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DOD Planning, Programming, Budgeting, and Execution (PPBE): Overview and Selected Issues for Congress

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The U.S. Department of Defense (DOD) Planning, Programming, Budgeting, and Execution (PPBE) system is a strategic planning process for allocating resources among the military departments, defense agencies, and other components. The process serves as a framework for DOD civilian and military leaders to decide which programs to fund based on strategic objectives and produces the department's portion of the President's annual budget request. In FY2022, Congress created a commission to study the effectiveness of the process in view of concerns over the pace at which the U.S. military is fielding commercially driven advances in software and other emerging technologies—such as hypersonic weapons, artificial intelligence, and 5G mobile technologies—relative to China and other strategic competitors.

The PPBE process dates to the Kennedy Administration. In 1961, Secretary of Defense Robert McNamara introduced the Planning, Programming, and Budgeting System, or PPBS, in part to exert more control over DOD's budget formulation process. Prior to the adoption of this system, the military departments had greater autonomy in formulating budgets. In subsequent decades, the process evolved within DOD, though its logic and major elements have remained generally intact. The Deputy Secretary of Defense manages the overall process. During the *planning* phase, the Under Secretary of Defense for Policy prepares force development priorities in Defense Planning Guidance. During the *programming* phase, the Director of Cost Assessment and Program Evaluation reviews each component's five-year projections for forces, personnel, and funding known as Program Objective Memorandums, which are incorporated into a database called the Future Years Defense Program. During the *budgeting* phase, the Under Secretary of Defense (Comptroller) reviews components' Budget Estimate Submissions and prepares the information for the annual budget request submitted to Congress. During the *execution* phase, officials implement funded programs and adjust resources, if necessary, typically through transfer and reprogramming actions that require congressional notification or prior approval.

Some observers have criticized DOD's PPBE process—particularly its assumptions about program timelines and development—as reflecting an “industrial-era” approach and oriented toward large capital expenditures, such as aircraft carriers and strategic bombers. Such systems typically cost billions of dollars, take years to complete, and follow a traditional model of research and development before procurement and fielding. In 2019, the Defense Innovation Board, a DOD advisory board, stated in part that the PPBE process “requires two years or more in lead time” and “increases the barriers for integrating advancements in digital technology in a timely and effective manner.” Others have defended the PPBE process by noting that DOD can alter the process or elements of the process without intervention by Congress; increase flexibility within its annual budget request by amending certain line items or by submitting amendments or supplemental requests to Congress; and respond to emerging priorities by reprogramming and transferring funds through existing (or amended) authorities provided by Congress.

As part of the National Defense Authorization Act for Fiscal Year 2022 (NDAA; P.L. 117-81, §1004; 135 Stat. 1884), Congress established the Commission on Planning, Programming, Budgeting, and Execution Reform to study DOD's PPBE process and to submit recommendations for improving the process in 2023.

Potential issues for Congress relating to DOD's PPBE process include: perceived advantages and disadvantages; Congress's role; oversight considerations; comparisons with alternative models; and congressional control versus department flexibility. Congress may consider reviewing how recommended changes to the process may affect the balance of the perceived pros and cons—and the incentives of stakeholders involved; how much or how little control or influence Congress should exert (e.g., in law or report language); how certain oversight considerations may produce additional information about DOD decisionmaking; how alternative or complementary models may affect DOD decisionmaking; and how the adoption of new defense appropriations or authorities may affect the balance of congressional control and department flexibility.

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Introduction

With a discretionary budget of nearly \$800 billion and a workforce of nearly three million employees (servicemembers and civilians), DOD is the largest federal agency.¹ It uses a system called Planning, Programming, Budgeting, and Execution (PPBE) to allocate resources among military departments, defense agencies, and other components (hereafter, DOD components or simply components).² The process, which dates to the Kennedy Administration, serves as an annual framework for DOD civilian and military leaders to decide which programs to fund based on strategic objectives.³ While the process is intended as a deliberative way to decide who gets what and how much, it's also a venue for institutional politics. A key output of the process is the department's portion of the annual President's budget request that is submitted to Congress.⁴

Following the inception of the precursor to PPBE in 1961, Congress expressed interest in the process.⁵ Some of the questions Congress raised about the process historically remain relevant today, such as to what degree the Office of the Secretary of Defense (OSD) uses the process to centralize decisionmaking and exert control over the budgets of the armed services and to gauge the performance of individual programs, projects, and activities against strategic objectives.⁶ Members of the 117th Congress have raised questions about the process, citing concerns over the pace at which the U.S. military is fielding commercially driven advances in software and other emerging technologies—such as hypersonic weapons, artificial intelligence, and 5G mobile technologies—relative to China and other strategic competitors.⁷ In 2021, for example, Senator Jack Reed, Chairman of the Senate Committee on Armed Services, said, “I am concerned that the Defense Department is not postured correctly to invest in the correct emerging technologies or to play the appropriate role of co-developer and early adopter of the advanced capabilities they will enable.”⁸

Some observers have pointed to China's increasing military threats toward Taiwan in recent years and Russia's invasion of Ukraine in 2022 as evidence of an erosion of the U.S. military's ability

¹ Department of Defense (DOD), “About” website, accessed June 18, 2022, at <https://www.defense.gov/about/>.

² DOD, Department of Defense Directive (DODD) 7045.14, *The Planning, Programming, Budgeting, and Execution (PPBE) Process*, August 29, 2017, at <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/704514p.pdf>. DOD components include military departments, such as the Department of the Navy, which includes two armed services: the Navy and Marine Corps; defense agencies, such as the Defense Advanced Research Projects Agency (DARPA); DOD field activities, such as the Defense Technical Information Center (DTIC); and combatant commands, such as U.S. Indo-Pacific Command (INDO-PACOM).

³ For a brief overview of the PPBE process, see CRS In Focus IF10429, *Defense Primer: Planning, Programming, Budgeting, and Execution (PPBE) Process*, by Brendan W. McGarry.

⁴ *Ibid.*

⁵ For more information, see the “Historical Context” section.

⁶ *Ibid.*

⁷ For more information, see CRS Report R43838, *Renewed Great Power Competition: Implications for Defense—Issues for Congress*, by Ronald O'Rourke; CRS Report R46458, *Emerging Military Technologies: Background and Issues for Congress*, by Kelley M. Saylor; CRS Report R45811, *Hypersonic Weapons: Background and Issues for Congress*, by Kelley M. Saylor; CRS Report R45178, *Artificial Intelligence and National Security*, by Kelley M. Saylor; and CRS In Focus IF11251, *National Security Implications of Fifth Generation (5G) Mobile Technologies*, by John R. Hoehn and Kelley M. Saylor.

⁸ U.S. Congress, Senate Committee on Armed Services, *Emerging Technologies and Their Impact on National Security*, 117th Cong., 1st sess., February 23, 2021, transcript at https://www.armed-services.senate.gov/imo/media/doc/21-05_02-23-2021.pdf.

to deter aggressors, and as a reason to consider changes to the PPBE process.⁹ A former DOD official has said that the United States “is in a race against time to reestablish credible deterrence and contain further aggression before it turns into military conflicts. Timely adoption of new technology and fielding advanced equipment have become national security imperatives.”¹⁰

Between FY2016 and FY2018, Congress was particularly active in legislating acquisition reform.¹¹ The legislation was intended in part to produce faster and more efficient defense acquisitions, including weapons systems.¹² During the 117th Congress, first session, Congress expressed interest in PPBE reform during congressional hearings and in legislation.¹³ As part of the National Defense Authorization Act for Fiscal Year 2022 (NDAA; P.L. 117-81, §1004), Congress established the Commission on Planning, Programming, Budgeting, and Execution Reform to study the PPBE process and make recommendations for improving the process in 2023.¹⁴

This report describes a notional PPBE process, summarizes the historical basis for the PPBE system, and discusses potential issues for Congress. A detailed description of how each of the DOD components implements the PPBE process internally is beyond the scope of this report.¹⁵

For other CRS products on this topic and related issues, see CRS In Focus IF10429, *Defense Primer: Planning, Programming, Budgeting, and Execution (PPBE) Process*, by Brendan W. McGarry; CRS In Focus IF10428, *Intelligence Planning, Programming, Budgeting, and Evaluation (IPPBE) Process*, by Michael E. DeVine; and CRS In Focus IF10831, *Defense Primer: Future Years Defense Program (FYDP)*, by Brendan W. McGarry and Heidi M. Peters.

Overview of the PPBE Process

In practice, aspects of the PPBE process may differ based on current events or leadership preferences. While the Deputy Secretary of Defense manages the overall PPBE process, numerous actors and decisionmaking bodies within OSD, the military departments, and defense agencies are involved.

In addition to the Deputy Secretary of Defense, other OSD civilian leaders involved in the process are the Under Secretary of Defense for Policy (hereafter USD Policy), Director of the Cost Assessment and Program Evaluation (hereafter CAPE), and Under Secretary of Defense

⁹ John Whitley, *Three Reforms to Improve Defense Resource Management*, IBM Center for the Business of Government, June 9, 2022, p. 8, at <https://www.businessofgovernment.org/sites/default/files/Three%20Reforms%20to%20Improve%20Defense%20Resource%20Management.pdf>.

¹⁰ Ibid.

¹¹ For more information, see CRS Report R45068, *Acquisition Reform in the FY2016-FY2018 National Defense Authorization Acts (NDAAAs)*, by Heidi M. Peters.

¹² Ibid.

¹³ On March 18, 2021, for example, the Senate Committee on Armed Services held a closed hearing, “Planning, Programming, Budget, and Execution Process of the Department of Defense,” at which CRS analysts, including the author, provided a briefing. See <https://www.armed-services.senate.gov/hearings/21-03-18-planning-programming-budget-and-execution-process-of-the-department-of-defense>.

¹⁴ 135 Stat. 1884.

¹⁵ For a reference on department-specific PPBE implementation, see Bob Bradford, “Army Planning, Programming, Budgeting, and Execution Process,” Chapter 8 in *How the Army Runs: 2019-2020: A Senior Leader Reference Handbook*, ed. Louis G. Yuengert (Carlisle, PA: The Army War College), pp. 8-1 to 8-24, at <https://publications.armywarcollege.edu/pubs/3736.pdf>.

(Comptroller) (hereafter DOD Comptroller). Military leaders involved in the process include the Chairman of the Joint Chiefs of Staff (hereafter CJCS),¹⁶ service chiefs, commanders of the combatant commands, and the chief of the National Guard Bureau. The CJCS plays a role in the PPBE process in accordance with broader responsibilities as the principal military advisor to the Secretary of Defense established by the Goldwater-Nichols Department of Defense Reorganization Act of 1986 (P.L. 99-433).¹⁷ The CJCS's role is, in part, to advocate for solutions to department-wide requirements.

Congress plays a role in the department's internal PPBE process.¹⁸ Congress has required that DOD civilian and military personnel carry out certain activities directly and indirectly related to the process. Congress also authorizes and appropriates funding for DOD, the amount and timing of which can affect activities conducted in various phases of the process. Congress also provides limited authority for DOD to transfer and reprogram funds, which can affect the activities typically conducted in the final phase of the process.

Selected Definitions and Laws¹⁹

The DOD Financial Management Regulation (FMR) defines PPBE as:

A cyclic process containing four distinct, but interrelated phases: planning, programing, budgeting, and execution. In addition to establishing the framework and process for decision making on future programs, the process permits prior decisions to be examined and analyzed from the viewpoint of the current environment (threat, political, economic, technological, and resources) and for the time period being addressed. The ultimate objective of PPBE is to provide operational commanders the best mix of forces, equipment, and support attainable within fiscal constraints.²⁰

DOD policy describes PPBE in part as “the annual resource allocation process for DoD within a quadrennial planning cycle.”²¹

The CJCS, the highest-ranking military officer of the Armed Forces, describes the PPBE process as the Secretary of Defense's “institutional strategic planning system and the primary decision making process for translating strategic guidance into resource allocation decisions.”²²

DOD policy does not reference a statutory basis for the establishment of the PPBE process.²³ Rather, the PPBE process has emerged largely as a product of administrative decisions and

¹⁶ The Joint Staff assists the CJCS in accomplishing his responsibilities. For more information, see DOD, Joint Chiefs of Staff, Leadership, Director, Joint Staff, accessed June 28, 2022, at <https://www.jcs.mil/Leadership/Director-Joint-Staff/>.

¹⁷ For more information, see 10 U.S.C. §§113, 151, 153, 161, 163, 164, 181, and 482.

¹⁸ For a broader discussion of this topic, see the “Congress's Role” section.

¹⁹ For a list of terms and definitions used in the PPBE process, see **Appendix A**. For a list of other Title 10 sections of the *U.S. Code* that reference the PPBE process, system, or its elements, see **Appendix B**. For a list of DOD policies and regulations on the PPBE process, see **Appendix C**.

²⁰ DOD, *Financial Management Regulation*, DoD 7000.14-R, Glossary, p. G-28, at <https://comptroller.defense.gov/Portals/45/documents/fmr/current/glossary.pdf>. The reference to quadrennial aligns with a previous document called the Quadrennial Defense Review (QDR), a DOD study conducted every four years that was replaced by the National Defense Strategy (NDS).

²¹ DOD, DODD 7045.14, *The Planning, Programming, Budgeting, and Execution (PPBE) Process*, August 29, 2017, at <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/704514p.pdf>.

²² DOD, Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3100.01E, *Joint Strategic Planning System*, May 21, 2021, p. E-3, at <https://www.jcs.mil/Portals/36/Documents/Library/Instructions/CJCSI%203100.01E.pdf>.

²³ DOD, DODD 7045.14, *The Planning, Programming, Budgeting, and Execution (PPBE) Process*, August 29, 2017, at

practices. Over time, Congress has included references to the PPBE process, system, or its elements in multiple provisions of Title 10 of the *United States Code* (*U.S. Code* or *U.S.C.*), mostly in the context of responsibilities of senior department officials. See, for example, the following:²⁴

- **10 U.S.C. §113: Secretary of Defense.** This law states in part that the Secretary of Defense, with the advice of the CJCS, is to provide Defense Planning Guidance (DPG) to the secretaries of the military departments, chiefs of staff of the Armed Forces, commanders of the unified and specified combatant commands, and the heads of defense agencies and field activities;²⁵
- **10 U.S.C. §134: Under Secretary of Defense for Policy.** This law states in part that the USD Policy shall be responsible and have overall direction and supervision for, among other matters, “the development of the Defense Planning Guidance that guides the formulation of program and budget requests by the military departments and other elements of the Department”;²⁶
- **10 U.S.C. §135: Under Secretary of Defense (Comptroller).** This law states in part that the DOD Comptroller shall advise and assist the Secretary of Defense in, among other matters, “supervising and directing the preparation of budget estimates of the Department of Defense”;²⁷
- **10 U.S.C. §139a: Director of Cost Assessment and Program Evaluation.** This law states that the Director of CAPE is the principal official within the senior management of DOD for, among other matters, “analysis and advice on matters relating to the planning and programming phases of the Planning, Programming, Budgeting and Execution system, and the preparation of materials and guidance for such system, as directed by the Secretary of Defense, working in coordination with the Under Secretary of Defense (Comptroller);”²⁸ and
- **10 U.S.C. §153: Chairman: functions.** This law states that the CJCS shall determine whether to prepare in certain years a National Military Strategy, which describes how the military will support national security objectives and which typically informs the DPG.²⁹

<https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/704514p.pdf?ver=2019-06-06-145814-060>.

²⁴ For a list of other Title 10 sections of the *U.S. Code* that reference the PPBE process, system, or its elements, see **Appendix B**.

²⁵ 10 U.S.C. §113(g)(2)(A), which describes the DPG in part as written guidance that establishes “goals, priorities, including priorities relating to the current or projected risks to military installation resilience, and objectives, including fiscal constraints, to direct the preparation and review of the program and budget recommendations of all elements of the Department.” For a more detailed description of the DPG, as well as a list of other terms and definitions used in the PPBE process, see **Appendix A**.

²⁶ 10 U.S.C. §134(b)(2)(E).

²⁷ 10 U.S.C. §135(c)(2).

²⁸ 10 U.S.C. §139a(d)(2).

²⁹ 10 U.S.C. §153(b). For certain other authorities related to military roles in the PPBE process, see 10 U.S.C. §§113, 151, 161, 163, 164, 181, and 482.

PPBE's Role in DOD Decision-Support Systems³⁰

PPBE is one of three main decision-support systems used by DOD civilian and military leaders to allocate resources and manage defense acquisitions. Taken together, these systems are sometimes referred to as “Big A” acquisition:³¹

- **Joint Capabilities Integration and Development System (JCIDS).** The process by which DOD identifies capabilities, or items, required by the military to fulfill its missions, resulting in programmatic *requirements*;³²
- **Planning, Programming, Budgeting, and Execution (PPBE) System.** The process by which DOD translates strategic guidance into resource allocation decisions, resulting in *funding*;³³ and
- **Defense Acquisition System (DAS).** The process by which DOD manages the development and purchase of products and services, resulting in *acquisition* (sometimes referred to as “Little A” acquisition).³⁴

See **Figure 1**.

³⁰ This section draws in part from research previously coordinated by Heidi M. Peters, Analyst in U.S. Defense Acquisition Policy.

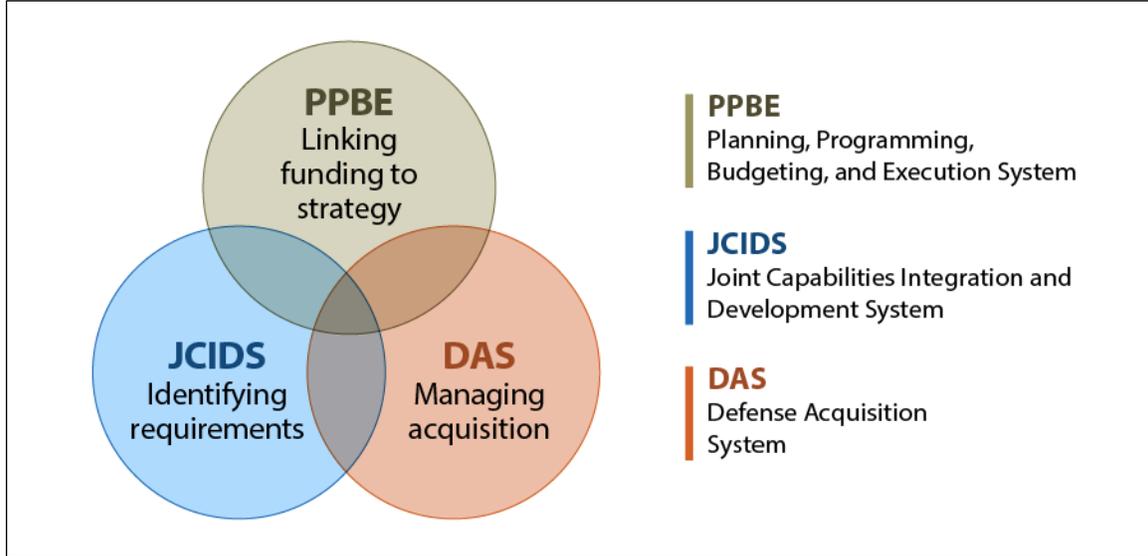
³¹ For more information, see CRS Report RL34026, *Defense Acquisitions: How DOD Acquires Weapon Systems and Recent Efforts to Reform the Process*.

