Canadian Maritime Security Network | Analysis

Naval Shipbuilding

Lessons from Down Under, 2015 to 2025

Elinor Sloan | April 2026

Executive Summary

As Canada seeks to recapitalize the Royal Canadian Navy lessons can be taken from Australia, whose recent naval shipbuilding experience offers parallels and a strategic guide. In recent years, Australia has accelerated its shipbuilding by consolidating yards, aligning infrastructure investment with long-term continuous production, and adapting fleet plans to changing geopolitical realities. However, immature designs and bespoke modifications caused delays and cost growth. Australia's willingness to course-correct by revising its fleet composition while investing in its previously identified principal shipyards demonstrates the importance of flexibility and discipline in naval shipbuilding.

A key element underwriting any nation's sea power is its ability to buy or build naval ships. Constructing naval vessels, especially warships, is very different from building even the largest of commercial ships. Whereas the cost of constructing a commercial ship is approximately 80% for the hull and 20% for the systems, the division is roughly reversed in a warship, where the cost is typically 30% for the hull construction and outfitting compared to 70% for the systems, weapons, and technology.[1] The marked difference between commercial and naval ships means that a commercial yard and workforce are not easily transferable to naval shipbuilding. For a nation to construct naval vessels or even be able to domestically maintain or upgrade those that are built partially or wholly abroad, it must plan accordingly. As one historian has put it, to build a fleet at home, a country must first build a shipyard.[2]

There are other factors to consider in naval shipbuilding. One is the degree to which the fleet being built accords strategically with the geopolitical environment and what the country needs to do with the ships, recognizing that the complexity of a modern warship can place a decade or more between its conception and commissioning. More operational-level factors are those pertaining to the overall build approach – block-build entirely in one shipyard (a vertically integrated build) or in multiple yards (a distributed build) – as well as those around whether to build offshore, onshore, or via a hybrid approach. Linked to this area are questions around continuous naval shipbuilding and how many major shipyards a country can sustain. More tactical naval shipbuilding

considerations centre on the role of the prime contractor, design maturity, and bespoke requirements.

Since 2015, Australia has actively engaged with all of these naval shipbuilding themes. At the time, it was in the early stages of a major fleet recapitalization, including of its naval surface warships and submarines. The Australian Department of Defence commissioned the RAND Corporation to assess the best course forward for acquisitions. Its recommendations were straightforward: institute and adhere to a consistent production pace of warship builds – i.e., a continuous shipbuilding plan – so as to reduce the build-at-home premium; have in hand a mature design when construction on a warship starts; and make minimal changes once production begins.[3] Australia's 2017 Naval Shipbuilding Plan followed, in large measure, the recommendations of the RAND report.

Despite some positive steps, implementation has not been entirely smooth. Central elements of the original plan – the Hunter-class frigates and diesel-electric submarines – have run behind schedule and over budget or been cancelled altogether. Significant changes in the geopolitical environment, as well as the AUKUS nuclear-propelled submarine decision, sparked a fleet review, plans for an enhanced surface combatant capability, and a revised shipbuilding plan. Released at the end of 2024, the government's Naval Shipbuilding and Sustainment Plan reflects a marked change in direction and is testament to Australia's ability to change course in response to new circumstances. Its experience and decisions may hold lessons for Canada as it, too, looks to rethink and review its maritime security requirements, platforms, and technologies.

Australia's Continuous Shipbuilding Decision

The acquisition of naval vessels is distinct from other major military platforms such as aircraft and land systems. The number of vessels a country will buy is small compared to, say, fighter jets or battle tanks, and because naval ships are a complex system of systems, they take relatively longer to build, experience some crossover between design and build, and involve many skilled trades and suppliers. This combination of factors turns naval vessels into a highly political commodity. Many countries want to build at home, even at the expense of higher unit costs. The length of time to design and build, the influence of industrial and political factors, and the significant level of concurrency between the design and build processes among surface ships – even as compared to submarines – have been identified as the key distinguishing attributes of naval shipbuilding.[4]

