



INSTITUTE FOR DEFENSE ANALYSES

**Planning, Programming, and Budgeting
System (PPBS)/Multi-year Programming
Reading Guide**

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Executive Summary

This paper provides the results of an Institute for Defense Analyses (IDA) study to compile a reading guide addressing defense Planning, Programming, and Budgeting Systems (PPBS)/multi-year programming practices worldwide. The work supports a Department of Defense (DOD) program entitled Defense Resource Management Studies (DRMS) that for more than fifteen years (since the early 1990s) has assisted more than thirty U.S. security partners around the world in improving their defense resource management capabilities. The primary uses of this Reading Guide are to:

- Support IDA DRMS follow-on work in developing a comprehensive, analytically-based compilation of “international best practices” for Defense Resource Management.
- Provide IDA DRMS country assistance teams with up-to-date reference information for their background and use in supporting nations in developing improved resource management practices.
- Provide defense and security officials in countries currently engaged in DRMS programs or that may undertake DRMS programs in the future with an authoritative collection of information that will enable them to improve their understanding of defense resource management.
- Provide the U.S. and international defense resource management and defense analysis communities with an up-to-date baseline compendium of information sources to support a wide range of research.

Types of information sources identified and reviewed for this Reading Guide included – among others – books, journals, periodicals, articles, documents (published, unpublished, and some out-of-print), and websites. In developing the list of publications, the IDA study team’s objective was to be *quite selective*, i.e., to incorporate the *most pertinent and useful* U.S., non-U.S., and international publications. We were *not* seeking to compile an all-inclusive collection of all or most of the publications on the subject.

Since the principal use of this Reading Guide is to support development of a comprehensive code of international best practices for Defense Resource Management, a key objective of our search was to identify material that discusses the fundamental concepts, principles, and practices of PPBS/multi-year programming—as they were originally established and as they have evolved over the years. Of particular interest was material that explains and/or provides insights on:

1. Events that led to the discovery or adoption of those principles and practices (i.e., what were the basic problems that they were intended to address);
2. The fundamental rationale for each principle, concept, and practice; and
3. Circumstances and factors that promoted successful implementation of PPBS/multi-year programming practices, as well as those that contributed to implementation failure. In addition, we gave priority to locating publications that contained compilations of best practices addressing the topics of interest in the Reading Guide.

For the initial document search, the IDA study team conducted research in at least four dimensions. First, we performed an extensive, keyword-based, literature search in online journal databases and library catalogs; consulted relevant academic websites and book reviews; and undertook Internet research and visited U.S. Government (USG), foreign government (e.g., United Kingdom, Australia), and non-governmental organization and transnational organization websites. Second, we engaged in liaison with resource professionals located in various organizations, ranging from Presidential libraries to the U.S. Army Warfare School. Third, we consulted existing bibliographies, along with collections of relevant websites. Fourth, we consulted selected PPBS/multi-year programming experts and practitioners in the United States and selected foreign countries.

Principal selection criteria used in screening the collected documents included:

- Extent to which publications address topics of interest to this project; e.g., principles, concepts, practices of PPBS/multi-year programming and clear explanations of basic rationale for principles, concepts, and practices
- Credentials and qualifications of the author
- Quality and clarity of the writing
- Accuracy of the material (e.g., free of blatant, substantive errors)

For the publications in this Reading Guide, the IDA study team developed “annotated” citations: i.e., brief commentaries that provide bibliographic information (author’s name, document title, publisher, etc.); details regarding the author’s credentials and purpose of the publication; a short description and evaluation of the contents; and recommendations regarding the publication’s utility to potential readers. The IDA study team offers information regarding the user-friendliness of the document and guidance on portion(s) of the document that would be most relevant to typical users of the Reading Guide. To the maximum extent possible, our objective in these commentaries was to convey the essence of a publication, so readers can assess whether the publication suits their needs.

For ease of use, the IDA study team divided the publications included in this Reading Guide into seven groups.

- **Group A: Planning, Programming, Budgeting System (PPBS)/Multi-year Programming Overall with Special Focus on Programming.** The publications in this group provide readers with an overview and introduction (for novices) to or refresher (for experts) on the topic of PPBS/multi-year programming. Group A also serves as a basic reference on this topic for all users of the Reading Guide.
- **Group B: History.** The publications in this group focus on various aspects of the history of PPBS/multi-year programming. The order of the documents in this group is generally chronological.
- **Group C: Individual Components of PPBS.** This group addresses publications focusing on one particular component of PPBS/multi-year programming. Examples of individual components include: planning (national objectives, national strategy, threat assessments, etc.), capability analysis, acquisition analysis, cost analysis, and systems analysis/cost-effectiveness analysis.
- **Group D: Best Practices.** This group includes best practices publications addressing PPBS/multi-year programming and fiscal transparency in public expenditures and related topics.
- **Group E: Critiques.** This group comprises critiques and reviews of defense PPBS/multi-year programming.
- **Group F: Open Source Defense Establishment Publications.** This group includes examples of open source defense resource management-related documents typically published by countries. The documents listed here are intended to indicate the format and subject matter typically addressed in such documents and serve as a model for countries that wish to develop similar publications. The IDA study team solicits readers' recommendations on publications that should be added to this group in future editions of the Reading Guide.
- **Group G: Country-specific.** This group of publications addresses the experiences of individual nations regarding PPBS/multi-year programming and related topics. The documents in this group have received less screening and review than those in the other groups, and are listed with basic bibliographic information (author, title, publisher, etc.), but without annotated citations.

The IDA study team's initial document search yielded more than 185 publications. Of that total, our subsequent screening and review identified 35 percent that were ultimately included in this Reading Guide—about 20 percent as annotated citation entries (Groups A, B, C, D, E, and F) and just under 15 percent as country-specific publications for which we have provided bibliographic information only (Group G). Regarding substance and content, we identified and obtained authoritative and high quality publications that meet the criteria and objectives established for this project.

Notwithstanding the IDA study team's efforts to locate the best publications available for all of the topics of interest in this Reading Guide, we cannot be absolutely sure that we did not miss some important material. Also, we recognize that, over time, as new publications addressing topics of interest are released, this Reading Guide will gradually become dated. Therefore, it is our intention to treat the Reading Guide as a "living document," which will be updated periodically to incorporate new publications and older publications we may have missed during the development of this first edition. To assist us in this undertaking, we solicit comments from users on publications that should be considered for future editions.

Readers are encouraged to send requests for this publication and changes to:

Strategy, Forces, and Resources Division
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Institute for Defense Analyses
4850 Mark Center Drive
Alexandria, VA 22311

readingguide@ida.org

Other Defense Resource Management Studies (DRMS) Publications

This paper, *Planning, Programming, and Budgeting System (PPBS)/Multi-Year Programming Reading Guide*, represents only a portion of the work that IDA has pursued with the Department of Defense regarding Defense Resource Management Studies (DRMS). The following publications document other aspects of IDA's work in this area.

Best Practices in Defense Resource Management, IDA Document D-4137. C. Vance Gordon, Wade P. Hinkle. Alexandria, VA: Institute for Defense Analyses. [To be published].

Defense Resource Management Studies (DRMS): Introduction to Capability and Acquisition Planning Processes, IDA Document D-4021. Mark E. Tillman, Alfred H. Gollwitzer, Gregory H. Parlier, Charles V. Fletcher, Wade P. Hinkle. Alexandria, VA: Institute for Defense Analyses. August, 2010.

Contents

1. Overview	1
Organization	1
Defense Resource Management Studies (DRMS) Program.....	2
Reading Guide Project.....	5
Intended Uses of the Reading Guide	6
Terminology	7
Recommended Changes	7
2. Methodology and Results	9
Methodology.....	9
Publications by Group	11
Summary of Results	13
3. Reading Guide	15
Group A: Planning, Programming, and Budgeting System (PPBS) / Multi-Year Programming Overall with Special Focus on Programming.....	16
Group B: History	25
Group C: Individual Components of Planning, Programming, and Budgeting System (PPBS)	30
Group D: Best Practices	35
Group E: Critiques.....	43
Group F: Open Source Defense Establishment Publications	48
Group G: Country-Specific	50

Appendices

A. Publications by Major Functional Topics	A-1
B. Publications by Author.....	B-1
C. Publications by Title.....	C-1
D. Abbreviations	D-1
E. Glossary	E-1

1. Overview

This paper provides the results of an Institute for Defense Analyses (IDA) study to compile a Reading Guide that addresses defense Planning, Programming, and Budgeting Systems (PPBS)/multi-year programming practices worldwide. This work supports a Department of Defense (DOD) program entitled Defense Resource Management Studies (DRMS) that for more than fifteen years (since the early 1990s) has assisted more than thirty U.S. security partners around the world in improving their defense resource management capabilities. One important use of this Reading Guide is to support IDA DRMS follow-on work in developing a comprehensive, analytically-based compilation of “international best practices” for Defense Resource Management.

Organization

This paper is organized into three chapters and five appendices.

Chapter 1, “Overview,” discusses the objectives of the work described in this paper, provides background on the Defense Resource Management Studies (DRMS) program, and addresses the rationale for the Reading Guide study and its intended uses and terminology.

Chapter 2, “Methodology and Results,” describes the approach the IDA study team used to develop this Reading Guide, summarizes the results, discusses observations and insights, and provides the plans for soliciting comments from users and developing periodic updates that will maintain this material as a “living document.”

Chapter 3, “Reading Guide,” contains the reading guide itself, which is composed of annotated citations for each publication selected for inclusion, and is divided into seven groups.

Appendix A contains a matrix display depicting major PPBS-related functional topics (e.g., planning, programming, systems analysis) and which of these topics are substantively addressed in the publications selected for this Reading Guide.

Appendices B and C list the publications alphabetically by author (Appendix B) and by title (Appendix C).

Appendices D and E, respectively, list abbreviations and contain a glossary.

Defense Resource Management Studies (DRMS) Program

The Defense Resource Management Studies program contributes to a broader U.S. bilateral program with countries worldwide aimed at strengthening host country defense resource management practices. The Office of the Under Secretary of Defense for Policy (OUSD (P)) and the Office of the Secretary of Defense, (Program Analysis and Evaluation) (OSD (PA&E)) (recently reorganized and renamed Cost Assessment and Program Evaluation (CAPE)) established the Defense Resource Management Studies program in the early 1990s. Its goal is to help American security partners increase their military capabilities through improved management of defense resources.

The program has three primary objectives:

- Assist key security partners in meeting security challenges through more effective and efficient resource management practices.
- Strengthen and enhance the defense linkages between the United States and its partners through professional exchanges at the staff and senior levels.
- Enhance transparency and accountability in partner countries through appropriate management and decision-making processes.

