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Planning, Programming, Budgeting, and Execution in Comparative Organizations: Case Studies of Selected Allied and Partner Nations

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Abstract

The United States (U.S.) Department of Defense's (DoD's) Planning, Programming, Budgeting, and Execution (PPBE) System was originally developed in the 1960s as a structured approach for planning long-term resource development, assessing program cost-effectiveness, and aligning resources to strategies. Yet changes to the strategic environment, the industrial base, and the nature of military capabilities have raised the question of whether existing U.S. defense budgeting processes remain well aligned with national security needs.

The U.S. Congress called for the establishment of a commission on PPBE reform. As part of its data collection efforts, the commission asked RAND to conduct case studies of budgeting processes across 16 comparative organizations: 10 international defense organizations and six U.S. federal government agencies.



In this paper, RAND researchers provide a summary of the case studies of the defense budgeting processes of Australia, Canada, and the United Kingdom (U.K.). Researchers conducted extensive document reviews and structured discussions with subject-matter experts with experience in the budgeting processes of the international governments. Each case study was assigned a unique team with appropriate regional or organizational expertise. The analysis was also supplemented by experts in the U.S. PPBE process.

Key Findings¹

- Australia, Canada, and the U.K. have a shared commitment to democratic institutions with the United States and converge on a similar strategic vision.
- Foreign military sales are an important mechanism for strategic convergence but pose myriad challenges for coordination and resource planning.
- The Australian, Canadian, and U.K. political systems shape the roles and contours of resource planning.
- Australia, Canada, and the U.K. have less legislative intervention in budgeting processes, relative to the United States, and do not need to confront the challenges of operating without a regular appropriation (as is the case under continuing resolutions).
- Strategic planning mechanisms in Australia, Canada, and the U.K. harness defense spending priorities and drive budget execution.
- Jointness in resource planning appears to be easier in Australia, Canada, and the U.K., given the smaller size and structure of their militaries.
- Australia, Canada, and the U.K. place a greater emphasis on budget predictability and stability than on agility.
- Despite the common emphasis on stability, each system provides some budget flexibility to address unanticipated changes.
- Similar budget mechanisms are used in Australia, Canada, and the U.K.
- Australia, Canada, and the U.K. have all pivoted toward supporting agility and innovation in the face of lengthy acquisition cycles.
- Australia, Canada, and the U.K. have independent oversight functions for ensuring transparency, audits, or contestability of budgeting processes.
- Despite the push to accept additional risk, there is still a cultural aversion to risk in the Australian, Canadian, and British budgeting processes.

Introduction

In light of a dynamic threat environment, increasingly capable adversaries, and rapid technological changes, there has been increasing concern that the U.S. Department of Defense's (DoD's) resource planning processes are too slow and inflexible to meet warfighter needs.² DoD's Planning, Programming, Budgeting, and Execution (PPBE) System was originally developed in the 1960s as a structured approach for planning long-term resource development, assessing program cost-effectiveness, and aligning resources to strategies. Yet changes to the strategic environment, the industrial base, and the nature of military capabilities have raised the question of whether the DoD's budgeting processes are still well aligned to

¹ There is additional information on this topic in the full document: McKernan, M., et al. (2024). *Planning, Programming, Budgeting, and Execution in comparative organizations: Volume 2, Case studies of selected allied and partner nations* (Report No. RR- A2195-2). RAND. https://www.rand.org/pubs/research_reports/RRA2195-2.html

² See, for example, Section 809 Panel, (2018, June), pp. 12–13; McGarry (2022, July 11), p. 1; Greenwalt & Patt (2021), pp. 9–10.



national security needs.

To consider the effectiveness of current resource planning processes for meeting national security needs and to explore potential policy options to strengthen those processes, Congress called for the establishment of a commission on PPBE reform in Section 1004 of the National Defense Authorization Act for Fiscal Year (FY) 2022.³ The Commission on PPBE Reform took shape as a legislative commission in 2022, consisting of 14 appointed commissioners, each drawing on deep and varied professional expertise in the DoD, Congress, and the private sector. In support of this work, the commission collected data, conducted analyses, and developed a broad array of inputs from external organizations, including federally funded research and development centers, to develop targeted insights of particular interest to the commission. The commission asked the RAND National Defense Research Institute to contribute to this work by conducting case studies of 16 comparative organizations: 10 international defense organizations and six other U.S. federal government agencies.

The Planning, Programming, and Budgeting System (PPBS), the precursor to DoD's PPBE process, took shape in the first decades after World War II and was introduced into DoD in 1961 by then-Secretary of Defense Robert McNamara.⁴ Drawing on new social science methods, such as program budgeting and systems analysis, the PPBS was designed to provide a structured approach to weigh the cost-effectiveness of potential defense investments. A central assertion of the PPBS's developers was that strategy and costs needed to be considered together.⁵ As Charles Hitch, Secretary McNamara's first comptroller and a key intellectual leader in the development and implementation of the PPBS, and Roland McKean (1960) noted, "There is no budget size or cost that is correct regardless of the payoff, and there is no need that should be met regardless of cost."

To make decisions about prioritization and where to take risk in a resource-constrained environment, DoD needed an analytic basis for making choices. Therefore, the PPBS first introduced the program budget, an *output*-oriented articulation of the resources associated with a given military capability projected out over 5 years.⁶ The PPBS then introduced an approach for assessing cost-effectiveness, termed *systems analysis*, which was institutionalized in the Office of Systems Analysis. Since 2009, the institutional successor to the Office of Systems Analysis has been known as Cost Assessment and Program Evaluation (CAPE).⁷ At its inception, the PPBS was a process for explicitly linking resources to strategy and for setting up a structure for making explicit choices between options, based on transparent analysis of costs

³ Public Law 117-81, National Defense Authorization Act (NDAA) for Fiscal Year 2022. (2021, December 27). Section 1004(f) of this Act is of particular relevance to our research approach: "Compare the planning, programming, budgeting, and execution process of the Department of Defense, including the development and production of documents including the Defense Planning Guidance (described in section 113(g) of Title 10, United States Code), the Program Objective Memorandum, and the Budget Estimate Submission, with similar processes of private industry, other Federal agencies, and other countries."

