



COMMISSION ON PLANNING, PROGRAMMING, BUDGETING, AND EXECUTION REFORM

Status Update

March 2023

Nothing from this report shall be construed as a recommendation from the Commission

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The Commission on Planning, Programming, Budgeting, and Execution (PPBE) Reform has consistently heard that there is the need for change to the multi-faceted aspects that make up the PPBE process. The Commission is actively listening, conducting research, and is on track to deliver the statutory reports as directed by Congress.

EXECUTIVE SUMMARY

In the National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2022, signed into law on December 27, 2021, Congress established the Commission on Planning, Programming, Budgeting, and Execution (PPBE) Reform. By law, the Commission must provide an Interim and Final report articulating the results of the review and proposed recommendations to the congressional defense committees as well as to the Secretary of Defense. After months of interviews and research, the Commission is on track to deliver and meet its statutory reporting requirements on time.

A year after being sworn in, the Commissioners have chosen to provide this additional Status Update, which contains no recommendations but does summarize the Commission's activities and efforts completed to date. The Status Update begins by documenting the extensive steps taken by the Commission to gather, analyze, and assimilate information including:

- Holding 27 formal Commission meetings and engagements interviewing more than 280 individuals and organizations familiar with and knowledgeable about the Department of Defense (DoD) PPBE process and included eight engagements with Congressional committees. Interviewees have included current and former senior members of the Congressional staff, current and former senior officials from DoD, industry officials, and outside experts from a variety of organizations.
- Sponsoring intensive research efforts led by Federally Funded Research and Development Centers (FFRDC), the Commission staff, and academic experts along with scrutiny of published reports about DoD's PPBE process; and

- Putting in place processes, described further in this Status Update, that will allow the Commission to meet its statutory requirements by the deadlines specified in the law.

As a result, the Commission has gained an extensive understanding of viewpoints on how the current PPBE system operates. While some of the information gained highlights useful aspects of the current system that should be considered for retention, a majority suggests the system needs significant improvement. Many of the suggestions made to the Commission are highlighted in this Status Update. While the Commission does not specifically endorse any of these discussed changes at this time, it will consider them all as it prepares the Interim and Final Reports.

INTRODUCTION

First created in the early 1960s, the PPBE system exists to allocate resources within the DoD to allow the Department as a whole, including the military services, agencies, and Combatant Commands (COCOM) to achieve their missions. It is focused on creating a balance between policies and strategies of the DoD within given fiscal constraints, to guide the delivery of necessary military capabilities with sufficient capacity and readiness to execute the strategy. In short, it is designed to provide the right things, in the right quantities, to train and equip a ready force of the right size.

By act of Congress contained in Section 1004 of the FY22 NDAA, Congress mandated creation of an independent “Commission on Planning, Programming, Budgeting, and Execution Reform.”

Specifically, this Commission was to be composed of “14 civilian individuals not employed by the Federal Government” with proven experience and expertise in the DoD’s resourcing processes and the Defense Industrial Base (See Appendix 2, Commissioner Biographies).

According to Section 1004, the Commission has been tasked to carry out the following duties:

“(1) Compare the planning, programming, budgeting, and execution process of the Department of Defense, including the development and production of documents including the Defense Planning Guidance (described in section 113(g) of title 10, United States Code), the Program Objective Memorandum, and the Budget Estimate Submission, with similar processes of private industry, other Federal agencies, and other countries.

(2) Conduct a comprehensive assessment of the efficacy and efficiency of all phases and aspects of the planning, programming, budgeting, and execution process, which shall include an assessment of—

(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;

(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;

(F) a review of the 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.

(3) Develop and propose recommendations to improve the effectiveness of the planning, programming, budgeting, and execution process.

The Commission was also tasked to present the results of its investigation in two reports: an Interim Report to be delivered in August 2023 and a Final Report in March 2024, as amended in Section 1057 of the NDAA for FY 2023.

After months of research and interviews with key stakeholders and current and former practitioners in the PPBE process, both inside and outside of government, the Commission is prepared to announce:

1. It is on track to complete its mandated work according to schedule.
2. Thanks to the outpouring of input from diverse stakeholders, it is rigorously assessing the most important priorities for addressing significant reform of the complex PPBE process. In particular, the Commission's work has been focused (albeit not exclusively) on finding ways to improve the process's ability (as stated in the law establishing the Commission) to "enable the United States to more effectively counter near-peer competitors" by adopting new technologies more effectively and integrating and implementing those technologies into the field to respond to current and future threats.

ROADMAP TO REFORM

Since the passing of the NDAA for FY 2022 creating the Commission in December 2021, the swearing-in of Commissioners in March 2022, and bringing on much of its staff in August and September 2022, the Commission has been proceeding according to a four-phased process.