Origin of DRMS

The DRMS program evolved from a request for U.S. assistance in 1990 from the Egyptian Ministry of Defense. OSD (PA&E) was asked by OUSD(P) to develop analytic techniques to assist the Egyptians in formulating an affordable multi-year plan for defense capabilities in light of the significant U.S. security assistance program. Shortly after the work in Egypt concluded, the North Atlantic Treaty Organization (NATO) asked its aspirant members in Eastern Europe to improve their capacities for defense resource management. In the early 1990s, OSD (PA&E) was asked to build on its Egyptian experience in devising ways to assist the NATO effort. Over the next decade, DRMS teams worked with counterparts in all of the new NATO member countries and in all of the Partnership for Peace (PfP) member countries except for Russia and Belarus. The program was subsequently extended to include U.S. security partners in other regions of the world. In total, IDA DRMS teams have conducted programs in thirty-nine countries in Europe, Asia, the Middle East, and Latin America.

How Defense Resource Management Studies Are Conducted

Each country's needs with respect to resource management are unique. Practices used in one place cannot transfer in cookie-cutter fashion to another. In particular, the Planning, Programming, Budgeting, and Execution System (PPBES) as practiced in the United States is complex, staff-intensive, and, as objective as intentions may be, decisions are often and ultimately political compromises that can be difficult to justify otherwise. DRMS, therefore, adapts the principles used in U.S. defense resource

management to the scale and situation of the host nation. These same principles are utilized in other defense ministries that employ modern management practices, and are also advocated by many international institutions that specialize in public resource management.

The DRMS program continually assesses the lessons DRMS country teams have learned from experience in working with host nations. IDA has synthesized these lessons learned into a “standard” methodology, which is complemented by materials that support work in new countries. A modular concept provides a four-phase, building block approach to management reform. The four phases are:

1. **Assessment:** A DRMS country program typically begins with a detailed assessment of the host country’s current approach, including force, resource, and budget planning activities to document how well the existing system functions and identify opportunities for improvement.
2. **Preparation and Skill-Building:** The next phase focuses on suggestions for improving existing systems and procedures while concurrently preparing the host country to implement new management processes and procedures. A critical part of this phase involves identifying the personnel and organizational realignment needed to implement the new processes, and assisting in development of specialized skills and information systems.
3. **Implementation:** The host country creates its first resource-constrained, multi-year program and budget using the new processes and procedures. The host country creates or adjusts management and implementation directives to align with necessary adjustments.
4. **Sustainment:** Finally, a sustainment effort supports institutionalization of the defense reform effort, primarily from an advisory role.

The duration of a full DRMS program with a host nation, encompassing all four phases shown above, will vary from country to country, but notionally could be on the order of three years or more. (See Figure 1 for a notional timeline.)

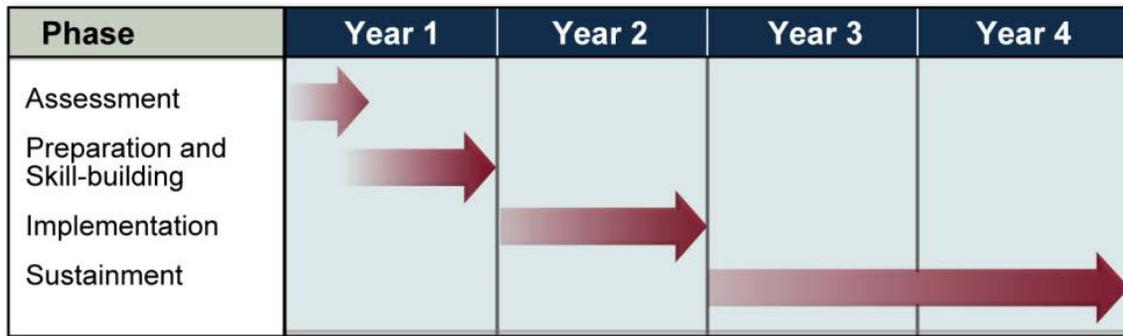


Figure 1. Modular Approach Time Line

A complete set of supporting materials has been developed to present concepts and principles common to effective defense planning as it is practiced in many countries. The materials illustrate the steps needed in an integrated process from national-level policy-making through submission of the annual budget request. The materials consist of separate “modular” packages that include concept briefings, seminar-like skill-building exercises, and assessment questionnaires. They are complemented by computer-assisted simulations and by skill-building analytic seminars.

Together, the materials are used to introduce concepts, assist the host country in exploring how best to design its internal management and decision-making process, build the staff skills necessary to implement the system, and begin analyzing the real-world resource issues confronting the host country military and its budget. The modular approach is structured so that a host country need not commit itself at the outset to devising and implementing a completely revised management process. The host country can use results from the first two phases to determine the desirability and scope of such “process re-engineering,” or simply elect to make a more targeted set of improvements.

In some countries, DRMS work is constrained in scope from the outset. These projects are shorter in duration (typically about six months) and are centered on introduction of modern management concepts, skill-building, and demonstration of techniques. They can involve seminars, workshops, and staff exercises using materials adapted from the standard DRMS “modular” package, or off-the-shelf materials that previous DRMS teams have developed on specialized topics. Shorter-duration visits can also be used to assist host countries in completing specific studies of resource issues or to create specialized spreadsheet tools for analysis of issues.

All the DRMS materials are designed to be used either early in the host country engagement in order to present broad concepts necessary to help leaders understand the benefits of adopting these practices, or later, after a country has decided to implement these practices, in order to better inform staffs on specific process steps and analyses. Further, the materials offer a balance between broad concepts and the theoretical underpinnings of resource management, and drills and practice. The latter focus on more specifics and, arguably, may be more immediately useful for staffs in order to more fully appreciate roles and workloads.

Throughout their engagements, the DRMS teams are careful to not press a host country into adopting U.S. practices or to adopt a U.S. Government policy position. Instead the teams suggest a set of international best practices. These practices represent what has worked best from DRMS program experiences in more than thirty different countries.

Products Typically Used by DRMS Country Teams

Resource management in many countries is centered on the well-known PPBES process flow, originally developed in the early 1960s under U.S. Secretary of Defense Robert S. McNamara (January 21, 1961 – February 29, 1968). In many countries, work on a core and improved PPB system begins first. This was the case for countries that were initially the focus of IDA's DRMS efforts (NATO expansion countries). To support this work, the DRMS program developed its first teaching simulation as the instructional vehicle to demonstrate possible improvements in resource management.

Once a host country, with DRMS team assistance, has determined the types of improvements it desires in its resource management process, the DRMS team assists in the development of a work plan to introduce those improvements in a way that is culturally sensitive and most likely to produce desired results in the project's timeframe. The work plan helps to achieve these common, essential objectives:

1. **Building Know-How:** Improving the skills and introducing tools needed for sound practices.
2. **Organizing for Success:** Thinking through shifts in office organization, rules, and functions that are likely to result from the improvements desired.
3. **Developing Products and Obtaining Decisions:** Formulating recommendations and linking new analytic products to improvements in senior-level decision making processes.

To assist in the accomplishment of these objectives, DRMS teams generally use three types of products (shown below), depending on the stated need and the lead time associated with the product (part of the approved work plan).

1. **Seminars:** Developed specifically for a country or adapted from a generic product and tailored for a country's specific needs. Generally, seminar development involves longer lead times are necessary as preparation and coordination can be extensive.
2. **Opportunity Instruction:** developed in-country to address specific time-sensitive questions. These classes can be formal, but more often, are informal and ad hoc. Generally, these needs are not well known in advance and lead times will be short and involve intense, overnight preparation.
3. **Real-World Document Preparation:** Developed both in- and out-of-country to support a host country's actual implementation of DRMS. This process is continuous and teams can be drawn into these activities with little notice.

Reading Guide Project

Given the significance of the DRMS program to U.S. national security interests and the importance of ensuring that the United States is able to maintain the high value and

success of the DRMS program, the DOD sponsor and IDA have agreed that it would be beneficial to revalidate the basic principles and concepts that underpin DRMS work with allied nations. The DRMS program material has, heretofore, been periodically updated on an ad hoc basis to take into account new developments in international and U.S. resource management. DOD and IDA believe that, in addition to the ad hoc updates, it is important to undertake a fundamental top-to-bottom review of all of the principles, concepts, practices, and processes that serve as the foundation for DRMS. Key components of this review include:

1. Developing this Reading Guide on defense PPBS/multi-year programming practices worldwide; and
2. Preparing a comprehensive code of best practices addressing Defense Resource Management.

The initial edition of the Reading Guide is the subject of this IDA paper.

Intended Uses of the Reading Guide

This Reading Guide is primarily intended to:

- Support IDA follow-on work in developing an analytically-based understanding of the concept of “international best practices” for defense resource management worldwide and serve as a basic up-to-date reference and data source for the development of a comprehensive compilation of those practices.
- Provide DRMS country teams with up-to-date reference information for their background and use in assisting nations in developing improved resource management practices.
- Provide defense and security officials in countries currently engaged in DRMS programs or that may undertake DRMS programs in the future with an authoritative collection of information that will enable them to improve their understanding of defense resource management from an international perspective.
- Provide the United States and international defense resource management and defense analysis communities with an up-to-date baseline compendium of information sources on defense PPBS/multi-year programming practices worldwide. The material in this Reading Guide could generally support a wide range of research relating to resource management issues, but may require expansion or modification to fully address specific needs, depending on the research objectives.

Terminology

In the course of the work, the IDA study team encountered—not surprisingly—a multiplicity of terms that have been used to describe the general subject of this Reading Guide. These terms include, among others:

- Planning, Programming, and Budgeting System (PPBS)
- Planning, Programming, Budgeting, and Execution System (PPBES)
- Program budget
- Program budgeting
- Modern methods of resource management
- Multi-annual programming
- Multi-year programming
- Defense Resource Management Studies (DRMS)

In the interest of simplicity and brevity, we have adopted the term, “PPBS/multi-year programming,” to represent the general subject matter addressed in this Reading Guide, including all of the terminology variations mentioned above.

Recommended Changes

This paper captures the IDA study team’s recommended compilation of publications regarding defense resource management. It is helpful to know about organizations that are actively engaged in DRMS-like activities (advising, mentoring, training, and educating Ministries or Departments of Defense on resource management processes and reform), both so that we can learn from those experiences and so those organizations may benefit from changes to this publication.

Notwithstanding the IDA study team’s efforts to locate the best publications available for all of the topics of interest in this Reading Guide, we cannot be absolutely sure that we did not miss some important material. Also, we recognize that over time as new publications addressing topics of interest are released, this Reading Guide will gradually become dated and less relevant. Therefore, it is our intention to treat this Reading Guide as a “living document.” By this we mean that we intend to update it periodically to incorporate new publications and older publications we may have missed during the development of this first edition. To assist us in this undertaking, we solicit comments from readers regarding: recommendations on publications that should be considered for inclusion in future editions, documents included in this paper that proved not to be helpful, errors in the contents of this edition, recommendations for enhancing the utility of this paper, questions regarding locating documents identified in this paper, and any other issues and concerns.