Notwithstanding the marked political aspect to naval shipbuilding, Australia is a relative newcomer to a build-at-home continuous shipbuilding strategy. The idea behind such a strategy is to reduce the build-at-home premium by ensuring consistent domestic shipyard work, thereby eliminating the cost of re-establishing a yard and workforce with every new build. Australia's 2000 Defence White Paper raised the possibility of replacing what until then had been a project-by-project approach with strategically linked programs under long-term arrangements.[5] Yet, five years later, the government was still deciding whether to build locally or overseas.[6] At the time, the Defence Department advised against building at home.[7]

Not until the 2010s did Australia face head-on the question of whether to support a domestic naval shipbuilding industry or to buy ships from foreign builders. Driven by problems with the air warfare destroyer (AWD) (discussed below), the need to avoid a submarine capability gap, and the

impending requirement to build new frigates, Australia announced plans in the summer of 2015 for a continuous build of warships in Australia. This was the first time in the country's history that a government had committed to a permanent naval shipbuilding industry. Australia reaffirmed its commitment to a long-term continuous build of surface warships in the pages of its 2016 Defence White Paper, and it released its first naval shipbuilding plan the following year.

Australia's Naval Shipbuilding Approach—A Strategic View

Shipyards

At least three strategic attributes stand out with respect to Australia's naval shipbuilding approach. First is the straightforward way Australia selected its shipyards. Continuous naval shipbuilding necessarily involves a rationalization of shipyards, since it is not financially possible for a government to sustain many yards with ongoing, taxpayer-funded work. In the early 2010s, Australia's shipbuilding industrial base included four major yards: ASC in Adelaide, South Australia; Austal in Henderson, Western Australia; BAE in Williamstown, Victoria; and Forgacs in Tomago, New South Wales.[8] The 2015 RAND assessment, noted above, argued that with the size of its fleet, Australia would be hard pressed to sustain more than one warship builder on a continuous basis, but that a one-yard decision would be risky in case a man-made or natural disaster shut it down.[9] Taking this advice, in 2016 Australia announced that naval shipbuilding in the country would be consolidated and centred on two yards: the Osborne Naval Shipyard in South Australia and the Henderson Maritime Precinct in Western Australia, near Perth.[10] This decision made its way into the 2017 Naval Shipbuilding Plan. In similarly straightforward fashion, Australia's 2024 Naval Shipbuilding and Sustainment Plan identifies two "principal" shipyards, Osborne and Henderson.

Both the Osborne and Henderson yards are government owned. The Commonwealth of Australia owns the Osborne yards, North and South, while the State of Western Australia owns the Henderson Precinct. But this latter situation is changing: in 2024, Australia announced it would be establishing a consolidated Commonwealth-owned Defence Precinct at the Henderson yard.[11] The move follows Australia's decision, a year earlier, to establish a strategic shipbuilder partnership "pilot" with the main shipbuilding firm at Henderson, Austal Ships Pty Ltd., under which Austal will build Army landing craft and Navy patrol boats, with a view to eventually negotiating a more permanent agreement.[12] This decision, in turn, was in response to Australia's 2023 Defence Strategic Review, which had noted that there was not enough work to sustain the number of shipbuilders located at Henderson and recommended that Australia "urgently" intervene to consolidate shipbuilding at the Henderson yard.[13] Consolidation under Commonwealth ownership is well under way.[14]

Austal remains a privately owned company, while ASC – formerly the Australian Submarine Corporation – is a government-owned shipbuilding firm. Australia nationalized ASC in 2000 after the Collins-class submarine build became unmanageable.[15] For the Hunter build, Australia has made ASC a subsidiary of BAE Systems, but this is only temporary for the duration of the program (see below). BAE Systems and ASC are to be "build partners" for Australia's nuclear-powered submarines, forming an integrated joint venture.[16]

Naval Vessels: Ships and Submarines

Australia has also straightforwardly allocated its ship and submarine builds to its two selected shipyards. In its 2017 Naval Shipbuilding Plan, Australia announced not just that Osborne and Henderson had been chosen for its continuous naval shipbuilding program, but also that the country's future frigate and submarine classes would be built at Osborne (South and North respectively) and that its offshore patrol vessels would be built at Henderson. Specific platform numbers were included: nine future frigates optimized for anti-submarine warfare, twelve offshore patrol vessels, and twelve new "regionally superior" submarines.[17] The allocations represented, in actuality, three naval shipbuilding continuous-build programs: a submarine rolling acquisition program, a major surface combatant continuous-build program, and a minor naval vessel continuous-build program.