³² DOD defines a *requirement* in part as “a capability which is needed to meet an organization’s roles, functions, and missions in current or future operations to the greatest extent possible.” For more information, see DOD, CJCSI 5123.01I, *Charter of the Joint Requirements Oversight Council (JROC) and the Implementation of the Joint Capabilities Integration and Development System*, October 30, 2021, p. GL-11, at <https://www.jcs.mil/Portals/36/Documents/Library/Instructions/CJCSI%205123.01I.pdf>; and JCIDS Manual, August 31, 2018, at <https://www.acq.osd.mil/asda/jrac/docs/2018-JCIDS.pdf>. DOD defines *capability* as “the ability to complete a task or execute a course of action under specified conditions and level of performance.” See DOD, *DOD Dictionary of Military and Associated Terms*, updated November 2021, p. 2, archived at <https://irp.fas.org/doddir/dod/dictionary.pdf>.

³³ DOD, DODD 7045.14, *The Planning, Programming, Budgeting, and Execution (PPBE) Process*, August 29, 2017, at <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/704514p.pdf>.

³⁴ DOD, DODD 5000.01, *The Defense Acquisition System*, September 9, 2020, at <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/500001p.pdf>; DODD 5000.02, *Operation of the Adaptive Acquisition Framework*, January 23, 2020, at <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/500002p.pdf>; and DOD, Defense Acquisition University (DAU), *Defense Acquisition Guidebook*, at <https://www.dau.edu/tools/dag>.

Figure 1. DOD Decision-Support Systems



Source: Figure created by CRS based on DOD, *Defense Acquisition Performance Assessment Report*, February 2006, p. 4, archived at <https://www.airforcemag.com/PDF/DocumentFile/Documents/2006/DAPA-Rpt-012706.pdf>.

Notes: JCIDS is Joint Capabilities Integration and Development System; PPBE is Planning, Programming, Budgeting, and Execution; and DAS is Defense Acquisition System.

PPBE Phases, Actors, and Outputs³⁵

PPBE comprises four separate, but interrelated phases: planning, programming, budgeting, and execution (see **Table 1**). Each phase typically involves certain actions, officials, and outputs:

- **Planning.** During the planning phase, the USD Policy assesses strategic guidance (e.g., the President’s National Security Strategy; the Secretary of Defense’s National Defense Strategy; and the CJCS’s National Military Strategy)³⁶ and coordinates the DPG detailing force development priorities that inform the programming phase;
- **Programming.** During the programming phase, the Director of CAPE reviews the Program Objective Memorandum (POM) developed by each DOD component.³⁷ The POM is a funding plan that describes proposed resource requirements (forces, personnel, and funding) over five years and adjusts programs in the Future Years Defense Program (FYDP) database.³⁸ At certain

³⁵ This section draws from CRS In Focus IF10429, *Defense Primer: Planning, Programming, Budgeting, and Execution (PPBE) Process*, by Brendan W. McGarry.

³⁶ For more information on these types of documents, see CRS Insight IN10842, *The 2017 National Security Strategy: Issues for Congress* and CRS Insight IN10855, *The 2018 National Defense Strategy*.

³⁷ DOD defines the POM as the final product of the PPBE programming phase displaying each DOD component’s recommendations to OSD for resource allocation decisions. For more information, see DOD, DODD 7045.14, *The Planning, Programming, Budgeting, and Execution (PPBE) Process*, August 29, 2017, p. 12, at <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/704514p.pdf>.

³⁸ DOD defines the FYDP as the “program and financial plan for the DoD as approved by the Secretary of Defense. The FYDP arrays cost data, personnel, and force structure over a 5-year period (force structure for an additional 3

points throughout the year, OSD works with DOD components to make changes to programs through Resource Management Decisions (RMDs);³⁹

- **Budgeting.** During the budgeting phase, the DOD Comptroller reviews the Budget Estimate Submission (BES) developed by each DOD component.⁴⁰ The BES covers the first year of the POM and adjusts amounts in the FYDP. The output is the DOD portion of the President’s budget request to Congress. At certain points throughout the year, particularly in the fall, OSD works with the White House Office of Management and Budget (OMB) to make changes to budgets through RMDs; and
- **Execution.** During the execution phase, officials in OSD and the DOD components adjust resources, typically through transfer and reprogramming actions that require congressional notification and/or prior approval.

Table 1. Phases, Actors, and Outputs of the DOD Planning, Programming, Budgeting, and Execution (PPBE) Process

Phase	Description	Lead Actor	Output(s)
Planning	Review strategic guidance Assess threats Evaluate takeaways from war games Identify capability gaps and risks	Under Secretary of Defense for Policy	Chairman’s Program Recommendations (CPR) Defense Planning Guidance (DPG) Fiscal Guidance (FG)
Programming	Translate planning decisions into program and resource requirements Consider program alternatives Develop five-year projections for forces, personnel, funding	Director, Cost Assessment and Program Evaluation (CAPE)	Program Objective Memorandum (POM) Resource Management Decisions (RMDs; programmatic) ^a Future Years Defense Program (FYDP) updates

years), portraying this data by major force program for DoD internal review for the program and budget review submission. It is also provided to the Congress annually in conjunction with the President’s budget.” For more information, see DOD, DODD 7045.14, *The Planning, Programming, Budgeting, and Execution (PPBE) Process*, August 29, 2017, p. 12, at <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/704514p.pdf>; and CRS In Focus IF10831, *Defense Primer: Future Years Defense Program (FYDP)*, by Brendan W. McGarry and Heidi M. Peters.

³⁹ According to DAU, OSD publishes decisions related to program and budget issues in Resource Management Decisions (RMDs). The term RMD replaced Program Decision Memorandum (PDM) for program-related decisions and Program Budget Decisions (PBD) for budget-related decisions. There are two sets of RMDs: programmatic RMDs issued in early November reflecting decisions made during the programming phase; and budgetary RMDs issued in late November or early December reflecting decisions made during the budgeting phase.

⁴⁰ DOD, DODD 7045.14, *The Planning, Programming, Budgeting, and Execution (PPBE) Process*, August 29, 2017, p. 5, at <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/704514p.pdf>.

Phase	Description	Lead Actor	Output(s)
Budgeting	Review budget justifications Consider funding alternatives Prepare budget submission	Under Secretary of Defense (Comptroller)	Budget Estimate Submission (BES) RMDs (programmatic) ^a FYDP updates (incorporating RMDs) DOD portion of President's budget request
Execution	Assess output to planned performance Adjust resources, as necessary	Multiple: Under Secretary of Defense (Comptroller) and DOD component financial managers	Assessments (internal reviews by OSD and DOD components) Reprogramming actions and transfers (including external interactions with Congress)

Source: Table created by CRS based on CRS In Focus IF10429, *Defense Primer: Planning, Programming, Budgeting, and Execution (PPBE) Process*; and DOD, Defense Acquisition University (DAU) references.

Notes: For a list of terms and definitions used in the PPBE process, see **Appendix A**.

- a. According to DAU, OSD publishes decisions related to program and budget issues in Resource Management Decisions (RMDs). The term RMD replaced Program Decision Memorandum (PDM) for program-related decisions and Program Budget Decisions (PBD) for budget-related decisions. There are two sets of RMDs: programmatic RMDs issued in early November reflecting decisions made during the programming phase; and budgetary RMDs issued in late November or early December reflecting decisions made during the budgeting phase.

A more detailed description and discussion of each phase follows.

Planning

The USD Policy conducts and coordinates the planning phase.⁴¹ The phase involves reviewing the President's National Security Strategy,⁴² the Secretary of Defense's National Defense Strategy,⁴³ and the CJCS's National Military Strategy⁴⁴ to develop the DPG aligned with the Administration's policy goals and potential threats, force structure, readiness posture, and other factors.⁴⁵ Also during this phase, OSD provides fiscal guidance detailing projected funding for DOD components.⁴⁶ In addition to issuing the National Military Strategy, the CJCS provides the chairman's program recommendation to the Secretary of Defense. The recommendation is the CJCS's "direct input" to the DPG and incorporates the CJCS's military advice on programming

⁴¹ DOD, DODD 7045.14, *The Planning, Programming, Budgeting, and Execution (PPBE) Process*, August 29, 2017, p. 5, at <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/704514p.pdf>.

⁴² 50 U.S.C. §3043.

⁴³ 10 U.S.C. §113.

⁴⁴ 10 U.S.C. §153.

⁴⁵ 10 U.S.C. §113 details elements of the DPG; 10 U.S.C. §134 states in part that the USD Policy shall be responsible and have overall direction and supervision for, among other matters, development of the DPG. For more information, see **Appendix B**.

⁴⁶ Sean C. Sullivan, *Planning, Programming, Budgeting and Execution Workbook*, Naval War College Faculty Paper, updated 2015. According to DOD, fiscal guidance is the Secretary of Defense's "topline fiscal control" provided to each DOD component for the purpose of preparing a program objective memorandum. For more information, see DOD, CJCSI 8501.01B, *Chairman of the Joint Chiefs of Staff, Combatant Commanders, Chief, National Guard Bureau, and Joint Staff Participation in the Planning, Programming, Budgeting, and Execution Process*, December 15, 2021, p. GL-4, at <https://www.jcs.mil/Portals/36/Documents/Library/Instructions/CJCSI%208501.01B.pdf>.

priorities.⁴⁷ The recommendation is based in part on a capability gap assessment performed by the Joint Requirements Oversight Council,⁴⁸ including priorities identified by combatant commanders (known as integrated priority lists, or IPLs)⁴⁹ and by the chief of the National Guard Bureau. With this input from the CJCS, the DPG is drafted by the USD Policy and typically contains guidance on investments and divestments for the DOD components and is intended to inform a component's POM.⁵⁰

Programming

The programming phase is meant to analyze anticipated effects of present-day decisions on the future force. The Director of CAPE leads this phase.⁵¹ Traditionally, CAPE provided the analytic baseline—an integrated set of data related to combatant commander's plans and force management decisions—to analyze POMs developed by the DOD components.⁵² A POM describes proposed resource requirements (forces, personnel, and funding) for programs over five years.⁵³ Each POM prioritizes and adjusts programs in the FYDP and describes risks associated with unfunded, underfunded, or overfunded programs. After each component submits a POM, the CJCS submits to the Secretary of Defense a chairman's program assessment, an independent assessment intended to inform program reviews.⁵⁴ The CJCS typically reviews the extent to which the military departments satisfied combatant command requirements.⁵⁵ The Director of CAPE leads program reviews, forecasts resource requirements for the next five years, and updates the FYDP. To adjudicate disagreements during program and budget reviews, the Deputy Secretary of Defense may convene a meeting of the Deputy's Management Action Group.⁵⁶ As a result of program reviews, the Secretary of Defense may direct the components to make RMDs.

⁴⁷ DOD, CJCSI 3100.01E, *Joint Strategic Planning System*, May 21, 2021, pp. G-4 to G-5, at <https://www.jcs.mil/Portals/36/Documents/Library/Instructions/CJCSI%203100.01E.pdf>.

⁴⁸ 10 U.S.C. §181. JROC is the decision authority for the JCIDS process.

⁴⁹ 10 U.S.C. §153.

⁵⁰ DOD, CJCSI 8501.01B, *Chairman of the Joint Chiefs of Staff, Combatant Commanders, Chief, National Guard Bureau, and Joint Staff Participation in the Planning, Programming, Budgeting, and Execution Process*, December 15, 2021, p. B-2, at <https://www.jcs.mil/Portals/36/Documents/Library/Instructions/CJCSI%208501.01B.pdf>.

⁵¹ 10 U.S.C. §139a; and DOD, DODD 7045.14, *The Planning, Programming, Budgeting, and Execution (PPBE) Process*, August 29, 2017, p. 6, at <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/704514p.pdf>.

⁵² DOD, DODD 8260.05, *Support for Strategic Analysis (SSA)*, July 7, 2011, p. 2, at <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/826005p.pdf>.

⁵³ Forces may include items of equipment or combat units, such as elements of Army brigade combat teams or combat aviation brigades, Navy ships or carrier strike groups, Marine Corps marine expeditionary forces or infantry battalions, and Air Force squadrons or aircraft. For more information, see DOD, Office of the Secretary of Defense, *Future Years Defense Program (FYDP) Structure Handbook*, February 2020.

⁵⁴ DOD, CJCSI 8501.01B, *Chairman of the Joint Chiefs of Staff, Combatant Commanders, Chief, National Guard Bureau, and Joint Staff Participation in the Planning, Programming, Budgeting, and Execution Process*, December 15, 2021, p. B-3, at <https://www.jcs.mil/Portals/36/Documents/Library/Instructions/CJCSI%208501.01B.pdf>.

⁵⁵ DOD, DAU, *Teaching Note: Planning, Programming, Budgeting, and Execution (PPBE) Process*, March 2018, p. 114.

⁵⁶ DOD, CJCSI 8501.01B, *Chairman of the Joint Chiefs of Staff, Combatant Commanders, Chief, National Guard Bureau, and Joint Staff Participation in the Planning, Programming, Budgeting, and Execution Process*, December 15, 2021, p. B-3, at <https://www.jcs.mil/Portals/36/Documents/Library/Instructions/CJCSI%208501.01B.pdf>. DAU describes the DMAG as, "One of the principal integrated civilian-military governance bodies of DoD. Meets at the discretion of the Deputy Secretary of Defense ... to provide advice and assistance to the deputy on matters pertaining to DoD enterprise management, business transformation, and operations, and strategic-level coordination and integration of planning, programming, budgeting, execution, and assessment activities within the department." For more information, see DOD, DAU Glossary, "Deputy Secretary's Management Action Group," accessed June 5, 2022, at

Budgeting

The DOD Comptroller leads the budgeting phase,⁵⁷ in which the components complete a BES for the first year of the FYDP. Using guidance from OMB, the DOD Comptroller reviews the budget submissions for funding and fiscal controls, phasing of the efforts over the funding period, and feasibility of execution within the budget year. During this phase, Comptroller analysts collaborate with component analysts to align component budget requests with the overall defense budget. As a result of budget reviews, the Secretary of Defense may direct the components to make changes in RMDs. The final product is typically submitted to OMB in December for inclusion in the President's annual budget request to Congress, which is usually submitted in February.⁵⁸

Execution

During the execution phase, OSD and the DOD components evaluate the obligation and expenditure of funds, as well as program results.⁵⁹ The purpose of execution review is to assess program objectives against outcomes. The components assess compliance with priorities and guidance of the Secretary of Defense, performance metrics, and program results. OSD staff review the assessments and recommend changes, in coordination with the CJCS and the Joint Staff.

Timelines

The PPBE process is a calendar-driven process intended to produce the DOD portion of the annual President's budget request. This section describes and illustrates notional timelines of certain events and phases in the PPBE process.

Calendar-Driven Events

Figure 2 shows some of the key calendar-driven events, processes, and outputs of the PPBE process during a typical calendar year for a given fiscal year cycle.

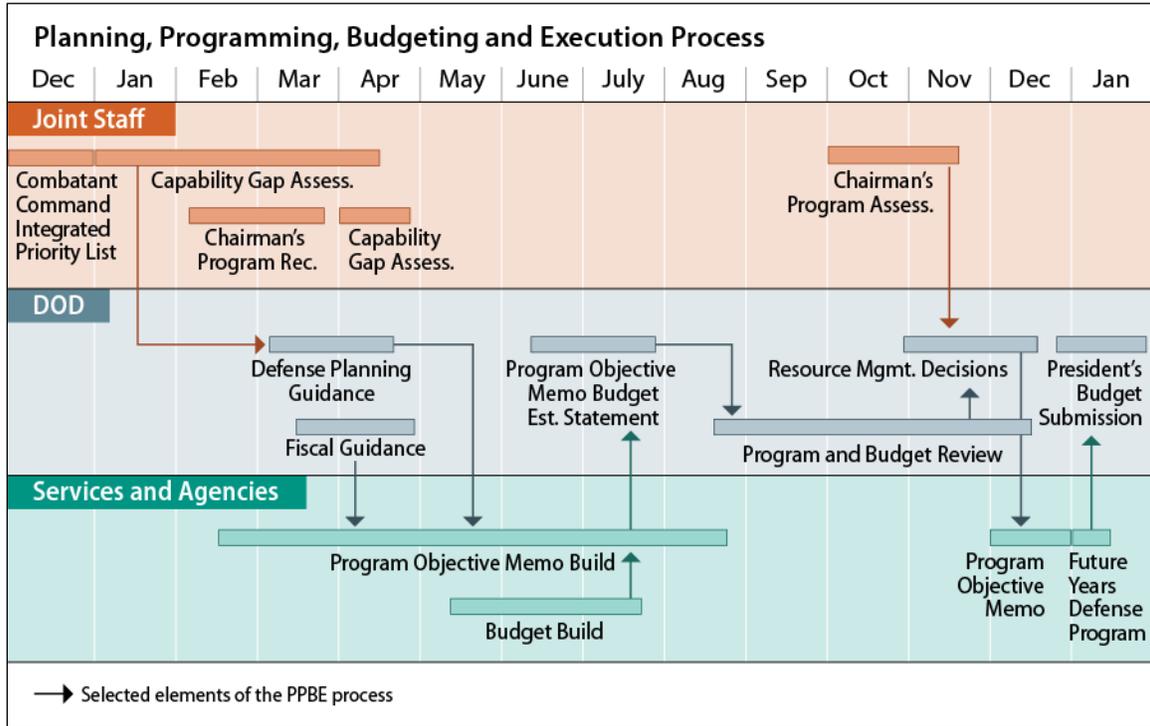
<https://www.dau.edu/glossary/Pages/GlossaryContent.aspx?itemid=27324>.

⁵⁷ 10 U.S.C. §135; and DOD, DODD 7045.14, *The Planning, Programming, Budgeting, and Execution (PPBE) Process*, August 29, 2017, p. 5, at <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/704514p.pdf>.

⁵⁸ 31 U.S.C. §1105(a).

⁵⁹ DOD, DODD 7045.14, *The Planning, Programming, Budgeting, and Execution (PPBE) Process*, August 29, 2017, p. 11, at <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/704514p.pdf>.

Figure 2. Calendar-Driven Events in the Annual PPBE Process
(notional timeline)



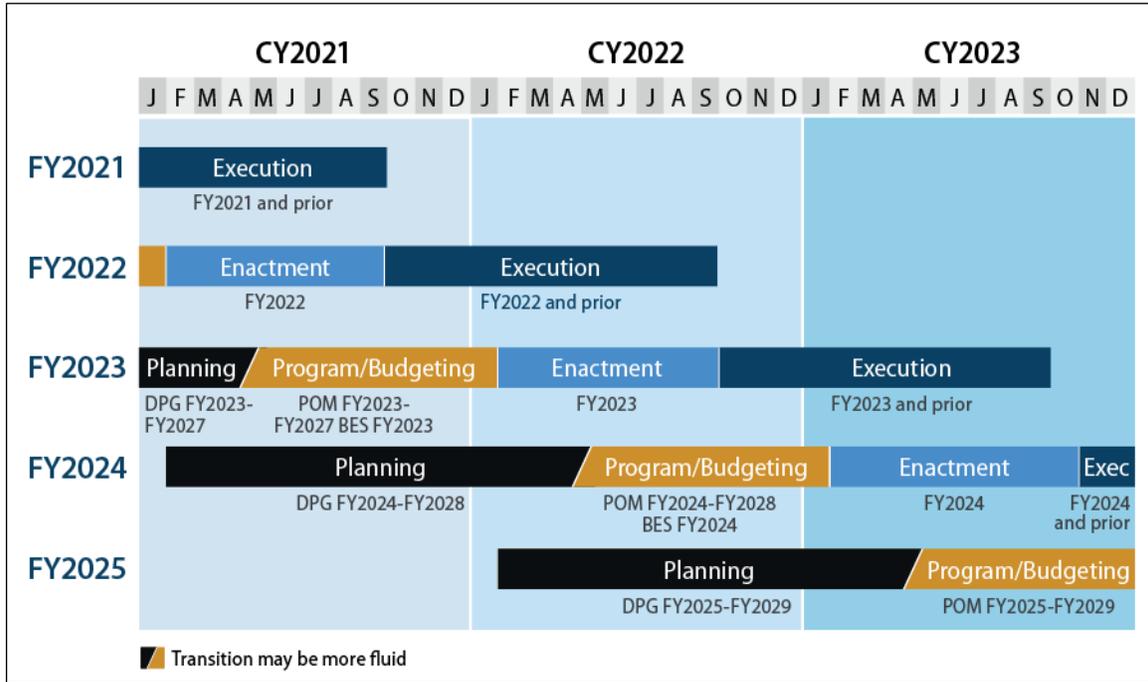
Source: Figure created by CRS based on Sean C. Sullivan, *Planning, Programming, Budgeting and Execution Workbook*, Naval War College Faculty Paper, updated 2015; and DOD, CJCSI 8501.01B, *Chairman of the Joint Chiefs of Staff, Combatant Commanders, Chief, National Guard Bureau, and Joint Staff Participation in the Planning, Programming, Budgeting, and Execution Process*, December 15, 2021, p. B-5, at <https://www.jcs.mil/Portals/36/Documents/Library/Instructions/CJCSI%208501.01B.pdf>.