Readers are encouraged to send requests for this publication and changes to:

Strategy, Forces, and Resources Division

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2. Methodology and Results

This chapter provides details on the methodology (including how the IDA study team conducted the initial document search, screened those documents, developed the annotated citations, and grouped the selected publications); summarizes, and provides insights on, the results of the study; and discusses plans for future updates and establishing this paper as a “living document.”

Methodology

This study primarily entailed compiling a list of sources of information about defense PPBS/multi-year programming practices worldwide. Types of information sources identified and reviewed include, among others, books, journals, periodicals, articles, documents (published, unpublished and some out-of-print), and websites. In developing the list of publications to be addressed in this Reading Guide, the IDA study team’s objective was to be *quite selective*, i.e., to incorporate the *most pertinent and useful* U.S., non-U.S., and international (e.g., Organization for Economic Co-operation and Development (OECD), World Bank, International Monetary Fund (IMF)) publications. We were not seeking to compile an all-inclusive collection of all or most of the literature on the subject.

The document search encompassed a variety of related topics including planning, programming, budgeting, cost-effectiveness analysis, and systems analysis, as well as supporting components, including capability and acquisition planning and analysis, and related topics (e.g., transparency in government expenditures). Since the principal use of this Reading Guide is to support development of a comprehensive code of international best practices for Defense Resource Management, a key objective of the IDA study team’s search was to identify material that discusses the fundamental concepts, principles, and practices of PPBS/multi-year programming worldwide—as they were originally established and as they have evolved over the years. Of particular interest was to identify material that explains and/or provides insights on:

- Events that led to the discovery or adoption of those principles and practices (i.e., what were the basic problems that they were intended to address);
- The fundamental rationale or logic for each principle, concept, and practice; and

- Circumstances and factors that promoted successful implementation of PPBS/multi-year programming practices, as well as those that contributed to implementation failure.

In addition, the IDA study team gave priority to locating publications that contained compilations of best practices addressing the topics of interest in the Reading Guide. To ensure an objective representation of views and opinions—both the pros and cons—regarding PPBS/multi-year programming practices worldwide, we sought to include a representation of publications providing critiques and assessments. Because we wanted to be able to disseminate the Reading Guide widely, we excluded from our review any material that was sensitive and/or not open-source. Due to time and resource constraints, we limited our review to English-language publications. We hope to expand our coverage to include non-English publications in future editions.

Initial Document Search

For the initial document search, the IDA study team conducted research in at least four dimensions. First, we performed an extensive, keyword-based, literature search in online journal databases and library catalogs. We also consulted relevant academic websites and book reviews in such journals as the *American Political Science Review* and *Public Budgeting and Finance*. In order to uncover publications and articles not found in the journal databases, we undertook Internet research and visited U.S. Government, foreign government (e.g., United Kingdom, Australia), and non-governmental organization/transnational organization websites (e.g., Geneva Center for the Democratic Control of Armed Forces, RAND Corporation, IMF, World Bank, and OECD). Second, we engaged in liaison with resource professionals located in various organizations, ranging from Presidential libraries to the U.S. Army Warfare School. Third, we consulted existing bibliographies, along with collections of relevant websites. Fourth, we consulted selected PPBS/multi-year programming experts and practitioners in the United States and foreign countries.

Screening of Documents

The principal selection criteria included:

- Extent to which publications address topics of greatest interest to this project; e.g.,
 - Principles, concepts, practices of PPBS/multi-year programming
 - Explanations of circumstances that led to discovery and adoption of those principles, concepts, practices
 - Clear explanations of basic rationale for principles, concepts, practices

- Factors that have contributed to or inhibited the implementation of defense PPBS/multi-year programming
- Credentials and qualifications of the author
- Quality and clarity of the writing
- Accuracy of the material (e.g., free of blatant, substantive errors)

Annotated Citations

For the publications identified in this Reading Guide, the IDA study team developed “annotated” citations; i.e., brief commentaries that provide bibliographic information (author’s name, document title, publisher, date); details, where appropriate, regarding the author’s credentials and purpose of the publication; a short description and evaluation of the contents; and an evaluation of the information source and its utility to potential readers. The IDA study team offers information regarding the user-friendliness of the document and guidance on portion(s) of the document that would be most relevant to users of the Reading Guide. To the maximum extent possible, our objective in these commentaries was to convey the essence of a publication, so readers can assess whether the publication suits their needs.

Publications by Group

The IDA study team divided the entries in the Reading Guide into seven groups and has displayed them in a reading sequence that it believes will best enable users to review, comprehend, and efficiently use the material in this paper.

Group A: Planning, Programming, Budgeting System (PPBS) / Multi-Year Programming Overall with Special Focus on Programming

Publications addressing defense PPBS/multi-year programming overall, many of which provide special emphasis on the “programming” component of PPBS. “Programming” is one of two fundamental characteristics that set PPBS/multi-year programming apart from traditional budgeting and all other resource management approaches. The other characteristic is “systems analysis.” The publications in this group provide readers with an overview and introduction (for novices) to or refresher (for experts) on the topic of PPBS/multi-year programming. Group A also serves as a basic reference on this topic for all users. The annotated citations in this group are presented in a reading sequence that the IDA study team believes will be most meaningful to users of this Reading Guide.

Group B: History

Publications focusing on various aspects of the history of PPBS/multi-year programming. Most of the documents in this group are in a timeline format. The order of the documents in this group is generally chronological; i.e., those primarily addressing

the earliest period of history are at the beginning and those addressing the latest periods of history are at the end.

Group C: Individual Components of Planning, Programming, Budgeting System (PPBS)

Publications focusing on one particular component of PPBS/multi-year programming. The documents in this group address individual components, including: planning (national objectives, national strategy, threat assessments, etc.), capability planning and analysis, acquisition planning and analysis, cost analysis, and systems analysis/cost-effectiveness analysis. The order of the documents in this group reflects the order of components listed above. (Note that programming is extensively addressed in most of the documents in Group A. Budgeting and transparency are comprehensively discussed in several of the documents in Group D (Best Practices)).

Group D: Best Practices

Best practices publications addressing PPBS/multi-year programming/fiscal transparency in public expenditures and related topics. The publications are generally arranged with the most comprehensive documents by major international organizations at the beginning and less comprehensive documents at the end.

Group E: Critiques

Critiques and reviews of defense PPBS/multi-year programming. The publications are listed in chronological order based on publication date.

Group F: Open Source Defense Establishment Publications

Examples of open-source defense resource management-related documents typically published by countries. The documents listed here are intended to indicate the format and subject matter typically addressed in such open source documents. The current contents of this group are mainly intended to illustrate the concept for this group. The IDA study team solicits readers' recommendations on other documents that would be appropriate examples for inclusion in future editions of this Reading Guide.

Group G: Country-specific

Publications addressing the experiences of individual countries regarding PPBS/multi-year programming and related topics. The publications are presented in alphabetical order by country name. The documents in this group have received less screening and review than those in the other groups, and thus are listed with bibliographic information (author, title, publisher, etc.), but without annotations.

Appendix A: Publications by Major Functional Topics

Appendix A identifies nine major functional topics and indicates whether those topics are substantively addressed in the publications (excluding Category G, Country-specific publications) addressed in this Reading Guide. The functional topics include:

- PPBS/multi-year programming overall
- Planning
- Programming
- Budgeting
- Execution/performance review
- Systems analysis/cost effectiveness analysis
- Costing/cost analysis
- Capability planning and analysis/acquisition planning and analysis
- Transparency/Combating Corruption

Summary of Results

Overview

The IDA study team’s initial document search yielded more than 185 publications. Of that total, our subsequent screening and review identified 35 percent that were ultimately included in this Reading Guide—about 20 percent as annotated citation entries (Group A, B, C, D, E, and F) and just under 15 percent as country-specific publications for which we have provided bibliographic information only (Group G).

The publications addressed in this Reading Guide vary widely in several respects. For example, in terms of size, the publications range from two to three pages in length to more than 1,200 pages; in terms of availability, they range from freely available over the Internet to two publications (the Congressional reports in Group A) we were told may be the only known copies in existence, other than in the Library of Congress. (For these and other relatively rare or hard to locate documents, we are exploring approaches for making them accessible to users of this Reading Guide.) Regarding substance and content, we identified and obtained authoritative and high quality publications that meet the criteria and objectives established for this study, as outlined in the methodology discussion. However, since there is no way to know at this stage whether we may have missed some important items, we are soliciting readers’ comments and plan to issue periodic updates that reflect both reader input and the results of our own follow-on work. Refer to Chapter 1, “Recommended Changes” for additional information.

Insights and Observations

Given the relatively high interest that has existed over the years regarding the subject matter of this study and the relatively large number of publications that have been generated about it, the IDA study team had expected to find at least a few comprehensive, published, stand-alone bibliographies and annotated bibliographies that could serve as a baseline for this project, or that might even have indicated that there was no need for yet another bibliography on this general subject. As it turned out, we were unable to locate any comprehensive, published stand-alone bibliographies on the topic of defense PPBS, defense program budgeting, defense resource management, or other directly related topics.

It was remarkable to discover how well some of the early “classic” publications on defense PPBS/multi-year programming—published in the 1960s and 1970s—have stood the test of time and remained not just relevant over the years, but, arguably, in a number of instances, the best material currently available on the topics they were addressing. Prime examples include Charles Hitch’s *Decision-Making for Defense* and Alain Enthoven’s *How Much is Enough*, but there are many more. As a result, the proportion of early works selected for incorporation in the Reading Guide is quite high.

3. Reading Guide

This chapter contains annotated citations for each of the selected publications. The entries employ the following multi-paragraph format:

First paragraph: Provides provenance and credentials of the author and, as appropriate, the purpose of the publication.

Middle paragraph(s): Conveys the essence of the principal contents.

Last paragraph: Comments on whether and how the publication would be of use to particular categories of users.

The IDA study team divided the entries in the Reading Guide into seven groups, which are defined in Chapter 2 and summarized here.

Group A: Planning, Programming, Budgeting System (PPBS) / Multi-Year Programming Overall with Special Focus on Programming

Group B: History

Group C: Individual Components of PPBS

Group D: Best Practices

Group E: Critiques

Group F: Open Source Defense Establishment Publications

Group G: Country-specific

Group A: Planning, Programming, and Budgeting System (PPBS) / Multi-Year Programming Overall with Special Focus on Programming

Group A includes publications addressing defense PPBS/multi-year programming overall, many of which provide special emphasis on the “programming” component of PPBS.