Prompted by the findings of the 2023 Defence Strategic Review, the 2024 Naval Shipbuilding and Sustainment Plan marks a departure from the 2017 plan in terms of the ships to be built. Only Australia's second full-fledged defence review since the end of the Cold War, the 2023 assessment identified a significant disconnect between the new geopolitical environment – China's rapid and non-transparent military build-up, as well as the intensifying China–US competition – and the forces, including naval forces, that Australia possessed or was building. The country's military forces, the review argued, were "not fully fit for purpose."[18] Australia needed to shift from having a "balanced force" designed to respond to a range of contingencies, to a "focused force" designed to operate in a world of great power conflict.[19] Long-range maritime and land strike, air defence, and anti-submarine warfare were especially important. The strategic review called for an "optimal mix of Tier 1 and Tier 2 surface combatants, consistent with a strategy of a larger number of smaller surface vessels."[20] Overall, the requirement is for a more lethal surface combatant fleet to complement a conventionally armed, nuclear-powered submarine fleet.

The contours of Australia's future submarine fleet were established soon after the Strategic Defence Review's release. In March 2023, Australia, the United Kingdom, and the United States, the members of the AUKUS trilateral security partnership established in 2021, announced an "Optimal Pathway" to deliver to Australia conventionally armed, nuclear-powered submarines (SSNs). First, there is to be a rotational presence of British and American nuclear-powered submarines at HMAS *Stirling*, which is part of the Henderson Precinct; then, Australia is to acquire three Virginia-class submarines from the United States; and finally, there will be a trilateral program to develop and build the SSN-AUKUS, with construction to start in Australia on its submarines by the end of this decade.[21]

It is left to an independent analysis of the Navy's surface combatant fleet, commissioned by the Australian government, to propose what might be the optimal size, structure, and composition of a Tier 1–Tier 2 hybrid surface combatant fleet to complement this submarine force. The Surface Combatant Review, released in early 2024, defines Tier 1 ships as those that are essential to advanced air defence, long-range strike, presence, and undersea warfare, while Tier 2 vessels are those optimized for undersea warfare, operating both independently and in conjunction with the Tier 1 ships to secure maritime trade routes and northern approaches.[22] The review recommends nine Tier 1 ships, comprising the three Hobart-class destroyers and six (as opposed to the original nine) Hunter-class frigates; at least seven (and ideally eleven) Tier 2 ships, meaning a general-

purpose frigate to replace Australia's Anzac-class frigates; and a force of twenty-five minor war vessels, consisting of offshore patrol vessels and other patrol ships. Reducing the number of Hunter-class frigates from nine to six is explicitly tied to accelerating a replacement for the Hobart-class destroyers. The review also recommends, uniquely, the acquisition of six large optimally crewed surface vessels (LOSVs), armed with vertical launching system cells and the Aegis Combat System, with the goal of "increas[ing] distributed fleet lethality with a lower cost and crewing impact."[23] The government agreed with this blueprint, deciding on an accelerated acquisition of eleven general-purpose frigates.[24]

The Naval Shipbuilding and Sustainment Plan, released at the end of 2024, translates the ship class decisions in the Surface Combatant Review into a plan for execution. Under the plan, the Osborne South yard will build major surface combatants (including the Hunter class and the future destroyer), Osborne North will build the nuclear-powered submarines that are part of AUKUS, and the Henderson Precinct will be assigned to build the general-purpose frigates and LOSVs, along with patrol ships and other minor vessels.