COMMISSION ON PPBE REFORM WORK SCHEDULE

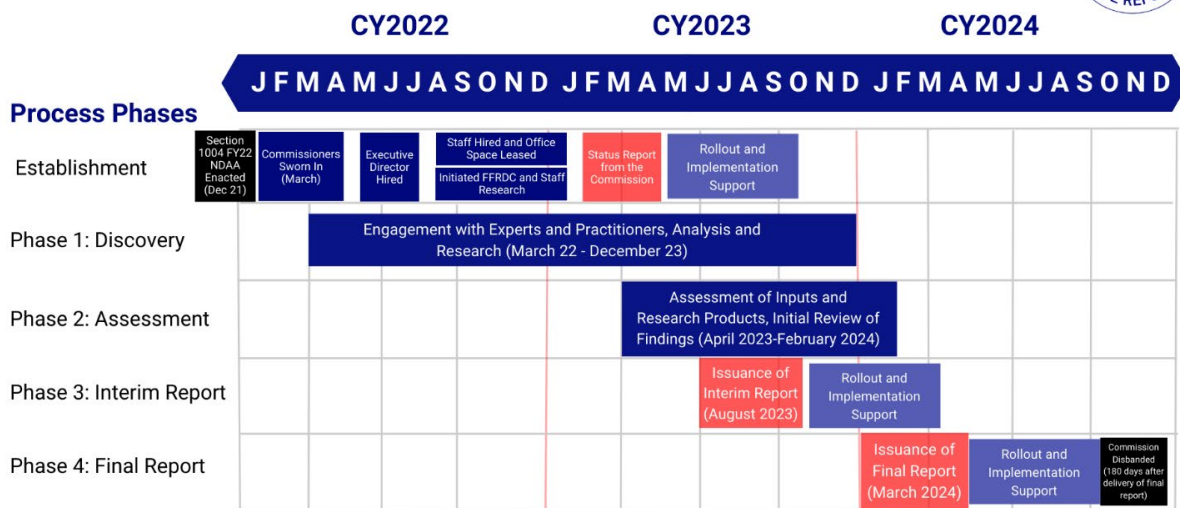


Figure 1 - Commission on PPBE Reform Work Schedule

Phase 1: Discovery (March 2022 - December 2023)

Engagement with current and former experts and practitioners within Congress and DoD and an extensive outreach to industry partners and outside agencies (including think tanks, FFRDCs, and universities) to gather relevant supporting research and analysis.

Phase 2: Assessment (April 2023 - February 2024)

Review and assessment of inputs and research products in preparation for the Interim and Final Reports.

Phase 3: Interim Report (August 2023)

While still in the process of continuing research and analysis, an initial set of recommendations will be developed, followed by composition and issuance of the Commission's Interim Report, as mandated by Congress.

Phase 4: Final Report (March 2024)

With research and analysis completed, the Commission will develop its final recommendations, then compose and issue its Final Report, thus completing the Commission's statutory reporting requirements and its mission to "develop and propose recommendations to improve the effectiveness of the planning, programming, budgeting, and execution process".

COMMISSION RESEARCH AND OUTREACH

From its earliest stages, the Commission has reached out to conduct research and gain insights from key communities who are knowledgeable of or affected by the PPBE process and has conducted its own original research to support the Commission's statutory taskings.

Formal Commission Sessions and Meetings

As of February 2023, the Commission has held 27 formal meetings, including interviews with Congressional staff members, key stakeholders, and participants in the PPBE process.

In addition, the Commissioners themselves and the staff bring decades of insight and experience to understanding the PPBE process and DoD as an institution.

Engagements within Congress

The Commission has held eight formal engagements and has been in regular consultation with the following Congressional committees and organizations during its tenure:

- United States House and Senate Armed Services Committees
- United States House and Senate Committees on Appropriations
- United States House and Senate Appropriations Subcommittees on Defense
- Government Accountability Office

The Commission also interviewed former House and Senate Armed Services Committee, House and Senate Committees on Appropriations, and House and Senate Appropriations Subcommittees on Defense staff directors and professional staff members. Several other former congressional staff members have also provided additional insights.

Engagements with the Department of Defense

From the beginning of the Commission's existence, it has sought out and received inputs from key DoD personnel, offices, and agencies, including the Deputy Secretary of Defense, the Under Secretary of Defense (Comptroller), the Director of Cost Assessment and Program Evaluation, the Under Secretary of Defense (Research and Engineering), the Under Secretary of Defense (Acquisition and Sustainment), the Joint Staff Force Structure, Resources, and Assessment Directorate; the Military Department Financial Management and Comptrollers; the Service Programmers and Service Acquisition Executives; Program Executive Officers (PEO), and many others (See Appendix I for a complete list of whom the Commission has engaged with and from whom it has received input to date).

The Commission also conducted interviews with numerous former Defense Department officials including: former Deputy Secretary of Defense, Bob Work; former Assistant Secretary of the Navy for Research, Development, and Acquisition, James "Hondo" Geurts; General (retired) Ellen Pawlikowski; General (retired) Arnold Bunch; former CAPE Director Christine Fox and former acting Director Yisroel Brumer; former Defense Innovation Unit Director, Michael Brown; and former Directors of the Air Force Rapid Capability Office, Randy Walden and David Hamilton.

In addition, during its "Open Mic" sessions, where subject matter experts can put forth their views in a more informal way with the Commissioners and staff, the Commission heard from former and current Program Managers (PM), PEOs, Programmers, Comptrollers, and Financial Managers from the DoD.

Inputs from Private Industry

Getting feedback and hearing concerns from private industry, as one of the principal stakeholders in the PPBE process and in future PPBE reforms, has been a leading priority for the Commission.

To date, the Commission has heard from representatives of no less than 45 companies both in and outside the defense industry, gathering their views and perspectives regarding the current PPBE process, in addition to soliciting insights into how non-

defense companies manage resources and deal with some of the same issues that the PPBE process is designed to address.

Industry partners that have engaged with the Commission through formal Commission meetings, “Open Mic” sessions, and through interviews conducted by Commission staff include but are not limited to: Lockheed Martin, Palantir, Science Applications International Corporation (SAIC), Voyager Space, Parsons Corporation, Ford Motor Company, PepsiCo, Walmart, Exiger, AAR Corporation, Boeing, Anduril, Hermeus, PsiQuantum, Unison Global, MDC Global Solutions. and Booz Allen Hamilton. (See Appendix I for a complete list of whom the Commission has engaged with and from whom it has received input).

Research from Federally Funded Research and Development Centers

An important part of the Commission’s work has been calling upon original research on the PPBE process and related topics from several FFRDCs, including the RAND Corporation; the Institute for Defense Analysis; the MITRE Corporation; and the Software Engineering Institute at Carnegie Mellon University.