“Programming” is one of two fundamental characteristics that set PPBS/multi-year programming apart from traditional budgeting and all other resource-management approaches. (The other characteristic is “systems analysis.”) The collection of publications in Group A is intended to provide readers with an overview and introduction (for novices) to or refresher (for experts) on the topic of PPBS/multi-year programming, and to serve as a basic reference on this topic for all readers. The annotated citations in this group are presented in a reading sequence that the IDA study team believes will be most meaningful to the users of this guide.

Hitch, Charles J. *Decision-Making for Defense*. Berkeley and Los Angeles, CA: University of California Press, 1965.

Charles J. Hitch is widely acknowledged as “the father of PPBS,” given his role as the main architect of the PPBS process and a principal practitioner, as the Assistant Secretary of Defense (Comptroller) in DOD during the early to mid-1960s. This classic volume consists of four lectures Hitch delivered in 1965 providing historical context and explaining the fundamental rationale for the foundation components of PPBS.

The first lecture addresses the evolution—from 1789 through 1960—of what Hitch refers to as the “defense problem” and documents why DOD needed to make fundamental improvements in its decision-making capabilities in the early 1960s. The second lecture describes the purpose, function, and techniques of “programming”—linking strategic goals to budgets. (A good summary description of programming and the problem it was intended to address is contained on pages 25-29 and 32-39.) The third lecture addresses how the techniques of systems analysis and operations research (terms Hitch uses interchangeably) were used to address defense decision-making problems. The fourth lecture evaluates PPBS innovations and discusses unresolved problems. Hitch endeavors to address prevalent myths and misunderstandings regarding PPBS and systems analysis, e.g., that systems analysis assessments will inevitably result in decisions to procure the cheapest, cut-rate weapons and thereby put U.S. forces at a disadvantage in wartime. His lucid myth rebuttals and explanations of the rationale for PPBS components draw on examples from everyday life and historical references.

This document should be read in its entirety and retained as a basic reference by PPBS/defense resource management researchers and

instructors and those involved in assisting nations or organizations in improving resource management capabilities. It will be a valuable resource for those engaged in assessment or development of PPBS/defense resource management best practices.

Enthoven, Alain C., and K. Wayne Smith. *How Much is Enough? Shaping the Defense Program, 1961-1969*. New York: Harper & Row, Publishers, Inc., 1971.

Alain Enthoven was a pioneer and early practitioner of PPBS, who along with his mentor, Charles Hitch, established the foundations for the modern-day defense PPBS process. From 1961 through 1969 Enthoven served in a variety of key positions within the Office of the Secretary of Defense, including Assistant Secretary of Defense for Systems Analysis. K. Wayne Smith served as Special Assistant to the Assistant Secretary of Defense (Systems Analysis) during the 1960s and has authored or coauthored multiple publications on systems analysis, planning, and national security affairs. This easy-to-comprehend book—a classic within the defense analysis community—was drafted following Enthoven’s Pentagon assignment. Its intent was to accomplish three objectives: record lessons learned regarding PPBS as it was applied in the 1960s; present the case for an activist Secretary of Defense on program development matters; and enhance understanding of, and support for, using analysis in defense decision making.

Enthoven identifies six fundamental ideas that provided the “intellectual foundation for PPBS” as it functioned during his tenure in the Pentagon: decision making based on explicit criteria of national interest, evaluating needs and costs together, explicitly considering alternatives, actively using an independent analytical staff at the top policy-making levels, using a multi-year force and financial plan that projects into the mid-term future the impacts of current decisions, and conducting open and explicit analysis available to all interested stakeholders. Although *How Much is Enough?* reviews many of the same fundamental PPBS issues discussed by Hitch in *Decision Making for Defense*, these two classics complement each other. Hitch provides historical context for PPBS components and an overview of PPBS work in the Pentagon from the early through mid-sixties. Enthoven provides a more comprehensive and detailed review of systems analysis and PPBS work undertaken by his office throughout the 1960s as well as details on major strategy and program issues addressed by his office during that period.

Those interested in identifying currently applicable PPBS lessons learned and best practices and in acquiring a better understanding of the rationale for key components of modern-day PPBS should focus on Chapter 1 (“Unfinished Business, 1961”), Chapter 2 (“New Concepts and New Tools to Shape the Defense Program”), Chapter 3 (“Why Independent Analysis?”), Chapter 6 (“Yardsticks of Sufficiency”), and Chapter 9 (“Unfinished Business, 1969”). The remaining four chapters will be less

useful for contemporary PPBS/defense resource management work, but of interest to those seeking historical insights. These include Chapters 4 and 5, addressing NATO and nuclear strategy and forces; Chapter 7, discussing three controversial weapon systems programs (the B-70 bomber, the Skybolt missile program, and the TFX/F-111 aircraft); and Chapter 8, dealing with Vietnam War force deployment analyses and related issues.

Novick, David. *Current Practice in Program Budgeting (PPBS)—Analysis and Case Studies Covering Government and Business*. New York: Crane, Russak, 1973.

The editor of this volume—a RAND researcher during the early days of PPBS—has authored multiple publications on program budgeting and related subjects. In the early 1970s, when this book was published, PPBS (or program budgeting, Novick’s preferred term for this subject) was being widely used, or being readied for use, in many Western countries, in state and local governments within the U.S. and some other nations, and in private industry.

Novick’s objective was to draw on the experiences of selected organizations already using program budgeting to provide lessons learned to assist three categories of readers: (1) those interested in potentially implementing program budgeting in their organizations; (2) those in organizations that had already implemented program budgeting and who wanted to enhance their practices and techniques; and (3) educators and their students. The book contains five introductory chapters by Novick providing a well-written, easy-to-comprehend, and highly informative tutorial on program budgeting and its history. The remaining twenty-one chapters—by multiple authors—are case studies on the use of program budgeting in eight national governments, as well as in U.S. state and local governments, two large U.S. corporations, and foreign governments. Since the U.S. Department of Defense’s PPBS efforts were already widely addressed in many books and articles, DOD was not addressed as a case study in this compendium.

The author’s thoughtful tutorial chapters on program budgeting and the mostly-international case studies provide a wealth of information that will be directly useful to those involved in developing PPBS best practices or engaged in assisting nations or organizations in implementing or improving their use of PPBS/multi-year resource management processes. In particular, Novick’s Chapter 2 discussion of “what program budgeting is and is not” and how program budgeting differs from other resource management processes and management practices will serve as an excellent introduction to PPBS/multi-year programming for all readers, particularly those without extensive experience in dealing with these topics. Also likely to be of interest and utility to many readers are: a discussion on how to recruit and develop a PPBS staff—including recommended qualifications of PPBS analysts (Chapter 24); a real-world

illustration of the breakdown of a major program into sub-programs and program elements (Appendix A); and a real-world example of a crosswalk from an output-oriented program budget to a traditional input-oriented line-item budget (Chapter 2).

IDA DRMS Task. *Modular DRMS Concept*. Alexandria, VA: Institute for Defense Analyses (IDA), 2006.

This material consists of a comprehensive set of Microsoft PowerPoint tutorial briefings discussing concepts and principles common to defense multi-year programming as practiced by many countries worldwide. This material was created by the IDA Defense Resource Management Studies (DRMS) staff to support their work in assisting nations worldwide in implementing effective and transparent defense multi-year programming resource management processes.

Three major categories of defense planning are addressed: force planning (identifying the forces and capabilities needed to implement national policy and strategy), resource planning (identifying the best mix of capabilities within anticipated financial limits), and budget planning (translating the completed resource plan into an annual budget request). The entire set of material consists of sixteen briefings designed to reflect an international perspective regarding defense resource management planning. The briefings begin with an introductory presentation that outlines the basic principles and concepts underlying the entire modular concept and includes an easy-to-comprehend “framework” chart depicting major components of the process and how they are interrelated in an integrated process. The remaining briefings address each of those major components, including: national policy, military strategy, operations plans, force plans, assessments, resource forecasts, military advice, defense planning guidance, service programs (i.e., proposed programs submitted by each of the military services and other defense organizations), defense program (the consolidated program for the defense establishment as a whole, developed and based on a review and assessment of the individual service programs), budget guidance, service budget proposals, defense budget request, and government budget request. A fundamental premise of this compendium of briefings is that there is no single best way to design a resource management process. Each country is urged to review the wide range of material in this collection with a view toward determining the specific approach that best meets its particular needs.

This material will serve as an excellent general primer on the topic of multi-year programming and will help users gain familiarity with the major elements and terminology of multi-year resource management, from a non-country-specific perspective.

Sullivan, Raymond E., Jr. *Resource Allocation: The Formal Process*, 8th ed. Newport, RI: U.S. Naval War College, July 1, 2002.

This document provides a comprehensive and easy-to-understand description of three interrelated processes used by DOD for resource allocation and force planning. Primary DOD processes addressed are: the Joint Strategic Planning System (JSPS), the Planning, Programming, and Budgeting System (PPBS), and the Defense Acquisition System (DAS).

This is the eighth edition of this publication, originally created in 1988 with a view toward providing Naval War College graduates with an introduction to U.S. DOD resource management mechanisms. The contents are organized into an overview chapter (Chapter 1) briefly describing the three DOD processes (and the federal budget), four chapters, each of which discusses a DOD process (and the budget), and a synthesis chapter (Chapter 6). The document also includes appendices addressing, among other topics, the resource allocation processes of each of the military services.

Three features of this document are particularly helpful in making the complex topics addressed quite comprehensible to readers. First, each chapter is designed to stand alone, thus enabling the reader to quickly grasp the essence of a given process. Second, the author's graphics are simple and easy to understand. Third, each chapter is organized to address the same six topics for each of the processes. These topics are: Purpose (brief overview of the process), Past (historical context), Process (how elements of the system fit together), People (key players and their roles), Products (key outputs), and Plug-in (how this particular system interacts with the other systems).

This document will serve as a superb basic primer for understanding the interrelationships of the major resource management and force planning processes. Although this publication specifically addresses U.S. DOD resource management processes, the basic principles should be generally understandable by personnel not already intimately familiar with them. Given the utility and practicality of both the format and the organizational structure of this publication, the Naval War College, perhaps in collaboration with other interested organizations, should consider developing an international version of this compendium.

Tagarev, Todor. "Introduction to Program-Based Defense Resource Management." *Connections Quarterly Journal* 5, no. 1 (Spring-Summer 2006): 55-69.

This short essay by Todor Tagarev—an authority on defense resource management and fiscal transparency issues in Eastern and Southeastern Europe—is intended to serve as a primer on program-based defense resource management, and is primarily oriented toward new NATO members and Partnership for Peace (PfP) countries.