At the Osborne South yard, construction of the future destroyer is to immediately follow the Hunter-class frigate build, an important commitment in continuous shipbuilding terms because under the 2017 plan, the yard was given no guarantee that its mandate would continue beyond the delivery of the Hunter class. Interestingly, from the time of its inception in Australia's 2009 Defence White Paper, to the release of the 2023 Defence Strategic Review, Australia's future frigate, which became the Hunter class in 2018, was presented as the Anzac-class replacement. Now, the Anzac-class replacement is to be an entirely different ship, a general-purpose frigate built at a different yard. The new track may reflect the fact that the Hunter, which has grown to about 10,000 tons (t), will be almost three times the size of the 3,600 t Anzac it was to replace.[25] The end-2024 shipbuilding plan states that the new general-purpose frigate will be acquired through a hybrid offshore-onshore build strategy in which the first three frigates will be built offshore, transitioning to the Henderson yard once infrastructure upgrades there have been completed.

Infrastructure

A final noteworthy strategic attribute of Australia's naval shipbuilding approach is its active incorporation, from the beginning, of infrastructure upgrades into its plans. The 2017 Naval Shipbuilding Plan identified infrastructure as a key enabler of continuous naval shipbuilding and emphasized that both the Osborne and Henderson yards would need substantial infrastructure upgrades to support modern warship-building requirements, such as building ships in large structural blocks. Australia committed to $535 million and $100 million of upgrades at Osborne and Henderson, respectively, with the goal of having the new infrastructure in place in time to support the start of continuous-build programs.[26] Building submarines at Osborne North, too, would require infrastructure upgrades, and the 2017 plan committed to a detailed costing of modernizing the yard for submarine construction at a scale not unlike that for the surface ships at Osborne South.[27]

Like the 2017 plan, the 2024 Naval Shipbuilding and Sustainment Plan identifies infrastructure as a critical enabler and devotes an entire chapter to naval infrastructure. It outlines measures to expand the capability and capacity of the Henderson and Osborne (North and South) yards, at a

cost of billions of dollars, to ensure the yards are "fit-for-purpose" – that is, that they have the infrastructure in place for their assigned builds.[28] Upgrades include infrastructure for the design and construction of nuclear-powered submarines at Osborne North, as well as further upgrades to Osborne South to construct the Hunter-class frigates and upgrade the Hobart-class destroyers. The 2024 Surface Combatant Review explicitly links the infrastructure at the two Osborne yards, advising the government to build, maintain, and sustain the entire Tier 1 surface fleet at Osborne South so as to assist in developing the industrial capacity necessary to deliver nuclear-powered submarines at Osborne North.[29] In Western Australia, the 2024 shipbuilding plan announced an initial infrastructure investment of $127 million to progress the defence precinct at Henderson, as well as $8 billion over the coming decade to upgrade HMAS *Stirling* to the level necessary to support nuclear-propelled submarines.[30]

Australia's Naval Shipbuilding Approach—Tactical Lessons

Block Build and Vertical Integration

Where Australia has landed on shipyards, naval vessels, and infrastructure has been informed by lessons learned at the more tactical shipbuilding level. One such lesson is regarding whether the build is distributed across multiple yards or vertically integrated in a single yard. When Australia established the Air Warfare Destroyer Alliance of companies to build its three Hobart-class air warfare destroyers in 2009, it decided that the ships would be built using a block-build construction method, meaning blocks or segments of a ship being pre-built in a shipyard and then taken to the building dock for assembly, to be attached to other sections to form a complete ship. The approach, which was first introduced in Japan in the 1960s and then perfected in South Korea and Europe,[31] has become the standard method in the naval shipbuilding industry because it allows for the parallel construction of ships. Significantly, the government also decided on a distributed block-build approach, across several shipyards. The forward superstructure blocks were built by ASC in Osborne, the rest of the superstructure by Forgacs in Newcastle, the keel blocks by BAE Systems in Williamstown, and the sonar blocks in Spain and the UK.[32] The blocks were then integrated at the government-owned ASC shipyard. The ship designer, Navantia, was not included in the AWD Alliance.