⁴ An oft-quoted assertion by Secretary of Defense Robert McNamara, which is pertinent to this discussion, is that "you cannot make decisions simply by asking yourself whether something might be nice to have. You have to make a judgment on how much is enough." See Enthoven & Smith (1971); see also Young (2009).

⁵ Or, as Bernard Brodie stated succinctly, "Strategy wears a dollar sign" See Brodie (1959).

⁶ On the need for an output-oriented budget formulation at the appropriate level to make informed choices, Hitch and McKean (1960) noted that the consumer "cannot judge intelligently how much he should spend on a car if he asks, 'How much should I devote to fenders, to steering activities, and to carburetion?' Nor can he improve his decisions much by lumping all living into a single program and asking, 'How much should I spend on life?'"

⁷ In a discussion of the founding of PPBS, Enthoven (the first director of the Office of Systems Analysis) and Smith (1971) described "the basic ideas that served as the intellectual foundation for PPBS" as follows: (1) decision-making should be made on explicit criteria of the national interest, (2) needs and costs should be considered together, (3) alternatives should be explicitly considered, (4) an active analytic staff should be used, (5) a multiyear force and financial plan should project consequences into the future, and (6) open and explicit analysis should form the basis for major decisions.



and effectiveness. Then, as today, the system introduced friction with other key stakeholders, including Congress and industry partners. Key features of the PPBS have become institutionalized in the DoD's PPBE System, and questions have arisen about whether its processes and structures remain relevant and agile enough to serve their intended purposes (Greenwalt & Patt, 2021).

To set up the discussion of case studies, it will be helpful to outline the key features of the PPBE process and clarify some definitions. Today, consideration of PPBE often broadly encapsulates internal DoD processes, other executive branch functions, and congressional rules governing appropriations. Internal to the DoD, PPBE is an annual process by which the department determines how to align military programs and resources to strategic guidance. The process supports the development of DoD inputs to the President's Budget and to a budgeting program with a 5-year time horizon (McGarry, 2022), known as the Future Years Defense Program (FYDP). Department of Defense Directive (DoDD) 7045.14, *The Planning, Programming, Budgeting, and Execution (PPBE) Process*, states that one intent for PPBE "is to provide the DoD with the most effective mix of forces, equipment, manpower, and support attainable within fiscal constraints." PPBE consists of four distinct processes, each with its own outputs and stakeholders. Select objectives of each phase include the following:

- **Planning:** "Integrate assessments of potential military threats facing the country, over-all national strategy and defense policy, ongoing defense plans and programs, and projected financial resources into an overall statement of policy" (DoD, 2017).
- **Programming:** "Analyze the anticipated effects of present-day decisions on the future force; detail the specific forces and programs proposed over the FYDP period to meet the military requirements identified in the plans and within the financial limits" (Tyszkiewicz & Daggett, 1998).
- **Budgeting:** "Ensure appropriate funding and fiscal controls, the phasing of the efforts over the funding period, and the feasibility of execution within the budget year" (Tyszkiewicz & Daggett, 1998); restructure budget categories for submission to Congress according to the appropriation accounts; and prepare justification material for submission to Congress (McGarry, 2022).
- **Execution:** "Determine how well programs and financing have met joint warfighting needs" (DoD, 2017).

Several features of congressional appropriations processes are particularly important to note. First, since FY 1960, Congress has provided budget authority to DoD through specific appropriations titles (sometimes termed *colors of money*), the largest of which are operation and maintenance (O&M); military personnel; research, development, test, and evaluation (RDT&E); and procurement (Tyszkiewicz & Daggett, 1998). These appropriations titles are further broken down into appropriation accounts, such as Military Personnel, Army, or Shipbuilding and Conversion, Navy (SCN). Second, the budget authority provided in one of these accounts is generally available for obligation only within a specified period. In the DoD budget, the period of availability for military personnel and O&M accounts is 1 year; for RDT&E accounts, 2 years; and for most procurement accounts, 3 years (although for SCN, it can be 5 or 6 years, in certain circumstances). This specification means that budget authority must be obligated within those periods, or with only a few exceptions, it is sent back to the U.S. Department of the Treasury (Tyszkiewicz & Daggett, 1998).⁸ There has been recent interest in exploring how these features of the appropriations process affect transparency and oversight, institutional incentives, and the exercise of flexibility, should resource needs change (McGarry, 2022). Importantly, PPBE

⁸ For a discussion of the availability of funds appropriated to DoD for RDT&E activities, see Section 3131 of Title 10, *United States Code*, Availability of Appropriations.



touches almost everything the DoD does and, thus, forms a critical touchpoint for engagement among stakeholders across the DoD (e.g., Office of the Secretary of Defense, military departments, Joint Staff, combatant commands), in the executive branch (through the Office of Management and Budget), in Congress, and among industry partners.