Academic Support

Several universities and military educational institutions have also lent their support to the Commission’s efforts to date and bring specialized research expertise in key areas of the PPBE and DoD acquisition process. These include:

- The Naval Postgraduate School
- Duke University
- The Defense Acquisition University
- George Mason University
- The University of Virginia
- The College of William & Mary

The Commission’s Research Staff

Finally, and in addition to the inputs received externally, the Commission’s own research team has been actively pursuing the following research agenda over the past year in response to the legislative mandate:

(NOTE: all items marked with an “” are requirements under the NDAA for FY 2022)*

1. *Workforce: Evaluating the sufficiency of the current DoD programming and budgeting workforce;
2. *Reprogramming: analyzing trends in monetary thresholds and assessing the use of below-versus above-threshold reprogrammings by the DoD;
3. *Budget Structure: Examining the current structure and its effectiveness in supporting warfighting requirements;
4. *Agile Budgeting Mechanisms: Use and effectiveness of the BA-08 Software Pilot Program and other mechanisms;
5. *DoD Innovation Funds: Reviewing the history, and delivery of capability, through these funds to the warfighter; and studying access to and use of current innovation funds;
6. *Providing Better Information to Congress: looking at ways DoD could institutionalize information necessary for congressional oversight and improve communication and overall trust;
7. *Comparison of DoD/PPBE to Private Industry Practices: Analyzing best practices that could be transferrable to the DoD from companies like Walmart, PepsiCo, Parsons, Lockheed Martin, Ford Motor Company, and others;
8. *Comparison of DoD to other Federal Agencies (Department of Homeland Security, Department of Health and Human Services, the Office of the Director of National Intelligence, and the National Aeronautics and Space Administration) and other countries (the United Kingdom, Canada, Australia, Russia, and China);
9. *Net Assessment of the Effectiveness of all four phases of the PPBE system;
10. *Performance Measures: Identifying measures currently being used at Service and the Office of the Secretary of Defense (OSD) levels and determining how they are used to inform budgets;
11. *Assessment of Financial Management systems and their relationship to auditability;
12. Exploring individual case studies that demonstrate how PPBE supports or hinders program execution (e.g., the so-called "Valley of Death")
13. Reviewing key sections of the DoD Financial Management Regulation, while also looking at provisions not currently enshrined in law that could be changed to enhance flexibility.

INPUTS TO THE COMMISSION

During the Commission's investigation to date, witnesses and interviewees have expressed both positive and negative views on many aspects of the current PPBE system. Nearly all these views and recommendations were based on their first-hand experience with PPBE either inside or outside the government. The views expressed to the Commission included the following observations about the PPBE system (none of which are being specifically endorsed or validated by the Commission at this time):

For example, some asserted that the PPBE process functions best for acquiring and funding large-scale systems such as aircrafts, tanks, ships, and submarines but is less suitable in supporting new technologies, such as software and artificial intelligence (AI), the optimal development of which is tied directly to advances in the commercial sector. Others expressed the view that PPBE was not adequate for either type of system.

Some saw the PPBE process as effectively balancing a vast array of competing interests, while producing a budget on an annual basis that gains the Departmental and Congressional support required to be enacted into law. Others asserted that politically driven funding decisions may not effectively serve our long-term strategic interests and needs.

Some expressed the view that the PPBE process enables the planned delivery of resources in a coordinated manner – ensuring, for example, that a new weapon system is supported by an appropriately trained workforce, needed facilities, and an effective supply and sustainment system. Others argued that efforts to engage in long-range planning have the effect of locking in funding years in advance, impeding innovation and adaptive response to emerging sufficient flexibility to provide for innovation and address emergent requirements if that flexibility is properly applied.

Some expressed the view that while obligations and expenditures are relatively easy to measure under the current system, the PPBE process lacks adequate metrics and mechanisms for measuring capabilities/delivery to the warfighter. Others contended that the effectiveness of these capabilities is given extensive consideration through mechanisms that intersect with the PPBE process.

Some expressed the view that even when stakeholders agree that new innovative technologies are needed that do not fit into program stovepipes, there are too few opportunities to get funding within the PPBE process, given budgets start being built over two years in advance. Others took the view that many proposals that are viewed by their

proponents as innovative may simply lose out in competition against other, higher priorities given fiscal constraints.

Some expressed the view that Continuing Resolutions (CR) and late appropriations drive inefficient and costlier execution and negatively impact current and future readiness. Others argued that the DoD has learned to live with CRs and that trying to ease the pain with new procedures would make it even harder to enact future budgets in a timely manner.

Some expressed the view that the formal justification materials, also known as "J-books," currently submitted by DoD are extensive but of questionable utility as the information contained is often not consistent with briefings later provided to Congressional staffers. Others took the view that much of the structure and content of these materials is dictated by Congress and that additional explanation and justification is generally available to Congress upon request.

Some took the view that while many non-traditional companies are available and ready to support DoD needs, the rigid PPBE timeline limits opportunities to inject their knowledge and products into the acquisition process. Others contended the existing system contains numerous mechanisms that allow adoption of new technologies offered by non-traditional companies and DoD just needs to take advantage of the flexibilities it already has.

Some took the view that DoD focuses too much on hardware and large acquisition programs instead of looking for ways to incorporate more innovative, non-traditional products, and technologies into the existing system. Others took the view that numerous innovation funds have been tried over the years and are often underutilized and produced unimpressive results.

Some took the view that reprogramming thresholds are out-of-date, have not been adjusted for inflation, and as a result are far too low. Others pointed out that most reprogramming requests are approved, few such requests are for innovative new technologies, and the Department has not used all the transfer authority it has been provided.

Some took the view that under the current system, too many managers are concerned about compliance and executing to baseline instead of delivering capability. Others took the view that good PEOs and PMs know how to work the system and use the funds they have to ensure their programs are successful and incorporate new technologies where appropriate.

Some took the view that developing budgets starting two years in advance and establishing forecasting milestones can lock out new ideas and push systems/products into production when they lack proper maturity. Others took the view that advance planning is needed to make a complex enterprise like the DoD work.