Tagarev reviews the basic principles and practices of program-based defense resource management, beginning with a presentation on the fundamental rationale for and benefits of this management approach. Key topics addressed by Tagarev include, among others, the development of defense capabilities (with examples of alternative functional concepts of capability used by NATO and several nations, e.g., the Doctrine, Organization, Training and Education, Material, Leadership, People, and Facilities (DOTMLPF) model used by the United States); development of a defense program structure (also with examples of alternative program structures that have been adopted by selected nations); and approaches for dealing with uncertainty. Tagarev concludes with a short list of major obstacles that have typically been encountered by new NATO and PfP countries in attempting to implement program-based resource management, such as organizational resistance due to “the culture of secrecy.”

Tagarev’s paper will be a valuable reference for experienced resource management personnel. Less-experienced users may find some portions of this paper a bit challenging, given Tagarev’s attempt to cover so much ground in such a relatively short paper.

Hitch, Charles J. “Management Problems of Large Organizations.” *Operations Research* 44, no. 2 (March-April 1996): 257-264.

This is a lecture Charles J. Hitch, the father of PPBS, gave in 1978 addressing management issues he encountered during his service as Assistant Secretary of Defense (Comptroller) within the U.S. Department of Defense (1960-1965) and as President of the University of California (1967-1978).

Hitch compares and contrasts efforts to implement and use PPBS programming and systems analysis in managing those two large public organizations. Even though there were what Hitch describes as “many intriguing similarities” between these two public organizations, the differences that did exist made it quite difficult to apply defense PPBS and systems analysis approaches effectively to budgeting and resource management at the University of California. Hitch identifies and analyzes a number of the factors that he believes account for this difficulty.

Hitch’s analysis should be particularly instructive to officials and analysts interested in applying PPBS and systems analysis to non-defense organizations. Some of his lessons learned should also provide useful insights to those involved in assisting defense establishments worldwide in adopting PPBS and systems analysis in an effort to enhance their resource management capabilities.

Hitch, Charles J. "The Systems Approach to Decision-Making in the Department of Defense and the University of California." Special Conference Issue: Decision-Making, *Operational Research Quarterly* 19 (April 1968): 37-45.

This is one of at least two papers by Charles J. Hitch, the father of PPBS, that provide insights into and perspectives on the implementation of PPBS within both DOD in the early-to-mid 1960s (when he was DOD's Assistant Secretary of Defense (Comptroller)) and within the University of California in the mid-to-late 1960s (when he was president of that institution).

In this paper, Hitch focuses on the following: (1) problems and issues in structuring a program-budget for DOD and the University of California (including creating a major program structure and program element structure) and (2) implications of program budgeting for centralization versus decentralization. With regard to DOD's program budget development, a simple model involving eight or nine major programs and about one thousand program elements worked reasonably well for DOD overall, but its applicability to the force structures of the services was mixed. It fit the U.S. Air Force structure best, was a poor fit for the U.S. Army, and was somewhere in between for the U.S. Navy.

However, DOD's general approach for major programs and program element structure was not directly applicable to the University of California. Hitch notes that, in retrospect, the correct question for the University of California should not have been how to define major programs and program elements, but, rather, how to project future resource requirements in a way that focuses attention on key policy decisions affecting those requirements.

Regarding centralization versus decentralization, Hitch believes that program budgeting does indeed make it possible to achieve a higher degree of centralization, if a senior leader so desires that objective, but that program budgeting neither requires nor leads necessarily to greater centralization. Hitch notes that the trend for the University of California during his tenure was progressive decentralization and argues that a leader with a propensity for delegating decisions to subordinates can still achieve many of the benefits of program budgeting.

This paper will provide useful insights and lessons learned for those involved in assisting nations and organizations in implementing PPBS/modern multi-year resource management processes. One of the most important lessons is that establishing major program and program element structures requires careful evaluation of each nation's or organization's organizational structure and specific needs. Even then, the most workable and practical approach that can be devised and agreed may not be ideal.

Rostker, Bernard, and Lewis Cabe. *Naval Studies Group Proceedings, Conference on the Defense Planning, Programming, and Budgeting System (PPBS): Past, Present, and Future*. Edited by Walter Golman. Alexandria, VA: Center for Naval Analyses, 1982.

This document, compiled by the conference coordinators, contains the proceedings of a major, three-day Center for Naval Analyses (CNA) conference held in 1982 on a broad range of PPBS topics, with special focus on the DOD military services' programming practices.

Two factors provided the primary impetus for this conference: (1) a CNA observation that most examinations of PPBS processes and analysis issues over the years had focused on topics of special interest to the Office of the Secretary of Defense (OSD), as opposed to the military services; and (2) CNA's discovery, while reviewing the Navy's Program Objective Memorandum (POM) development process, that there had been very little sharing of information among the services regarding how programming (POM development, etc.) was actually accomplished. The conference program included: (1) presentations by each of the services on how they conducted programming; (2) service presentations on new programming techniques under development; and (3) discussion panels encompassing past and current DOD senior resource management officials—including those who had originally developed DOD's PPBS process—regarding the history of PPBS, current practices, and the future outlook. Participants included, among others, John Keller, Russell Murray, Phillip Odeen, Ivan Selin, Leonard Sullivan, David Chu, Lawrence Korb, and key programming officials from each of the service programming organizations. This document contains a comprehensive record of the conference, including formal papers, presentation transcripts, and verbatim transcripts or summaries of the panel discussions and question-and-answer sessions.

This document fills a particularly critical void in PPBS literature, given the central importance of programming to the PPBS process and the paucity of information on how this activity is actually accomplished. The lessons learned and insights gleaned from this material should be valuable to defense resource management researchers and those involved in assisting countries in implementing multi-year programming processes in their defense establishments.

United States Senate. Committee on Government Operations. Subcommittee on National Security and International Operations. *Planning-programming-budgeting. Inquiry of the Senate Subcommittee on National Security and International Operations of the Committee on Government Operations*, U.S. Senate. Washington, D.C.: U.S. Government Printing Office, 1970.

This comprehensive (600+ pages) U.S. Senate publication provides the full record of a late-1960s major inquiry by the Government Operations Subcommittee on National Security and International Operations into the DOD PPBS process.

The objective of these hearings—the first major congressional inquiry on the general subject of PPBS—was to examine the pros and cons of using program budgeting and systems analysis methodologies. The inquiry included Senate staff reports and testimony and/or written inputs from senior government officials—e.g., Alain Enthoven (Assistant Secretary of Defense (Systems Analysis)) and James Schlesinger (Acting Deputy Director of the Bureau of the Budget)—as well as from PPBS critics (e.g., Aaron Wildavsky and Vice Admiral Hyman Rickover). Some of the information in this document duplicates material included elsewhere in this Reading Guide. Examples include: Charles Hitch’s “Decision-Making in Large Organizations,” David Novick’s “Origin and History of Program Budgeting,” and Aaron Wildavsky’s “Rescuing Policy Analysis from PPBS.”

This compendium will serve as a rich, comprehensive, and authoritative basic reference document for defense resource management researchers and interested practitioners.

United States Congress. Joint Economic Committee. Subcommittee on Economy in Government. *The Analysis and Evaluation of Public Expenditures: The PPB System; A Compendium of Papers Submitted to the Subcommittee on Economy in Government of the Joint Economic Committee, Congress of the United States.* 3 vols. Washington, D.C.: U.S. Government Printing Office, 1969.

This massive (1200+ pages) three-volume congressional publication contains a collection of papers by a wide range of authors addressing PPBS.

The papers included in this compendium—a total of more than fifty—are intended to stimulate discussion among economists and policymakers on identifying the most effective funding proposals among the many alternatives that are submitted to the Federal Government for consideration. The contents are divided into six parts, each of which addresses one of the following general topics: (1) issues of economics and equity related to making optimal decisions on the appropriate functions of governments; (2) isolating factors that influence the ability of the Federal Government to achieve efficiency in public spending policy; (3) applying economic analysis to public spending; (4) use of PPBS in the Federal Government; (5) appraisal of PPBS and its structure and performance to date; and (6) major issues for policy analysis in each of the primary functional areas of the federal budget.

This compendium will serve as a rich, comprehensive, and authoritative basic reference document for defense resource management researchers and interested practitioners.

Group B: History

Group B includes publications focusing on various aspects of the history of PPBS/multi-year programming.

Most of the documents in this group are in a timeline format. The order of the documents in this group is generally chronological; i.e., those primarily addressing the earliest period of history are at the beginning and those addressing the latest periods of history are generally at the end.

Kraft, Jonathan. "The Evolution of Program Budgeting in the United States Government." *Armed Forces Comptroller* 54, no. 1 (Winter 2009): 40-41.

This brief article is based on a paper submitted by the author—Colonel Jonathan Kraft—in partial fulfillment of his requirement for a master’s degree from the U.S. Army War College.

The author’s objective in this well-researched and fascinating article is to describe the events—extending back to the founding of the republic—that contributed to the establishment of defense PPBS/multi-year programming. Among the factors Kraft cites are: (1) agreement by the Continental Congress that the Federal Government should provide for the defense of the nation; (2) growth in size and complexity of the federal budget, ultimately necessitating consolidating individual government agency budget inputs to Congress into a single executive branch budget submission; (3) use by U.S. industry (as early as the 1920s) of analytically-oriented, program budget-like processes; (4) use of program budget and systems analysis-like approaches in the 1940s by the War Production Board (WPB) for prioritizing production of critical production outputs; (5) use and refinement of program budgeting techniques in the 1950s by the RAND Corporation for defense weapons systems analysis; and (6) adoption of these techniques (then called PPBS) by the Kennedy Administration in the early 1960s for use in developing a multi-year defense program.

Kraft observes that while it is difficult to fully evaluate the advantages and disadvantages of PPBS, it is clear that this resource management approach has continued for more than forty years to serve DOD needs well by consolidating costs across service components, aligning resources to U.S. strategic needs, and providing a forum for the use of analytical techniques for assessing costs and benefits. Kraft concludes with RAND researcher David Novick’s description of PPBS as “potentially the most significant management improvement in the history of American Government.”

This article, which also tracks the modern-day history of PPBS to 2004, provides information and insights that will be of interest and utility to all defense resource management researchers and practitioners. In addition, it should serve as a good historical-context introduction for most users of this Reading Guide.

Novick, David. "The Origin and History of Program Budgeting." RAND Paper P-3427. Santa Monica, CA: RAND, 1966.

This paper contains the verbatim transcript of comments by RAND researcher David Novick on the origins of program budgeting. Novick's discussion was filmed for use in PPBS orientation and training courses sponsored by the Bureau of the Budget and the U.S. Civil Service Commission, both of which supported President Lyndon Johnson's mid-1960s initiative to implement PPBS throughout the Federal Government.