Problems with this approach soon appeared. With no overall prime contractor, no oversight by the ship designer, and blocks being built in many yards as part of a distributed build approach, different interpretations of the design emerged. Some blocks did not "fit" once they were brought together, adding several years to the ship construction schedule as the issues were sorted out. The lesson Australia took from the AWD experience was two-fold and definitive. First, future large naval vessels would be built in blocks at one yard to be integrated at that same yard; that is, to follow a vertically integrated approach. Thus, the Hunter class is being built in blocks by BAE at the ASC shipyard, for integration in the same location. ASC's Osborne South yard has been upgraded to be a "state of the art" vertically integrated shipyard.[33]

Second, future naval shipbuilding contracts would include the designer. The contracting model adopted for the AWD had put the Spanish designer at arm's length from the Australian shipyards, with the result being that the designer was not invested in the build outcome.[34] To avoid this, when it awarded BAE Systems the design contract for the Hunter class in 2018, Australia also arranged

to temporarily transfer ownership of ASC Shipbuilding to BAE so as to ensure the blocks accord with the design at all times and that BAE is accountable for the outcome.[35] In previous builds, the Collins-class submarines and Anzac-class frigates, the designer was subcontracted to the shipyard, thereby also guaranteeing a close relationship between the ship designer and shipbuilder.[36]

A distinction needs to be made between the terms "block build" and "modular build," which are often used interchangeably in the naval shipbuilding literature. Block build refers to major segments of a ship that are then assembled – hull blocks, forward superstructure blocks, etc. Meanwhile, modular build refers to capabilities that can be switched in and out of a ship, such as mission modules for anti-submarine warfare, mine countermeasures, anti-surface missiles, and autonomous systems. Incorporating an architecture into a warship that is amenable to mission modularity is often touted as a means of ensuring a ship can be continuously updated with the most advanced technology. Ironically, however, it may also promote or at least facilitate a move toward bespoke capabilities. As discussed below, the reference design for the Hunter class, Britain's Type 26 Global Combat Ship, was designed with an open architecture intrinsic to modularity, which in turn enabled Australia to incorporate a significantly modified combat system on the same common platform.[37]

Mature Design and Avoid Bespoke

Australia's current mix of naval vessels in the 2024 Naval Shipbuilding and Sustainment Plan reflects lessons that have been learned – or relearned – over the course of the Hunter frigate build. The most important are to start with a mature design and to avoid to the greatest degree possible bespoke changes in the early stages of the build. In 2015, well before the Hunter contract was awarded, a RAND assessment of Australia's naval shipbuilding industry (noted above) advised the government that for future large naval ships, it must have a mature design in hand and make minimal changes once production begins. The lesson had emerged from the AWD experience, where the design had not been finalized even as the work was progressing.[38] At one point, the general manager of the AWD Alliance had felt compelled to recommend a "design freeze."[39] The imperative was reiterated by the government itself in the pages of its 2017 Naval Shipbuilding Plan, when it stated that two key guiding principles for implementing the plan were selecting a mature design at the start of the build and limiting the amount of unique Australian design changes.[40]

Neither principle was held for the Hunter class. Of the shipbuilders that competed for the contract, including Britain's BAE Systems, Spanish shipbuilder Navantia, and Italian shipbuilder Fincantieri, BAE was the only one unable to offer a mature design, i.e., one that was already built and in service with a navy. Rather, to win the frigate competition in 2018, BAE emphasized its proven experience in anti-submarine warfare (a key requirement for Australia's new frigate), the company's long history in Australia, and the enduring Five Eyes intelligence-sharing relationship.[41] With no version of the ship in the water, the reference design continued to change during the early stages of the Hunter-class contract award. For example, the keel for the first Type 26 was laid in 2017, and as it was constructed in Glasgow, design changes flowing from production increased the design's baseline weight and slightly extended its overall length.[42]