Study Objectives and Approach

In close partnership with the PPBE Commission, we selected 10 case studies of international defense organizations to explore decision-making in organizations facing challenges like those experienced in the DoD: exercising agility in the face of changing needs and enabling innovation. Three of those case studies are documented here: Australia, Canada, and the United Kingdom. For all 10 case studies, we conducted extensive document reviews and structured discussions with subject-matter experts having experience in the budgeting processes of the examined international defense organizations. Case study research drew primarily on government documentation outlining processes and policies, planning guidance, budget documentation, and published academic and policy research. Although participants in structured discussions varied in accordance with the decision-making structures across case studies, they generally included chief financial officers, representatives from organizations responsible for making programmatic choices, and budget officials. To facilitate consistency, completeness in addressing the commission's highest-priority areas of interest, and cross-case comparisons, we developed a common case study template. This template took specific questions from the commission as several inputs, aligned key questions to PPBE processes and oversight mechanisms, evaluated perceived strengths and challenges of each organization's processes and their applicability to DoD processes, and concluded with lessons learned from each case. To enable development of a more consistent evidentiary base across cases, we also developed a standard interview protocol to guide the structured discussions.

Selected Allied and Partner-Nations Focus

The 2022 National Defense Strategy (NDS) describes a security environment of complex strategic challenges associated with such dynamics as emerging technology, transboundary threats, and competitors posing "new threats to the U.S. homeland and strategic stability" (DoD, 2022). Among these challenges, the NDS notes that "the most comprehensive and serious challenge" is the People's Republic of China (PRC). The NDS points to China's military modernization and exercise of whole-of-government levers to effect "coercive" and "aggressive" approaches to the region and international order (DoD, 2022). While the NDS designates China as the "pacing challenge" for the DoD, it also highlights the threat posed by Russia as an "acute threat" (DoD, 2022). To counter these strategic challenges, the NDS calls for strong relationships among U.S. allies and partner nations (DoD, 2022). The lower half of Figure 1 illustrates the increasing gap between China's rising military expenditure over time and the relatively flat, lower levels of expenditure by Russia and U.S. allies and partner nations: Australia, Canada, and the U.K.

To better understand and operate in the competitive environment, the Commission on PPBE Reform is considering "budgeting methodologies and strategies of near-peer competitors to understand if and how such competitors can address current and future threats more or less successfully than the United States," along with defense resource planning in allied and partner nations (Pub. L. 117-81, Section 1004(f)(2)(F)). For the allied and partner nations, the commission asked us to analyze the defense resource planning processes of Australia, Canada, and the U.K. Notably, this focus on internal processes as key enablers of military outcomes is well aligned with the NDS's imperatives of "build[ing] enduring advantage," "undertaking reforms to accelerate force development, getting the technology we need more quickly, and making investments in the extraordinary people of the Department, who remain our most valuable



resource” (DoD, 2022). These imperatives have prompted reflection on the extent to which internal DoD processes, including PPBE, are up to the challenge of enabling rapid and responsive capability development to address the emerging threats. The following sections summarize the key insights and applicability of these insights to the DoD’s PPBE System.

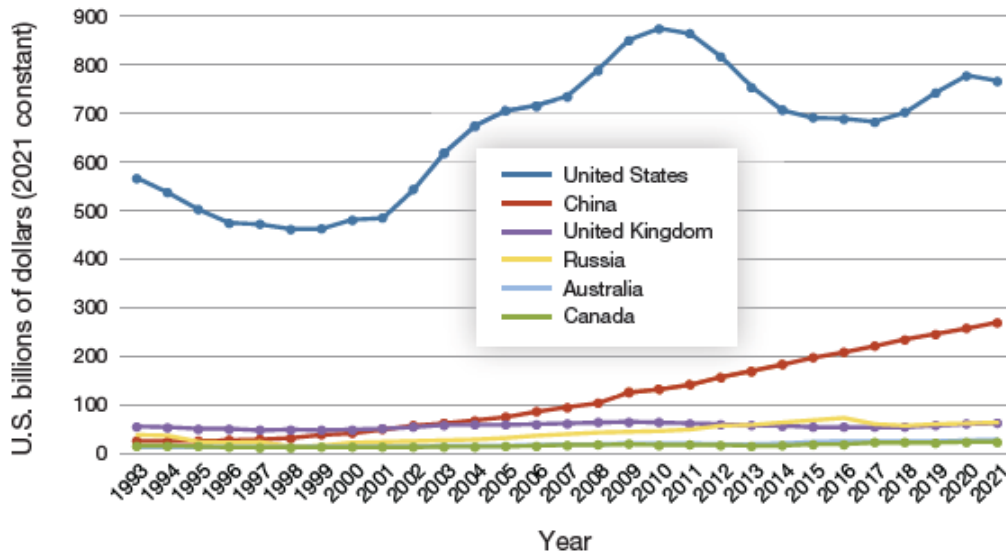


Figure 1. Military Expenditure, by Country
 (Features information from Stockholm International Peace Research Institute (SIPRI; n.d.). SIPRI Military Expenditure Database. Data shown are as of March 17, 2023.)

Key Insights

The material presented in this section distills important themes for the commission to understand when trying to compare the U.S. defense resource planning process with that of selected allies and partner nations. The similarities of the Australian, Canadian, and British processes to those of the U.S. PPBE process far exceed the differences and therefore suggest multiple insights that are germane for the United States.

Key Insight 1: Australia, Canada, and the United Kingdom Have a Shared Commitment to Democratic Institutions with the United States and Converge on a Similar Strategic Vision

The United States, Australia, Canada, and the U.K. have similar strategic visions and aim to counter similar strategic threats. This alignment presents opportunities for co-development and broader opportunities to work together toward shared goals, but also it requires the United States and its allies to develop plans and processes to facilitate more-effective partnership approaches. In addition, each country struggles to balance at least four often-competing priorities: keeping pace with strategic threats, executing longer-term plans, using deliberate processes with sufficient oversight, and encouraging innovation.

Australia’s Defence operates in close concert with several allies, especially the United States, and leverages those alliances and partnerships as a central tool of national security. Australia is a member of the Five Eyes (Australia, Canada, New Zealand, U.K., and United States) security agreement, the Quadrilateral Security Dialogue (“the Quad”), and the Australia–United Kingdom–United States (AUKUS) agreement. Australia is a strategically located partner in the Indo-Pacific theater and shares U.S. concerns about China’s military rise.