Novick's stated objective is to counter comments he said "have been made from time to time" that apparently sought to undermine support for PPBS in non-Defense government agencies by portraying it as something "brand new" or as "specifically designed for application to the military," and thus presumably not appropriate for other government departments and agencies. Novick notes that program budgeting (his preferred terminology for PPBS) "has a rather ancient and hoary origin and it did not start in the Department of Defense." As evidence, he cites and discusses "two roots" of the program budget concept and methodology: one, in the Federal Government, where program budgeting was introduced in 1942 as part of the wartime control system by the War Production Board (WPB). The other root is in U.S. industry, which included General Motors' introduction of a program budget approach in the early 1920s and the DuPont Chemical Company's use of that resource management technique even earlier. Novick's discussion supports and reinforces a similar commentary by Hitch in *Decision-Making for Defense* (though with different examples) that the origins of PPBS extend far back in time.

This paper provides information and insights that will be of value to those readers with a particular interest in the early history of PPBS/multi-year programming.

Massey, Robert J. "Program Packages and the Program Budget in the Department of Defense." *Public Administration Review* 23, no. 1 (March 1963): 30-34.

Linking strategic objectives to budgets using "program packages" and "program budgets" was the Holy Grail of enlightened public administration budgeting academics and practitioners for more than fifty years prior to DOD's successful introduction of PPBS in the early 1960s. The author of this article (a naval officer in the U.S. Navy Chief of Naval Operations organization) explains how Charles Hitch and his colleagues were able to accomplish this long-sought goal that eluded so many others.

Hitch's predecessors' program budget proposals had several fatal flaws, among which were the assumptions: (1) that workable program budgeting could only be achieved "when agencies were reorganized so they could function along major-purpose lines" and (2) that such reorganizations would not be possible without "willing Congressional participation." Massey observes that "Great ideas are simple." Hitch's great but simple

idea was to use the program budget approach for the multi-year program within DOD for output-oriented decision making (which did not require Congressional approval), while converting “a one year slice” of the approved DOD multi-year program (using a simple crosswalk) into the appropriate budget format for submission to Congress in the traditional layout preferred by that body.

This material should be of interest to, and provide valuable insights and lessons learned for, analysts engaged in identifying PPBS best practices and in assisting nations in adapting PPBS to meet their needs in improving country resource management capabilities.

Gordon, C. Vance, David L. McNicol, and Bryan C. Jack. "Revolution, Counter-Revolution, and Evolution: A Brief History of the PPBS." Unpublished paper, n.d. [2002]

This paper provides the perspective of three longtime PPBS practitioners, with extensive resource management experience in senior positions of OSD (PA&E), regarding the history of PPBS within DOD from the early 1960s through the mid-1990s.

To assist the reader in understanding the context for the creation of the DOD PPBS, the authors document, at the start of the paper, the multiple military and political problems confronting the Kennedy administration in the early 1960s that necessitated a more unified, rationalized, and analytical resource management process for DOD. The authors divide the history of PPBS in DOD into four periods (corresponding to successive administrations) and characterize how the role and influence of PPBS and the OSD Systems Analysis office, as well as the relationship between the Systems Analysis office and the military, evolved during each of those periods.

This publication provides authoritative insights on the evolution of PPBS within the U.S. Department of Defense and on the implications of changes in the way the PPBS process was conducted and managed in DOD over a multi-year period. These lessons and insights should be useful in contributing to the development of defense resource management best practices and in assisting nations currently using PPBS/multi-year programming approaches or considering doing so in the future.

Grimes, Steven R. "PPBS to PPBE: A Process or Principles?" Carlisle, PA: U.S. Army War College, March 15, 2008.

This publication was prepared as a Strategy Research Project by the author while a student at the U.S. Army War College, with the objective of assessing how DOD addresses such questions as “How much is enough?” and “How much risk are we willing to take?” In pursuit of this goal, the author prepared a well-researched and documented survey of PPBS as it was first implemented by Hitch and Enthoven in the early 1960s and how

it evolved over the years, through the mid-2000s, to what is now called PPBES.

Grimes begins the paper with a brief but clear and user-friendly explanation of the basic principles that underpinned that original PPBS process and of the rationale for those principles. He then discusses some of the main modifications, describes and evaluates two well-publicized major critiques of PPBS (the “Business Executives for National Security” and “Beyond Goldwater-Nichols” [BG-N] reports), and provides a fairly detailed discussion of the components of PPBS as it existed in the mid-2000s.

Grimes’ principal conclusions are that, notwithstanding frequent modifications, the basic principles of PPBS have endured through nine administrations, and that PPBS continues to provide the fundamental structure under which military strategy is translated into an annual budget. He observes that the longevity of PPBS supports the view expressed by Charles Hitch in his 1965 book, *Decision-Making for Defense*, that “the programming systems can be adapted without too much difficulty to almost any style of leadership...” Based on his research, Grimes proposes three recommendations: (1) that the DOD PPBS be evaluated on a regular basis, to include determining how well the process supports the six original fundamental principles (that are highlighted in Enthoven’s *How Much is Enough*); (2) that the “doctrinal” documents for PPBS (e.g., DOD Instructions) be updated and kept up to date; and (3) that centralized education be provided to all participants in the PPBS process.

This monograph provides defense resource management researchers and those assisting nations in adopting PPBS best practices with useful information on, insights into, and observations about the history and evolution of PPBS/multi-year programming.

Anonymous. “Mel Laird: Coach, Quarterback, or Both?” *Armed Forces Management* 15 (October 1969): 34-36.

This article by an anonymous author addresses Melvin Laird’s implementation of “participatory management,” a decentralized management concept for the DOD that he introduced when he succeeded Robert McNamara as Secretary of Defense in 1969. The material appears to be based largely on interviews with Laird, and thus provides Laird’s perspective on these management changes.

As the article shows, the most significant component of this change was Laird’s reversal of the approach to conducting the PPBS process that McNamara had introduced in the early 1960s, whereby the Secretary’s Systems Analysis office developed integrated multi-year program proposals that were then reviewed by the Joint Chiefs of Staff (JCS) and the Military Services. Under Laird’s concept, this process was reversed: the JCS and the Military Services were assigned responsibility for

developing the proposed multi-year defense programs (called Program Objective Memorandums, or POMs) based on fiscal guidance targets and program development guidance issued by the Secretary of Defense. In addition, the role of the Laird-era Systems Analysis office was to evaluate the JCS/military service submissions to ensure they complied with program guidance and fiscal guidance.

This article should be useful for those desiring to understand the participatory management concept, particularly those who are already familiar with PPBS, as this is but one concept applied to PPBS. Researchers studying defense PPBS/multi-year programming processes, as well as those seeking to compile best practices in defense resource management, will also find it helpful.

Group C: Individual Components of Planning, Programming, and Budgeting System (PPBS)

Group C addresses publications focusing on one particular topic or component of PPBS/multi-year programming. Examples of such individual topics or components include: planning (national objectives, national strategy, threat assessments, etc.), capability planning and analysis, acquisition planning and analysis, cost analysis, and systems analysis/cost-effectiveness analysis. The order of the documents in this group reflects the order of topics listed above. Please note that programming is extensively addressed in most of the documents in Group A (PPBS/Multi-year Programming Overall). Budgeting and fiscal transparency are comprehensively discussed in several of the documents in Group D (Best Practices).

Lloyd, Richmond M., and Dino A. Lorenzini. "A Framework for Choosing Defense Forces." *Naval War College Review* (January/February 1981): 46-58.

This article—by a professor of management at the U.S. Naval War College (Lloyd) and a member of the U.S. Naval War College Management Department faculty (Lorenzini)—provides an overview of the principal elements, activities, and interactions that should comprise a strategically and analytically sound and cost-effective force planning process.

The authors' purpose is to impart to their readers a good understanding of the basic concepts and principles of—and underlying reasons for—rational force planning, rather than to present a set of detailed step-by-step instructions. Their primary target audience encompasses those who oversee and evaluate or use the work of force planners, rather than the force planners themselves. In their presentation, the authors highlight the importance of beginning with strategic choices, i.e., clearly defined national interests, national objectives, and national security strategy, and the military objectives that logically flow from them. The authors then address the process of making force choices, i.e., assessments that take into account the threat, available forces, force deficiencies, risk, fiscal constraints, and program guidance and the identification of alternatives, among other factors. The authors demonstrate a thorough comprehension of this subject matter and are able to address the myriad complexities of this material in an easy to comprehend, but not overly simplistic, fashion.

This brief article should be required reading for strategic planners and force planners and those who review their work.

Murray, Russell and Les Aspin. *Searching for a Defense Strategy*. Washington, D.C.: House of Representatives, 1987

This pamphlet contains the text of four speeches by Congressman Les Aspin (Democrat-Wisconsin), Chairman of the House Armed Services Committee, addressing why defense programs and budgets must be based on a solid foundation of thoughtfully developed defense policy and strategy. Russell Murray, a former Assistant Secretary of Defense for Systems Analysis and an authority on defense PPBS, wrote these speeches for Aspin.

The defense budget should provide the forces, equipment, and other resources (the “means”) needed to carry out defense goals that are spelled out in a nation’s defense security strategy and policy statements (the “ends”). Aspin expresses concern that defense strategy and policy are typically too imprecisely stated to enable defense planners and Congress to evaluate, even roughly, the forces and equipment needed to accomplish stated goals. Aspin’s characterization was that the likely availability of resources must guide the formulation of strategy from the outset and throughout the course of its development, if those strategies are to be realistic and the programs adequate. In addition, he takes Congress to task for focusing excessively on budget details, while displaying little interest in understanding and evaluating the strategy that generated those budgets. He notes that without an understanding of the ends, “the Congress cannot competently judge the means proposed to achieve them.” Aspin offers a comprehensive eight-step process to reconcile this ends-means disconnect.

Although these speeches were drafted more than twenty years ago to address concerns regarding the U.S. defense planning process at that time, the issues arguably remain relevant today for nations worldwide. This material should be required reading for any officials with responsibilities for developing defense policy and strategy or for translating defense policy and strategy into programs and budgets. Aspin’s eight-step proposed solution (presented in the third speech of the series) should be considered—with appropriate refinements, as necessary—for potential use as a defense resource management best practice for defense strategy and policy guidance development.

Australian Government Department of Defence. *Defence Capability Development Manual*. Canberra: Department of Defence, Commonwealth of Australia, 2006.

Published by the Australian Department of Defence and freely available online, this publication provides comprehensive and detailed information about, and instructions on, Australia’s approach for developing investment proposals for new defense capabilities.

The manual’s primary purpose is to give authoritative guidance to the Australian Department of Defence Capability Development Group staff in accomplishing the Group’s core responsibilities in developing investment

proposals for new defense capabilities for consideration by the Australian Government. Among the major topics addressed in this 100+ page, seven chapter document are: the concept of capability, capability planning principles, strategy development, the first pass and second pass approval process, identifying proposed broad options, the industry solicitation process, the development of cost estimates, technical risk assessment, simulation in capability development, and preparing capability roadmaps.