Some took the view that the Department lacks modern financial tools and has failed to take advantage of AI and machine learning capabilities to support programming and budget decisions. Others took the view that ADVANA and other DoD data initiatives have gone a long way to address these problems.

At the same time, the views expressed to the Commission also included several suggested ideas, none of which have been endorsed by the Commission, and some of which (it can be argued) contradict each other. A sampling of the suggestions made includes the following:

- An ideal defense resource allocation system would balance flexibility, transparency, and accountability.
- The Commission should consider reinvention of the entire defense resource allocation system and not simply incremental reforms or administrative tweaks of PPBE.
- The DoD needs a way to incorporate new technologies more quickly into the PPBE process so acquisition can keep closer pace with the speed of innovation in the commercial space.
- DoD needs a more fluid budget process – one that’s more responsive to operational needs of the services and COCOMs.
- The DoD needs to adopt a more agile model for development and fielding capabilities to the warfighter.
- The Commission needs to address the “trust gap” issue between the DoD and Congress, in which Congress believes more transparency is needed in how DoD allocates money and resources and needs to communicate with Congress earlier, more often, and with additional detail.
- There is an urgent need for developing strategy-driven budgets and capabilities, even if this involves major changes in the PPBE process.
- DoD needs the ability to carry over portions of its one-year operating dollars to permit effective execution, especially during periods when CRs are common.

- There needs to be improvements in budget data relevancy and presentation.
- Reforms must address the so-called “Valley of Death” i.e., the gap between early-stage research and development for promising technologies and scaling up to development, full-scale production, and fielding.
- There is an overriding need to ensure there is always funding in place to buy the products the warfighter needs.
- Software needs a firm focus at the beginning of requirements generation, to support the software development process. “Software-centric” capabilities should be a priority for the PPBE process. The fast pace of commercial technology development makes agile “make-versus-buy” decisions within PPBE more important but also more difficult when the commercial market is essentially selling services rather than hardware.
- The best defense resource allocation system would provide flexible money when needed, with limited oversight when appropriate.
- The best system would consistently empower decision-makers at critical levels of the process, surrounding them with small teams of talented experts to make smarter and more timely decisions on a consistent basis.
- There needs to be higher innovation risk tolerance within DoD and within the bounds of Congressional oversight.
- There needs to be clearer direction in facing the operational challenges and needs of COCOMs.
- A better approach to innovation funds and Program Element/Budget Line Item consolidation would yield more flexibility into the resourcing process.
- A more detailed vision document than the National Defense Strategy and Defense Planning Guidance is needed for an effective PPBE process. Such a document would include more specifics regarding force structure, directed areas in which to take risk, and would be issued in time to inform programs and budget development.
- More top-down guidance on priorities is needed. Communication should be clear that only programs supporting prioritization will be funded and areas where risk can be tolerated should be clearly identified.
- Creation of a Joint Forces-like COCOM type of organization would assist with a more collaborative joint resourcing process.

- More transparency in Operation and Maintenance funding requests is required. Relevant numbers don't appear in the Future Years Defense Program and are not organized by major weapon systems like the Investment accounts.

None of these viewpoints have been officially endorsed by the Commission; nor should listing these concerns or ideas be taken as recommendations for policy changes. However, they do represent the kinds of concerns and issues that the Commission will be addressing as it puts together its findings and recommendations for meaningful reform in its Interim and Final Reports.

In the next phase of its work, the Commission will systematically evaluate the views expressed by interviewees and witnesses and set them alongside the results of its own research. In each case the goal will be to validate a problem set that needs addressing; explore root causes; identify potential solutions; then evaluate and pressure test those solutions based on past and present practices and available data.

THE WAY FORWARD

This Status Update from the Commission will be followed by its Interim Report, which is planned to be released in August 2023. Paragraph (g)(1) of the statute requires that the Interim Report include the following:

(A) An examination of the development of the documents described in subsection (f)(1).

(B) An analysis of the timelines involved in developing an annual budget request and the future-years defense program (as described in section 221 of title 10, United States Code), including the ability to make changes to such request or such program within those timelines.

(C) A review of the sufficiency of the civilian personnel workforce in the Office of the Secretary of Defense and the Office of Cost Assessment and Program Evaluation to conduct budgetary and program evaluation analysis.

(D) An examination of efforts by the Department of Defense to develop new and agile programming and budgeting to enable the United States to more effectively counter near-peer competitors.

(E) A review of the frequency and sufficiency of budget and program execution analysis, to include any existing data analytics tools and any suggested improvements.

(F) Recommendations for internal reform to the Department relating to the planning, programming, budgeting, and execution process for the Department of Defense to make internally.

(G) Recommendations for reform to the planning, programming, budgeting, and execution process that require statutory changes.

(H) Any other matters the Commission considers appropriate.

In March 2024, the Commission will present to the congressional defense committees and Secretary of Defense “a final report that includes the elements required under paragraph (1).”

Although it must be stressed that the Commission is making no recommendations at this time, it is seeking multiple avenues toward reform in the broadest sense, meaning all options are being considered to enhance our nation’s defense.

CONCLUSION

In 2021, the PPBE system celebrated its sixtieth year of implementation. Since its inception, the system has undergone many changes and efforts at improvement.

Despite these changes - or, some might argue, because of them – the critics of PPBE are many, from members of Congress and Secretaries of Defense, to defense company executives and self-styled procurement reformers. Some of the harshest critics are the very personnel who perform its functions daily and who struggle at times heroically with its shortcomings and limitations - but also carry out its most valuable features.

The mandate which Congress has given to this Commission is both a heavy responsibility and an important opportunity to propose lasting changes in the way in which the DoD builds arms, allocates resources, and maintains itself. The Commission’s goal is to provide the best possible military posture this country needs to secure its freedom and national interests.