Canada and the United States have a long, collaborative defense relationship. Their militaries have fought alongside one another in several conflicts since World War II. Both countries are members of the North Atlantic Treaty Organization (NATO), and they cooperate extensively through several bilateral defense forums and agreements, including the North American Aerospace Defense Command (NORAD), the Permanent Joint Board on Defense, the Military Cooperation Committee, the Combined Defense Plan, the Tri-Command Framework, the Canada–U.S. Civil Assistance Plan, and the National Technology Industrial Base (Government of Canada, 2014). Canada recognizes its relatively small military size on the world stage and emphasizes cooperation with allies, specifically, the United States and NATO member countries. However, Canada lacks the population and military personnel to sustain large overseas military deployments, and, thus, its 2017 policy limits the size and duration of planned contributions. Nonetheless, the Canadian Armed Forces (CAF) participates throughout the year—again, largely with allies—in operations and joint military exercises, including assurance missions, stability operations, and United Nations missions.⁹

The U.K. is a critical U.S. ally that retains global military responsibilities and capabilities, including nuclear weapons. The U.K. is a member of the AUKUS security pact, the Combined Joint Expeditionary Force with France, the European Intervention Initiative, the Five Eyes security agreement, the Five Power Defence Arrangements (with Australia, Malaysia, New Zealand, and Singapore), the Joint Expeditionary Force (which it leads), NATO, and the Northern Group. It is also a veto-wielding permanent member of the United Nations Security Council. Therefore, the U.K. Ministry of Defence (MoD) interacts frequently and interoperates closely with the U.S. military and intelligence community, and its defense budget and planning decisions are often made in unofficial concert with DoD decisions and priorities.

Key Insight 2: Foreign Military Sales Are an Important Mechanism for Strategic Convergence but Pose Myriad Challenges for Coordination and Resource Planning

Australia, Canada, and the U.K. rely on U.S. Foreign Military Sales (FMS) to promote strategic convergence, interconnectedness, interoperability, and interchangeability. One downside to this reliance is exchange rate volatility, which can require budget adjustments to cover exchange rate adjustments. Accrual-based accounting for life-cycle planning can present additional challenges when adjusting FMS for inflation or exchange rates; these challenges can also require revisions to cost estimates. However, given the strong allied focus of the defense strategies of all these countries, each country places a heavy emphasis on the importance of interoperability and, in some cases, integration—a key consideration in acquisition and force generation. This strategic emphasis poses a further challenge to each country’s ability to independently act with flexibility.

Australia’s Defence is typically a customer of U.S. systems, often through FMS. Because the development and production of these systems may depend on the DoD’s PPBE processes, there are limitations to Australia’s ability to become more agile than those U.S. processes will allow—at least with respect to major weapon systems. This constraint is acceptable to Defence in view of the interoperability and capability advantages. In discussions about AUKUS, emerging technologies, innovation, and weapon cooperation, our interviewees indicated that the U.S.–Australia relationship may shift to one in which Australia is not simply a defense materiel customer but more of a partner. Beyond technology cooperation, there is the prospect that greater transparency and coordination across U.S. and Australian PPBE processes could lead to mutual benefits in terms of capability agility, synergies, and efficiencies. Canada also relies on U.S. FMS. Major contracting and FMS for the Canadian Department of National Defence (DND) (and other Canadian federal agencies) are handled by Public Services and Procurement

⁹ For a list, see DND (2022b).



Canada, which centralizes major purchases for the Canadian government. This centralization may cause internal delays in processing FMS. Along with the exchange rate volatility that Australia and the U.K. experience, the Canadian fiscal year does not align with the U.S. fiscal year, which can cause additional problems when planning or accounting for FMS purchases.

In the U.K., inflationary pressures have been exacerbated by a strengthening U.S. dollar, to which the MoD is especially sensitive because of its large number of major U.S. FMS contracts and some fixed-price fuel-swap contracts denominated in dollars.¹⁰ The U.K. defense sector is highly exposed to exchange rate volatility, given the extent of its U.S. imports, primarily aircraft (e.g., F-35Bs, P-8s, AH-64 Apache helicopters, CH-47 Chinook helicopters). Because the MoD budget is expressed in nominal terms and because the MoD often purchases assets from abroad, it is greatly affected by inflation in fuel and other running costs and by the valuation of the pound sterling relative to other currencies (especially the U.S. dollar).¹¹ Consequently, the MoD budget has been hit especially hard by recent inflationary pressures, exchange rate volatility, and the financial costs of Brexit.

Key Insight 3: The Australian, Canadian, and U.K. Political Systems Shape the Roles and Contours of Resource Planning

The political systems in the three allied countries are similar in that the executive branch has the power of the purse, which reduces political friction over appropriations.

The Australian electorate votes for parties, not prime ministers. A prime minister is selected by the party that holds the majority in the new government, and, subsequently, the prime minister appoints senior elected colleagues to ministerial positions, which are comparable to secretaries in the U.S. cabinet. Each minister is therefore an elected official. Under the Minister for Defence, there is both a departmental secretary—who is a career bureaucrat rather than a political appointee—and the Chief of the Defence Force (CDF), who is a military officer.¹² Overall, the legislative and executive branches of the Australian system are more closely linked than they are in the United States.