This manual contains a wealth of information that should be directly useful to those involved in assisting nations in establishing capability development processes or improving existing ones.

United Kingdom Ministry of Defense (MOD). *JSP 507 MOD Guide to Investment Appraisal and Evaluation*. London, UK: Department of Economic Statistics and Advice, December 2006.

This sizable (300+ pages) United Kingdom Ministry of Defense publication provides comprehensive guidelines on conducting appraisals of defense investment opportunities.

This guide—produced by the MOD Economic Statistics and Advice Directorate—explains the principles of the appraisal process and describes in detail how to apply them to a wide range of real world investment problems. Principal topics addressed in this guide include, among others: an introduction to appraisal and evaluation (what is appraisal, why it matters, planning and managing the process); the process of appraisal and evaluation (justifying requirements, setting objectives, developing and reviewing options, costs and benefits); writing business cases and investment appraisal reports; basic appraisals (i.e., under \$15 million); full appraisals (discounting, inflation, internal rate of return, opportunity costs, sunk costs, hidden costs, valuing risks, assessing uncertainty, scenario analysis, non-quantifiable costs and benefits); implementation (program and project management, performance measurement); project evaluation (financial and commercial control, project governance and control); fixed assets and stocks; choosing locations for government businesses; risk and uncertainty (estimating likelihood of risk, estimating optimism bias, Monte Carlo analysis); and involving the private sector.

This authoritative and clearly-written document provides myriad instructional and reference information on investment appraisal and evaluation that will be of immediate and practical use to members of defense establishments worldwide.

United Kingdom Ministry of Defense (MOD). “Defence Acquisition.” *Policy Paper No. 4*. London, UK: Director General Corporate Communications, December 2001.

This United Kingdom Ministry of Defense policy paper contains a series of essays on the general subject of defense acquisition.

The UK MOD uses the term “acquisition” to encompass all of the following activities: setting requirements for new equipment, facilities, and services; procuring those items; and supporting them through the entire life cycle. Much of the information in this publication reflects initiatives that were introduced in the UK Strategic Defense Review of 1998 and that have evolved through the years. Chief among these new measures is the Smart Procurement Initiative (now called Smart Acquisition), a concept intended to transform processes and organizational structures with the objective of achieving faster, cheaper, and better procurement of defense equipment. Key elements of the Smart Acquisition initiative include: meeting or exceeding the time, cost, and performance targets originally established; lowering risk in acquiring capability, with the appropriate balance among military effectiveness, time, and total life cycle costs; and reducing the time for introducing major technologies into the front line when necessary to achieve a military advantage. Among the guiding principles of defense acquisition highlighted in this publication are: writing acquisition specifications to address “outputs” (the final capability desired), rather than “inputs” (e.g., required number of layers of paint on a ship); total life cycle costing; establishing a partnership with industry; and exploiting e-commerce opportunities.

Those readers interested in identifying new concepts in defense acquisition that may be appropriate for and applicable to partner nations may wish to evaluate the initiatives in this document, taking care to try to separate the buzzwords from the substantive proposals.

Fisher, Gene H. *Cost Considerations in Systems Analysis*. New York: American Elsevier Publishing Company, 1971.

The primary purpose of this publication—which was the inspiration of Alain Enthoven, was authored by RAND researcher, Gene Fisher, and was sponsored by the DOD Office of the Secretary of Defense (Systems Analysis)—is to promote the training of DOD analysts in cost analysis techniques that support systems analysis.

This document provides a clearly-written and well-organized tutorial that starts with the basics and extends into a wide range of cost subjects, pertinent real-world examples, and suggested supplementary readings. Major topics include: overview of systems analysis; concepts of economic analysis; introduction to military cost analysis; cost estimating relationships; cost models (individual system cost, mission area force-mix cost, and total force cost); treatment of uncertainty; problems associated with time; opportunity cost; and the concept of comparative advantage.

This is an excellent reference for both new and experienced cost analysts, as well as those responsible for reviewing the work of cost personnel and formulating the structure of systems analyses approaches.

Hitch, Charles J., and Roland N. McKean. *The Economics of Defense in the Nuclear Age*. Santa Monica, CA: RAND, March 1960.

Charles Hitch, the father of PPBS, distills the essence of this massive (400+ pages) volume into its opening sentence: “Military problems are...economic problems in the efficient allocation and use of resources.” Hitch and his colleagues at the RAND Corporation developed the principal concepts underpinning defense systems analysis (a systematic interdisciplinary approach to assessing the implications of defense policy issues) in the 1950s; this book codifies and serves as a tutorial for these ideas, principles, techniques, and methodologies.

The document is organized into three major parts: (1) an assessment of the overall level of national resources and the proportion that should be allocated for defense; (2) an assessment of how efficiently DOD can use those resources; and (3) a discussion of special defense problems and applications. Notwithstanding the Cold War orientation of the book’s title and some of the examples, the fundamental concepts remain valid and applicable to current defense problems.

Parts 2 and 3 of this publication will serve as valuable reference material for practitioners and students of systems analysis, cost-effectiveness analysis, defense capability analysis, and related topics. Part 1 will be a valuable and unique reference for analysts engaged in macro resource planning (e.g., fiscal guidance development) in support of senior national security officials.

Group D: Best Practices

Group D includes best practices publications addressing PPBS/multi-year programming and fiscal transparency in public expenditures and related topics.

The publications are generally arranged with the most comprehensive documents by major international organizations at the beginning and less comprehensive documents at the end.

World Bank. *Public Expenditure Management Handbook*. Washington, D.C.: World Bank, 1998.

Developed by the World Bank staff, this comprehensive handbook provides a framework and guidelines for use by nations worldwide—particularly developing nations—in improving their budgetary and financial management in the public sector. The impetus for this document was World Bank concerns regarding continuing poor budget practices and performance in many countries and the belief that there had been a sufficient number of “lessons learned” on public expenditure management (PEM) during the 1980s and 1990s to justify documenting them in this publication.

The document has two major parts and a set of annexes. Part I addresses guidelines for improving budgetary and financial management. Part II and the annex provide a checklist for diagnosing weaknesses and improving budgetary and financial management. The chapters in Part I address developments in budgetary practice (Chapter 1); institutional arrangements for improving budgetary outcomes (Chapter 2); linking policy, planning, and budgeting in a medium term planning framework (Chapter 3); financial management information systems (Chapter 4); and approaches for budget reform (Chapter 5).

Chapter 3 makes a powerful case for using a multi-year medium term expenditure planning process to link policy, planning, and budgeting with techniques that seem tantamount to what Hitch and Enthoven called “programming.” However, the chapter never specifically mentions the term programming, nor is there any reference to Hitch, Enthoven, or PPBS. The significance of this planning approach is summarized well in a single sentence in the middle of the first page of Chapter 3: “Failure to link policy, planning, and budgeting may be the single most important factor contributing to poor budgeting outcomes at the macro, strategic and operational levels in developing countries.”

This document contains substantial material directly relevant to those involved in assisting nations in improving their resource management capabilities and those engaged in assessing or developing PPBS/defense resource management best practices. The material in Chapter 3 will be particularly valuable in corroborating the value and importance of multi-

year mid-term resource planning and linking policy and strategy to budgeting.

International Monetary Fund (IMF). *Manual on Fiscal Transparency*. Washington, D.C.: IMF, 2007.

This IMF publication provides an extensive and detailed set of guidelines and instructions intended to assist IMF member countries in enhancing openness and clarity in the presentation of government fiscal policies and developments.

The principal components of this document are a Code of Good Practices on Fiscal Transparency (a four-page section at the beginning of the document) and a Manual of Fiscal Transparency (which encompasses a little over 100 pages), both of which were updated in 2007. Also included at the end of the publication are a table that summarizes the principles and basic requirements of fiscal transparency (two pages), a glossary, a bibliography, a list of website references, and an index. Both the Code of Good Practices and the Manual are subdivided into four sections that address the following topics: clarity of roles and responsibilities; open budget processes; public availability of information; and assurances of integrity.

This manual should serve as an authoritative reference work for individuals engaged in developing compendia of PPBS/multi-year resource management best practices or are involved in assisting nations in enhancing the transparency of their defense resource management processes.

Schiavo-Campo, Salvatore, and Daniel Tommasi. *Managing Government Expenditures*. Manila, Philippines: Asian Development Bank, April 1999.

Authored by Salvatore Schiavo-Campo and Daniel Tommasi, this massive (550+ pages) Asian Development Bank document provides a comprehensive overview of public expenditure management (PEM) from an international perspective, addressing all aspects of the budget development process, from formulation through execution, audit, and evaluation.

The material in this document represents primarily a synthesis of pertinent literature on the topic of budgeting “and of international experience.” Among the topics addressed in the document’s seventeen chapters are budget systems and expenditure classification (Chapter 3); the budget preparation process (Chapter 4); assuring compliance in budget execution (Chapter 6); managing and monitoring budget implementation (Chapter 7); management controls, audit, and evaluation (Chapter 9); strengthening “performance” in PEM (Chapter 15); and—of special interest to users of this PPBS-oriented annotated bibliography—multi-year expenditure programming approaches (Chapter 13). Two major related themes

highlighted throughout this book are: (1) the importance of giving countries a menu of options for improving their budgeting processes, rather than a single “best practice”; and (2) the necessity of understanding the context of each nation individually (its development stage, type of government, education and skill levels of the populace, customs, etc.) before recommending approaches for improving PEM processes.

The authors’ detailed and authoritative coverage of so many of the major components of public expenditures management will make this publication a valuable primary reference for officials and analysts involved in assisting foreign nations in improving their resource management capabilities. The sizeable amount of detail (as reflected in the high page count) and lack of an explicit table of contents will require readers to invest some time and effort familiarizing themselves with the contents, to be able to use this document most productively. But that is an investment worth making.

Potter, Barry H., and Jack Diamond. *Guidelines for Public Expenditure Management*. Washington, D.C.: IMF, 1999.

The IMF—publisher of this document—is an organization of approximately 180 countries that works to encourage a range of interrelated fiscal objectives worldwide, including promoting monetary cooperation, financial stability, and sustainable economic growth.

The impetus for this set of guidelines grew out of IMF lessons learned over a number of years in conducting budgetary program missions in countries throughout the world. During these visits, country officials typically bombarded IMF economists with practical questions on day-to-day expenditure management issues that the IMF theory-oriented experts could not answer. Based on those experiences, the IMF undertook an initiative to develop guidelines addressing principles and practices in: budget preparation, budget execution, and cash planning. Rather than a generalized set of guidelines, the IMF distinguishes among the different practices in four groups of nations: francophone Africa (more centralized with data typically readily available), British Commonwealth (more decentralized with data reporting lags and requirements for specialized reports), Latin America (quite decentralized with greater instances of data not available), and transition economies (situation in flux). The document is divided into four major chapters: Introduction; Budget Preparation (including basic steps in budget development, typical weaknesses of budget preparation systems, pro and cons of extra-budgetary funding); Budget Execution (including stages of the execution process); and Cash Planning and Management (including essential features).

