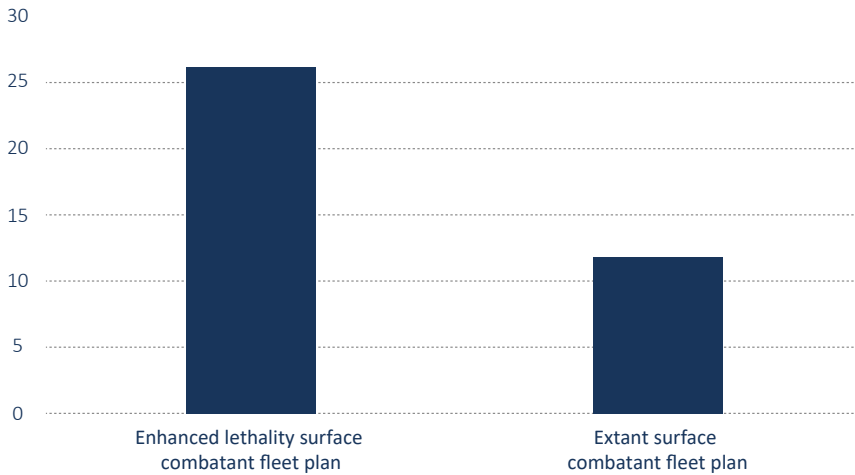
Our response takes into account the current and deteriorating state of the Anzac class frigates, accelerating the acquisition of a new, more capable general purpose frigate to replace the ageing Anzac class. The Government has directed these ships be acquired rapidly with an established international shipbuilding partner through a hybrid offshore then onshore build strategy, transitioning to the consolidated Henderson shipyard in Western Australia. Four platforms have been identified by the independent analysis as exemplars to form the basis of a selection process for this new general purpose frigate:

- ▶ Meko A-200
- ▶ Mogami 30FFM
- ▶ Daegu class FFX Batch II and III
- ▶ Navantia ALFA3000

Hunter class frigates and destroyers will continue to be built and upgraded at Osborne Naval Shipyard in South Australia.

This will see Navy equipped with a major surface combatant fleet twice as large as planned when we came to government – and with more of these new surface combatants in the water and operational sooner.

Surface combatant fleets



In realising this plan, the Albanese Government has committed to increase Defence's funding in the 2024-25 Federal Budget over the next decade to ensure the enhanced lethality surface combatant fleet is fully funded.

This includes injecting a further \$11.1 billion of additional funding over the next decade to support the realisation of the enhanced lethality surface combatant fleet.

An updated Naval Shipbuilding and Sustainment Plan will be released this year, providing certainty to Australia's shipbuilding industry.

These actions will deliver an enhanced lethality surface combatant fleet and sovereign shipbuilding industry that will contribute to securing Australia's economic prosperity and trade, and help keep Australians safe.

The Hon Richard Marles MP

Deputy Prime Minister
Minister for Defence

PART

B



Independent Analysis

The Defence Strategic Review (DSR) found that the Navy must be optimised for operating in Australia's immediate region and for the security of our sea lines of communication and maritime trade. Expanding upon this, the DSR identified that an enhanced lethality surface combatant fleet, which complements a conventionally armed, nuclear-powered submarine fleet, is now essential given the changed strategic circumstances. The purpose of our independent analysis was to develop a recommended fleet design that delivers the optimum mix of Tier 1 and Tier 2 surface combatants to meet the strategic circumstances outlined in the DSR and that complements a conventionally armed, nuclear-powered submarine capability.

The surface combatant fleet contributes to the strategy of denial in Australia's northern approaches through the flexible application in time and space of naval power projection, sea control and sea denial. The DSR identified that the ADF's current force structure is not fit for purpose for our current strategic circumstances. It further identified that an enhanced lethality surface combatant fleet should consist of Tier 1 and Tier 2 surface combatants that provide for increased strike, air defence, presence operations and undersea warfare. The Independent Analysis Team (IAT) agrees with this conclusion, and notes that a mix of Tier 1 and Tier 2 combatants would enable a larger surface combatant force more able to address the breadth of maritime missions across an expansive area of responsibility.