Notes: Timeline is notional.

Cyclical Planning Process

The PPBE process is characterized by long-term planning, with a planning phase that can begin more than two years before the expected year of budget execution. **Figure 3** shows a notional representation of this timeline. Initial planning for the fiscal year (FY) 2022 budget request began in early 2019. The figure shows Congress’s role in the process with the portion labeled “enactment,” referring to the period from the issuance of the request to passage of annual defense authorization and appropriations legislation. The figure also shows how, in any given month, multiple phases of the PPBE process are occurring simultaneously for various fiscal year cycles. For example, in June 2022, defense officials were executing or spending FY2022 funding (and prior-year funding, as some appropriations are available for obligation for longer than a year); monitoring the enactment of FY2023 funding; programming and budgeting FY2024 funding; and planning FY2025 funding.

Figure 3. Fiscal Year Cycles in the PPBE Process (notional)
(fiscal year cycle by calendar year and month)



Source: Figure created by CRS based on DAU references.

Notes: Timeline is notional. CY is calendar year; FY is fiscal year. Execution as shown is based on appropriations available for one year.

Future Years Defense Program (FYDP)⁶⁰

The PPBE process is intended to be a way for DOD components to identify funding for programs, projects, and activities over a multi-year period as part of the FYDP. On any given day, the Navy, for example, is operating ships, maintaining ships, building ships, decommissioning ships, training sailors to operate ships, and equipping ships with weapons systems and, in some cases, aircraft.⁶¹ In doing these activities, the service uses the PPBE framework to associate inputs (i.e., funding) with outputs (i.e., programs) and assess tradeoffs between allocation options.⁶² These decisions are entered into the FYDP, a classified database containing five-year projections of forces, personnel, funding, and programs intended to support DOD operations. In this context, fiscal years beyond the forthcoming budget year are sometimes referred to as “out-years.”⁶³ The FYDP is compiled every year during the programming phase of the PPBE process. The projection is updated during the budgeting phase of the PPBE process to reflect DOD’s final funding

⁶⁰ This section is drawn in part from CRS In Focus IF10831, *Defense Primer: Future Years Defense Program (FYDP)*, by Brendan W. McGarry and Heidi M. Peters.

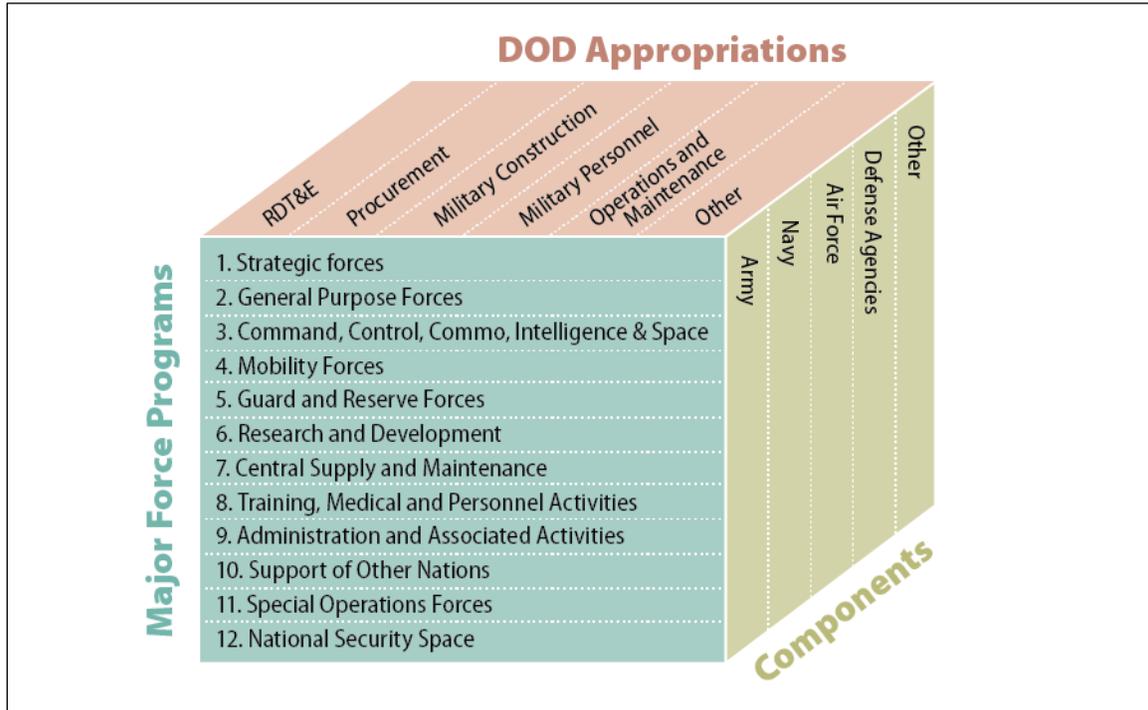
⁶¹ Philip J. Candreva, “PPBE,” YouTube video, 28:39, March 16, 2020, at <https://www.youtube.com/watch?v=lCH4BUYuQZM>.

⁶² According to DOD, a *program element* (PE) is the primary data element in the FYDP and the “building blocks” of the programming and budget system. For more information, see DOD, Office of the Secretary of Defense, *Future Years Defense Program (FYDP) Structure Handbook*, February 2020, p. 8.

⁶³ DOD, DAU, *Teaching Note: Planning, Programming, Budgeting, and Execution (PPBE) Process*, March 2018, p. 107.

decisions presented in the President’s annual budget request. According to DOD, the FYDP is intended in part to link DOD’s internal review structure based on program elements with Congress’s review structure based on appropriation accounts.⁶⁴ The FYDP structure allows a user to examine DOD plans and programs in three dimensions: component (e.g., Air Force); major force program (e.g., strategic forces);⁶⁵ and appropriation title (e.g., procurement). See **Figure 4**.

Figure 4. Future Years Defense Program (FYDP) Structure



Source: Figure created by CRS based on DOD, Office of the Secretary of Defense, *Future Years Defense Program (FYDP) Structure Handbook*, February 2020.

Policy Context and Considerations⁶⁶

Proposals to change or improve the PPBE process occur in the context of various historical laws, regulations, institutions, and practices. The current-day PPBE process is a product of these influences.

⁶⁴ DOD, Office of the Secretary of Defense, *Future Years Defense Program (FYDP) Structure Handbook*, February 2020, p. 5.

⁶⁵ A Major Force Program (MFP) is an aggregation of the resources (total obligational authority, personnel, and forces) intended to achieve objectives. Currently, six of the MFPs are considered combat force programs (strategic forces; general purpose forces; command, control, communications, intelligence, and space; mobility forces; Guard and reserve forces; and special operations forces) and six are considered support programs (research and development; central supply and maintenance; training, medical, and other personnel activities; administration and associated activities; support of other nations; and national security space). For more information, see CRS In Focus IF10831, *Defense Primer: Future Years Defense Program (FYDP)*, by Brendan W. McGarry and Heidi M. Peters.

⁶⁶ This section draws in part from research previously conducted in coordination with Heidi M. Peters, Analyst in U.S. Defense Acquisition Policy; and John R. Hoehn, Analyst in Military Capabilities and Programs.

Historical Context

Congressional efforts to reconsider or change the PPBE process may benefit from insights into its history, including its underlying assumptions and original problems it was intended to address.

Some academics have described PPBE as a type of organizational budgeting process known as *program budgeting*,⁶⁷ which is “a framework through which organizations allocate different resources to different departments or teams for a program.”⁶⁸ A historical example from DOD was using the process to allocate resources based on an assessment of “the marginal contributions of strategic bombers, land based missiles, and submarine based missiles to nuclear deterrence— notwithstanding their locations in different components of the department.”⁶⁹ The concept of program extends to the smallest element of the DOD budget, which is called a “program element.”⁷⁰

As a type of program budgeting, PPBE has precedents in both the private sector and government.⁷¹ In the private sector, some observers trace the origins of program budgeting to efforts during the 1920s to improve organizational efficiency at major U.S. manufacturing companies, such as DuPont Corporation, Bell Laboratories, Ford Motor Company, and General Motors Corporation.⁷² In the government context, program budgeting is associated with efforts by Congress to better understand the performance of government programs through agency budgets. In 1956, acting in part on recommendations from the Hoover Commission—a panel appointed to study and propose Executive Branch organizational changes—Congress passed legislation (P.L. 84-863) that amended the Budget and Accounting Procedures Act of 1950 (P.L. 81-784) to require agency heads to support budget justifications with “information on performance and program costs by organizational units.”⁷³

At DOD, the process currently known as PPBE dates to 1961, when Secretary of Defense Robert McNamara and Assistant Secretary of Defense (Comptroller) Charles Hitch implemented the Planning, Programming, and Budgeting System (PPBS), in part to centralize budget decisionmaking processes in DOD.⁷⁴ Prior to this system, the military departments had greater independence in formulating their budgets, and McNamara described this decentralized approach as problematic for department-wide decisionmaking. Some participants have described the defense budget prior to the advent of PPBS as “essentially a bookkeeping device for dividing

⁶⁷ See, for example, William F. West, *Program Budgeting and the Performance Movement: The Elusive Quest for Efficiency in Government* (Washington, DC: Georgetown University Press, 2011); and Philip J. Candreva, *National Defense Budgeting and Financial Management: Policy and Practice* (Charlotte, NC: Information Age Publishing, 2017). Candreva notes that DOD program budgeting is complex and incorporates other systems.

⁶⁸ CFA Institute, “What Is Program Budget? And How Does It Work?” accessed May 28, 2022, at <https://www.cfajournal.org/program-budget/>. According to this article, other types of budgeting processes include incremental budgets, zero-based budgets, rolling budgets, activity-based budgets, top-down budgets, and bottom-up budgets.

⁶⁹ William F. West, *Program Budgeting and the Performance Movement: The Elusive Quest for Efficiency in Government* (Washington, DC: Georgetown University Press, 2011), p. 10.

⁷⁰ For more information on program elements, see the “Future Years Defense Program (FYDP)” section below.

⁷¹ Philip J. Candreva, *National Defense Budgeting and Financial Management: Policy and Practice* (Charlotte, NC: Information Age Publishing, 2017), pp. 200-201.

⁷² Jonathan Kraft, “The Evolution of Program Budgeting in the United States Government,” *Armed Forces Comptroller*, Winter 2009, pp. 40-41.

⁷³ P.L. 84-863, §2; 70 Stat. 782.

⁷⁴ William F. West, *Program Budgeting and the Performance Movement: The Elusive Quest for Efficiency in Government* (Washington, DC: Georgetown University Press, 2011), p. 9.

funds between Services and accounts and a blunt instrument for keeping a lid on defense spending.”⁷⁵ Some observers have described another perceived problem of the previous practice as a disconnect between policy and funding processes.⁷⁶ Appointed at a time when the position of Defense Secretary and the department itself were slightly more than a decade old,⁷⁷ McNamara had the necessary authorities but lacked the necessary management tools to make effective decisions, according to some participants.⁷⁸ Earlier in his private-sector career, McNamara had used a similar budgeting process in efforts to improve organizational efficiency at Ford.⁷⁹ Hitch, who previously headed the economics division at the RAND Corporation,⁸⁰ has been described as the “father” of PPBS and the “architect of the system.”⁸¹ The PPBS proponents were interested in identifying a process that would allow officials to allocate funding efficiently based on national security objectives.⁸² According to participants in PPBS’s early implementation, the system was premised on six main ideas:

1. Decision-making on the basis of the national interest;
2. Considering needs and costs simultaneously;
3. Explicit consideration of alternatives;
4. Active use of an analytical staff;
5. A multiyear force and financial plan; and
6. Open and explicit analysis.⁸³

To implement PPBS, its founders created the following management tools:

- Five-year defense plan;⁸⁴

⁷⁵ For more information, see Alain C. Enthoven and K. Wayne Smith, *How Much Is Enough? Shaping the Defense Program, 1961-1969* (Santa Monica, CA: RAND Corporation, 2005, first published 1971 by Harper & Row), p. 11, at https://www.rand.org/pubs/commercial_books/CB403.html.

⁷⁶ John Whitley, *Three Reforms to Improve Defense Resource Management*, IBM Center for the Business of Government, June 9, 2022, p. 11, at <https://www.businessofgovernment.org/sites/default/files/Three%20Reforms%20to%20Improve%20Defense%20Resource%20Management.pdf>.

⁷⁷ The National Security Act of 1947 (P.L. 80-253, §201; 61 Stat. 499), established a National Military Establishment headed by a Secretary of Defense and consisting of the Departments of the Army, Navy, and Air Force. The National Security Act Amendments of 1949 (P.L. 81-216, §4; 63 Stat. 579) amended the law to establish the Department of Defense.

⁷⁸ Alain C. Enthoven and K. Wayne Smith, *How Much Is Enough? Shaping the Defense Program, 1961-1969* (Santa Monica, CA: RAND Corporation, 2005, first published 1971 by Harper & Row), pp. 32-33. Enthoven served as Assistant Secretary of Defense for Systems Analysis from 1965 to 1969, and Smith served as Special Assistant to the Assistant Secretary of Defense for Systems Analysis.

⁷⁹ Jerry L. McCaffery and L.R. Jones, *Budgeting and Financial Management for National Defense* (Greenwich, CT: Information Age Publishing, 2004), p. 89.

⁸⁰ The RAND Corporation is a nonprofit research organization based in Santa Monica, CA, with contracts to operate certain federally funded research and development centers. For more information, see <https://www.rand.org/>; and CRS Report R44629, *Federally Funded Research and Development Centers (FFRDCs): Background and Issues for Congress*, by Marcy E. Gallo.

⁸¹ Alain C. Enthoven and K. Wayne Smith, *How Much Is Enough? Shaping the Defense Program, 1961-1969* (Santa Monica, CA: RAND Corporation, 2005, first published 1971 by Harper & Row), p. xix.

⁸² William N. Dunn, *Public Policy Analysis: An Integrated Approach* (New York, NY: Routledge, 2018), p. 39.

⁸³ Alain C. Enthoven and K. Wayne Smith, *How Much Is Enough? Shaping the Defense Program, 1961-1969* (Santa Monica, CA: RAND Corporation, 2005, first published 1971 by Harper & Row), pp. 32-47, 365-366.

⁸⁴ This concept is currently known as the Future Years Defense Program. For more information, see the “Future Years Defense Program (FYDP)” section; and CRS In Focus IF10831, *Defense Primer: Future Years Defense Program*

- Draft presidential memorandums;⁸⁵
- Development concept paper;
- Readiness, information, and control tables; and
- Systems analysis.⁸⁶

In 1965, President Lyndon B. Johnson ordered other federal agencies to adopt similar budget processes.⁸⁷ However, the process proved difficult to implement across the federal government, in part because of its complexity, questions about its relevance, and lack of staff with the necessary technical expertise.⁸⁸ Beginning in 1967, Congress conducted its first major congressional inquiry into PPBS.⁸⁹ Around this time, some academics questioned the ability of program budgeting to perform as intended, with one outspoken critic arguing that budgets, like the political process, change only incrementally each year.⁹⁰ In 1969, during the Nixon Administration, Defense Secretary Melvin Laird modified the system to a more decentralized approach, directing the military departments to identify resourcing needs within guidance provided by OSD.⁹¹ In 1971, also during the Nixon Administration, OMB effectively retracted President Johnson's government-wide order as part of an effort to simplify budget submission requirements.⁹²

In subsequent decades, the manner in which DOD leaders implemented the process evolved within DOD; however, in general, the logic of the process and its major elements remained intact. Illustrative milestones include the following:

(FYDP), by Brendan W. McGarry and Heidi M. Peters.

⁸⁵ These documents included analysis of 16 categories of major defense programs. For more information, see Alain C. Enthoven and K. Wayne Smith, *How Much Is Enough? Shaping the Defense Program, 1961-1969* (Santa Monica, CA: RAND Corporation, 2005, first published 1971 by Harper & Row), p. 54. These categories are currently known as Major Force Programs (MFPs), of which there are 12: Strategic Forces; General Purpose Forces; C3 [Command, Control, and Communications], Intel, and Space; Mobility Forces; Guard and Reserve Forces; Research and Development; Central Supply and Maintenance; Training, Medical, and Other; Administrative and Associated; Support of Other Nations; Special Operations Forces; and Space. For a definition of MFP, see **Appendix A**.

⁸⁶ The Systems Analysis office was the predecessor organization to the Office of Cost Assessment and Program Evaluation (CAPE) within the Office of the Secretary of Defense.

⁸⁷ Allen Schick, "A Death in the Bureaucracy: The Demise of Federal PPB," *Public Administration Review*, vol. 33, no. 2 (Mar.-Apr., 1973), pp. 146-156, at <https://www.jstor.org/stable/pdf/974211.pdf>.

⁸⁸ *Ibid.*; and William N. Dunn, *Public Policy Analysis: An Integrated Approach* (New York, NY: Routledge, 2018), p. 39.

⁸⁹ U.S. Congress, Senate Committee on Government Operations, Subcommittee on National Security and International Operations, *Planning Programming Budgeting*, 90th and 91st Congress (1st sess.), March 1970, 42-649 O, p. III.

⁹⁰ Robert D. Lee, Jr., Ronald W. Johnson, and Philip G. Joyce, *Public Budgeting Systems*, 10th ed. (Burlington, MA: Jones and Bartlett Learning, 2021), pp. 172-173. For examples of such criticism, see Aaron Wildavsky, "Rescuing Policy Analysis from PPBS," *Public Administration Review*, vol. 29, no. 2 (March-April, 1969), pp. 189-202, at <https://www.jstor.org/stable/973700?seq=1>; and, more recently, William F. West, *Program Budgeting and the Performance Movement: The Elusive Quest for Efficiency in Government* (Washington, DC: Georgetown University Press, 2011).

⁹¹ Alain C. Enthoven and K. Wayne Smith, *How Much Is Enough? Shaping the Defense Program, 1961-1969* (Santa Monica, CA: RAND Corporation, 2005, first published 1971 by Harper & Row), p. xii, at https://www.rand.org/pubs/commercial_books/CB403.html.

⁹² Allen Schick, "A Death in the Bureaucracy: The Demise of Federal PPB," *Public Administration Review*, vol. 33, no. 2 (Mar.-Apr., 1973), pp. 146-156, at <https://www.jstor.org/stable/pdf/974211.pdf>.