APPENDIX 1

Commission on PPBE Reform Community Engagement

Congress

- House Appropriations Committee - Full Committee and Defense Subcommittee
- Senate Appropriations Committee - Full Committee and Defense Subcommittee
- House Armed Services Committee
- Senate Armed Services Committee
- Various Members of Congress and their staff
- Government Accountability Office

Former Government Officials

- former Deputy Secretary of Defense
- former DoD Comptroller
- former Director, CAPE
- former Assistant Secretary of the Navy for Research, Development & Acquisition
- former Assistant Secretary of the Air Force for Acquisition, Technology and Logistics
- former Director, Air Force Rapid Capabilities Office
- former Commander, Air Force Materiel Command
- former Director, Defense Innovation Unit
- former Service Acquisition Executives and program managers
- former HASC, SASC, HAC-D, and SAC-D professional staff members
- former PPBE practitioners

Associations

- American Society of Military Comptrollers
- Association for Uncrewed Vehicle Systems International
- Association of Government Accountants
- Silicon Valley Defense Group
- National Defense Industrial Association
- Federation of American Scientists/ Day One Project

The Public

- Open Mic Session on Program Management
- Open Mic Session on Budgeting
- Open Mic Session on Valley of Death
- Open Mic Session on Programming
- Open Mic Session on Requirements
- Open Mic Session on Reprogrammings
- Social Media/Email Input

Industry

Science Applications International Corporation, Inc., AECOM, AAR Corporation, Exiger, Revere Federal Strategies, Govini, DecisionLens, Productable, Defense & Aerospace Competitive Intelligence Service, Definitive Logic, Catalyst Campus, Applied Intuition, Hermeus, Booz Allen Hamilton, Darkside Federal, UNISON, CSIS, Boeing, Palo Alto, PespiCo, Walmart, Parsons Corp, Lockheed Martin, Northrup Grumman, Huntington Ingalls Industries, Voyager Space, Deloitte, Battelle, Ford Motor Company, Hawkeye 360, Resilience, Mercury Systems, Anduril, Palantir, Rebellion, Arete Associates, Continuum Dynamics, Corvid Technologies LLC, Critical Link LLC, Echelon Bio Sciences, EnergyNTEch, First RF, FTL Labs, Indiana Microelectronics, IRFLEX Corp, Judd Systems Technologies, LOADPATH, SI2 Technologies, Spectral Sciences, Tier 1 Performance, Teqnovation LLC, Cypress International, VOXTEL.....and more!

Department of Defense

- Deputy Secretary for Defense
- Secretary of the Air Force
- Under Secretary of Defense Comptroller
- Under Secretary of Defense (R&E)
- Under Secretary of Defense (A&S)
- Director, CAPE
- Joint Staff
- Combatant Commands
- Military Department Comptrollers
- Service Programmers
- Service Planners
- Service Acquisition Executives
- NavalX, AFWERX, Office of Naval Research, PEO Digital, Office of Strategic Capital
- Innovation Steering Group
- PEOs and Program Managers

Academia

- George Mason University
- Naval Postgraduate School
- Duke University
- The College of William and Mary
- University of Virginia
- Defense Acquisition University

Federally Funded Research and Development Centers (FFRDCs)

- RAND
- MITRE
- Institute for Defense Analyses
- Carnegie Mellon University Software Engineering Institute
- More to follow



Comparative Case Studies

- Countries: Russia, China, Australia, United Kingdom, Canada
- US Federal Agencies: Department of Homeland Security (DHS), Office of the Director of National Intelligence (ODNI), NASA, Health and Human Services (HHS)
- More to follow

APPENDIX 2

Jonathan Burks

Commission Biography



***Appointed by the Honorable Kevin McCarthy,
then Minority Leader of the House of
Representatives***

Mr. Jonathan Burks is Vice President for global public policy at Walmart where he leads the global retailer's efforts to analyze and develop positions on pressing public policy issues. In August 2022, the Senate confirmed Burks to serve on the Board of Directors of the US Institute of Peace.

Prior to joining Walmart, he was a partner at the Brunswick Group, the global critical issues consultancy, where he was the co-lead for the U.S.

public affairs office. Before moving to the private sector, Burks spent nearly two decades in public service culminating in his service as the chief of staff to Speaker of the House Paul Ryan, acting as the Speaker's principal adviser on policy, strategy, and management. His prior positions include advisor on budget and appropriations to Senate Republican Leader Mitch McConnell, policy director of the House Budget Committee with a focus on defense budgeting, director of legislative affairs at the Securities and Exchange Commission, senior advisor to the Under Secretary of the Treasury for International Affairs, and policy advisor in the transition office for the Director of National Intelligence.

Early in his career, he served four years at the White House working first for Vice President Cheney and then for President Bush in a variety of positions including as the Vice President's staff secretary, associate staff secretary to the President, and special assistant to the President for policy in the Chief of Staff's office.

During a leave of absence from government service, Burks was the deputy policy director on the 2012 Romney for President campaign.

Burks holds a Master of Arts from the School of Advanced International Studies at Johns Hopkins University and a Bachelor of Science in foreign service from Georgetown University.



Peter Levine

Commission Biography



***Appointed by the Honorable Lloyd Austin,
Secretary of Defense***

The Honorable Peter Levine is a Senior Fellow at the Institute for Defense Analyses, where he works on issues related to defense management, organizational reform, human resources management and acquisition policy. Levine is the author of *Defense Management Reform: How to Make the Pentagon Work Better and Cost Less* (Stanford University Press, 2020).