The two major parties in Australia take a relatively bipartisan approach to defense; hence, a change of government does not necessarily result in any significant change in defense plans or budget allocations. New governments sometimes direct the department to begin work on a new defense white paper; however, such changes in strategic guidance are typically related more to changes in the geostrategic environment than to politics.¹³

In Canada, members of the lower chamber of parliament, the House of Commons, are elected by voters; the leader of the largest party in that chamber becomes prime minister and selects the cabinet. The executive branch plays the dominant role in Canada's budget preparation, and parliament has relatively limited influence. Parliament performs legislative and oversight functions through its review and approval of the budget (Armit, 2005). When the executive controls a majority of seats in the House of Commons, it is in a very strong position to have its prepared budget approved with minimal or no changes. When the executive controls a plurality of seats but not a majority, it relies on support from the opposition or other, smaller parties to pass budgets and other key legislation. If the ruling government cannot pass its budget through the House of Commons, it is considered to no longer have the confidence of the

¹⁰ The MoD maintains multiple euro and dollar bank accounts and enters into forward-purchase contracts for these currencies to mitigate the risk from changing exchange rates.

¹¹ U.K. subject-matter expert, interview with the authors, October 2022.

¹² The CDF is Australia's senior military officer, the only four-star officer in the ADF. The CDF leads the integrated Australian Department of Defence and ADF as a diarchy with the defence secretary.

¹³ The 2022 change in government leadership from the Liberal to the Labour party did not result in any substantial change in priorities or budget for the Australian Department of Defence, nor did it result in a new defense white paper.



House, and an election must be called.

In the U.K., the stability of the bicameral parliamentary system relies on the fact that the chief of the executive branch (the prime minister) is an elected member of parliament from the party with a majority in the elected lower chamber (the House of Commons). Members of the upper chamber, the House of Lords, are not elected but appointed. By centuries-old convention, the upper chamber defers to the lower chamber on financial matters. Because the U.K. does not have a codified constitution and instead relies to a significant extent on accumulated convention, there is less inherent antagonism between the branches of government than in the United States. The resulting empowerment of the prime minister can enable more streamlined executive and legislative action, but it also limits the formal checks and balances that characterize the U.S. system.

Parliament must approve the government defense missions and the resources that the MoD requests for those missions. Opposition from the prime minister's own majority in the House of Commons triggers a no-confidence vote and the likely collapse of the government. The alignment of resource allocation with the MoD's mission is therefore a structural feature of the U.K. parliamentary system.

Key Insight 4: Australia, Canada, and the U.K. Have Less Legislative Intervention in Budgeting Processes, Relative to the United States, and No Continuing Resolutions

The Australian, Canadian, and U.K. resource management systems have less partisan interference than in the United States, according to subject-matter experts on these systems.

Compared with the DoD, Australia's Department of Defence receives significantly less PPBE guidance from the Australian legislature. The executive branch—the Minister for Defence, the prime minister, and cabinet colleagues—hold the purse strings. The other members of Parliament and senators can review Australia's PPBE-like functions and direct their questions to either the Minister for Defence or directly to the Australia's Department of Defence through parliamentary liaison officers. Unlike in the United States, the annual budget for existing services and programs in Australia appears in a separate appropriations bill from that for new programs,¹⁴ making it unlikely that existing government services will be blocked and effectively eliminating any need for a continuing resolution.

Canada's government is never at risk of a shutdown because of funding lapses. Parliament can enact interim estimates that authorize spending at proposed levels until the Main Estimates pass through the normal legislative process, or the executive can take other extraordinary measures to continue funding ongoing government functions.

The U.K. parliamentary system offers little or no risk of parliament interfering in the specifics of the MoD's budget or delaying approvals. In any case, the automatic preauthorization of a portion of defense spending based on the previous year's approved expenditure allows the MoD to avoid a U.S.-style situation of political deadlock, budget sequestration, or continuing resolutions. Members of Parliament appear to be less concerned than their U.S. counterparts in Congress with where defense production occurs, perhaps because construction sites are well-established and production does not substantively influence MoD decisions.¹⁵

Key Insight 5: Strategic Planning Mechanisms in Australia, Canada, and the U.K. Harness Defense Spending Priorities and Drive Budget Execution

Australia, Canada, and the U.K. each start their defense resource management processes with strategic planning that tries to identify key priorities for finite funds in defense

¹⁴ For details on the separation of appropriations bills for continuing services and new policies, see Webster (2014).

¹⁵ U.K. subject-matter expert, interview with the authors, November 2022.



budgets that are smaller than that of the United States.

Australia's defense budgeting system is guided by a series of strategic planning documents, such as the *2016 Defence White Paper* and *2020 Defence Strategic Update* (Australian Department of Defence, 2016, 2020a; Brangwin & Watt, 2022) that lay out strategic goals, capability priorities, and funding profiles for the following decade. The Portfolio Budget Statement and the Integrated Investment Program (IIP), both of which are derived from mission needs and strategic priorities, reflect the "value to the warfighter" of resource allocations. The Defence Capability Assessment Program (DCAP) ensures that the current and planned force structure is fit for prospective operational scenarios, theater campaign plans, operational concepts, and preparedness directives.

Canada's defense programs are also based on several strategic planning documents: 2017's *Strong, Secure, Engaged*; 2018's *Defence Investment Plan and Defence Plan, 2018–2023*; 2019's updated *Defence Investment Plan*; 2020's *Defence Capabilities Blueprint*; and the latest *Department of National Defence and Canadian Armed Forces Departmental Plan*, which was released in 2022 (DND, 2017, 2018a, 2018b, 2019, 2020, 2022a). Together, these strategic documents provide the basis for defense budgeting decisions.

The MoD's approach to strategic planning begins with its mission as outlined in the Defence Command Paper. The most recent iteration of this white paper, *Defence in a Competitive Age*, was published in March 2021 (MoD, 2021; U.K. Cabinet Office, 2021). The white paper states that the seven primary goals of the MoD and the British Armed Forces are to defend the U.K. and its overseas territories, sustain the country's nuclear deterrence capacity, project the U.K.'s global influence, execute its NATO responsibilities (U.K. House of Commons, Defence Select Committee, 2021), promote national prosperity, contribute to peacekeeping, and support the defense and intelligence-gathering capabilities of the U.K.'s allies and partners (MoD, n.d.). The Treasury aligns fiscal resources to support these missions through comprehensive spending reviews.