We applied a first principles approach, starting with framing the operational problem set for the surface combatant fleet. The IAT explored options that were the minimum viable capability in each tier of combatant – to avoid costly redesign of complex systems – and also of replacing crewed systems with uncrewed/optionally crewed systems, where possible. The capability sets were put through modelling and war gaming to test their efficacy in meeting the operational requirements, and were then evaluated against objective criteria until a recommended option set was identified.

The IAT also analysed the requirement for Navy's minor war vessels and their role in constabulary and civil maritime security operations, as well as their contribution to the lethality of the surface combatant force and continuous Australian naval shipbuilding.

During our analysis we sought to balance the need for enhanced lethality with consideration of a number of factors: workforce, cost, schedule and risks, and the continuous Australian naval shipbuilding potential of each option.

The current plan is a 12 Tier 1 surface combatant fleet comprising Hobart class destroyers and Hunter class frigates.

The IAT assessed a number of options to best manage the competing objectives of capability, cost and executability against the accelerated delivery of capability to reduce operational risk.

Immediate implementation is necessary to deliver this capability within an acceptable risk profile. Any delay will exacerbate the risk, lead to a level of unbalance and necessitate further analysis to be undertaken.

Surface combatant fleet design

From our analysis, we have determined the optimal size, structure and composition of a hybrid future surface combatant fleet as follows:

Tier 1

- ▶ Nine Tier 1 ships, comprising three Hobart class destroyers and six Hunter class frigates, to provide essential advanced air defence, long-range strike, presence and undersea warfare.
 - Proceed with SEA 5000 Phase 1 Hunter Class Frigate project and negotiate terms to acquire one batch of six Hunter class frigates of the current design.
- ▶ To leverage the capabilities of the Tier 1 combatants and to enhance the lethality and sustainability of the force, the following integrated investments should be made:
 - Urgently undertake the planned Destroyer Capability Enhancement program to significantly upgrade the Hobart class destroyers' Aegis Combat System from Baseline 8 to Baseline 9. This will reduce the risk of obsolescence and increase the range of missions that the Hobart class destroyers can conduct. This is an essential modernisation activity.
 - Acquire six Large Optionally Crewed Surface Vessels (LOSVs) with 32 Vertical Launching System cells, providing enhanced lethality through additional multi-domain strike capacity and directly increasing survivability, lethality and endurance. This investment will increase distributed fleet lethality with a lower cost and crewing impact. These vessels will rely on Aegis Baseline 9 or later, which is the combat system planned to be operated by the Hunter class frigates from delivery, and by the Hobart class destroyers post-upgrade.
 - The reduction in Tier 1 surface combatants from 12 to nine necessitates the acceleration of the replacement Destroyer to ensure continuous naval shipbuilding at the Osborne Naval Shipyard in South Australia. The initial requirements setting and design work will need to commence by mid-2027.

Tier 2

- ▶ At least seven, and optimally 11, Tier 2 ships, optimised for undersea warfare, to operate both independently and in conjunction with the Tier 1 ships to secure maritime trade routes, northern approaches and escort military assets. Consistent with the DSR and our Terms of Reference, it is essential these vessels include the ability to:
 - operate a Maritime Combat Helicopter
 - provide undersea warfare through a depressed active/passive towed array sonar and have the ability to store, handle and employ lightweight torpedoes
 - provide air defence through a limited number of point and self-defence systems
 - provide maritime and land strike
 - provide force protection.
- ▶ The undersea warfare and multi-domain strike capability of the Anzac class frigates to be enhanced through their planned Transition Capability Assurance Program (TransCAP). This will ensure that retained Anzac class frigates will maintain the minimum viable capability for the Tier 2 mission until replaced by the new Tier 2 surface combatants. The number of Anzac class frigates to undertake TransCAP is to be determined by the date the Tier 2 acquisition program is commenced.
- ▶ The Tier 2 acquisition timelines were adapted to address the deteriorating material state of the Anzac class frigates and to reduce the risk of a potential capability gap.