- The Goldwater-Nichols Department of Defense Reorganization Act of 1986 (P.L. 99-433) resulted in an expanded role for the CJCS and combatant commanders in the resource allocation process;⁹³
- The Department of Defense Authorization Act, 1986 (P.L. 99-145) required a two-year budget proposal for DOD, resulting in certain temporary changes to the PPBE process, until the provision was repealed in FY2008;⁹⁴ and
- In 2003, during the George W. Bush Administration, DOD renamed the process *PPBE* to emphasize the need to better manage the “execution” of budget authority provided by Congress.⁹⁵

The process has also generated interest from the Comptroller General of the United States. In 1984, the General Accounting Office—the predecessor organization to the Government Accountability Office (GAO)—and DOD conducted a joint study of PPBS. The report described the process as “an extensively developed and flexible resource allocation system” and identified several areas of potential improvement.⁹⁶

Other agencies with significant capital expenditures—including the Department of Homeland Security (DHS), the National Aeronautics and Space Administration (NASA), the National Oceanic and Atmospheric Administration (NOAA), and elements of the intelligence community—have adopted similar budgeting processes, in part to meet performance requirements of the Government Performance and Results Act of 1993 and subsequent amendments (GPRA; P.L. 103-62 and P.L. 111-352).⁹⁷

Contemporary Context

Congress has expressed interest in the PPBE in view of multiple developments, mostly in the context of questions about the pace at which the U.S. military is modernizing its forces relative to China and other strategic competitors. Some observers have cautioned that DOD’s budget process may not be sufficient to maintain U.S. competitiveness with China. DOD has pointed to China’s military-civil fusion strategy, which seeks to “develop and acquire advanced dual-use technology for military purposes and deepen reform of the national defense science and technology

⁹³ P.L. 99-433, §§201, 211; 100 Stat. 1004, 1016. In addition, §109(d)(2); 100 Stat. 1000 required the Chairman of the Joint Chiefs of Staff to study the functions and organization of the Office of the Secretary of Defense, including “whether the planning, programming, and budgeting system of the Department of Defense (including the role of the Office in such system) needs to be revised.”

⁹⁴ P.L. 99-145, §1405; 99 Stat. 744. This provision of law was repealed in P.L. 110-181, §1006; 122 Stat. 303.

⁹⁵ Philip J. Candreva, *National Defense Budgeting and Financial Management: Policy and Practice* (Charlotte, NC: Information Age Publishing, 2017), p. 202.

⁹⁶ The study identified the following areas of potential improvement: Planning, Its Linkage with Programming, and Cross-Service Analysis; Time Horizon and Out-Year Uncertainties; Structures of Information in PPBS; Budget Presentation and Justification; Managerial Flexibility and Legislative Control; Timing and Work Intensity; Programmatic Analysis of Operating Accounts; Compatibility Among Management Information Systems; and Management Review, Evaluation; and Feedback. The study also included discussion of “Some Management Implications of a Change in Appropriation Accounts.” For more information, see General Accounting Office, *The DOD Planning, Programming, and Budgeting System*, OACG-84-5, September 1, 1983, at <https://www.gao.gov/products/oacg-84-5>.

⁹⁷ NOAA adopted a version of program budgeting in 2002, and NASA and DHS in 2005. For more information, see William F. West, *Program Budgeting and the Performance Movement: The Elusive Quest for Efficiency in Government* (Washington, DC: Georgetown University Press, 2011), pp. 78, 184, 191. For more information about GPRA, see CRS Report R42379, *Changes to the Government Performance and Results Act (GPRA): Overview of the New Framework of Products and Processes*, by Clinton T. Brass.

industries, and serves a broader purpose to strengthen all of the [People’s Republic of China’s] instruments of national power.”⁹⁸ The National Security Commission on Artificial Intelligence stated, “While the United States should by no means adopt China’s centrally planned and state-directed economic model, it must start by developing better strategic planning, forecasting, and prioritization of emerging technologies to ensure long-term competitiveness.”⁹⁹ A RAND Corporation report concluded that “neither Russia nor China has better acquisition processes” than the United States, but noted that China is growing organic capabilities through joint ventures and acquisition of foreign technology.¹⁰⁰

In this context, some observers have criticized DOD’s PPBE process—particularly its assumptions about program timelines and development—as reflecting an “industrial-era” approach and oriented toward large capital expenditures, such as aircraft carriers and strategic bombers. Such systems typically cost billions of dollars, take years to complete, and follow a traditional model of research and development before procurement and fielding. In 2019, the Defense Innovation Board, a DOD advisory board, argued in part that the PPBE process, including its requirement for two years or more in planning time, “limits the ability to quickly adapt systems against rapidly changing threats and increases the barriers for integrating advancements in digital technology in a timely and effective manner.”¹⁰¹ It also argued, “the latest industry best practices for developing, fielding, and sustaining software applications and information technology (IT) systems are substantially outpacing the US government’s industrial-era planning, programming, budgeting, and execution system ... methods.”¹⁰² In a 2021 report, the Hudson Institute argued that DOD’s decision time—that is, the time necessary from the early identification of opportunity or need through the first contract—can take even longer, up to six years, and that “to gain an advantage in a military competition with China, the [United States] will likely need to revise its resource allocation processes to permit faster decisions and more adaptability in selecting how to best pursue its operational objectives”¹⁰³ Eric Schmidt, former

⁹⁸ DOD, *Military and Security Developments Involving the People’s Republic of China, 2021*, p. IV, at <https://media.defense.gov/2021/Nov/03/2002885874/-1/-1/0/2021-CMPR-FINAL.PDF>. For more background and analysis on China’s military-civil fusion, see CRS Report R46808, *China’s Military: The People’s Liberation Army (PLA)*, by Caitlin Campbell.

⁹⁹ *National Security Commission on Artificial Intelligence Final Report*, March 2021, p. 257, at <https://www.nscai.gov/wp-content/uploads/2021/03/Full-Report-Digital-1.pdf>. The commission was established by P.L. 115-232, §1051; 132 Stat. 1962.

¹⁰⁰ Mark Ashby et al., *Defense Acquisition in Russia and China*, RAND Corporation, 2021, p. 31, at https://www.rand.org/content/dam/rand/pubs/research_reports/RRA100/RRA113-1/RAND_RRA113-1.pdf.

¹⁰¹ DOD, Defense Innovation Board, Final Report of the Defense Innovation Board (DIB) Software Acquisition and Practices (SWAP) Study, *Software Is Never Done: Refactoring the Acquisition Code for Competitive Advantage*, May 3, 2019, p. S134, at https://media.defense.gov/2019/Apr/30/2002124828/-1/-1/0/SOFTWAREISNEVERDONE_REFACTORINGTHEACQUISITIONCODEFORCOMPETITIVEADVANTAGE_FINAL.SWAP.REPORT.PDF. P.L. 115-91, §872; 131 Stat. 1497, required the Defense Secretary to direct the Defense Innovation Board, an independent advisory board to DOD, to study how to streamline the department’s software development and acquisition regulations.

¹⁰² *Ibid.*, p. S77. The report recommended for DOD to shift from a traditional linear development approach (i.e., “waterfall”) to an iterative software development methodology that combines development, security, and operations (i.e., “DevSecOps”). See p. xi.

¹⁰³ William Greenwalt and Dan Patt, *Competing in Time: Ensuring Capability Advantage and Mission Success through Adaptable Resource Allocation*, Hudson Institute, February 2021, pp. 6, 10-11, at https://s3.amazonaws.com/media.hudson.org/Patt%20Greenwalt_Competing%20in%20Time.pdf. For additional discussion of perceived shortcomings of the PPBE process, see also Eric M. Lofgren, *The DoD Budget Process: The Next Frontier of Acquisition Reform*, George Mason University, School of Business, Center for Government Contracting, July 29, 2020, at <https://business.gmu.edu/news/2021-10/no-5-dod-budget-process-next-frontier-acquisition-reform>; Thomas Spoehr and Frederico Bartels, *Reforming the Defense Department’s Planning*,

chief executive officer of Google who served as a co-chair of the National Security Commission on Artificial Intelligence, testified before Congress that the problem facing DOD is not “innovation, but innovation adoption.”¹⁰⁴ He said the department’s outdated budgeting process “creates a valley of death for new technology, allowing basic research funding and also procurement of weapons systems, but preventing the flexible investment needed in prototypes, concepts, and experimentation of new concepts and technologies like AI.”¹⁰⁵

Other observers, including former participants in the process, have provided different characterizations of the PPBE process. Some of them have noted that because the PPBE process adheres to provisions of permanent law but does not have an explicit statutory basis for establishment, DOD can:

- alter internal the process or elements of the process without intervention by Congress;¹⁰⁶
- adopt a different approach to funding defense programs, organizations, and missions in its annual budget request, for example, by consolidating or reorganizing program elements;¹⁰⁷
- seek budgetary changes through amendments or supplemental requests to Congress; and
- respond to emerging priorities by reprogramming and transferring funds through existing (or amended) authorities provided by Congress.¹⁰⁸

A former DOD official has argued that the PPBE process is not a cause of the “valley of death”—that is, the period when experimental programs fail to transition from either the science and technology phase or development phase to production—but rather part of the solution, by providing an opportunity for decisionmakers to allocate funding for such transitions during the multi-year funding plan.¹⁰⁹ While noting that the DOD budgeting process “is not responsive enough to pivot away from losing efforts or to quickly double down on emerging winners,” a RAND Corporation analyst has argued that an overemphasis on speed can produce unintended

Programming, Budgeting, and Execution Process, The Heritage Foundation, January 14, 2022, at <https://www.heritage.org/defense/commentary/reforming-the-defense-departments-planning-programming-budgeting-and-execution>; and Jon Etherton et al., *Stepping Back from Acquisition Reform: How Our Resourcing Processes Drive Defense Outcomes*, January 2022, at https://www.ndia.org/-/media/sites/policy-issues/acquisition-reform/ndia_acquisition_reform-final3.pdf.

¹⁰⁴ Testimony of Eric E. Schmidt, in U.S. Congress, Senate Committee on Armed Services, *Emerging Technologies and Their Impact on National Security*, hearings, 117th Congress, 1st sess., February 23, 2021, pp. 11-12, at https://www.armed-services.senate.gov/imo/media/doc/Schmidt_02-23-21.pdf.

¹⁰⁵ *Ibid.*

¹⁰⁶ CRS communications with former DOD officials. For a list of laws related to PPBE, see **Appendix A**.

¹⁰⁷ See, for example, Jamie Morin, “Podcast: PPBE Reform Panel 2 — From Ideas to Implementation,” in *Acquisition Talk*, produced by Eric Lofgren, April 6, 2021, at <https://acquisitiontalk.com/2021/04/podcast-ppbe-reform-panel-2-from-ideas-to-implementation/>.

¹⁰⁸ See, for example, Dov S. Zakheim, “Reform the Pentagon’s budget process, or lose our military and tech advantages,” *The Hill*, April 2, 2021, at <https://thehill.com/opinion/546097-reform-the-pentagons-budget-process-or-lose-our-military-and-tech-advantages?> For more information on DOD transfer and reprogramming authorities, see CRS Report R46421, *DOD Transfer and Reprogramming Authorities: Background, Status, and Issues for Congress*, by Brendan W. McGarry.

¹⁰⁹ John Whitley, *Three Reforms to Improve Defense Resource Management*, IBM Center for the Business of Government, June 9, 2022, p. 26, at <https://www.businessofgovernment.org/sites/default/files/Three%20Reforms%20to%20Improve%20Defense%20Resource%20Management.pdf>.

consequences, such as systems that become “evolutionary dead ends” or “outsized operations and maintenance burdens.”¹¹⁰

Certain reviews in 2021 have recommended changes to defense appropriations and authorities as part of efforts to modernize the DOD budget process. The 2021 National Security Commission on Artificial Intelligence Final Report included several recommendations for Congress and DOD to modernize the budget and oversight processes for digital technologies, for example, by creating a single appropriation and budget structure for software and digital technologies.¹¹¹ A former chairman of the House Committee on Armed Services said another commission recommendation—for a pilot program to test a portfolio management approach for requirements and budgeting—should produce lessons learned for broader reforms to the PPBE process.¹¹²

In the DOD context, some observers have described the concept of portfolio-based budgeting as managing funding for an entire category of systems, such as all Army helicopters, rather than a single program, such as the AH-64 Apache attack helicopter.¹¹³ For many programs, Congress currently authorizes and appropriates funding for one or more appropriation accounts, each containing one or more line items. For example, of the \$790 million provided for the AH-64 helicopter in FY2022, \$780 million was for line items within the Aircraft Procurement, Army account and \$10 million was provided for a line item in the Research, Development, Test, and Evaluation, Army account.¹¹⁴

The aforementioned DIB report made certain recommendations that it characterized as priority, including the establishment of a new appropriation category to fund software “as a single budget item, with no separation between RDT&E, production, and sustainment.”¹¹⁵ In FY2021, Congress established a new RDT&E budget activity (6.8), “Software and Digital Technology Pilot

¹¹⁰ Jonathan P. Wong, “Bad Idea: Overly Focusing on Speed in Development and Acquisition,” *The Center for Strategic and International Studies*, December 15, 2020, at <https://defense360.csis.org/bad-idea-overly-focusing-on-speed-in-development-and-acquisition/>. For examples of questions posed about the long-term utility of mine-resistant ambush-protected (MRAP) vehicles built for the wars in Iraq and Afghanistan, see Alex Rogers, “The MRAP: Brilliant Buy, or Billions Wasted?” *Time*, October 2, 2012, at <https://nation.time.com/2012/10/02/the-mrap-brilliant-buy-or-billions-wasted/>.

¹¹¹ The report included the following defense budget-related recommendations: make supplemental funding available to drive operational prototyping, scale, and transition of AI technologies; accelerate efforts to implement a portfolio management approach for requirements and budget; direct the Secretary of Defense to establish a dedicated AI fund; support the continuation of the Budget Activity 8 pilot program in FY2022 and direct the Department to add an S&T [science and technology] project to the pilot programs; establish a single appropriation and budget structure for software and digital technologies by FY2023; and identify and implement successful portfolio- and mission-based budgeting constructs at scale across DOD. For more information, see *National Security Commission on Artificial Intelligence Final Report*, March 2021, pp. 308-311, at <https://www.nscai.gov/wp-content/uploads/2021/03/Full-Report-Digital-1.pdf>.

¹¹² William “Mac” Thornberry, “How Congress must reform its budget process to compete against China in AI,” *The Hill*, June 25, 2021, at <https://thehill.com/blogs/congress-blog/economy-budget/560345-how-congress-must-reform-its-budget-process-to-compete/>.

¹¹³ Thomas Spoehr and Frederico Bartels, *Reforming the Defense Department’s Planning, Programming, Budgeting, and Execution Process*, The Heritage Foundation, January 14, 2022, at <https://www.heritage.org/defense/commentary/reforming-the-defense-departments-planning-programming-budgeting-and-execution>.

¹¹⁴ DOD, *Office of the Under Secretary of Defense (Comptroller)/Chief Financial Officer, April 2022, Program Acquisition Cost by Weapon System, United States Department of Defense Fiscal Year 2023 Budget Request*, p. 1-9, at https://comptroller.defense.gov/Portals/45/Documents/defbudget/FY2023/FY2023_Weapons.pdf.

¹¹⁵ DOD, Defense Innovation Board, Final Report of the Defense Innovation Board (DIB) Software Acquisition and Practices (SWAP) Study, *Software Is Never Done: Refactoring the Acquisition Code for Competitive Advantage*, May 3, 2019, pp. 37-38.

Programs.”¹¹⁶ In general, a budget activity is a grouping of similar line items within an appropriation account.¹¹⁷ The funding can be used for activities typically associated with other types of defense appropriations during the period of availability, including “agile research, development, test and evaluation, procurement, production, modification, and operation and maintenance.”¹¹⁸

Defense appropriations generally have differing periods of availability in which DOD financial managers can obligate the authority for new obligations, obligation adjustments, expenditures, and outlays.¹¹⁹ For example, military personnel (MILPERS) and operations and maintenance (O&M) appropriations are generally available for such actions for up to one year; RDT&E appropriations for two years, procurement appropriations for three years (shipbuilding for five years), and military construction (MILCON) appropriations for five years.¹²⁰ The DIB report also made other recommendations that it characterized as secondary,¹²¹ including replacing PPBE and other processes with a portfolio management approach that would empower a program executive officer in each of the armed services to allocate funding for software capabilities based on warfighter needs.¹²²

In 2022, a RAND Corporation report summarized recent proposals for PPBE reform as follows:

- More efficient execution of the existing PPBE process (e.g., reduce the number of approval authorities, modernize budget justification documents, release timely strategic guidance);
- Broader or different units of analysis (e.g., create new budget categories for networked communications and other modernization priorities, consolidate various RDT&E program elements into larger groupings, establish a contingency fund to be used for multiple purposes);

¹¹⁶ P.L. 116-260, Division C, §8131; 134 Stat. 1335.

¹¹⁷ According to DAU, budget activities are “categories within each appropriation and fund account that identify the purposes, projects, or types of activities financed by the appropriation or fund.” See DOD, DAU Glossary, “budget activity,” accessed June 28, 2022, at <https://www.dau.edu/glossary/Pages/GlossaryContent.aspx?itemid=26941>. For more information on RDT&E budget activities, see CRS Report R44711, *Department of Defense Research, Development, Test, and Evaluation (RDT&E): Appropriations Structure*, by John F. Sargent Jr.

¹¹⁸ Ibid.

¹¹⁹ The major categories of DOD appropriations are military personnel (MILPERS); operation and maintenance (O&M); procurement; research, development, test, and evaluation (RDT&E); and military construction and family housing (MILCON). For more information on the DOD budget, see CRS Report R46965, *The Department of Defense (DOD) Budget: An Orientation*, by Pat Towell.

¹²⁰ This concept is often referred to as “colors of money.” See, for example, Department of the Army, “Understanding Acquisition: The Colors of Money,” *Army ALT [Acquisition, Logistics, and Technology] Magazine*, March 25, 2021, at <https://asc.army.mil/web/news-understanding-acquisition-the-colors-of-money/>.

¹²¹ DOD, Defense Innovation Board, Final Report of the Defense Innovation Board (DIB) Software Acquisition and Practices (SWAP) Study, *Software Is Never Done: Refactoring the Acquisition Code for Competitive Advantage*, May 3, 2019, p. S16.

¹²² According to the Project Management Institute, portfolio management “refers to the centralized management of one or more project portfolios to achieve strategic objectives.” See Project Management Institute, Portfolio Management, accessed June 11, 2022, at <https://www.pmi.org/learning/featured-topics/portfolio>. According to the Government Accountability Office (GAO), some companies and organizations use a portfolio management approach to “assess product investments collectively from an enterprise level, rather than as independent and unrelated initiatives.” See GAO, *Best Practices: An Integrated Portfolio Management Approach to Weapon System Investments Could Improve DOD’s Acquisition Outcomes*, GAO-07-388, March 2007, summary, at <https://www.gao.gov/assets/gao-07-388.pdf>.

- Integrated portfolios (e.g., consolidate portions of the defense budget into missions, capability areas, or regions—similar to previous efforts that funded the Joint Improvised Explosive Device Defeat Organization, or JIEDDO, and the Joint Artificial Intelligence Center, or JAIC);¹²³
- Removal of RDT&E from the FYDP (i.e., exclude RDT&E funding from long-term budget projections);
- More powerful reprogramming (e.g., increase the amount of funding that DOD can transfer or reprogram, delegate authority for such actions to lower organizational levels).¹²⁴

Selected Legislative Activity

This section of the report discusses recent legislation relevant to the discussion of PPBE reform.