Key Insight 6: Jointness in Resource Planning Appears to Be Easier in Australia, Canada, and the U.K. Given the Smaller Size and Structure of Their Militaries

In Australia, the Australian Defence Force (ADF) operates in a relatively more joint manner than its U.S. counterpart. Some ADF program costs, such as fuel costs, are centralized.¹⁶ There is a level of joint financial governance; service component Chief Finance Officers (CFOs) report to the departmental CFO and to their service chiefs. These points may be important to the U.S. defense community, given ongoing efforts to enhance jointness across the U.S. military.

In Canada, military service acquisition projects are managed by a DND process that is service-agnostic and ranks projects according to DND priorities. This process ensures that service-centric views do not dominate procurement planning and encourages more collaboration, discussion, and consensus.

With cross-governmental mechanisms and joint funds, such as the United Kingdom Integrated Security Fund (UKISF), the U.K.'s Planning, Budgeting, and Forecasting (PB&F) system can allocate resources to urgent requirements while incentivizing interagency work. Such mechanisms and funding sources allow the MoD to address the root causes of conflict and instability rather than merely reacting to them militarily. These efforts demonstrate ways to balance decentralization with organizational, process, and cultural measures that promote jointness and multidomain integration. They also demonstrate how broader changes to

¹⁶ Australian Defence official, interview with the authors, November 2022.



institutional and individual culture can combat the effects of interservice rivalries.

Key Insight 7: Australia, Canada, and the U.K. Place a Greater Emphasis on Budget Predictability and Stability Than on Agility

Australia's Defence is given assurance of sustained funding levels over a 4-year rolling period. The *2016 Defence White Paper* laid out a baseline for defense spending over 10 years. The *2020 Defence Strategic Update* laid out an updated version of this baseline, extending it to 2029–2030. Defence plans its investments out as far as 20 years as whole-of-life investments.¹⁷ Canada's notional DND budget is guaranteed to continue year on year, allowing for better decision-making in out-years. DND's Capital Investment Fund ensures that approved projects will be paid for years or even decades to come, regardless of a change in government.

MoD programs are normally guaranteed funding for 3 to 5 years, with estimates out to 10 years. In contrast, with only a few exceptions, Congress must revisit and vote on DoD's entire budget every year (albeit requiring a 5-year defense plan). Certain U.S. contracts, including for munitions and missiles, must also be renegotiated every year, something that the MoD avoids. These attributes of the systems of Australia, Canada, and the U.K. offer a high degree of budget security but not necessarily flexibility.

Key Insight 8: Despite the Common Emphasis on Stability, Each System Provides Some Budget Flexibility to Address Unanticipated Changes

The Australian Parliament can boost the defense budget in periods of national emergency (e.g., wildfires) or overseas military operations (e.g., Iraq, Timor-Leste) using the no-win/no-loss model for deployments.¹⁸ The government can supplement Defence's allocation to alleviate inflationary pressures. The National Security Committee of Cabinet (NSC) can consider urgent priorities and their funding implications, and the Minister for Defence can intervene to prioritize certain programs or investments. There is flexibility to move current-year funds among groups and military services to meet emerging needs. The CFO can divert funding to meet emerging priorities. The DCAP promotes agility, but it is linked to government updates of strategic guidance, which may not be sufficiently agile.¹⁹ However, there has been an effort to make these updates more frequent and ongoing, and there is an intent for capability processes to be more agile in the future, in cases where reducing operational risk is more important than acquisition risk.²⁰

In the DND, regular supplementary parliamentary spending periods can help close unforeseen funding gaps for emerging requirements and help manage risk. DND officials believe that planning capital investments on an accrual basis while managing year-on-year funding on a cash basis allows for more-flexible funding. DND does not require parliamentary approval—nor must it inform parliament—to transfer funds within a vote from one program to another. DND can carry forward to the next fiscal year up to 5% of total operating expenditures, which it can use to adjust misalignments in spending (Perry, 2015).

For the MoD, multiyear spending reviews make budgeting more rigid than a yearly budget would, but the Treasury and the MoD retain some flexibility when translating the spending reviews into annual budgets and plans. The U.K. also has mechanisms for moving money between accounts and accessing additional funds in a given fiscal year. These mechanisms include a process known as virement for reallocating funds with either Treasury or parliamentary approval. The MoD can make additional funding requests through in-year

¹⁷ Australian Defence officials, interviews with the authors, October and November 2022.

¹⁸ No-win/no-loss funding is appropriated through appropriations bills. It can be appropriated to offset the cost of approved operations and foreign exchange movements.

¹⁹ Australian Defence official, interview with the authors, October 2022.

²⁰ Australian Defence official, interview with the authors, October 2022.



supplementary estimates sent to parliament. The MoD has access to additional Treasury funds to cover urgent capability requirements (UCRs), and it can use the cross-governmental UKISF or the Deployed Military Activity Pool “to make available resources to fund the initial and short-term costs of unforeseen military activity,” (MoD, 2022) such as responses to natural disasters or support to Ukraine (U.K. Cabinet Office, 2023).

Key Insight 9: Similar Budget Mechanisms Are Used in Australia, Canada, and the U.K.

Australia, Canada, and the U.K. use similar budget mechanisms, including the carryover of funds, movement of funds across portfolios, appropriations with different expirations, and supplementary funds for emerging needs. The use of these mechanisms, however, varies across the cases.