Minor war vessels

- ▶ A total force of 25 minor war vessels, consisting of Navy's requirement for six Arafura class Offshore Patrol Vessels (OPVs) and eight Evolved Cape class patrol boats (ECCPBs), and 11 ECCPBs for Australian Border Force (ABF).
- ▶ The ECCPB design best meets the operational need of the constabulary force in the conduct of civil maritime security operations. The ECCPB (single vessel design) should be operated by both Navy and ABF. A single organisation (Defence) should be responsible for contracting acquisition and sustainment of the constabulary force, with the costs met by the relevant acquiring and operating force.
- ▶ The OPV is an inefficient use of resources for civil maritime security operations and does not possess the survivability and self-defence systems to contribute to a surface combatant mission. Therefore the number of OPVs to be acquired should be reduced from 12 to six, with their role focused on civil maritime security operations and enhanced regional engagement in the Southwest Pacific and maritime Southeast Asia. These vessels will also provide the additional capability and capacity for civil maritime security operations surge requirements in lieu of Tier 1 and Tier 2 surface combatants.
- ▶ Whilst the OPV cannot conduct other roles (such as mine countermeasure or military survey) in its as-designed-and-delivered state, further investigation should be undertaken to determine how the OPVs could contribute to other mission sets. If this proves feasible, they should be replaced by ECCPBs in the civil maritime security operations function.

Implementation

The combination of a surface combatant fleet with this mix of Tier 1 and Tier 2 surface combatants and minor war vessels means a larger, more capable surface combatant force, which will increase lethality in each of the DSR planning time periods (epochs).

During epoch 1 (2023-2025) the maritime and land strike capabilities of the Hobart class destroyers and Anzac class frigates will be enhanced through the replacement of the aging Harpoon anti-ship missile with the Naval Strike Missile and the installation of the Tomahawk cruise missile for long-range strike. Whilst defensive in nature, the installation of additional electronic warfare systems will enhance the survivability of both platforms and enable the more effective employment of the strike missile systems.

Our analysis confirmed that the delivery of maritime and surface combatant capability takes considerable time from the development of the initial concept and government decision to the delivery of a platform. These timelines need to be a key consideration and enduring theme in fleet and force design planning. This will ensure that future planning and commencement of replacement programs are started at the appropriate points in time and resourced appropriately. A failure to adopt and adhere to this future

focused approach risks realising capability gaps. In addition, and in line with the DSR's recommendation, acquisition and platform selection processes need to be streamlined not only to create a more agile and flexible capability development system, but to deliver capability that is relevant to the threat and strategic circumstances.

The Department of Defence Joint Experimentation Directorate war gaming analysis also emphasised that there is no Joint Force substitute for the effect delivered by a surface combatant with the high-end undersea warfare capabilities that are inherent within Hunter class frigates and the proposed Tier 2 exemplars.

Continuous Australian naval shipbuilding

We agree with the DSR and Government, who have confirmed their commitment to continuous naval shipbuilding and determined that, as an essential foundation for sovereign capability and independence, this will be codified through an updated Naval Shipbuilding and Sustainment Plan. We consider that a published Shipbuilding Forecast that includes the type and number of vessels to be built, and the yard at which they will be built and upgraded, is a necessary artefact in addition to the Plan. This forecast would provide greater certainty to, and enhance the confidence of, the Australian shipbuilding industry and facilitate long-term investment in workforce and facilities. We suggest that the Shipbuilding Forecast (20 year outlook) should be reviewed and published annually, independent of the Naval Shipbuilding and Sustainment Plan.

The DSR noted that Government intervention is required to enable the Henderson shipyard's critical role in Australia's naval shipbuilding landscape. We concur with the DSR's recommendation that industry consolidation options for Henderson shipyard in Western Australia should be examined as a matter of urgency, with a realistic timeline (and associated build capacity) defined to balance feasibility, capacity and competing concurrent activities.

To build the industrial capacity and capability necessary to deliver the future nuclear-powered submarines, we recommend that Tier 1 vessels be built, maintained, upgraded and sustained at the shipyard in Osborne.