Department of Defense Appropriations Act, 2022

In response to calls to establish new appropriations accounts or structures to provide DOD with greater acquisition and budgetary flexibility for software-related development, as discussed above, Congress in FY2021 established a new RDT&E budget activity for software and digital technology pilot programs, and increased funding for such efforts from \$588 million in FY2021 to \$741.8 million in FY2022.¹²⁵

At the same time, in the explanatory statement accompanying the FY2021 defense appropriations act, Congress argued that “objective quantitative and qualitative evidence is needed to evaluate potential expansion of the approved pilot programs” and that “seeking additional flexibility in the execution of appropriations should not be a solution to internal accounting and guidance issues that challenge the Department’s ability to execute these programs.”¹²⁶

In legislative documents accompanying FY2022 defense appropriations bills, Congress made similar points. The Senate Committee on Appropriations Subcommittee on Defense acknowledged DOD’s “rationale regarding the incremental technical challenges posed by modern software development practices, including implementing technical fixes to existing code, addressing cyber vulnerabilities, and integrating incrementally developed new capabilities.”¹²⁷ However, the panel stated, “reporting requirements ... have not been submitted to the

¹²³ Congress has directed the creation or expansion of certain defense capabilities. Congress regularly provides funding for the National Guard and Reserve Equipment Account (NGREA) to procure items for the reserve components (see, for example, P.L. 117-103, Division C, Title III; 136 Stat. 169). Congress has also directed DOD to establish a Chemical, Biological, Radiological, and Nuclear (CBRN) rapid response team (see P.L. 104-201, §1414; 110 Stat. 2720).

¹²⁴ Jonathan P. Wong, *Resourcing Defense Innovation: The Role of Organizational Values*, Acquisition Research Program at the Naval Postgraduate School, May 2, 2022, at <https://dair.nps.edu/bitstream/123456789/4565/1/SYM-AM-22-052.pdf>.

¹²⁵ DOD requested \$1.78 billion for such pilot programs in FY2023. For more information, see DOD, *Research Development, Test & Evaluation Programs (R-1) FY2023 budget document*, accessed June 10, 2022, at <https://comptroller.defense.gov/Portals/45/Documents/defbudget/FY2023/r1.xlsx>.

¹²⁶ Explanatory statement accompanying the Department of Defense Appropriations Act, 2021 (Division C of P.L. 116-260), in the House, *Congressional Record*, daily edition, vol. 166 (December 21, 2020), Book III, p. H8167.

¹²⁷ Senate Appropriations Committee, *Explanatory Statement for the Department of Defense Appropriations Bill, 2022* (draft statement released by the committee’s majority [Democratic] caucus), October 18, 2021, p. 154, at https://www.appropriations.senate.gov/imo/media/doc/DEFRept_FINAL.PDF.

congressional defense committees on a timely basis, and have not yet provided a baseline for analyzing the effectiveness of the pilot programs compared to traditional appropriation practices.”¹²⁸ In the explanatory statement accompanying the Department of Defense Appropriations Act, 2022 (Division C of P.L. 117-103), Congress encouraged the Secretary of Defense to perform “detailed analysis of the Department’s accounting and financial management process for such pilot programs compared to traditional software and digital technology programs,” and to submit quarterly reports to the congressional defense committees that detail the quantitative and qualitative metrics and other information as part of assessments of each pilot.¹²⁹

National Defense Authorization Act for Fiscal Year 2022

Congressional consideration of the National Defense Authorization Act for Fiscal Year 2022 (NDAA; P.L. 117-81) involved debate about the speed and effectiveness of the PPBE process.¹³⁰ The House-passed NDAA included a provision (§1079) to establish Defense Resource Budgeting and Allocation Commission.¹³¹ The purpose of the provision would have been to “develop a consensus on an effective and strategic approach to Department of Defense resource budgeting and allocation, including by conducting an examination of the planning, programming, budgeting, and execution methodology of the Department; and by considering potential alternatives to such methodology to maximize the ability of the Department to equip itself in a timely manner to respond to current and emerging threats.”¹³² The SASC-reported NDAA included a similar provision (§1002) that would have established a Commission on Planning, Programming, Budgeting, and Execution Reform to provide an independent review and assessment of DOD’s PPBE process.¹³³

The enacted FY2022 NDAA included an amended version (§1004) of the SASC provision.¹³⁴ The legislation stated the purpose of the commission was to examine the effectiveness of the PPBE process (and related processes), consider alternatives, and make legislative and policy recommendations for improvement “to field the operational capabilities necessary to outpace near-peer competitors, provide data and analytical insight, and support an integrated budget that is aligned with strategic defense objectives.”¹³⁵ The legislation stated the duties of the commission were to compare the process with similar processes of private industry, other federal agencies, and other countries; assess the efficacy and efficiency of all phases and aspects of the process; and propose recommendations to improve the effectiveness of the process.¹³⁶

The enacted legislation included other provisions related to the PPBE process. These included requirements for the Secretary of Defense to establish a pilot program to identify ways to more

¹²⁸ Ibid.

¹²⁹ Explanatory statement accompanying the Department of Defense Appropriations Act, 2022 (Division C of P.L. 116-260), in the House, *Congressional Record*, daily edition, vol. 166 (March 9, 2022), Book III, p. H2064.

¹³⁰ See, for example, SASC, Hearings, “Planning, Programming, Budget, and Execution Process of the Department of Defense,” March 18, 2021, at <https://www.armed-services.senate.gov/hearings/21-03-18-planning-programming-budget-and-execution-process-of-the-department-of-defense>.

¹³¹ H.R. 4350, §1079.

¹³² H.Rept. 117-118, p. 234.

¹³³ S. 2792, §1002; and S.Rept. 117-39, p. 227.

¹³⁴ 135 Stat. 1884; and explanatory statement accompanying the FY2022 NDAA (P.L. 117-81) in Part 2 of the House section of the *Congressional Record*, December 7, 2021, Book II, p. H7314.

¹³⁵ Ibid.

¹³⁶ Ibid.

quickly meet the operational needs of combatant commands (§871);¹³⁷ for the Secretary of Defense to establish pilot programs within the Strategic Capabilities Office to close “significant” capability gaps in theater (§872);¹³⁸ and for the DOD Comptroller to submit a plan to the congressional defense committees to consolidate the information technology systems used to manage data and support the process (§1003).¹³⁹

Commission on Planning, Programming, Budgeting, and Execution Reform

As discussed above, Section 1004 of the FY2022 NDAA (P.L. 117-81) established the Commission on Planning, Programming, Budgeting, and Execution Reform. The section discusses the purpose, duties, and other selected elements of the commission.

Purpose

The legislation stated the purpose of the commission was to:

1. examine the effectiveness of the planning, programming, budgeting, and execution process and adjacent practices of the Department of Defense, particularly with respect to facilitating defense modernization;
2. consider potential alternatives to such process and practices to maximize the ability of the Department of Defense to respond in a timely manner to current and future threats; and
3. make legislative and policy recommendations to improve such process and practices in order to field the operational capabilities necessary to outpace near-peer competitors, provide data and analytical insight, and support an integrated budget that is aligned with strategic defense objectives.¹⁴⁰

Duties

The legislation stated the duties of the commission were to compare the process with similar processes of private industry, other federal agencies, and other countries; assess the efficacy and efficiency of all phases and aspects of the process; and propose recommendations to improve the effectiveness of the process. In particular, the commission was to assess the following:

- (A) the roles of Department officials and the timelines to complete each such phase or aspect;
- (B) the structure of the budget of Department of Defense, including the effectiveness of categorizing the budget by program, appropriations account, major force program, budget activity, and line item, and whether this structure supports modern warfighting requirements for speed, agility, iterative development, testing, and fielding;
- (C) a review of how the process supports joint efforts, capability and platform lifecycles, and transitioning technologies to production;

¹³⁷ 135 Stat. 1855; and explanatory statement accompanying the FY2022 NDAA (P.L. 117-81) in Part 2 of the House section of the *Congressional Record*, December 7, 2021, Book II, p. H7308.

¹³⁸ 135 Stat. 1859; and explanatory statement accompanying the FY2022 NDAA (P.L. 117-81) in Part 2 of the House section of the *Congressional Record*, December 7, 2021, Book II, p. H7308.

¹³⁹ 135 Stat. 1884; and explanatory statement accompanying the FY2022 NDAA (P.L. 117-81) in Part 2 of the House section of the *Congressional Record*, December 7, 2021, p. H7314.

¹⁴⁰ 135 Stat. 1885.

(D) the timelines, mechanisms, and systems for presenting and justifying the budget of Department of Defense, monitoring program execution and Department of Defense budget execution, and developing requirements and performance metrics;

(E) a review of the financial management systems of the Department of Defense, including policies, procedures, past and planned investments, and recommendations related to replacing, modifying, and improving such systems to ensure that such systems and related processes of the Department result in: (i) effective internal controls; (ii) the ability to achieve auditable financial statements; and (iii) the ability to meet other financial management and operational needs; and

(F) a review of 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.¹⁴¹

Reports and Briefings

The legislation requires the commission to issue an interim report by February 6, 2023, and a final report by September 1, 2023.¹⁴² It also requires the commission to provide three briefings to the House and Senate Committees on Armed Services and Appropriations (the first within six months after its establishment, the next within one month after submitting the interim report, and the last within one month after submitting the final report).¹⁴³

Appointments

The legislation established a 14-member commission to be composed of nongovernment civilian experts appointed by leaders of the DOD, Congress, Armed Services, and Appropriations committees.¹⁴⁴ The commission subsequently elected as chair Robert Hale, a senior advisor at the consulting company Booz Allen Hamilton who served as DOD Comptroller during the Obama Administration; and as vice chair Ellen Lord, a director on the Board of Directors for the sensor-manufacturer GEOST who served as the Under Secretary of Defense for Acquisition and Sustainment (A&S) during the Trump Administration.¹⁴⁵

Some observers have criticized the composition of the commission. For example, one article reported that 11 of the 14 commissioners had ties to the defense industry and, while affirming potential benefits of PPBE reform, argued in part that “it would also present irresistible money-grabbing opportunities to the defense industry’s revolving door regulars: folks who bounce between high-profile jobs on Capitol Hill, in the Pentagon, and within top military contractors’ executive ranks and boards.”¹⁴⁶ Others have highlighted the importance of appointing commissioners with “the right mix” of professional backgrounds to assess the implications of

¹⁴¹ Ibid.

¹⁴² 135 Stat. 1886.

¹⁴³ Ibid. As of July 8, 2022, the commission had informal consultations with the committees for information-gathering purposes but had not provided a formal briefing on the status of the review and assessment.

¹⁴⁴ For a complete list of appointments to the commission, see **Appendix D**.

¹⁴⁵ Tony Bertuca, “New PPBE reform commission names Hale as chair, Lord as vice chair,” *Inside Defense*, June 2, 2022, at <https://insidedefense.com/daily-news/new-ppbe-reform-commission-names-hale-chair-lord-vice-chair>.

¹⁴⁶ Julia Gledhill, “Reform—or Repeat? Congress Fills New Pentagon Reform Panel with Revolving Door Regulars,” Project on Government Oversight (POGO), March 8, 2022, at <https://www.pogo.org/analysis/2022/03/reform-or-repeat-congress-fills-new-pentagon-reform-panel-with-revolving-door-regulars>.

potential changes on the various stakeholders involved in the process: “Add too many people invested in the current system, and it becomes a recipe for perpetuating the status quo. Pour in an overabundance of people with innovative private-sector experience, and the solutions will turn out to be wholly unworkable in the Pentagon.”¹⁴⁷

More generally, some long-standing criticisms of commissions are that they reflect an abdication of lawmaker responsibility, engage in an undemocratic practice because commissioners are unelected, and produce findings that are frequently ignored.¹⁴⁸ A former DOD official encouraged the commission to avoid: trying to eliminate the reality of resource scarcity or fix poor leadership with changes to the PPBE process; ignoring the incentives of stakeholders in the process, including Congress; and legislating a policy process.¹⁴⁹

Potential Issues for Congress

Potential issues for Congress relating to DOD’s PPBE process include, among others: perceived advantages and disadvantages; Congress’s role; oversight of DOD design and implementation; comparisons with alternative models; and balancing congressional control and department flexibility.

Perceived Advantages and Disadvantages

Congress may consider reviewing how changes to the PPBE process could affect the balance of perceived advantages and disadvantages of the process and the incentives of stakeholders involved.

In terms of advantages, proponents have praised the PPBE process as deliberate, disciplined, logical, consistent, and forward-looking. At multiple levels of DOD, the calendar-driven process provides regular forums for civilian and military leaders to review and make decisions on defense programs, projects, and activities. The process is structured to include participation from multiple stakeholders with differing incentives to encourage negotiation and consensus-building on contentious issues. The precursor to CAPE was established in part to provide independent analysis to enable the Secretary of Defense to make informed budget and strategy decisions as part of the process.¹⁵⁰ Some observers argue that DOD civilian leaders need independent sources of information to counterbalance and overcome the incentives of service leaders and others to “sell” their programs with overly optimistic cost estimates and promises of revolutionary performance and to preserve those programs by withholding bad news.”¹⁵¹

¹⁴⁷ Thomas Spoehr and Frederico Bartels, *Reforming the Defense Department’s Planning, Programming, Budgeting, and Execution Process*, The Heritage Foundation, January 14, 2022, at <https://www.heritage.org/defense/commentary/reforming-the-defense-departments-planning-programming-budgeting-and-execution>.

¹⁴⁸ For more information, see CRS Report R40076, *Congressional Commissions: Overview and Considerations for Congress*, by Jacob R. Straus.

¹⁴⁹ John Whitley, *Three Reforms to Improve Defense Resource Management*, IBM Center for the Business of Government, June 9, 2022, pp. 32-33, at <https://www.businessofgovernment.org/sites/default/files/Three%20Reforms%20to%20Improve%20Defense%20Resource%20Management.pdf>.

¹⁵⁰ Alain C. Enthoven and K. Wayne Smith, *How Much Is Enough? Shaping the Defense Program, 1961-1969* (Santa Monica, CA: RAND Corporation, 2005, first published 1971 by Harper & Row), p. 11, at https://www.rand.org/pubs/commercial_books/CB403.html.

¹⁵¹ Peter Levine, *Defense Management Reform: How to Make the Pentagon Work Better and Cost Less* (Stanford,

In general, the process is oriented toward the *base* defense budget—that is, the planned or regularly occurring costs to staff, train, and equip the military force—and reflective of anticipated strategies and needs. The process is intended to provide an opportunity for oversight and consideration of tradeoffs, both internally by DOD and externally by Congress. A former DOD Comptroller has said that alternative assessments during the process help ensure that “program effects are correctly identified” and “costs are correctly estimated.”¹⁵² Some observers have said of the PPBE process, in concert with other decision-support systems: “Having multiple entities working on solutions to the same or similar sets of joint operational problems can result in creative solutions.”¹⁵³

In terms of disadvantages, critics have called the PPBE process slow, rigid, complex, outdated, and insular. While the process may be conducive for defense programs characterized by significant capital expenditures, such as aircraft carriers and strategic bombers, it may be less agile for certain other defense programs, such as those characterized by software or rapidly evolving information-technology requirements, or for emergencies and contingencies. For example, during the past decade, funding designated for Overseas Contingency Operations was incorporated into the FYDP as placeholder projections that frequently underestimated actual amounts.¹⁵⁴ Some observers have argued that the PPBE process does not effectively integrate with other DOD decision-support systems;¹⁵⁵ does not result in changes to a significant percentage of defense programs, particularly during periods of downsizing or major funding changes;¹⁵⁶ and assumes a linear development model for funding weapon systems.¹⁵⁷ One academic has argued that PPBE and another type of government budgeting system “fell short of their goals. In particular, the substantial effort that went into these systems failed to change the way federal resources were allocated.”¹⁵⁸ Some have described PPBE as an example of “centralized planning” and called for the adoption of a budgeting process that supports “modularity, iteration and speed.”¹⁵⁹ Other budget allocation processes may better address rapidly emerging concerns and situations where strategies and needs emerge from events or new insights. Apart from the PPBE discussion, one author has argued that the strengths of a bureaucracy—for example, well-defined rules, structures, and procedures—are weaknesses “when the agency needs

California: Stanford University Press, 2020), p. 139.

¹⁵² Robert F. Hale, “Should PPBEs Be Reformed?” *Armed Forces Comptroller*, Fall 2021.

¹⁵³ Susanna V. Blume and Molly Parrish, *Make Good Choices, DoD*, Center for a New American Security, November 20, 2019, at <https://www.cnas.org/publications/reports/make-good-choices-dod>.

¹⁵⁴ For more information, see CRS Report R44519, *Overseas Contingency Operations Funding: Background and Status*, by Brendan W. McGarry and Emily M. Morgenstern.

¹⁵⁵ GAO, *Best Practices: An Integrated Portfolio Management Approach to Weapon System Investments Could Improve DOD’s Acquisition Outcomes*, GAO-07-388, March 2007, summary, at <https://www.gao.gov/assets/gao-07-388.pdf>.

¹⁵⁶ Gordon Adams and Cindy Williams, *Buying National Security: How America Plans and Pays for Its Global Role and Safety at Home* (New York, NY: Routledge, 2010), p. 118.

¹⁵⁷ William Greenwalt and Dan Patt, *Competing in Time: Ensuring Capability Advantage and Mission Success through Adaptable Resource Allocation*, Hudson Institute, February 2021, pp. 6, 10-11, at https://s3.amazonaws.com/media.hudson.org/Patt%20Greenwalt_Competing%20in%20Time.pdf.

¹⁵⁸ Philip G. Joyce, “Using Performance Measures for Federal Budgeting: Proposals and Prospects,” *Public Budgeting and Finance*, vol. 13, no. 4 (December 1993), at <https://onlinelibrary.wiley.com/doi/abs/10.1111/1540-5850.00987>.

¹⁵⁹ Jerry McGinn and Eric Lofgren, “Three steps to help defense innovation break free from its shackles,” *Defense News*, January 20, 2022, at <https://www.defensenews.com/opinion/commentary/2022/01/20/three-steps-to-help-defense-innovation-break-free-from-its-shackles/>.

to respond quickly. In some cases, a problem comes and goes before the responsible agency can act. Other times the environment is so dynamic that the stable processes cannot keep up.”¹⁶⁰

Any given resource allocation process may not serve all purposes. That is, simultaneous operation of PPBE and other, more nimble processes might be viewed as complements, given the needs for both deliberate, long-range strategic planning and quickly responding to emerging lessons learned, needs, and strategies.¹⁶¹ From such a perspective, questions for Congress might include how to accommodate PPBE with other potential processes and, accordingly, how to structure planned flexibility while preserving coordination with DOD and accountability and transparency to Congress. Questions might also include identifying instances in which DOD entities more strictly or loosely adhered to the PPBE process to determine whether one approach or the other resulted in a timelier adoption and fielding of certain commercially driven technology.

Congress’s Role

In weighing recommendations to reform the PPBE process, Congress may consider how much or how little control or influence to exert over the PPBE process in statute. DOD policy does not reference a statutory basis for the establishment of the current PPBE process.¹⁶² Rather, the PPBE process is largely the product of administrative decisions and practices; Congress has referred to the process in multiple provisions of Title 10 of the *U.S. Code*.¹⁶³ If Congress chooses to exert more control over the process, it may consider providing a statutory basis for the establishment of the PPBE process, or an alternative process or processes, perhaps as a part of a broader reorganization of statutory references to the PPBE process, system, or its elements. Alternatively, Congress might also consider the role of existing statutory references in advancing congressional influence and their potential impact on the flexibility of the PPBE process. A former DOD official has cautioned against legislating on what he considers an internal policy process: “Attempts to codify specific resource allocation processes internal to the department will make the process more antiquated (over time), slower, and less able to meet national security needs.”¹⁶⁴ Some academics have also argued that legislative or regulatory reforms to the defense budgeting process will never resolve political differences of opinion over funding priorities: “No amount of budget process or [PPBE] reform will reconcile the different value systems and funding priorities for national defense and security represented by opposing political parties, nor will it eliminate the budgetary influence of special interest politics.... threat perception and politics drive the defense budget, not the budget process itself.”¹⁶⁵

¹⁶⁰ Philip J. Candreva, *National Defense Budgeting and Financial Management: Policy and Practice* (Charlotte, NC: Information Age Publishing, 2017), p. 20.