Australia’s Defence has five key cost categories, which are similar to U.S. appropriation categories: workforce, operations, capability acquisition program (including research and development), capability sustainment, and operating costs.²¹ There is limited movement among categories, but there is flexibility for “unders” and “overs,” meaning that funds can be shifted from categories with a surplus to categories with a deficit. Projects are funded and managed on a whole- of-life basis,²² accounting for both capital and operating costs. Under the no-win/no-loss mechanism for deployments,²³ Defence is reimbursed for most operational costs and must return unused funds to the Treasury. Defence absorbs some level of its costs, but the majority is offset by government reimbursement.

Within Australia’s Defence Integrated Investment Program (IIP), both approved government projects and unapproved, fungible programs can be shifted “left” or “right” (accelerated or delayed) as needs arise.²⁴ To manage the risk of underachievement (or overexpenditure), the IIP is 20% overprogrammed for acquisition in the current financial year. Other types of Australian funding are also fungible in that they can be shifted across the defense portfolio, including across groups and military services. The operating budget for Defence expires at the end of each financial year, but major procurements are handled separately through the IIP and do not expire. Still, the overall acquisition program is expected to hit a target annual expenditure level.

When the Canadian Minister of Finance presents the annual national budget to the House of Commons, there are one or more votes that correspond roughly to different colors of money. Each color of money is assigned an arbitrary, noncontiguous vote number. Common votes include vote 1 for operating expenditures, vote 5 for capital expenditures, vote 10 for grants and contributions, and vote 15 for long-term disability and life insurance plans. The votes can span a portfolio of programs or apply to specific programs. Organizations can transfer funds within a vote from one program to another without parliament’s approval (Pu & Smith, 2021). Organizations do need parliament’s approval to transfer funds between votes (e.g., from vote 1 to vote 5). Canadian federal agencies can also carry forward a portion of their unspent funds from a previous year, typically up to 5% of operating expenditures and 20% of capital expenditures (Pu & Smith, 2021).

The U.K. uses both accrual-based budgeting (based on when transactions occur rather than when cash receipts or payments are exchanged) and zero-based budgeting (in which all activities and programs must be recosted from zero and justified through a set of criteria for

²¹ In this context, operating relates to the forecasted costs to support defense systems, including training on those systems, whereas operations relates to nonforecasted costs associated with deployed forces.

²² Under the One Defense Capability System (ODCS), approval to acquire new weapon systems requires an estimate of total costs through the system’s projected end of life, including personnel, operating, and sustainment costs.

²³ This is not to be confused with the day-to-day running of the ADF.

²⁴ Australian Defence official, interview with the authors, October 2022; Australian Department of Defence (2020b).



prioritizing projects with the highest value for money). The Treasury controls the MoD's spending using the accrual system.²⁵ The MoD reports its spending monthly to comply with Treasury reporting requirements (MoD, 2019). Like those of every other department, the MoD's budget works on a "spend-it-or-lose-it" basis by which the money allocated each year must be spent or it is returned without compensation.

Key Insight 10: Australia, Canada, and the U.K. Have All Pivoted Toward Supporting Agility and Innovation in the Face of Lengthy Acquisition Cycles

Australia's Defence has been looking for ways to increase agility. One way would extend the no-win/no-loss provision for operations to ordering ordnance and other expendables prior to a conflict so that the ADF would be more prepared for emerging threats. To accelerate innovation, the proposed Australian Strategic Capabilities Accelerator (ASCA) would be required to secure funds for capabilities in which technologies arise faster than capability planning time frames with greater agility, efficiency, and effectiveness.

Like the DoD, Australia's Department of Defence possesses technology facilitators, such as Defence Innovation Hub (DIH), that help integrate emerging technologies with defense priorities. But there are few examples of the successful adoption of new innovations through DIH. And although the goal of ASCA is to help fast-track innovations into service, some observers acknowledge that that agency's success will be highly dependent on broader changes to PPBE-like processes to facilitate agility.

Canada's strategic plan states that the DND should exploit defense innovation as a priority (DND, 2022a). Canada is working with the United States on NORAD modernization as one of its priorities.

Like the DoD, the MoD is experimenting with new ways to encourage innovation, including a new dedicated Innovation Fund, which allows the chief scientific adviser to pursue higher-risk projects as part of the main R&D budget. The MoD has also been experimenting with ways to accelerate procurement timelines, including through novel contracting methods for new equipment and through the creation of various accelerators and incubators.

Key Insight 11: Australia, Canada, and the U.K. Have Independent Oversight Functions for Ensuring the Transparency, Audits, or Contestability of Budgeting Processes

Accountability in Australia is provided through several means: the Australian National Audit Office (NAO), the Portfolio Budget Statement, the contestability function, and other reviews. The Australian National Audit Office, as an independent auditor, is similar to the U.S. Government Accountability Office (GAO) and the U.K. National Audit Office. The Portfolio Budget Statement is subject to public and parliamentary scrutiny; although the opposition can rarely change the spending decisions presented in the statement, public grievances can be aired, thereby pressuring the government as elections loom. The contestability function informs oversight but is not oversight itself; rather, contestability advice is integrated into the decision-making of the Defence Investment Committee, the Defence Finance and Resources Committee, and the National Security Committee of Cabinet (NSC). Oversight also exists through independent reviews of acquisition activities and through Senate reviews of defense programs.