We envisage that the LOSVs and minor war vessels would be constructed at Henderson shipyard. We recommend that the Tier 2 replacement for the Anzac class frigates is initially built offshore prior to onshoring once the Henderson shipyard attains the necessary maturity conditions to achieve the scale and complexity of this build.

Australia must have the industrial capability and capacity to build, maintain, sustain and upgrade naval vessels. We assess our proposal for the Tier 2 replacement, LOSVs and minor war vessels, in conjunction with the build of the Army Landing Craft and Guardian class patrol boats, can sustain the Henderson shipyard.

Cost, schedule and workforce

Cost has been a key consideration of this analysis, with detailed costings across different time horizons developed for each option. Many of the costing pressures we identified already existed in the Integrated Investment Program, with our analysis providing greater definition and illumination around the total cost of ownership (acquisition and sustainment) of each platform. The schedules used in the analysis provide a balance between feasibility and affordability.

The larger surface combatant force we have recommended requires a minimal increase to crew complement due to a rationalisation of crew sizes and an increased reliance on technology and automation. This increased workforce demand does not exceed the current plan before 2040. We considered the impact of crewing when analysing options, noting this is a significant risk to achievability. We agree with the DSR that Navy's biggest challenge is assuring an adequate workforce to sustainably meet enterprise priorities. We encourage Defence to adopt a more dynamic and aggressive approach to recruiting and endorse the workforce strategy to generate the required crews. We note that the crewing numbers for our recommended fleet design are reliant on the success of these strategies and the achievement of the projected forecasts.

Other considerations

Execution of our recommendations is not without risk, which will need deliberate mitigation. A number of challenges highlighted in the DSR will need to be addressed to deliver the strategic outcome. These include a sufficient and capable workforce, the appropriate number and type of Guided Weapons and Explosive Ordnance and infrastructure sufficient to provide basing and meet the operational need.



PART

C



The Albanese Government's Response to the Independent Analysis Recommendations

Tier 1 – Frigates and Destroyers

Urgently execute the Destroyer Capability Enhancement upgrade activity for the three Hobart class destroyers to increase Tier 1 lethality.	Agreed
Proceed with project SEA 5000 Phase 1 Hunter Class Frigate project and acquire one batch of six Hunter class frigates of the current design.	Agreed
Fit the Hunter class frigates with the Tomahawk cruise missile capability for precision long-range strike.	Agreed in-principle
Commence planning and requirements setting to replace the Hobart class destroyers to ensure surface combatant fleet capability into the future and ensure continuous naval shipbuilding at Osborne Naval Shipyard in South Australia.	Agreed in-principle

Government response:

- The Government agrees that frigates and destroyers are a critical component of the enhanced lethality surface combatant fleet, with future upgrades necessary to ensure they possess the lethality and survivability to operate in our complex and heightened strategic environment.
- Subject to a feasibility study, Government endorses the need to incorporate the Tomahawk cruise missile into the Hunter class frigate.
- The Government will consider the replacement program for the Hobart class destroyers in the context of the 2026 National Defence Strategy.
- Government decisions will be consistent with continuous naval shipbuilding at Osborne Naval Shipyard.

Tier 2 – General Purpose Frigates	
Acquire at least seven, and optimally 11, Tier 2 surface combatants.	Agreed
Urgently execute the planned Transition Capability Assurance Program (TransCAP) activity to upgrade the Anzac class frigates to prevent a Tier 2 capability gap.	Not Agreed
Establish a project to acquire Tier 2 surface combatants via an offshore then onshore build process, where ships are built overseas before transitioning to an Australian build.	Agreed
Four platforms have been identified as Tier 2 surface combatant exemplars and these should form the basis of a deliberate selection process.	Agreed
<p>Government response:</p> <ul style="list-style-type: none"> • The Government agrees that in addition to Hunter class frigates, optimised for undersea warfare, and upgraded Hobart class destroyers, general purpose frigates are needed to provide Navy with the necessary number of platforms to meet the strategic challenges Australia faces, provide enhanced availability and to secure our northern approaches. • The Government will accelerate the acquisition of 11 general purpose frigates to deliver capability sooner and address the risk presented by an ageing and increasingly fragile surface combatant fleet. • The Government will not proceed with the Anzac class TransCAP, which would have delivered upgrades to the Anzac class frigates to extend their life and increase capability. The accelerated acquisition of a new general purpose frigate allows for a more cost effective and lethal capability outcome, thus negating the need for TransCAP. • The six remaining Anzac class frigates will be upgraded with enhanced maritime strike capabilities. 	