Far more difficult to address were the unique Australian design changes. Because Australia possesses limited domestic capability to design warships, it has historically obtained plans from overseas and then modified and tailored them to meet Australian requirements and shipyard capabilities.[43] The approach is known as Australianized military off-the-shelf (MOTS). A 2008 Australian defence procurement report defined MOTS as a design that is already in service with a foreign military and requires only minor modification to meet Australian requirements.[44] In the case of the Hunter class, however, the notion of Australianized MOTS was stretched. Design changes to the baseline Type 26 (which, as noted, was not in service) were well beyond minor, including the integration of an Australian-built phased array radar, America's Aegis combat management system, an Australian combat tactical interface by SAAB, and Australian weapons, maritime helicopters, and communications systems.[45]

The modifications had two important impacts. First, they significantly delayed the schedule. The new requirements introduced changes throughout the ship, not just to the superstructure, and some of the changes had not been attempted before. For example, unlike Spain and Navantia, BAE Systems had never integrated a US combat system into its Royal Navy ships.[46] Just three years after choosing BAE's Type 26, the government was forced to announce an eighteen-month delay. Not until 2024 did Australia award BAE Systems Maritime Australia an actual contract to build the first three Hunter-class frigates.

More critically in the long run, accommodating the changes necessitated making the hull wider as compared to the reference design, increasing its size and making the warship heavier. The weight of the vessel has grown from the originally planned 8,000 t to over 10,000 t. In 2021, the Defence Department's own engineering assessment team raised concerns that the ship's speed, acoustic performance, and ability to conduct stealthy anti-submarine warfare operations could be impacted by the increased size and weight.[47] Not long after, Australia considered a "Plan B" for its new frigates, without specifying what this plan might be.[48] Although the government ultimately decided to stick with BAE Systems and the Hunter class, it was an early indication that the original plan for nine anti-submarine warfare frigates might be reconsidered. Scholarly reports and retired admirals were arguing that the problem-plagued Hunter should be scrapped in favour of building more of the proven Hobart class,[49] while others suggested investing in lethal autonomous systems as a complementary choice.[50]

Australian Naval Shipbuilding: The Current Status and the Way Ahead

Where Australia landed in its 2024 shipbuilding plan on fleet mix and how and where the ships will be built can best be understood in light of developments in the Australian naval shipbuilding space over the period from 2015 to 2025. The Hunter class will go ahead, but the problems the build has encountered by virtue of combining a not-in-the-water parent design with extensive Australianization have forced a reduction in the numbers to be acquired. Temporarily subcontracting the shipyard that is building the vessel (ASC) to the ship designer (BAE) did not remove all of the difficulties the AWD faced, although block building in a vertically integrated yard at Osborne South has been a good news story. In place of the three Hunters that have been cancelled is a government commitment to build a future destroyer immediately after the Hunter, along with a decision to accelerate a previously planned upgrade in the existing Hobart class's Aegis system.

The government has also committed to acquiring eleven general-purpose frigates, as well as six LOSVs – an entirely new capability in the fleet mix. Both are in response to a rapidly changing international security environment, which demands more ships and more vertical launching cells operating in Australia's immediate region and securing its sea lines of communication and maritime trade.[51] Australia assesses that "in addition to the Hunter class frigates, optimized for undersea warfare, and upgraded Hobart class destroyers, general purpose frigates are needed to provide the Navy with the necessary number of platforms to meet the strategic challenges Australia faces"; moreover, LOSVs, by "increas[ing] the vertical launching system cell capacity of the Tier 1 surface combatant fleet . . . will enhance the lethality and survivability of the joint integrated force . . . [while] also reducing the crewing requirement for [the] Navy."[52]

How these ships will be built also reflects lessons learned from the Hunter class. The government has directed that the general-purpose frigate be acquired from an established shipbuilding partner through a hybrid offshore-then-onshore build strategy, with the first three to be built "off the shelf" overseas before transitioning to the consolidated yard at Henderson.[53] Thus, although Australia has confirmed its commitment to continuous naval shipbuilding – indeed, the December 2024 shipbuilding plan is also referred to as the Continuous Naval Shipbuilding and Sustainment Enterprise or CNSS Enterprise – not all ships are to be built in-country. Rather, the government is supporting its continuous-build strategy with its decision to build the general-purpose frigates to replace the Anzac class at the Henderson yard, thereby enabling that yard to transition from building smaller offshore patrol vessels to major surface combatants.[54] The LOSVs, which are being developed by the US Navy, will also be constructed at the Henderson yard.