Parliamentary oversight—or scrutiny—in Canada is aided by analyses from the Auditor General, the Parliamentary Budget Officer, and, at times, the Library of Parliament. The former two roles are accountable directly to parliament rather than to the executive or a minister. The Auditor General holds office for a 10-year term, issues an annual report to the House of Commons, produces other audits during the year, and appears regularly before parliamentary committees (Barnes, 2021). The Parliamentary Budget Officer holds office for a 7-year term and

²⁵ U.K. subject-matter experts, interviews with the authors, October and November 2022.



provides estimates on matters relating to Canada's finances or economy either independently or at the request of a parliamentary committee. The Parliamentary Budget Officer issues an annual report to both chambers of parliament in addition to reports requested by committees or parliamentarians, all of which are meant to raise the quality of debate and promote budget transparency. At the beginning of each fiscal year, the Parliamentary Budget Officer also submits an annual work plan with a list of matters that the office intends to bring to the attention of parliament (Barnes, 2021).

Each year, the MoD is externally vetted by the House of Commons Public Accounts Committee, the NAO, and the Comptroller and Auditor General to ensure that funds are not misused. Audits focus on what the NAO terms the three Es: economy, efficiency, and effectiveness (MoD, 2019b). Within the MoD, evaluation teams undertake internal reviews of individual programs to determine risks and identify other relevant issues. Throughout the year, decision-makers are encouraged to consider value for money and "the effective use of resources" (MoD, 2019b). Nevertheless, cost overruns do occur, and they can be embarrassing for the government.²⁶

The MoD recognizes the need to scale oversight, assurance, and compliance activities to program size and risk to minimize unnecessary bureaucracy and delays. Therefore, there are additional layers of oversight for single-source contracts and major projects. In these and other ways, the U.K. seeks to cultivate a robust but nuanced approach to oversight and assurance, balancing the risk of the misuse of funds or program difficulties and delays (because of insufficient oversight) against the risk of failing to deliver required capabilities to the warfighter in a timely manner (because of excessive caution and focus on compliance).

Key Insight 12: Despite the Push to Accept Additional Risk, There Is Still a Cultural Aversion to Risk in the Australian, Canadian, and British Budgeting Processes

In Australia, stakeholders seek to spend within limits while adhering to the annual budget, which is intuitively prudent but could also limit agility. The cultural aversion to acquisition risk within Defence lengthens review times and holds up funds that could be spent on other projects. Canada's political structure does not allow Parliament to drastically change funding for departments, including DND, beyond what has been requested. Canada's political culture means that there is typically not much appetite for large increases in DND's spending in any given year. As in DoD, the MoD is experimenting with new ways to encourage innovation, including a new dedicated Innovation Fund. However, these strategies have not alleviated the enduring challenge of a risk-averse MoD culture.

Applicability of Selected Allied and Partner Nation Insights to DoD's PPBE System

The Commission on PPBE Reform is looking for potential lessons from the PPBE-like systems of selected allied and partner nations to improve the DoD's PPBE System. There are notable differences between the United States and the selected allies and partners in terms of political systems, population sizes, industrial bases, workforce sizes, and military expenditures; however, we found that, despite these differences, there are similarities in how all four countries generally approach defense resource management:

- Many decision-makers and stakeholders are involved throughout the complicated defense resource allocation processes.
- Strategic planning is a key input that is used to explicitly connect priorities to how much funding is spent to address military threats.

²⁶ U.K. subject-matter expert, interview with the authors, November 2022.



- Ongoing discussions are held between defense departments and decision-makers who control the “power of the purse” to justify how forces and programs will use the funding.
- Defense departments receive and spend funding according to agreed-on appropriations rules and then use certain mechanisms if plans change to move or carry over funding.
- Oversight is a key mechanism for making sure what is budgeted is appropriately spent.

The United States provides needed capabilities to Australia, Canada, and the U.K. This dependence arises from the capacity of the U.S. industrial base and the technological edge of its systems, but it also arises from the high priority that these countries place on allied interoperability. Given the interdependencies that exist, the Commission on PPBE Reform may want to consider the consequences of potential changes to the DoD’s PPBE System for countries with some level of dependence on U.S. FMS.

Although the political systems of the allies and partners described in this report appear to offer easier ways to pass a defense budget with stronger executive branches, the U.S. system of government offers some of its own intended benefits of involving strong voices from both the executive and legislative branches. The diversity of thought can help ensure that both the majority and minority parties have some input in spending priorities. At the same time, this system can cause gridlock yearly through continuing resolutions and potential government shutdowns that allies do not endure. Continuing resolutions have been criticized for the inefficiency that they impose on the DoD; the increased need for advance—or even crisis—planning; and the rush to spend when one-year funds are, at long last, available. Although the DoD expects and prepares for annual continuing resolutions, the commission may want to consider alternatives for mitigating the consequences of these annual disruptions in resource allocations.

All three countries examined exert some level of oversight over defense spending. In all cases, a balance is needed between the necessary oversight and the necessary flexibility to support innovation in response to emerging priorities. All the cases demonstrated ways in which flexibility is afforded through various mechanisms. Although none is a magic bullet, certain allied mechanisms could help improve DoD practices. Of particular relevance are those mechanisms that provide extra budget surety for major multiyear investments as opposed to reevaluating them every year. For example, the U.K.’s PB&F system benefits from multiannual spending plans, programs, and contracts. The MoD can sign decade-long portfolio management agreements with U.K. firms to provide long-term certainty. The PB&F system also allows for advance funding early in a budget year to ensure continuous government operations, thereby avoiding the possibility—and cost—of a shutdown. Likewise, Australia’s defense planning, programming, and budgeting processes provide a high level of certainty for the development and operationalization of major military capabilities. These farsighted processes ensure a strong connection between strategy and resources, reduce prospects for the misuse of funds or inefficiency, and limit the risk of blocked funding from year to year.

The Commission on PPBE Reform will find many similarities across processes used in the United States, Australia, Canada, and the U.K., but one particular similarity that is ingrained in resource planning will be very tough to change: The risk-averse resource planning culture across these countries will need to adapt to allow additional ways to innovate to counter emerging and future threats.

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