Recently, Levine served as a panel member for the National Academy for Public Administration Report on the Office of Personnel Management, a panel member for a National Academy of Sciences study on the acquisition workforce and a co-chair of the Independent Panel to Assess EMS Organizational Alternatives. From April 2016 to January 2017, Levine served as Acting Under Secretary of Defense for Personnel and Readiness. In this capacity, he was the principal assistant and advisor to the Secretary on military and civilian personnel policy and management. Levine also served as the Deputy Chief Management Officer (DCMO) of the Department of Defense, acting as the senior advisor to the Secretary on business transformation. He led the Secretary's review of the Goldwater- Nichols Act and the Department's efforts to achieve greater efficiency in management, headquarters and overhead functions.

Prior to his appointment as DCMO, Levine served on the staff of the Senate Armed Services Committee from August 1996 to February 2015, including two years as Staff Director, eight years as General Counsel, and eight years as minority counsel, where he was responsible for providing legal advice on legislation and nominations, and advised on acquisition policy, civilian personnel policy and defense management issues affecting the Department of Defense. Levine also served as counsel to Senator Carl Levin of Michigan and as counsel to the Subcommittee on Oversight of Governmental Management of the Senate Committee on Governmental Affairs.

Levine holds a Bachelor of Arts from Harvard College and a Juris Doctor from Harvard Law School.



Robert Hale

Commission Biography



***Chair, Appointed by the Honorable Jack Reed,
Chairman of Senate Armed Services Committee***

The Honorable Robert Hale is a senior fellow at the Center for Strategic and International Studies and a Senior Executive Advisor at Booz Allen Hamilton, where he provides international consulting on financial management issues.

Most recently, Hale served as Comptroller and Chief Financial Officer at the Department of Defense, where he managed a \$600 billion budget in wartime and oversaw efforts by the Department to minimize the problems caused by the 2013 sequestration and government shutdown. He also made significant improvements in defense financial management, making tangible progress toward auditable financial statements and establishing a course-based certification program for defense financial managers.

Previously, Hale also served as the Assistant Secretary of the Air Force (Financial Management and Comptroller), managing the Department's budgets and spearheading efforts to create a test-based certification program. Hale served as a Commissioner on the National Commission on the Future of the Army and is a past member of the Defense Business Board. Hale spent 12 years as head of the defense group at the Congressional Budget Office. He was also the Executive Director of the American Society of Military Comptrollers and held analytic and management positions at LMI government consulting and the Center for Naval Analyses. Early in his career, he served as a Navy officer.

Hale holds a Bachelor of Science in statistics and a Master of Science in operations research from Stanford University and a Master of Business Administration from the George Washington University.

Ellen Lord

Commission Biography



Vice-Chair, Appointed by the Honorable Jim Inhofe, then Ranking Member of the Senate Armed Services Committee

The Honorable Ellen Lord is a defense industry participant whose career has spanned the c-suite to the federal government. Currently operating at the nexus of the U.S. industrial capability and domestic and foreign government acquisition processes, Ellen understands how national security products and services are successfully sold.

Ellen has more than 30 years of corporate experience in the automotive and defense industries, serving in a variety of capacities, including as President and Chief Executive Officer of

Textron Systems Corporation, a subsidiary of Textron Inc. from 2012-2017. In this role, she led a multi-billion dollar business with a broad range of products and services supporting defense, homeland security, aerospace, infrastructure protection, and customers around the world.

From 2017-2021, Ellen served as the first U.S. Under Secretary of Defense for Acquisition and Sustainment, leading the Department of Defense's personnel, policy and processes for acquisition of products and services, lifecycle sustainment and the security and resiliency of the defense industrial base. Ellen is credited in her government work for driving significant acquisition policy change focused on simplicity and speed. She implemented procedures that recognize major platforms and weapon systems are hardware enabled yet software defined.

Additionally, she is recognized for addressing cyber vulnerabilities and incorporating an aggressive cybersecurity posture into acquisition policy. Ellen also focused on a high level of communication with all stakeholders as well as strengthening human capital. During her time with the Department of Defense, she developed strong relationships with Congressional members in both a bipartisan and bicameral manner. She holds TS and SCI security clearances.

After leaving her Department of Defense role in January 2021, Ellen established EML Enterprises, LLC, providing advisory services that leverage her industry and government experience. Ellen serves on the Board of Directors for AAR Corporation, Parsons Corporation, GEOST and Voyager Space, is a Senior Fellow at Johns Hopkins Applied Physics Laboratory and advises a number of aerospace, defense, and industrial companies while serving on the Naval Institute Board of Directors.

Ellen earned a Master of Science degree in Chemistry from the University of New Hampshire and a Bachelor of Arts degree in Chemistry from Connecticut College.



Susan Davis

Commission Biography



Appointed by the Honorable Nancy Pelosi, then Speaker of the House of Representatives

The Honorable Susan Davis is the former U.S. Representative for California's 53rd Congressional District. During her tenure in the House of Representatives from 2001-2021, she was assigned to the United States House Armed Services Committee, where she served as the Chairperson and Ranking Member of the Subcommittee on Military Personnel from 2007-2016.

She also served on the Subcommittees on Seapower and Projection Forces, Strategic Forces, and Readiness. Davis was assigned to the Committee on Education and the Workforce from 2001-2020, where she served as the Chairperson and Ranking Member of the Subcommittee on Higher Education and Workforce Development from 2016-2020.

Prior to her election to the House of Representatives, Davis began her career in public office in 1983 by being elected to the board of the San Diego Unified School District. She later served in the California State Assembly from 1994-2000 and served as the Chair of the Committee on Consumer Protection, Government Efficiency and Economic Development.

Davis holds a Bachelor of Arts from the University of California at Berkeley and a Master of Arts in social work from the University of North Carolina at Chapel Hill.



Lisa Disbrow

Commission Biography



***Appointed by the Honorable Lloyd Austin,
Secretary of Defense***

The Honorable Lisa Disbrow has over 32 years of military and civilian service in the national security sector, including the Department of Defense, the National Security Council and the National Reconnaissance Office. Disbrow currently serves on the Board of Directors of Mercury Systems, BlackBerry, CACI, SparkCognition, NobleReach, the National Defense Industrial Association, and the Wounded Warrior Project. She is a Senior Fellow at the Johns Hopkins University Applied Physics Lab.