A Comparison to Canada

Strategic Differences

Comparing Canada's naval shipbuilding approach to that of Australia reveals both strategic differences and tactical commonalities. Strategically, both countries sought to rationalize the number of shipyards it had for building large military vessels in order to overcome what is colloquially referred to as a "boom and bust" cycle of naval shipbuilding.[55] But what stands out most noticeably with respect to Australia is the refreshingly straightforward way the country chose its shipyards, allocated the builds, and dealt with the need for infrastructure upgrades. Canada's approach in these areas was more complicated. To choose the original two shipyards under its National Shipbuilding Strategy, the country undertook a year-long competition in 2011 that included the release of a request for proposals, bid submissions, and an evaluation procedure akin to a major military procurement program. The idea was to embed market competition into shipyard selection, but the knock-on impact was to negatively impact the speed with which Canada could develop the shipyard capacity to build large surface combatants. This is because the request for proposal assessment metrics was set such that shipbuilders were incentivized to bid zero cost to the Canadian taxpayer for shipyard infrastructure upgrades.[56]

Within short order, this metric proved unreasonable. The competition was not to build ships per se but rather to become designated as one of the federal government's preferred sources of supply. Indeed, the 2012 umbrella agreements with the winning yards – Irving Shipbuilding in Halifax for combat ships and Seaspan Shipyards in Vancouver for non-combat ships – made it clear that the yards were not guaranteed actual shipbuilding contracts, again to embed market competition. Yet,

one could hardly expect a shipyard to spend hundreds of millions of dollars in infrastructure costs without some assurance that the costs would be recovered. The end result was the modification of the umbrella agreements to include provisions that ensured the yards would recoup their infrastructure outlays.[57] Only then did the years-long process of rebuilding the shipyards begin.

The whole convoluted process of embedding market competition into Canada's national shipbuilding strategy at multiple points, as compared to the Australian government's straightforward approach of deciding on the yards, deciding on the ships, and taking the lead on infrastructure, arguably set Canada back five years. Canada's shipbuilding strategy dates to 2011/12 and Australia's to 2017, and yet the two countries are at roughly the same stage when it comes to the most directly comparable project: using Britain's Type 26 as the reference design for their next-generation frigate/destroyer. Both countries awarded a contract to BAE Systems for a modified Type 26 in 2018; the contract for Australia's first three Hunter-class frigates was awarded in 2024, while the implementation contract for Canada's first three River-class destroyers was signed in 2025.

Australia's approach to shipbuilding infrastructure may have been facilitated by government ownership of the yards involved. Many of Canada's allies build their naval ships in government or military shipyards. Apart from the Australian examples, the Spanish government owns Navantia, the French government owns DCN, and the United States has four government shipyards. Britain had government-owned royal dockyards for centuries before the last was privatized in 1997. Uniquely among its major allies, Canada has never had government or military shipyards; rather, its naval vessels have always been built in civilian/commercial yards. "Eschewing the practice of many countries," notes naval historian Michael Hennessy, "the Canadian model mostly rejects state ownership of naval building yards," preferring something closer to a public-private/commercial partnership.[58]