¹⁶¹ For discussion of the deliberate/emergent dichotomy, see Henry Mintzberg and James A. Waters, “Of Strategies, Deliberate and Emergent,” *Strategic Management Journal*, vol. 6, no. 3 (July-September 1985), pp. 257-272, at <https://www.jstor.org/stable/2486186>.

¹⁶² DOD, Department of Defense Directive (DODD) 7045.14, *The Planning, Programming, Budgeting, and Execution (PPBE) Process*, August 29, 2017, at <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/704514p.pdf>.

¹⁶³ For a list of Title 10 sections of the *U.S. Code* that reference the PPBE process, system, or elements, see **Appendix B**.

¹⁶⁴ John Whitley, *Three Reforms to Improve Defense Resource Management*, IBM Center for the Business of Government, June 9, 2022, p. 33, at <https://www.businessofgovernment.org/sites/default/files/Three%20Reforms%20to%20Improve%20Defense%20Resource%20Management.pdf>.

¹⁶⁵ Jerry L. McCaffery and L.R. Jones, *Budgeting and Financial Management for National Defense* (Greenwich, CT: Information Age Publishing, 2004), p. 134.

Congress may also consider how it influences the PPBE process in routine legislative activity, such as by passing or not passing appropriations acts (e.g., regular defense appropriations acts, continuing resolutions, and supplemental funding); providing limited authority for the DOD to transfer and reprogram funds; and requiring military officials to submit lists of “unfunded priorities” that were not included in the President’s budget request.

Relying on continuing resolutions rather than regular appropriations acts to fund the government may affect multiple phases of the PPBE process, for example, by limiting DOD funding at the previous fiscal year’s level and by preventing the department from starting new programs or increasing production rates.¹⁶⁶ Some observers have argued that Congress could improve the effectiveness of the PPBE process by enacting on-time regular defense appropriations acts. A former DOD Comptroller has argued that the PPBE “trains generally run on time unless congressional delays interfere with schedules” and recommended changing the start and end dates of the government’s fiscal year to better align with legislative activity at the end of a calendar year.¹⁶⁷ Congress also sometimes enacts supplemental funding in response to emergencies, contingencies, and disaster relief that may affect the PPBE process by changing baseline assumptions for certain DOD programs, projects, and activities. For example, Congress has provided \$26.6 billion in FY2022 supplemental funding for DOD in response to the war in Ukraine,¹⁶⁸ with assistance for thousands of Javelin anti-tank missiles, Stinger anti-aircraft missiles, and other weapon systems.¹⁶⁹ This assistance has generated congressional interest in U.S. stockpiles and manufacturing capacity related to such systems.¹⁷⁰

Congress also provides limited authority for DOD to transfer and reprogram funds, which can affect activities typically conducted in the final phase of the PPBE process (i.e., *execution*) by allowing DOD financial managers to obligate funds for purposes other than those originally approved.¹⁷¹ Some observers have argued that Congress could improve the flexibility of the PPBE process by increasing DOD transfer authority in law and DOD reprogramming thresholds in report language.¹⁷² Others have recommended that any proposals to increase DOD funding flexibility should complement the ability of Congress to provide oversight of taxpayer funds.¹⁷³

¹⁶⁶ For more information, see CRS Report R45870, *Defense Spending Under an Interim Continuing Resolution: In Brief*, coordinated by Pat Towell.

¹⁶⁷ Robert F. Hale, “Should PPBEs Be Reformed?”, *Armed Forces Comptroller*, Fall 2021.

¹⁶⁸ As of June 28, 2022, Congress provided \$26.632 billion for DOD in FY2022 supplemental funding in response to the situation in Ukraine, including \$6.528 billion in the Ukraine Supplemental Appropriations Act, 2022 (Division N of H.R. 2471; P.L. 117-103) and \$20.104 billion in the Additional Ukraine Supplemental Appropriations Act, 2022 (H.R. 7691; P.L. 117-128), according to Congressional Budget Office (CBO) scores of the legislation. For more information, see CBO, *Estimate for H.R. 2471* [Table 2. Discretionary Spending Under Division N], p. 3, at https://www.cbo.gov/system/files/2022-03/HR2471_As_Cleared_by_the_Congress.pdf; and CBO, *Estimate for H.R. 7691*, at https://www.cbo.gov/system/files/2022-05/hr7691_passed.pdf.

¹⁶⁹ DOD, “Fact Sheet on U.S. Security Assistance to Ukraine,” press release, June 17, 2022, at <https://www.defense.gov/News/Releases/Release/Article/3066864/fact-sheet-on-us-security-assistance-to-ukraine/>.

¹⁷⁰ Letter from Representatives Adam Smith and Mike Rogers to Defense Secretary Lloyd Austin and Chairman of the Joint Chiefs of Staff General Mark Milley, March 18, 2022, at https://armedservices.house.gov/_cache/files/8/a/8a41d8b1-43fc-4999-b13a-c6baa81d1d73/8460402C4BE18C5B6B3BCC8C058AD302.smith-rogers-stinger-letter-march-2022.pdf.

¹⁷¹ For more information, see CRS Report R46421, *DOD Transfer and Reprogramming Authorities: Background, Status, and Issues for Congress*, by Brendan W. McGarry.

¹⁷² See, for example, Dov S. Zakheim, “Reform the Pentagon’s budget process, or lose our military and tech advantages,” *The Hill*, April 2, 2021, at <https://thehill.com/opinion/546097-reform-the-pentagons-budget-process-or-lose-our-military-and-tech-advantages?>

¹⁷³ John Whitley, *Three Reforms to Improve Defense Resource Management*, IBM Center for the Business of

Congress also requires that certain DOD military and civilian leaders submit annual “unfunded priorities” lists that can affect the PPBE process.¹⁷⁴ Some observers have argued that such lists constitute a circumvention of the process because they reflect items that DOD and OMB leaders opted to not include in the budget request.¹⁷⁵ Others argue that they provide Congress with greater transparency into the process by detailing examples of internal tradeoffs.¹⁷⁶

If Congress determines that the PPBE process is not agile enough, it may consider various options intended to provide DOD with more budgetary flexibility. Such options may include establishing new appropriations or increasing funding for certain existing appropriations, such as software and digital technology pilot programs; expanding the period of availability for new or existing defense appropriations; establishing new funds or increasing funding for organizations or entities tasked with carrying out specific missions; or increasing DOD transfer and reprogramming thresholds. If Congress determines that the PPBE process is not transparent enough, it may consider various options to provide more visibility into the process. Such options may include encouraging or requiring DOD to publish additional information and data related to the process in its annual budget request, reprogramming actions, and unfunded priorities lists; or one-time or recurring reports on certain topics of interest, such as how certain budget activities are intended to support strategic objectives or tradeoffs made during certain phases of the process.

Oversight Considerations

In conducting oversight of DOD’s design and implementation of the PPBE process, Congress may consider several broad categories of questions, including the effectiveness of people carrying out the process; centers of power in the process; the integration of PPBE with other DOD decision-support systems; and potential Executive Branch influences on the process.

People vs. Process

Congress may consider to what degree the effectiveness of any given decisionmaking process, including PPBE, can be attributable to the civilian and military leaders carrying out the process rather than the framework of the process itself. In 1968, an economist described the precursor to PPBE as “a method or procedure whose worth depends on the skill and wisdom of the people who use it. Identifying coherent objectives, relating activities to objectives, identifying costs with activities, comparing alternatives, and weighing achievements against costs, are bound to be unimpeachable activities if properly done.”¹⁷⁷ In 2021, RAND Corporation concluded that the

Government, June 9, 2022, pp. 23-24, at <https://www.businessofgovernment.org/sites/default/files/Three%20Reforms%20to%20Improve%20Defense%20Resource%20Management.pdf>.

¹⁷⁴ DOD unfunded priorities generally refer to reports submitted to Congress pursuant to United States Code provisions (e.g., 10 U.S.C. §222a and 10 U.S.C. §222b) listing military programs, activities, or mission requirements that were not included in the President’s annual budget request but that the department would fund with additional appropriations. For more information, see CRS In Focus IF11964, *Defense Primer: Department of Defense Unfunded Priorities*, by Maureen Trujillo and Brendan W. McGarry.

¹⁷⁵ See, for example, *Taxpayers for Common Sense*, “Unfunded Priorities Lists: The Latest Iteration of Backdoor Earmarking,” May 4, 2022, at <https://www.taxpayer.net/national-security/unfunded-priorities-lists/>.

¹⁷⁶ See, for example, Elaine McCusker and John G. Ferrari, *The Defense Unfunded Priority Lists Expose a Strategy and Resourcing Mismatch*, American Enterprise Institute, June 2022, at <https://www.aei.org/research-products/report/the-defense-unfunded-priority-lists-expose-a-strategy-and-resourcing-mismatch/>.

¹⁷⁷ Thomas C. Schelling memorandum, “PPBS and Foreign Affairs,” in U.S. Congress, Senate Committee on Government Operations, Subcommittee on National Security and International Operations, *Planning Programming*

research, development, and acquisition (RDA) processes of Russia and China were comparable to those in the United States and noted the importance of people involved in the process: “In practice, the outcomes of these broad RDA frameworks hinge on the people and institutions that are tasked with implementing the frameworks.”¹⁷⁸ From these perspectives, questions for Congress related to PPBE reform might include how to separate people-related issues from process-related issues; what people-related issues are frequently associated with perceived dysfunction in the PPBE process; how might talent management principles ameliorate people-related issues in the process, such as by selecting better-suited individuals for various roles; and whether mechanisms exist to incentivize individuals involved in the process to make more effective, agile, and timely decisions.¹⁷⁹

Centers of Power

Congress may consider to what degree the OSD can or should exert control over the process relative to the DOD components. While many observers associate the PPBE process with former Secretary of Defense Robert McNamara, some have argued that the process today more closely resembles that of his successor Melvin Laird, in that the armed services have a greater role in identifying resourcing needs.¹⁸⁰ According to one account, “This approach has remained the practice since, with recurrent debates over how much guidance the Secretary of Defense should provide and how much review the Secretary’s staff should undertake.”¹⁸¹ The idea of guidance and delegation rather than control may be similar to the military concept of mission command, which is defined as “the conduct of military operations through decentralized execution based upon mission-type orders.”¹⁸² Some observers have argued that “the services are consistently the power centers in this process, even when particularly robust civilian leadership is in place.”¹⁸³ From this perspective, questions before Congress might include what are the relative centers of power in the PPBE process, what would be a proper balance of power in the process, and how could actors be incentivized to provide such a balance.

Influences

Congress may consider the degree to which actors and events within the Executive Branch may influence each phase of the PPBE process.

Budgeting, 90th Congress and 91st Congress (1st sess.), March 1970, 42-649 O, p. 111.

¹⁷⁸ Mark Ashby et al., *Defense Acquisition in Russia and China*, RAND Corporation, 2021, p. 31, at https://www.rand.org/content/dam/rand/pubs/research_reports/RRA100/RRA113-1/RAND_RRA113-1.pdf.

¹⁷⁹ DOD, Defense Business Board (DBB), *Strengthening Defense Department Civilian Talent Management*, May 12, 2022 (released May 18, 2022), at [https://dbb.defense.gov/Portals/35/Documents/Reports/2022/DBB%20Talent%20Management%20Study%20Report%2023%20May%202022%20\(reduced%20size\).pdf](https://dbb.defense.gov/Portals/35/Documents/Reports/2022/DBB%20Talent%20Management%20Study%20Report%2023%20May%202022%20(reduced%20size).pdf).

¹⁸⁰ Alain C. Enthoven and K. Wayne Smith, *How Much Is Enough? Shaping the Defense Program, 1961-1969* (Santa Monica, CA: RAND Corporation, 2005, first published 1971 by Harper & Row), p. xii, at https://www.rand.org/pubs/commercial_books/CB403.html.

¹⁸¹ *Ibid.*

¹⁸² For more information, see DOD, Chairman of the Joint Chiefs of Staff, Joint Publication, Joint Publication 1-02, *Department of Defense Dictionary of Military and Associated Terms*, p. 155, archived at https://irp.fas.org/doddir/dod/jp1_02.pdf; and DOD, Chairman of the Joint Chiefs of Staff, Joint Publication 3-31, *Joint Land Operations*, pp. V-14—V-15, at https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp3_31ch1.pdf.

¹⁸³ Susanna V. Blume and Molly Parrish, *Make Good Choices, DoD*, Center for a New American Security, November 20, 2019, at <https://www.cnas.org/publications/reports/make-good-choices-dod>.

The planning phase of the PPBE process may be affected or influenced by the delayed release of strategic guidance, the President’s budget request, or projections that sometimes accompany the request, particularly during a presidential transition year. In theory, the President’s National Security Strategy (NSS) informs the Secretary of Defense’s National Defense Strategy (NDS), which informs the CJCS’s National Military Strategy.¹⁸⁴ In March 2022, the Biden Administration transmitted a classified version of the 2022 NDS the same day it released the FY2023 President’s budget request.¹⁸⁵ The documents were based on the Administration’s Interim National Security Strategic Guidance and predated the release of the anticipated NSS.¹⁸⁶ Some observers have criticized as “backwards” the release of an NDS before an NSS, as well as the release of a detailed defense budget request prior to the release of an NDS.¹⁸⁷ According to news reports, the Administration delayed releasing the NDS in part to revise the document following Russia’s invasion of Ukraine in 2022.¹⁸⁸ Potentially illustrating how the absence of strategic guidance can affect long-term defense budget planning, in May 2021, the Biden Administration released an FY2022 President’s budget request that included “mechanical extrapolations” for projected funding levels for national defense discretionary funding “because these strategy documents are currently under development.”¹⁸⁹

Historically, U.S. military leaders have embraced the idea of planning as a problem-solving technique. As President Dwight D. Eisenhower once said, “Plans are worthless, but planning is everything.”¹⁹⁰ While long-term planning is a major element of the strategic-planning process in PPBE, some observers have focused on the fact that, for any fiscal year cycle, the planning phase of PPBE can begin more than two years before the budget execution phase.¹⁹¹ One observer has argued that the planning phase “should not take two years for an idea to go from inception to getting funding that you’re actually able to spend,” and that the annual DPG is often issued too

¹⁸⁴ Mara Karlin and Christopher Skaluba, “Strategic Guidance for Countering the Proliferation of Strategic Guidance,” *War on the Rocks*, July 20, 2017, at <https://warontherocks.com/2017/07/strategic-guidance-for-countering-the-proliferation-of-strategic-guidance/>.

¹⁸⁵ DOD, “DoD Transmits 2022 National Defense Strategy,” press release, March 28, 2022, at <https://www.defense.gov/News/Releases/Release/Article/2980584/dod-transmits-2022-national-defense-strategy/>. As of June 9, 2022, the White House had not released the 2022 National Security Strategy.

¹⁸⁶ White House, *Interim National Security Strategic Guidance*, March 2021, at <https://www.whitehouse.gov/wp-content/uploads/2021/03/NSC-1v2.pdf>.

¹⁸⁷ See, for example, Zack Cooper, Melanie Marlowe, and Christopher Preble, “Podcast: A Strategy-Budget Mismatch?” in *Net Assessment*, April 29, 2022, at <https://warontherocks.com/2022/04/a-strategy-budget-mismatch/>.

¹⁸⁸ Connor O’Brien, Paul McLeary, and Lee Hudson, “Russia crisis forces Pentagon to rework defense strategy on the fly,” *Politico*, March 3, 2022, at <https://www.politico.com/news/2022/03/03/russia-ukraine-defense-strategy-pentagon-00013449>; and Peter Martin and Jennifer Jacobs, “Putin’s Invasion of Ukraine Forces Biden to Rewrite US Security Plan,” *Bloomberg News*, June 3, 2022, at <https://www.bloomberg.com/news/articles/2022-06-03/putin-s-war-forces-biden-to-rewrite-security-plan-nod-to-europe>.

¹⁸⁹ OMB, *Budget of the U.S. Government, Fiscal Year 2022*, Footnote 2 in Table S.7, “Funding Levels for Appropriated (“Discretionary”) Programs by Category,” p. 56, archived at <https://www.govinfo.gov/content/pkg/BUDGET-2022-BUD/pdf/BUDGET-2022-BUD.pdf>.

¹⁹⁰ Office of the Federal Register, National Archives and Records Administration (NARA), *Public Papers of the Presidents of the United States*, Dwight D. Eisenhower, 1957, p. 235, accessed at <https://www.govinfo.gov/app/collection/PPP>. Eisenhower continued, “There is a very great distinction because when you are planning for an emergency you must start with this one thing: the very definition of “emergency” is that it is unexpected, therefore it is not going to happen the way you are planning. So, the first thing you do is to take all the plans off the top shelf and throw them out the window and start once more. But if you haven’t been planning you can’t start to work, intelligently at least. That is the reason it is so important to plan, to keep yourselves steeped in the character of the problem that you may one day be called upon to solve—or to help to solve.”

¹⁹¹ DOD, DAU, *Teaching Note: Planning, Programming, Budgeting, and Execution (PPBE) Process*, March 2018, p. 112. For more information on a notional PPBE schedule, see the “Timelines” section in this report.

late in the calendar year to inform the armed services' programmatic decisions.¹⁹² A former DOD official has recommended that DOD rebuild strategic analysis to support the planning phase of PPBE, in part by designating a lead among the USD Policy, the Director of CAPE, and Joint Staff to produce a consolidated DPG and to support civilian leadership in implementing the NDS and coordinating strategic-level processes across the department.¹⁹³

The programming phase of the PPBE process may be affected or influenced by the extent to which the military departments develop programs independent of the DPG and any OSD changes to such programs. Some observers have argued that “in the programming process the services are very much in the driver’s seat, using the bulk of the year to build their inputs into the process.”¹⁹⁴ She also stated OSD-level program and budget reviews only adjust approximately 5% of programs.¹⁹⁵ Congress has sought information about DOD’s ability to perform strategic analysis in support of planning and programming phases of the PPBE process following the department’s decision in 2011 to disestablish CAPE’s campaign modeling and simulation—the methods used to develop the analytic baseline.¹⁹⁶ In 2016, RAND Corporation recommended in part that DOD create a new planning construct and revamp the analytical methods to review programmatic decisions.¹⁹⁷ The 2018 National Defense Strategy Commission, established by Congress to provide an independent assessment of the Trump Administration’s National Defense Strategy, concluded in part that “DOD struggled to link objectives to operational concepts to capabilities to programs and resources. This deficit in analytical capability, expertise, and processes is intolerable ... and it must be remedied.”¹⁹⁸

In 2019, GAO recommended that DOD determine the analytic products needed to support senior leader decisionmaking, provide guidance for the services to explore alternative approaches and force structures to respond to key threats, and establish an approach for comparing analyses of force structure requirements.¹⁹⁹ According to GAO, DOD has accepted these recommendations and the Deputy Secretary of Defense in February 2022 issued standards for analysis supporting strategic decisions.²⁰⁰ Given this issuance, questions for Congress may include what are the standards for analysis supporting strategic decisions, to what degree are DOD components

¹⁹² See, for example, Todd Harrison, “Experts Preview the FY 2023 Defense Budget Request,” posted April 29, 2022, *Center for International and Strategic Studies*, 74:05, at <https://www.csis.org/events/experts-preview-fy-2023-defense-budget-request>.

¹⁹³ John Whitley, *Three Reforms to Improve Defense Resource Management*, IBM Center for the Business of Government, June 9, 2022, p. 23, at <https://www.businessofgovernment.org/sites/default/files/Three%20Reforms%20to%20Improve%20Defense%20Resource%20Management.pdf>.