Most recently, Disbrow was the 25th Under Secretary of the Air Force from Jan 2015-July 2017, where she led a global organization of more than 660,000 personnel and an annual budget of over \$135 billion.

She led efforts to improve space system resiliency, increase and improve weapon system inventories, and increase operational readiness. Between the 2017 Presidential inauguration and confirmation of the new Secretary of the Air Force, she was Acting Secretary of the Air Force and the Secretary of Defense's Principal DOD Space Advisor.

Prior to these positions, she was the Senate-confirmed Financial Management & Comptroller of the Air Force, responsible for financial policy and execution of the Air Force budget. She served 19 years on the Joint Staff in multiple executive civilian positions including Vice Director of the Joint Staff J-8 Directorate where she advised the Joint Chiefs of Staff and the Joint Requirements Oversight Council on warfighting capabilities, global force management, and joint weapons system requirements.

From 2006-2007, she served on the National Security Council staff at the White House, contributing to major policy issues across the federal government. She was also previously a senior systems engineer at the National Reconnaissance Office responsible for developing requirements and programs to improve national intelligence support to deployed users.

Disbrow retired from military service in 2008 as a Colonel with over 23 years of combined active duty and part-time reserve duty in operations, signals, electronic intelligence, programming, and plans. Disbrow was deployed in Operation Desert Storm/Southern Watch and supported operations in Bosnia.

Disbrow holds a Bachelor of Arts in Foreign Affairs from the University of Virginia Charlottesville, a Master of Arts in International Affairs from George Washington University, and a Master of Science in National Security Strategy from the National War College.



Eric Fanning

Commission Biography



Appointed by the Honorable Adam Smith, then Chairman of House Armed Services Committee

The Honorable Eric Fanning is President and Chief Executive Officer of the Aerospace Industries Association (AIA), the leading advocacy organization for the aerospace and defense industry with nearly 350 companies in its membership – ranging from multinational prime contractors to family-owned businesses. As AIA's leader, Fanning develops the association's strategic priorities and works with

member CEOs to advocate for policies and responsible budgets that keep our country strong, bolster our capacity to innovate and spur our economic growth. Fanning joined AIA after serving as the 22nd Secretary of the Army. He has also previously served as Chief of Staff to the Secretary of Defense, Acting Secretary of the Air Force and Under Secretary of the Air Force, and Deputy Under Secretary of the Navy/Deputy Chief Management Officer.

During his more than 25 years of distinguished government service, Fanning worked on the staff of the House Armed Services Committee, was Senior Vice President of Strategic Development for Business Executives for National Security, was Deputy Director of the Commission on the Prevention of Weapons of Mass Destruction, Proliferation and Terrorism, and was associate director of political affairs at the White House.

Fanning holds a Bachelor of Arts in history from Dartmouth College.



Jamie Morin

Commission Biography



***Appointed by the Honorable Rosa DeLauro, then
Chair of House Committee on Appropriations***

The Honorable Jamie Morin is Vice President of Defense Systems Operations at The Aerospace Corporation. He leads Aerospace's technical support to the senior-most levels of the Department of Defense and Department of the Air Force. Morin also is executive director of the Center for Space Policy and Strategy, which provides objective analysis and comprehensive research to ensure well-informed, technically defensible, and forward-looking space policy across the civil, military, intelligence, and commercial space sectors. In addition to his role at Aerospace, Morin is an adjunct professor of international relations at Georgetown University, a member of the Secretary of State's International Security Advisory Board, a member of the Board of The HALO Trust, USA, a landmine clearance charity, and serves as an advisor to DEFCON AI, LLC.

Prior to joining Aerospace, Morin served as Director of Cost Assessment and Program Evaluation (CAPE) for the Department of Defense, where he led the organization responsible for analyzing and evaluating the department's plans, programs, and budgets in relation to U.S. defense objectives, threats, estimated costs, and resource constraints.

Before his time as Director, CAPE, Morin served for five years as the Assistant Secretary of the Air Force (Financial Management and Comptroller). He also served for a year as Acting Under Secretary of the Air Force, where he led the Air Force Space Board and the Air Force Council.

Before his time in the Department of Defense, Morin was lead analyst for defense, intelligence, and foreign affairs on the professional staff of the U.S. Senate Committee on the Budget.

Morin holds a Bachelor of Science in Foreign Service from Georgetown University, a Master of Science in Public Administration and Public Policy from the London School of Economics, and a Ph.D. in Political Science from Yale University.



David Norquist

Commission Biography



Appointed by the Honorable Kay Granger, then Ranking Member of the House Committee on Appropriations

The Honorable David Norquist is the President and Chief Executive Officer of the National Defense Industrial Association (NDIA). He has over 30 years of public and private sector experience in national security and federal financial management. Mr. Norquist previously served as the 34th Deputy Secretary of Defense from 2019 to 2021 and was responsible for the day-to-day operations of the Department of Defense, including managing the Pentagon's

budget and personnel. He led reforms in DoD business processes and realigned investments toward the challenges of multi-domain warfare.

At the request of the Biden Administration, Mr. Norquist served as Acting Secretary of Defense and continued as Deputy Secretary until the Senate confirmed Secretary Austin and Deputy Secretary Hicks. From 2017 until 2019 as the Under Secretary of Defense (Comptroller)/Chief Financial Officer, he supported the National Defense Strategy (NDS) through the development and execution of the Department's annual budget of then more than \$680 billion. Mr. Norquist strengthened accountability to the taxpayer by implementing DOD's first department-wide financial statement audit.