Large Optionally Crewed Surface Vessels	
Large Optionally Crewed Surface Vessels (LOSVs) should be acquired through formal engagement with the United States Navy program as a fast follower to enable construction of the LOSVs at either the Henderson shipyard in Western Australia or overseas.	Agreed
Increase the vertical launching system cell capacity of the Tier 1 surface combatant fleet by acquiring six LOSVs.	Agreed
<p>Government response:</p> <ul style="list-style-type: none"> • The Government agrees these optionally crewed vessels will enhance the lethality and survivability of the joint integrated force, with this modern technology also reducing the crewing requirement for Navy. • The intent is to build these six vessels in Western Australia. 	

Risk Management and Executability	
We recommend the Balanced Risk option, which increases affordability in the decade with limited impact to lethality in each epoch.	Agreed
Launch a tailored and focused recruitment framework and greater retention initiatives to prioritise the growth pool of Officers and Sailors to support the enhanced lethality surface combatant fleet.	Agreed
Rapidly consolidate Henderson, which is critical to the Maritime Domain and nuclear-powered submarine capability, and enable onshore Tier 2 continuous naval shipbuilding in Western Australia.	Agreed
Issue an annual Shipbuilding Forecast to industry and the public to build confidence in Australia's shipbuilding industry.	Agreed in-principle
We recommend that elements and resources of the Independent Analysis Team Secretariat be transitioned to an implementation team and/or future project team(s).	Agreed
<p>Government response:</p> <ul style="list-style-type: none"> • The Government agrees to the enhanced lethality surface combatant fleet proposed by the independent analysis. The Government has also decided to accelerate the acquisition of a new general purpose frigate, in line with the options canvassed by the independent analysis. • Work is ongoing to implement the recommendations and the Government's response to the Defence Strategic Review (DSR), including the establishment of the Chief of Personnel to centralise ADF personnel management and changes to Defence's recruitment framework. Work is underway to address internal workforce risk, including through the Interim Workforce Plan and focus on ADF recruitment and retention. • Henderson shipyard consolidation has commenced following the Government's decision in November 2023 to establish a new strategic partnership between Defence and Austal Limited. • The Government agrees that certainty is essential to enable a sovereign shipbuilding industry. A shipbuilding forecast will be issued biennially with the National Defence Strategy. The first of these will be released in tandem with the Naval Shipbuilding and Sustainment Plan. 	

Minor War Vessels	
Reduce the number of Arafura class Offshore Patrol Vessels (OPVs) acquired from 12 to six.	Agreed
Investigate options for how the Arafura class OPVs could contribute to other military roles.	Agreed
We recommend that both Navy and Australian Border Force should operate a single vessel design (Evolved Cape class patrol boat (ECCPB)) for civil military operations, sustained through a single organisation (Defence), with costs met by the relevant operating force.	Agreed
<p>Government response:</p> <ul style="list-style-type: none"> • The Government agrees that minor war vessels are critical to Australia maintaining a secure maritime border. These vessels are optimised for civil maritime security operations and operate within the full extent of Australia’s Exclusive Economic Zone (other than the deep Southern Ocean). • The Government has accepted the recommendation to reduce the number of OPVs to be built, with negotiations to occur with the contractor. This project will continue to be managed as a Defence Project of Concern. • The Government acknowledges the potential efficiencies that can be gained through the operation of a common platform by Navy and Australian Border Force, with work underway to realise these benefits. 	





Australian Government