¹⁹⁴ Susanna V. Blume and Molly Parrish, *Make Good Choices, DoD*, Center for a New American Security, November 20, 2019, at <https://www.cnas.org/publications/reports/make-good-choices-dod>.

¹⁹⁵ *Ibid.*

¹⁹⁶ P.L. 113-291, §1053; 128 Stat. 3498.

¹⁹⁷ Paul Davis, *Capabilities for Joint Analysis in the Department of Defense: Rethinking Support for Strategic Analysis*, RAND Corporation, p. 57, at https://www.rand.org/content/dam/rand/pubs/research_reports/RR1400/RR1469/RAND_RR1469.pdf.

¹⁹⁸ Eric Edelman and Gary Roughead (co-chairs), *Providing for the Common Defense: The Report of the National Defense Strategy Commission*, United States Institute of Peace, November 2018, p. x, at <https://www.usip.org/sites/default/files/2018-11/providing-for-the-common-defense.pdf>.

¹⁹⁹ GAO, *Defense Strategy: Revised Analytic Approach Needed to Support Force Structure Decision-Making*, GAO-19-385, March 2019, at <https://www.gao.gov/assets/gao-19-385.pdf>.

²⁰⁰ *Ibid.*

complying with the standards, and how are the standards affecting decisionmaking in the PPBE process.

The budgeting phase of the PPBE process may be affected or influenced by the extent to which the services seek to identify DOD-wide solutions to operational problems, create broader categories (i.e., *portfolios*) of capabilities, and acquire technology services rather than end-products. Some observers have questioned the ability or incentives of the armed services to independently propose DOD-wide programmatic and budgetary changes intended to meet operational challenges. One report noted that, “Service Chiefs want to hold on to their percentage of the budget and there is a Gentlemen’s Agreement between them preventing the Service Chiefs from trying to grow their TOA [total obligational authority] by recommending reductions in another Service’s TOA.”²⁰¹ Others have recommended that DOD and Congress improve the department’s agility in allocating resources, in part by consolidating certain DOD line items to create broader portfolios of capabilities that can be used for multiple types of activities and longer periods of availability, expanding the use of software and digital technology pilot programs, and purchasing technology as a service rather than a product.²⁰²

The execution phase of the PPBE process may be affected or influenced by the extent to which DOD components conduct program reviews, transfer or reprogram funds, and utilize information technology systems for financial management. Some observers have recommended that DOD conduct more regular reviews to improve the execution of funds during the PPBE process by transferring or reprogramming funds from under-performing programs to more promising efforts.²⁰³ Others have recommended that DOD expand the use of data analytics platforms, such as ADVANA (“advanced analytics”), to better measure actual cost and performance of programs during the PPBE process as a way to improve decisionmaking.²⁰⁴

Integration with Other Systems

Congress may consider to what degree the PPBE process integrates with DOD’s other decision-support systems, including JCIDS and DAS.²⁰⁵ Independent reviews of DOD decision-support systems have raised questions about their effectiveness. In 2007, GAO concluded in part that the armed services “identify needs and allocate resources separately, using fragmented decisionmaking processes that do not allow for an integrated, portfolio management approach

²⁰¹ Jon Etherton et al., *Stepping Back from Acquisition Reform: How Our Resourcing Processes Drive Defense Outcomes*, National Defense Industrial Association, January 2022, p. 20, at https://www.ndia.org/-/media/sites/policy-issues/acquisition-reform/ndia_acquisition_reform-final3.pdf.

²⁰² See, for example, Eric M. Lofgren, *The DoD Budget Process: The Next Frontier of Acquisition Reform*, George Mason University, School of Business, Center for Government Contracting, July 29, 2020, at <https://business.gmu.edu/news/2021-10/no-5-dod-budget-process-next-frontier-acquisition-reform>; and John Whitley, *Three Reforms to Improve Defense Resource Management*, IBM Center for the Business of Government, June 9, 2022, pp. 23-24, at <https://www.businessofgovernment.org/sites/default/files/Three%20Reforms%20to%20Improve%20Defense%20Resource%20Management.pdf>.

²⁰³ See, for example, Dov S. Zakheim, “Reform the Pentagon’s budget process, or lose our military and tech advantages,” *The Hill*, April 2, 2021, at <https://thehill.com/opinion/546097-reform-the-pentagons-budget-process-or-lose-our-military-and-tech-advantages?> For more information on DOD transfer and reprogramming authorities, see CRS Report R46421, *DOD Transfer and Reprogramming Authorities: Background, Status, and Issues for Congress*, by Brendan W. McGarry.

²⁰⁴ Robert F. Hale, “Should PPBEs Be Reformed?” *Armed Forces Comptroller*, Fall 2021, p. 17.

²⁰⁵ For a brief description of these systems, see the “PPBE’s Role in DOD Decision-Support Systems” section.

like that used by successful commercial companies.”²⁰⁶ GAO made several recommendations for DOD to implement a portfolio management approach to weapon system investments, including establishing “a single point of accountability at the department level with the authority, responsibility, and tools to ensure that portfolio management for weapon system investments is effectively implemented.”²⁰⁷

In 2019, a DOD advisory panel, known as the Section 809 Panel and appointed to recommend defense acquisition reforms,²⁰⁸ described DOD decision-support systems as “disjointed” and “one of the major inhibitors to achieving timeliness, flexibility, agility, and innovation.”²⁰⁹ The panel noted the different descriptive categories used in DOD decision-support systems (i.e., joint capability areas in JCIDS, major force programs in PPBE, and affordability portfolios in DAS),²¹⁰ and recommended for DOD to implement a portfolio management framework, including by transitioning “from a program-centric execution model to a portfolio execution model.”²¹¹ DOD guidance states that joint capability areas (JCAs) serve as the department’s framework for capability portfolios.²¹² In 2021, a DOD official reported an ongoing process to “rebalance from a program-centric approach to a portfolio-based perspective.”²¹³ Questions for Congress may include to what degree does the PPBE process integrate with the other DOD decision support systems, how does a dissimilar taxonomy for such systems complicate or inhibit decisionmaking, and how would shifting from a program-centric approach to a portfolio-based approach affect all activities in PPBE process, in addition to those related to weapons procurement.

Comparisons with Alternative Models

Some Members of Congress and observers have questioned the relevance and responsiveness of DOD’s PPBE process in the modern era, noting the shift since the process’s inception in the 1960s from a manufacturing-dominated economy to a services-oriented economy. Among the duties of Commission on Planning, Programming, Budgeting, and Execution Reform is to compare the DOD process “with similar processes of private industry, other federal agencies, and

²⁰⁶ GAO, *Best Practices: An Integrated Portfolio Management Approach to Weapon System Investments Could Improve DOD’s Acquisition Outcomes*, GAO-07-388, March 2007, summary, at <https://www.gao.gov/assets/gao-07-388.pdf>.

²⁰⁷ *Ibid.*, p. 32.

²⁰⁸ P.L. 114-92, §809; 129 Stat. 889.

²⁰⁹ Section 809 Panel, *Report of the Advisory Panel on Streamlining and Codifying Acquisition Regulations: Volume 3 of 3*, January 2019, pp. 53-135 (recommendations 36-42), at https://discover.dtic.mil/wp-content/uploads/809-Panel-2019/Volume3/Sec809Panel_Vol3-Report_Jan2019_part-1_0509.pdf.

²¹⁰ Section 809 Panel, *Report of the Advisory Panel on Streamlining and Codifying Acquisition Regulations: Volume 2 of 3*, June 2018, pp. 38-39, at https://discover.dtic.mil/wp-content/uploads/809-Panel-2019/Volume2/Sec809Panel_Vol2-Report_Jun2018.pdf.

²¹¹ Section 809 Panel, *Report of the Advisory Panel on Streamlining and Codifying Acquisition Regulations: Volume 3 of 3 Summary of Recommendations*, p. 4, at https://discover.dtic.mil/wp-content/uploads/809-Panel-2019/Volume3/Vol3_Summary_Letter-size.pdf.

²¹² DOD, DODD 7045.20, *Capability Portfolio Management*, June 21, 2019, at <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/704520p.pdf>. The current JCAs are force integration; battlespace awareness; force application; logistics; command and control; communications and computers; protection; and corporate management and support. For more information, see DOD, CJCSI 5123.011, *Charter of the Joint Requirements Oversight Council (JROC) and the Implementation of the Joint Capabilities Integration and Development System*, October 30, 2021, p. B-7, at <https://www.jcs.mil/Portals/36/Documents/Library/Instructions/CJCSI%205123.011.pdf>.

²¹³ Tony Bertuca, “DOD embarks on new acquisition portfolio reviews,” *Inside Defense*, September 28, 2021, at <https://insidedefense.com/daily-news/dod-embarks-new-acquisition-portfolio-reviews>.

other countries.” Such comparisons may yield insights for potential improvements to the DOD process, particularly from leading companies in information technology, manufacturing, and space industries.

The relevancy of such comparisons to the DOD process may be limited by the size of the department’s budget; number of employees; and qualitatively different issues of scale, complexity, and operational tempo.²¹⁴ As such, the applicability of specific lessons learned in the private sector to DOD may depend heavily on context. Unlike private-sector companies, which largely rely on profit to measure performance, DOD and other departments generally lack a comparable variable to gauge outcomes—other than outright success or victory in a war or armed conflict.²¹⁵

Strategic planning and budgeting processes in the private sector may vary by company (or even by division or unit within a company), market segment, or industry. In addition, strategic processes in the private sector are not always effective. For example, one Ernst and Young survey found that 66% of corporate strategy is never executed—an outcome some observers attributed to challenges related to competing cultures and traditions, conflicting interests, and poor communications.²¹⁶ In this context, much of the business management literature in recent decades has focused on matters of strategy formation and execution, in contrast with planning and budgeting.²¹⁷ Accordingly, there may be opportunities for further study of how DOD and other public and private organizations infuse discussion of strategy into planning and budgeting processes.

In 2022, GAO made several recommendations for DOD to adopt certain product development principles viewed by the authors as effective in the private sector for encouraging innovation. Specifically, GAO recommended for the Secretary of Defense to ensure that the Under Secretary of Defense for Acquisition and Sustainment update DOD acquisition policies to: attain a sound business case; apply iterative design approaches; off-ramp capabilities when needed to maintain schedule; and incorporate feedback from users of initial capabilities.²¹⁸

Congressional Control vs. Department Flexibility

The concept of balancing congressional control and department flexibility in providing and overseeing funding for DOD (or any federal agency) is a fundamental issue for Congress in discharging its constitutional responsibilities. Congress may consider how potential changes to

²¹⁴ DOD, *Office of the Under Secretary of Defense (Comptroller)/Chief Financial Officer, April 2022, Defense Budget Overview, United States Department of Defense, Fiscal Year 2023 Budget Request*, p. 1-3, at https://comptroller.defense.gov/Portals/45/Documents/defbudget/FY2023/FY2023_Budget_Request_Overview_Book.pdf. For more information on the FY2023 defense budget request, see CRS Video WVB00468, *FY2023 Defense Budget*, by Lawrence Kapp et al.

²¹⁵ John Whitley, *Three Reforms to Improve Defense Resource Management*, IBM Center for the Business of Government, June 9, 2022, p. 32, at <https://www.businessofgovernment.org/sites/default/files/Three%20Reforms%20to%20Improve%20Defense%20Resource%20Management.pdf>.

²¹⁶ Harvard Management Update, “Execute Your Strategy—Without Killing it,” *Harvard Business Review*, February 27, 2008, at <https://hbr.org/2008/02/execute-your-strategy-without-1.html>.

²¹⁷ For example, see Henry Mintzberg, *The Rise and Fall of Strategic Planning: Reconceiving Roles for Planning, Plans, Planners* (New York, NY: Free Press, 1994); and Shona L. Brown and Kathleen M. Eisenhardt, *Competing on the Edge: Strategy as Structured Chaos* (Boston, MA: Harvard Business School Press, 1998).

²¹⁸ GAO, *Leading Practices: Agency Acquisition Policies Could Better Implement Key Product Development Principles*, GAO-22-104513, March 10, 2022, at <https://www.gao.gov/assets/gao-22-104513.pdf>.

defense appropriations and authorities to reform the PPBE process may affect the balance of congressional control and department flexibility.

In 1984, a General Accounting Office-DOD joint study of the PPBS (the precursor to PPBE) stated that the system “could accommodate practically any appropriations account structure the Congress wished to use.”²¹⁹ The study stated that congressional committees frequently conducted defense policy reviews from a broader perspective than appropriation accounts.²²⁰ The study stated that the architect of the system concluded that advantages of the congressional appropriations structure “far outweigh the disadvantages, which are principally mechanical, namely, the need to translate program categories into budget categories and vice versa. This is the sort of disadvantage that modern high-speed computers are well designed to overcome.”²²¹ The report discussed potential consequences of a change to a “mission-oriented” appropriations structure, including compliance with controls required under the Anti-Deficiency Act (31 U.S.C. §1342).²²² The report presented the following scenarios as extremes:

1. The Congress would insist on maintaining, within a mission- or output-oriented structure, the current level of control over projects, procurements, and other commodities at the expense of efficiency deriving from flexibility or economies of scale in DOD activities.
2. The Congress, while appropriating in broad mission categories, would accept a lessening of its control over items to foster efficiency in DOD’s activities.²²³

This concept of balancing congressional control and department flexibility extends to any discussion of potential PPBE reforms related to changing defense appropriations and authorities, including establishing new appropriations or increasing funding for certain existing appropriations, such as those created for software and digital technology pilot programs; expanding the period of availability for new or existing defense appropriations; establishing new funds or organizations for specific missions or activities; and increasing DOD transfer and reprogramming thresholds.

²¹⁹ General Accounting Office, *The DOD Planning, Programming, and Budgeting System*, OACG-84-5, September 1, 1983, pp. 115-119, at <https://www.gao.gov/products/oacg-84-5>.

²²⁰ *Ibid.*

²²¹ *Ibid.*

²²² *Ibid.*

²²³ *Ibid.*

Appendix A. Selected Terms and Definitions

The U.S. Department of Defense (DOD) Planning, Programming, Budgeting, and Execution (PPBE) process employs numerous technical terms specific to defense planning and budgeting. The following list includes a selection and definition of such terms. All of the definitions come from DOD sources unless otherwise noted.

- **Budget Estimate Submission (BES).** Budget estimates submitted by a DOD component to the DOD Comptroller during the budgeting phase of PPBE in preparation of compiling the department’s portion of the annual President’s budget request to Congress.²²⁴ DOD policy states that budget submissions “include budget estimates, justification, and materials submitted in support of budget estimates submissions.”²²⁵
- **Capability.** “The ability to complete a task or execute a course of action under specified conditions and level of performance.”²²⁶
- **Capability Gap Assessment.** An assessment led by the Joint Requirements Oversight Council (JROC) that may include military needs “prioritized across Service and functional lines, risk area, and determining long-term strategic planning issues.”²²⁷
- **Defense Planning Guidance (DPG).** According to statute, the DPG is written guidance provided each year by the Secretary of Defense to DOD components establishing “goals, priorities, including priorities relating to the current or projected risks to military installation resilience, and objectives, including fiscal constraints, to direct the preparation and review of the program and budget recommendations of all elements of the Department, including: (i) the priority military missions of the Department, including the assumed force planning scenarios and constructs; (ii) the force size and shape, force posture, defense capabilities, force readiness, infrastructure, organization, personnel, technological innovation, and other elements of the defense program necessary to support the [National Defense Strategy]; (iii) the resource levels projected to be available for the period of time for which such recommendations and proposals are to be effective; and (iv) a discussion of any changes in the strategy and assumptions underpinning the strategy.”²²⁸ The DPG is produced during the PPBE planning phase, which is coordinated by the Under Secretary of Defense for Policy.²²⁹

²²⁴ DOD, DAU, *Teaching Note: Planning, Programming, Budgeting, and Execution (PPBE) Process*, March 2018, p. 115.

²²⁵ DOD, DODD 7045.14, *The Planning, Programming, Budgeting, and Execution (PPBE) Process*, August 29, 2017, p. 5, at <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/704514p.pdf>.

²²⁶ DOD, *DOD Dictionary of Military and Associated Terms*, updated November 2021, p. 2, archived at <https://irp.fas.org/doddir/dod/dictionary.pdf>.

²²⁷ DOD, CJCSI 8501.01B, *Chairman of the Joint Chiefs of Staff, Combatant Commanders, Chief, National Guard Bureau, and Joint Staff Participation in the Planning, Programming, Budgeting, and Execution Process*, December 15, 2021, at <https://www.jcs.mil/Portals/36/Documents/Library/Instructions/CJCSI%208501.01B.pdf>.

²²⁸ 10 U.S.C. §113(g)(2)(A).

²²⁹ DOD, DODD 7045.14, *The Planning, Programming, Budgeting, and Execution (PPBE) Process*, August 29, 2017, p. 5, at <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/704514p.pdf>.

- **Fiscal Guidance (FG).** The Secretary of Defense’s “topline fiscal control” provided to DOD components in preparation of the programming phase of PPBE.²³⁰
- **Future Years Defense Program (FYDP).** “Program and financial plan for the DoD as approved by the Secretary of Defense. The FYDP arrays cost data, manpower, and force structure over a 5-year period (force structure for an additional 3 years), portraying this data by major force program for DoD internal review for the program and budget review submission. It is also provided to the Congress annually in conjunction with the President’s budget.”²³¹
- **Integrated Priority List (IPL).** “A list of combatant commanders’ highest priority requirements, prioritized across Service and functional lines. They define shortfalls in key programs that may adversely affect the combatant commander’s mission. Each [combatant command] submits an IPL annually.”²³²
- **Major Force Program (MFP).** “An aggregation of [program elements] that contain the resources needed to achieve an objective or plan.”²³³ Of the 12 MFPs, six are considered combat force programs (strategic forces; general purpose forces; command, control, communications, intelligence, and space; mobility forces; Guard and reserve forces; and special operations forces) and six are considered support programs (research and development; central supply and maintenance; training, medical and other personnel activities; administration and associated activities; support of other nations; and national security space).²³⁴
- **Planning, Programming, Budgeting and Execution (PPBE).** “A cyclic process containing four distinct, but interrelated phases: planning, programing, budgeting, and execution. In addition to establishing the framework and process for decision making on future programs, the process permits prior decisions to be examined and analyzed from the viewpoint of the current environment (threat, political, economic, technological, and resources) and for the time period being addressed. The ultimate objective of PPBE is to provide operational commanders the best mix of forces, equipment, and support attainable within fiscal constraints.”²³⁵
- **Program Objective Memorandum (POM).** The final product of the PPBE programming phase displaying a DOD component’s recommendations for

²³⁰ DOD, CJCSI 8501.01B, *Chairman of the Joint Chiefs of Staff, Combatant Commanders, Chief, National Guard Bureau, and Joint Staff Participation in the Planning, Programming, Budgeting, and Execution Process*, December 15, 2021, p. GL-4, at <https://www.jcs.mil/Portals/36/Documents/Library/Instructions/CJCSI%208501.01B.pdf>.

²³¹ DOD, DODD 7045.14, *The Planning, Programming, Budgeting, and Execution (PPBE) Process*, August 29, 2017, p. 12, at <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/704514p.pdf>. For more information, see CRS In Focus IF10831, *Defense Primer: Future Years Defense Program (FYDP)*, by Brendan W. McGarry and Heidi M. Peters.

²³² DOD, CJCSI 8501.01B, *Chairman of the Joint Chiefs of Staff, Combatant Commanders, Chief, National Guard Bureau, and Joint Staff Participation in the Planning, Programming, Budgeting, and Execution Process*, December 15, 2021, p. GL-4, at <https://www.jcs.mil/Portals/36/Documents/Library/Instructions/CJCSI%208501.01B.pdf>.

²³³ DOD, Office of the Secretary of Defense, *Future Years Defense Program (FYDP) Structure Handbook*, February 2020, p. 6.