Norquist began his career as a Presidential Management Fellow supporting Army intelligence as a program/budget analyst with assignments on the Army staff, a major command, a defense agency, and at an overseas field site. Following his time with the Army, Mr. Norquist served for six years with the House Appropriations Subcommittee on Defense as a professional staff member where he focused on Air Force aircraft, munitions, ballistic missile defense and information assurance.

From 2002 to 2006, he served as the Deputy Under Secretary of Defense for Comptroller. In 2006, President George W. Bush selected him to be the first Senate-confirmed Chief Financial Officer for the Department of Homeland Security. Between his stints in government service, Norquist was a partner with Kearney and Company, a certified public accounting (CPA) firm focused exclusively on the federal government.

Norquist holds a Bachelor of Arts in Political Science and a Master of Arts in Public Policy from the University of Michigan. He also holds a Master of Arts in National Security Studies from Georgetown University.



Diem Salmon

Commission Biography



***Appointed by the Honorable Mitch McConnell,
Senate Minority Leader***

Ms. Diem Salmon is currently a Senior Director at Anduril Industries, a defense technology company, where she leads growth efforts for autonomy solutions. She is also an Adjunct Senior Fellow at the Center for New American Security (CNAS). Salmon has worked in the national security field for over 15 years, including the private sector, non-profit, and Congress, with a specific emphasis on defense budgets and requirements.

Previously, Salmon was the Budget Director and Deputy Policy Director for the United States Senate Armed Services Committee. While there, she worked on five annual National Defense Authorization Acts (NDAA's) and navigated the committee and NDAA's through three separate budget deals. Her work at the committee included advocating for higher defense budgets, including the increase for FY 2018 and FY 2019, as well as a myriad of provisions aimed at realigning the Department of Defense spending with the National Defense Strategy. Salmon was also previously a Senior Policy Analyst at the Heritage Foundation and worked at the Avascent Group, a management and strategy consulting firm.

Salmon holds a Bachelor of Arts from the University of California, Irvine and a Master of Arts in International Relations from the Johns Hopkins School of Advanced International Studies (SAIS) with a concentration in International Economics and Strategic Studies.

Jennifer Santos

Commission Biography



***Appointed by the Honorable Patrick Leahy,
Chairman of the Senate Appropriations
Committee***

Ms. Jennifer Santos is currently the Principal Director for Strategic Initiatives at Draper. Jennifer brings more than 25 years of national security leadership experience, having served as a tri-sector leader, across the executive branch, legislative branch, and industry. Jennifer is also adjunct professor at the

Defense Acquisition University and teaches at the National Defense University.

Most recently, Jennifer served as the naval research and development investment executive for the Department of the Navy, responsible for leading the creation of an investment strategy across multiple technology sectors. Previously, Jennifer served as the Deputy Assistant Secretary of Defense for Industrial Policy, responsible for executing the defense production act, serving on the committee for foreign investment in the United States, and leading other industrial base investments.

Earlier in her career, Jennifer served as vice president for Air Force and DoD innovation at consulting firm Cypress International; as a professional staff member on the United States Senate Appropriations Committee Subcommittee on Defense; and in a finance and acquisitions role in the Department of the Air Force.

Jennifer holds a Bachelor of Science in mathematics from Wheeling Jesuit University and a Master of Business Administration in aerospace from the University of Tennessee-Knoxville.



Arun Seraphin

Commission Biography



***Appointed by the Honorable Charles Schumer,
Majority Leader of the United States Senate***

Dr. Arun Seraphin is the Deputy Director of the Emerging Technologies Institute at the National Defense Industrial Association. In this role, he helps lead a nonpartisan institute focused on technologies that are critical to the future of national defense and provides research and analyses to inform the development and integration of emerging technologies and policies to support defense missions.

Between 2014 and 2021, Dr. Seraphin was a Professional Staff Member with the United States Senate Committee on Armed Services. His areas of responsibility included acquisition policy, funding and policies for the Department of Defense's science and technology programs and information technology systems, technology transition issues, defense laboratories and test ranges, Small Business Innovation Research program, manufacturing programs, test and evaluation programs, and Pentagon management issues. He rejoined the committee staff in 2014, after previously serving there between 2001 and 2010.

From 2010 to 2014, Dr. Seraphin served as the Principal Assistant Director for National Security and International Affairs at the White House Office of Science and Technology Policy (OSTP). During this time, he both led (in an Acting capacity) and served as the deputy director of the OSTP National Security and International Affairs division. He was on detail to OSTP from the Defense Advanced Research Projects Agency (DARPA) where he was the Special Assistant for Policy Initiatives to the Director of DARPA. Dr. Seraphin has also worked on the United States House of Representatives Committee on Science's Subcommittee on Research and at the Institute for Defense Analyses.

Dr. Seraphin holds a Bachelor of Arts in American Government and a Bachelor of Engineering in Engineering Science from Stony Brook University. He also holds a Doctor of Philosophy in electronic materials from the Massachusetts Institute of Technology.



Raj Shah

Commission Biography



Appointed by the Honorable Mike Rogers, then Ranking Member of the House Armed Services Committee

Mr. Raj Shah is the co-founder and chairman of Resilience, a cyber-security start-up, and managing partner for Shield Capital. Shah also serves as an F-16 pilot in the US Air Force, Air National Guard and has completed multiple combat deployments. Previously, Shah was the Director of the Pentagon's Defense Innovation

Unit Experimental (DIUx), appointed and reported directly to then-Secretary of Defense Ash Carter. Shah led DIUx in its efforts to strengthen U.S. armed forces through contractual and cultural bridges between Silicon Valley and the Pentagon.

Shah was also previously senior director of strategy at Palo Alto Networks, which acquired Morta Security, where he was chief executive officer and co-founder. He also served as a consultant with McKinsey & Company.

Shah holds a Bachelor of Arts from Princeton University and a Master of Business Administration from the Wharton School at the University of Pennsylvania.