Tactical Commonalities

Comparing Australian and Canadian shipbuilding efforts also reveals some tactical commonalities. Like Australia, Canada chose the Type 26 "paper ship" as the reference design for its new frigate/destroyer despite an early government commitment to use a proven, off-the-shelf warship design.[59] Whereas Australia's modified Type 26 is the Hunter-class heavy frigate, Canada's is the River-class guided missile destroyer. And like Australia, Canada has struggled to incorporate country-specific changes. Three of the biggest areas of adaptation, also echoing Australia, are to incorporate America's Aegis combat weapons system, a Canada-specific tactical interface derived from Lockheed Martin's Combat Management System (CMS) 330, and a different radar from the Type 26 parent, Lockheed Martin's AN/SPY-7. It has been reported that of the twenty-six major systems on the River class, there have been platform changes to nineteen of them.[60] As with Australia, these adaptations have set back the schedule, increased the weight of the platform, and forced the hull to be made slightly wider than the reference design. In 2023, Canada invested almost half a billion dollars in Irving's shipyard infrastructure to ensure the yard can accommodate building a larger hull.

Conclusion

In the space of only ten years, Australia commissioned a major study to inform its shipbuilding future (2015), released a defence policy that included its shipbuilding vision (2016) and also a comprehensive Naval Shipbuilding Plan (2017), commissioned a landmark Defence Strategic Review (2023) as well as an independent review of its major surface combatants (February 2024), and, finally, released a revised and far-reaching plan for a continuous naval shipbuilding and sustainment enterprise (December 2024). The documents communicate an overarching strategic vision for continuous naval shipbuilding in Australia as a means of ensuring the country has the combat vessels it needs over the coming decades. Key elements of carrying out the vision have been to decide on the shipyards, designate the ship builds to the yards, and commit to undertaking the necessary shipyard infrastructure upgrades.

These straightforward decisions have done much to move the Australian naval shipbuilding enterprise forward in just a few years. But they could not overcome the phenomenon of "bespoke creep" in Australianized MOTS vessels, nor could they hold back changes in the international security environment that have implications for fleet mix and warfighting capability (as measured in vertical launching cells). Australia's most recent policy documents reflect a course correction designed to address both elements. It has cut back procurement of a problem-plagued frigate in favour of a general-purpose frigate to be built by means designed to address the bespoke inertia, i.e., a hybrid offshore-onshore build. It has also set out plans for an entirely new vessel that will add combat capability with minimum crew requirements. To its credit, therefore, Australia has not stood back and let go unchecked a path that was progressively being revealed as unworkable. The first three general-purpose frigates have already been ordered.[61]

For Canada, lessons learned on how to go about choosing/rationalizing shipyards for continuous naval shipbuilding, and whether a government should proactively upgrade shipyard infrastructure, are useful but moot at this stage. The perhaps five years Canada lost to its adopted approach cannot be regained. Moving forward, however, having landed on Irving in Halifax, Seaspan in Vancouver, and more recently Chantier Davie in Lauzon, Quebec – and with the necessary infrastructure now largely in place – the Canadian government should actively strive to maintain these yards as the core of a continuous naval shipbuilding approach for decades to come. The basic principle on which Canada's original national shipbuilding strategy was built was to rationalize its number of yards so as to ensure continuous naval shipbuilding. The principle was stretched by adding in Davie and will be further tested if it adds Ontario Shipyards to the strategy to build a new Continental Defence Corvette.[62]

That said, a Continental Defence Corvette – currently under consideration by Canada and at the request for (industry) information stage – is necessary. As with Australia, growing costs and schedule delays may call for a course correction around Canada's new destroyer. This is doubly the case considering new concerns about the destroyers being reliant on an American-controlled command system, the Aegis.[63] Close observers believe the final River-class hull buy could shrink below the original 15-vessel commitment, and that it will be necessary to fill out Canada's desired naval firepower with a class of less expensive surface combatants.[64] It is not difficult here to see the analogies with Australia's general purpose frigate. As Canada rethinks and reviews its maritime

security requirements, platforms, and technologies, it is wise to consider Australia's experience and the decisions being made down under.

Dr. Elinor Sloan is Professor of International Security Studies in the Department of Political Science at Carleton University where she specializes in the security and defence policies of Canada, the United States, and other major allies.

Notes

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