²³⁴ For more information, see CRS In Focus IF10831, *Defense Primer: Future Years Defense Program (FYDP)*, by Brendan W. McGarry and Heidi M. Peters.

²³⁵ DOD, *Financial Management Regulation*, DoD 7000.14-R, Glossary, p. G-28, at <https://comptroller.defense.gov/Portals/45/documents/fmr/current/glossary.pdf>.

- resource allocation decisions.²³⁶ POMs are submitted during the programming phase, which is coordinated by the Director of CAPE.²³⁷
- **Requirement.** “A capability which is needed to meet an organization’s roles, functions, and missions in current or future operations to the greatest extent possible.”²³⁸
 - **Resource Management Decision (RMD).** The name of a decision document issued after a program review or a budget review during the PPBE process.²³⁹ In general, program-related RMDs are issued in early November for the upcoming fiscal year and reflect final decisions made during the PPBE programming phase, while budget-related RMDs are issued in late November or early December for the upcoming fiscal year and reflected decisions made during the PPBE budgeting phase.²⁴⁰

²³⁶ DOD, DODD 7045.14, *The Planning, Programming, Budgeting, and Execution (PPBE) Process*, August 29, 2017, p. 12, at <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/704514p.pdf>.

²³⁷ DOD, DAU, *Teaching Note: Planning, Programming, Budgeting, and Execution (PPBE) Process*, March 2018, p. 114; and 10 U.S.C. 139a(d)(2).

²³⁸ DOD, CJCSI 5123.01I, *Charter of the Joint Requirements Oversight Council and Implementation of the Joint Capabilities Integration and Development System*, October 30, 2021, p. GL-11, at <https://www.jcs.mil/Portals/36/Documents/Library/Instructions/CJCSI%205123.01I.pdf>.

²³⁹ DOD, DAU, *Teaching Note: Planning, Programming, Budgeting, and Execution (PPBE) Process*, March 2018, p. 107.

²⁴⁰ *Ibid.*

Appendix B. Selected Laws

The U.S. Department of Defense (DOD) Planning, Programming, Budgeting, and Execution (PPBE) process, system, or its elements, are referenced in the following sections of Title 10 of the *U.S. Code*:

- **10 U.S.C. §113: Secretary of Defense.** This law states in part that the Secretary of Defense, with the advice of the Chairman of the Joint Chiefs of Staff, is to provide the Defense Planning Guidance (DPG), which is typically produced during the planning phase of PPBE, to the secretaries of the military departments, chiefs of staff of the armed forces, commanders of the unified and specified combatant commands, and the heads of all defense agencies and field activities.²⁴¹
- **10 U.S.C. §129a: General policy for total force management.** This law states in part that “the Secretaries of the military departments and the heads of the Defense Agencies shall have overall responsibility for the requirements determination, planning, programming, and budgeting for such policies and procedures.”²⁴²
- **10 U.S.C. §134: Under Secretary of Defense for Policy.** This law states in part that, among other responsibilities, the Under Secretary of Defense for Policy shall be responsible and have overall direction and supervision for “the development of the Defense Planning Guidance that guides the formulation of program and budget requests by the military departments and other elements of the Department.”²⁴³
- **10 U.S.C. §135: Under Secretary of Defense (Comptroller).** This law states in part that, among other responsibilities, the Under Secretary of Defense (Comptroller) shall advise and assist the Secretary of Defense “in supervising and directing the preparation of budget estimates of the Department of Defense.”²⁴⁴
- **10 U.S.C. §139a: Director of Cost Assessment and Program Evaluation.** This law states that the Director of Cost Assessment and Program Evaluation in the Office of the Secretary of Defense is the principal official within the senior management of DOD for, among other matters, “analysis and advice on matters relating to the planning and programming phases of the Planning, Programming, Budgeting and Execution system, and the preparation of materials and guidance for such system, as directed by the Secretary of Defense, working in coordination with the Under Secretary of Defense (Comptroller).”²⁴⁵
- **10 U.S.C. §153: Chairman: functions.** This law states that the CJCS shall determine whether to prepare in certain years a National Military Strategy, which describes how the military will support national security objectives and which typically informs the DPG.²⁴⁶
- **10 U.S.C. §167b note: Assignment of Certain Budget Control Responsibilities to Commander of United States Cyber Command.** This law, included as a statutory note

²⁴¹ 10 U.S.C. §113(g)(2)(A).

²⁴² 10 U.S.C. §129a(c)(2).

²⁴³ 10 U.S.C. §134(b)(2)(E).

²⁴⁴ 10 U.S.C. §135(c)(2).

²⁴⁵ 10 U.S.C. §139a(d)(2).

²⁴⁶ 10 U.S.C. §153(b). For certain other authorities related to military roles in the PPBE process, see 10 U.S.C. §§113, 151, 161, 163, 164, 181, and 482.

in Title 10, requires the Commander of U.S. Cyber Command to “be responsible for directly controlling and managing the planning, programming, budgeting, and execution of resources to train, equip, operate, and sustain the Cyber Mission Forces.”²⁴⁷

- **10 U.S.C. §229 note: Prioritization of funds for equipment readiness and strategic capability.** This law, included as a statutory note in Title 10, requires the Secretary of Defense to “take such steps as may be necessary through the planning, programming, budgeting, and execution systems of the Department of Defense” to prioritize funds for equipment readiness and strategic capability.²⁴⁸
- **10 U.S.C. §1071 note: Health care management demonstration program.** This law, included as a statutory note in Title 10, directs the Secretary of Defense to carry out a demonstration program on health care management to “explore opportunities for improving the planning, programming, budgeting systems, and management of the Department of Defense health care system.”²⁴⁹
- **10 U.S.C. §2222 note: Standardized business process rules for Military Intelligence Program.** This law, included as a statutory note in Title 10, requires the Chief Management Officer to coordinate with the Under Secretary of Defense (Comptroller) and Under Secretary of Defense for Intelligence [now the Under Secretary of Defense for Intelligence and Security] to “develop and implement standardized business process rules for the planning, programming, budgeting, and execution process for the Military Intelligence Program.”²⁵⁰
- **10 U.S.C. Chap. 223 note: Trusted defense systems.** This law, included as a statutory note in Title 10, requires the Secretary of Defense to “identify the appropriate lead person, and supporting elements, within the Department of Defense for the development of an integrated strategy for managing risk in the supply chain for covered acquisition programs,” and for that lead person to develop a risk-management strategy that, among other matters, provides guidance “for the planning, programming, budgeting, and execution process in order to ensure that covered acquisition programs have the necessary resources to implement all appropriate elements of the strategy.”²⁵¹
- **10 U.S.C. §4403: Requirements relating to availability of major system interfaces and support for modular open system approach.** This law states in part that the secretary of each military department shall, among other matters, “ensure that necessary planning, programming, and budgeting resources are provided to specify, identify, develop, and sustain the modular open system approach, associated major system

²⁴⁷ P.L. 117-81, Div. A, Title XV, §1507; 135 Stat. 2030.

²⁴⁸ P.L. 109-364, Div. A, Title III, §323; 120 Stat. 2146.

²⁴⁹ P.L. 106-398, §1 [Div. A], Title VII, §733; 114 Stat. 1654A-191.

²⁵⁰ P.L. 115-232, Div. A, Title XVI, §1624(a); 132 Stat. 2119. On January 2, 2021, DOD disestablished the position of CMO. For more information, see memorandum from Kathleen Hicks, Deputy Secretary of Defense, to Senior Pentagon Leadership, Commanders of the Combatant Commands, and Defense Agency and DOD Field Activity Directors, “Disestablishment of the Chief Management Officer, Realignment of Functions and Responsibilities, and Related Issues,” September 1, 2021, at <https://media.defense.gov/2021/Sep/03/2002847421/-1/-1/0/DISESTABLISHMENT-OF-THE-CMO-REALIGNMENT-OF-FUNCTIONS-AND-RESPONSIBILITIES-AND-RELATED-ISSUES.PDF>. For more information on the PPBE process for intelligence, see CRS In Focus IF10428, *Intelligence Planning, Programming, Budgeting, and Evaluation (IPPBE) Process*, by Michael E. DeVine.

²⁵¹ P.L. 110-417, [Div. A], Title II, §254; 122 Stat. 4402.

interfaces, systems integration, and any additional program activities necessary to sustain innovation and interoperability.”²⁵²

- **10 U.S.C. §4506: Procurement of services: data analysis and requirements validation.** This law requires that the Secretary of Defense, acting through the Under Secretary of Defense (Comptroller) and Director of Cost Assessment and Program Evaluation, ensure that “appropriate and sufficiently detailed data are collected and analyzed to support the validation of requirements for services contracts and inform the planning, programming, budgeting, and execution process of the Department of Defense.”²⁵³
- **10 U.S.C. §4811 note: National security innovation partnerships.** This law, included as a statutory note in Title 10, requires the Secretary of Defense to report to the congressional defense committees an implementation plan for an activity to establish national security innovation partnerships with academic institutions, private-sector firms in defense and commercial sectors, and other entities, including plans for “integration of the activity into the programming, planning, budgeting, and execution process of the Department of Defense.”²⁵⁴
- **10 U.S.C. §7724: Executive Director.** This law states in part that the executive director of the Army National Military Cemeteries is responsible in part for “overseeing the programming, planning, budgeting, and execution of funds authorized and appropriated for the Cemeteries.”²⁵⁵

²⁵² 10 U.S.C. §4403(4).

²⁵³ 10 U.S.C. §4506(a).

²⁵⁴ P.L. 116-283, Div. A, Title II, §219; 134 Stat. 3463.

²⁵⁵ 10 U.S.C. §7724(8).

Appendix C. Selected Policies and Regulations

The U.S. Department of Defense (DOD) Planning, Programming, Budgeting, and Execution (PPBE) process is referenced in various department policies and regulations, including the following:

Department of Defense Directive (DODD)

- DOD, DODD 7045.14, *The Planning, Programming, Budgeting, and Execution (PPBE) Process*, August 29, 2017, at <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/704514p.pdf>.
- DOD, DODD 8260.05, *Support for Strategic Analysis (SSA)*, July 7, 2011, at <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/826005p.pdf>.

Chairman of the Joint Chiefs of Staff Instruction (CJCSI)

- DOD, CJCSI 5123.01I, *Charter of the Joint Requirements Oversight Council (JROC) and the Implementation of the Joint Capabilities Integration and Development System*, Oct. 30, 2021, at <https://www.jcs.mil/Portals/36/Documents/Library/Instructions/CJCSI%205123.01I.pdf>.
- DOD, CJCSI 3100.01E, *Joint Strategic Planning System*, May 21, 2021, at <https://www.jcs.mil/Portals/36/Documents/Library/Instructions/CJCSI%203100.01E.pdf>.
- DOD, CJCSI 8501.01B, *Chairman of the Joint Chiefs of Staff, Combatant Commanders, Chief, National Guard Bureau, and Joint Staff Participation in the Planning, Programming, Budgeting, and Execution Process*, Dec. 15, 2021, at <https://www.jcs.mil/Portals/36/Documents/Library/Instructions/CJCSI%208501.01B.pdf>.

Appendix D. Appointments to the Commission on Planning, Programming, Budgeting, and Execution Reform

Table 2 lists the names and titles of individuals appointed to the Commission on Planning, Programming, Budgeting, and Execution Reform, as well as those of their appointing officials.

Table 2. Appointments to the PPBE Commission

Commissioner	Current Position	Past Positions	Appointing Official	Appointing Official Title
Peter Levine ^a	Senior Fellow, Institute for Defense Analyses	Former Deputy Chief Management Officer and Acting Under Secretary of Defense for Personnel and Readiness; Minority Counsel, General Counsel, and Staff Director of the Senate Armed Services Committee	Lloyd J. Austin III	Secretary of Defense
Lisa Disbrow ^a	Director on the Board of Directors, Mercury Systems	Former Under Secretary of the Air Force; Assistant Secretary of the Air Force (Financial Management and Comptroller)		
Arun A. Seraphin ^b	Deputy Director of the Emerging Technologies Institute at the National Defense Industrial Association	Former Professional Staff Member on the Senate Armed Services Committee	Senator Chuck Schumer	Majority Leader of the Senate
Diem Salmon ^c	Senior Director, Mission Autonomy at Anduril Industries; Adjunct Senior Fellow at the Center for a New American Security	Former Budget Deputy Policy Director on the Senate Armed Services Committee	Senator Mitch McConnell	Minority Leader of the Senate
Susan Davis ^d	Co-Chair of the Board of Directors for the Information Technology and Innovation Foundation	Former Representative who served on the House Armed Services Committee	Representative Nancy Pelosi	Speaker of the House

Commissioner	Current Position	Past Positions	Appointing Official	Appointing Official Title
Jonathan Burks ^e	Vice President for Global Public Policy at Walmart	Former Chief of Staff and National Security Advisor to former House Speaker Paul Ryan; Policy Advisor for Budget and Appropriations to Senator McConnell; Policy Director and Budget Analyst for House Budget Committee	Representative Kevin McCarthy	Minority Leader of the House
Robert F. Hale ^f	Senior Advisor at Booz Allen Hamilton; and Center for Strategic and International Studies	Former Under Secretary of Defense (Comptroller)/ Chief Financial Officer; head of Air Force financial management; head of defense group at Congressional Budget Office	Senator Jack Reed	Chair of the Senate Armed Services Committee
Ellen M. Lord ^g	Senior adviser at The Chertoff Group; Director on Board of Directors at GEOST	Former Under Secretary of Defense for Acquisition and Sustainment (A&S); President and Chief Executive Officer of Textron Systems	Senator Jim Inhofe	Ranking Member of the Senate Armed Services Committee
Eric Fanning ^h	President and Chief Executive Officer of the Aerospace Industries Association	Former Secretary of the Army; Chief of Staff to the Secretary of Defense; Acting Secretary of the Air Force and Under Secretary of the Air Force; Deputy Under Secretary of the Navy/Deputy Chief Management Officer; and Professional Staff Member of the House Armed Services Committee	Representative Adam Smith	Chair of the House Armed Services Committee
Raj Shah ⁱ	Managing Partner of Shield Capital; and Chair of Resilience Insurance	Former head of DOD's Defense Innovation Unit Experimental (DIUx)	Representative Mike Rogers	Ranking Member of the House Armed Services Committee

Commissioner	Current Position	Past Positions	Appointing Official	Appointing Official Title
Jennifer Santosi	Principal Director for Strategic Initiatives, National Security and Space at Charles Stark Draper Laboratory	Former Naval R&D Investment Executive at the Department of the Navy; Deputy Assistant Secretary of Defense for Industrial Policy; Professional Staff Member on Senate Appropriations Committee	Senator Patrick Leahy	Chair of the Senate Appropriations Committee
Steven J. Cortese ^k	Retired	Former Executive Vice President at DRS Technologies; Senior Vice President at ATK; Vice President of Programs and Budget at Lockheed Martin; Staff Director of the Senate Appropriations Committee	Senator Richard Shelby	Ranking Member of the Senate Appropriations Committee
Jamie M. Morin ^l	Vice President of Defense Systems Operations at The Aerospace Corporation	Former Director of Cost Assessment and Program Evaluation in the Office of the Secretary of Defense; Assistant Secretary of the Air Force for Financial Management and Comptroller; Acting Under Secretary of the Air Force; Professional Staff Member of the Senate Budget Committee	Representative Rosa L. DeLauro	Chair of the House Appropriations Committee
David Norquist ^m	President and Chief Executive Officer of the National Defense Industrial Association	Former Deputy Secretary of Defense; Under Secretary of Defense (Comptroller)/Chief Financial Officer, and Professional Staff Member of the House Appropriations Committee	Representative Kay Granger	Ranking Member of the House Appropriations Committee

Source: DOD and Congressional releases (see links to individual source documents in the Notes below).

Notes:

- a. DOD, “DoD Announces Appointments to the Commission on Planning, Programming, Budgeting and Execution Reform,” press release, February 28, 2022, at <https://www.defense.gov/News/Releases/Release/Article/2948756/dod-announces-appointments-to-the-commission-on-planning-programming-budgeting/>;
- b. National Defense Industrial Association, “ETI’s Seraphin chosen for commission to examine defense PPBE,” press release, February 10, 2022, at <https://www.ndia.org/about/media/press-releases/2022/2/10/ppbecommission>; and “Appointments,” in the Senate, *Congressional Record*, daily edition, vol. 168 (February 1, 2022), p. S449;
- c. “Appointment,” in the Senate, *Congressional Record*, daily edition, vol. 168 (March 16, 2022), p. S1227; and Diem Salmon’s LinkedIn page, accessed June 10, 2022, at <https://www.linkedin.com/in/diem-salmon-2a438b25>;
- d. “Appointment of Individual to Commission on Planning, Programming, Budgeting, and Execution Reform,” in the House, *Congressional Record*, daily edition, vol. 168 (February 11, 2022), p. H305; and Information Technology and Innovation Foundation, accessed June 10, 2022, at <https://itif.org/person/susan-davis/>;
- e. “Communication from the Republican Leader,” in the House, *Congressional Record*, daily edition, vol. 168 (February 11, 2022), p. H1118; and Jonathan Burks’s LinkedIn page, accessed June 10, 2022, at <https://www.linkedin.com/in/jonathan-burks-28a8234>;
- f. “Appointments,” in the Senate, *Congressional Record*, daily edition, vol. 168 (February 1, 2022), p. S449; and Center for Strategic and International Studies (CSIS), accessed June 10, 2022, at <https://www.csis.org/people/robert-f-hale>;
- g. “Appointments,” in the Senate, *Congressional Record*, daily edition, vol. 168 (February 1, 2022), p. S449; and “GEOST Inc. Announces Appointment of Ellen Lord to Board of Directors,” press release, BusinessWire, January 12, 2022, at <https://www.businesswire.com/news/home/20220112005359/en/GEOST-Inc.-Announces-Appointment-of-Ellen-Lord-to-Board-of-Directors>; and DOD, Ellen M. Lord biography, accessed June 10, 2022, at <https://www.defense.gov/About/Biographies/Biography/Article/1281505/ellen-m-lord/>;
- h. Senate Committee on Armed Services, “Armed Services Committees Leadership Announces Selections for Commission on Planning, Programming, Budgeting, and Execution Reform,” press release, February 1, 2022, at <https://www.armed-services.senate.gov/press-releases/armed-services-committees-leadership-announces-selections-for-commission-on-planning-programming-budgeting-and-execution-reform>;
- i. Ibid.;
- j. “Message from the Senate,” in the House, *Congressional Record*, daily edition, vol. 168 (February 7, 2022), p. H993; and Jennifer Santos’ LinkedIn page, accessed June 10, 2022, at <https://www.linkedin.com/in/jennifer-santos-00922441>;
- k. “Appointment,” in the Senate, *Congressional Record*, daily edition, vol. 168 (February 10, 2022), p. S650; and Steven J. Cortese’s LinkedIn page, accessed June 10, 2022, at <https://www.linkedin.com/in/steve-cortese-86782682>;
- l. Jamie Morin Twitter post, February 14, 2022, 4:02 p.m., at <https://twitter.com/jamiemmorin/status/1493329894197051401?>; and The Aerospace Corporation, accessed June 10, 2022, at <https://aerospace.org/person/dr-jamie-m-morin>;
- m. House Committee on Appropriations, minority website, “Granger Nominates Former DOD Deputy Secretary Norquist to PPBE,” press release, February 15, 2022, at <https://republicans-appropriations.house.gov/news/press-releases/granger-nominates-former-dod-deputy-secretary-norquist-ppbe>; and National Defense Industrial Association, “David Norquist named NDIA’s new president and CEO,” press release, March 31, 2022, at <https://www.ndia.org/about/media/press-releases/2022/3/31/newceo>.

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