This material should be helpful in assisting nations in addressing real-world budgetary issues and in the development of best practices related to budgeting. The IMF’s innovative approach of tailoring guidelines for groups of nations based on common monetary system histories should be

evaluated to determine if a similar concept of categorizing countries based on common historical or other factors could in any useful way be developed for defense resource management best practices.

Organisation for Economic Co-operation and Development (OECD). “OECD Best Practices for Budget Transparency,” *OECD Journal on Budgeting* 1, no. 3 (2002): 7-14.

This succinct publication is the culmination of a multi-year OECD initiative to assist nations worldwide (both OECD member countries and non-members) in enhancing fiscal transparency in national government budgets.

OECD undertook this initiative on the premise that openness is a fundamental aspect of good government and that OECD countries “are at the forefront of budget transparency practices.” The methodology essentially entailed surveying OECD member countries’ budget practices and distilling the responses. A recent similar survey questionnaire and the comprehensive responses of each responding nation are available on OECD’s website. OECD’s publication has three sections: a listing of the principal reports—and their contents—that national governments should include in their budgets, “specific disclosures” those reports should contain, and guidelines for ensuring quality and integrity of those reports.

OECD’s best practices focus entirely on national government budgets in general. There are no specific references to defense budgets, nor are there specific references to planning or programming practices. Many, perhaps most, of the generic transparency practices listed in this publication are likely to apply to defense budgets. However, some of the functions of defense are sufficiently different from other government functions (e.g., equipment procurement), and thus could require budgeting approaches for defense budgets that are different from budgeting in non-defense departments and agencies.

Officials and analysts responsible for implementing budget transparency initiatives or assisting nations in doing so will find this publication a useful guide and checklist for general budget activities. A comparable set of fiscal transparency guidelines, specifically oriented toward defense establishments, would be quite useful. Appropriate officials should consider developing such a compendium of fiscal transparency best practices for defense-specific resource management activities.

Pyman, Mark. *Building Integrity and Reducing Corruption Risk in Defence Establishments: Ten Practical Reforms*. London, UK: Transparency International, April 2009.

Transparency International (TI)—the publisher of this “handbook”—is an international civil society organization with ninety chapters worldwide that engages in raising awareness of corruption and working with governments, businesses, and civil society to develop and implement

approaches for addressing this problem. Reducing corruption within defense organizations is a topic of special concern for TI.

Rather than assuming that readers of this document are already committed to the cause of fighting corruption, the authors begin with some practical rationale for doing so beyond simply that it is the “right thing to do.” Among the reasons cited are: corruption is a waste of scarce defense resources; it degrades military operational readiness; it reduces public trust in the military forces; and international corporations tend to shun corrupt economies. Acknowledging there are already a number of “excellent guides” on the subject of corruption, the authors claim a different purpose for this publication: “...to show busy senior officials...in defense ministries...how progress can be made in defense without tackling the problem right across government.” The approach is described in a series of ten specific measures—largely based on TI’s lessons learned in dealing with corruption in collaboration with defense industry, governments, NATO, and other organizations. The ten measures—explained and documented with specific country examples and charts and graphs—include: use good diagnostic tools for self-analysis; use surveys and metrics to monitor levels of trust and confidence in defense; develop an integrity and anti-corruption plan; make the subject discussable; establish a serious training course dedicated to integrity and corruption risk; set out clear standards for expected behavior from officials; hold public discussions on forthcoming procurements; engage with civil society; and work with defense contractors to raise standards.

These guidelines should be reviewed and carefully considered for use in developing defense resource management best practices, particularly for developing countries.

Organisation for Economic Co-operation and Development (OECD). *Integrity in Public Procurement: Good Practice from A to Z*. Paris, France: OECD Publishing, April 2007.

The OECD—the publisher of this document—is an major international organization, with membership of thirty economically developed democracies that include, among others, the United States, most NATO members, Australia, and New Zealand. The OECD engages in cooperative efforts to address economic, social, and environmental challenges, and develops good-practices material relating to these topics.

In developing this document, the authors started with the hypothesis that public procurement is the government activity with the greatest vulnerability to corruption. They tested and verified this hypothesis using a survey aimed largely at public procurement practitioners, as well as auditors, competition officials, and anti-corruption specialists. OECD staff then conducted a symposium in November 2006 during which participants (including government officials and private-sector representatives) reviewed survey results that they distilled into a set of good practices; i.e., successful measures for enhancing integrity in public

procurement. Key topics addressed in this document include: risks to integrity at each stage of the public procurement process (pre-bidding, bidding, post-bidding); promoting transparency—its potentials and limitations (balancing transparency with other considerations, levels of transparency, exceptions to competitive procedures); enhancing professionalism to prevent risks to integrity in public procurement; and ensuring accountability and control in public procurement (accurate records, internal control, external audit, taking a risk-based approach, challenging procurement decisions, ensuring public scrutiny).

Defense procurement is a resource management activity particularly vulnerable to corruption. Officials and analysts engaged in assisting partner nations in improving their defense resource management procurement processes should bring this publication to the attention of appropriate officials in those nations and advise them to consider implementing the practices outlined in this document that may be especially pertinent to their needs.

Lawrence, Dennis L., Kenton G. Fasana, and Alfred H. Gollwitzer. *Good Defense Resource Management Practices*. Alexandria, VA: IDA, 2007.

This unpublished paper was prepared by the IDA Defense Resource Management Studies (DRMS) team for the Thailand Ministry of Defense (MOD), in support of a DRMS program conducted with the Kingdom of Thailand. This publication draws in part on the DRMS Modular Approach material addressed in Group A of this Reading Guide and shares similarities with that material, but was not intended to serve as a summary version of, or substitute for, the Modular Approach document.

The paper presents concepts and principles common to defense resource management as practiced by a multiplicity of countries worldwide. The main focus is on internal defense resource management components and key external inputs. Each component within the framework presented in this paper comprises a series of important elements. In the planning section, the authors divide the elements into individual processes in order to enable the user to identify important linkages between each of the processes and the elements supported by those processes. The authors emphasize that it is not usual, nor necessary, that any given country's resource management system include every one of the components, elements, and processes portrayed in the paper. Rather, the form of a country's defense resource management system should reflect the roles and responsibilities within the defense ministry and the military services and the way decisions are made in that defense establishment.

This paper should be reviewed and carefully considered for use in developing defense resource management best practices for all countries. Given that there are commonalities, it would be appropriate and useful to use this publication in conjunction with the *Modular DRMS Concept* material from Group A of this Reading Guide.

Tagarev, Todor. "A Means of Comparing Military Budgeting Processes in South East Europe." *Information & Security* 11 (2003): 95-135.

As a senior official in Bulgaria's Ministry of Defense, Todor Tagarev's responsibilities included developing Bulgaria's defense resource management systems and coordinating defense modernization programs in support of defense reform and NATO integration. Tagarev has authored more than eighty publications on defense planning, budgeting, and other security-related issues. In this article, he outlines an approach for assessing the progress of southeastern European nations (including Tagarev's home country of Bulgaria and other countries in that region, e.g., Albania, Romania, and Serbia) in implementing fiscal transparency and other effective military budgeting processes and practices.

The central feature of Tagarev's approach is an idealized military budgeting process intended to serve as a standard for benchmarking an individual country's budgeting process. He also provides a questionnaire for assessing how well each nation measures up against the individual components of his idealized standard. Examples of his evaluation categories include whether a county has: clearly documented and obtained government ratification for security policies; an established process for developing a fiscally-constrained mid-term defense program; a capacity (methodology, adequate knowledge, and trained personnel) for accurately estimating future defense expenditures; fiscal transparency in all aspects of the budgeting process; and a strong capacity for internal auditing.

Although Tagarev presents this system as designed for evaluation of southeastern European nations in meeting an agreed regional Budget Transparency Initiative, nothing in his methodology would limit its use to just those nations or just that purpose. Tagarev's benchmarks, therefore, should be reviewed for use as potential components of international best practices for multi-year defense resource management. In addition, his proposed questionnaire appears easily adaptable for use in evaluating the defense multi-year resource management practices of individual nations worldwide.

Meyers, Roy T. "Is There a Key to the Normative Budgeting Lock?" *Policy Sciences* 29, no. 3 (September 1996): 171-188.

In this article, Roy Meyers—a professor of political science at the University of Maryland who focuses on U.S. Government budgeting issues—offers a prototypical starting point for developing a set of principles and practices of good budgetary processes.

Meyers begins with a review of the academic literature on the need for an answer to the question: "What is a good budgetary process?" and the reasons why that simple query has not been adequately answered to date. He then proposes a description of and justification for ten standards and potential related best practices that could serve as the starting point for

developing such a set of agreed best practices. Those standards are that a good budgetary process should be: comprehensive; honest (based on unbiased projections); perceptive (takes into account the long term as well as the medium term); constrained (entails government-mandated resource constraints); judgmental (seeks to identify ways of obtaining the most cost-effective approaches); cooperative (does not dominate other important decision processes); timely; transparent; legitimate; and responsive. The article includes an evaluation of the U.S. federal budget vis-à-vis Meyers' proposed standards. His evaluation rates the U.S. budget high on two standards (comprehensive and legitimate); medium on five (honest, perceptive, constrained, cooperative, and responsive), and low on three (judgmental, timely, and transparent). Meyers' closing paragraph acknowledges the quixotic nature of his proposal, but asserts that the extraordinary importance of the objective makes the challenge worth pursuing.

The components of Meyers' proposal should be reviewed for their potential use in developing best practices for PPBS/multi-year resource management processes.

Group E: Critiques

Group E includes critiques and reviews of defense PPBS/multi-year programming. The publications are listed in chronological order based on publication date.

Wildavsky, Aaron. *The Politics of the Budgetary Process*. Boston, MA: Little, Brown and Company, 1964.

Aaron Wildavsky is well-known within the political science community for his scholarly and groundbreaking research on government budgeting. He also gained the reputation as an outspoken, albeit thoughtful, critic of program budgeting and PPBS.

It was Wildavsky's view, at the time this book was written, that very little was known "about how or why budgetary decisions are actually made" in the U.S. Federal Government. Thus, the two fundamental purposes of this material are to describe the government budgetary process and to appraise it. His research approach involved interviewing approximately 160 budget practitioners. This volume's contents include a brief introductory discussion defining and discussing the purposes of budgets (chapter 1); a description—based on the results of his research—of the types of calculations made and the strategies used in preparing budgets (chapters 2 and 3); a review and evaluation of budget reform proposals (chapter 4); and an evaluation of his research findings and some recommendations (chapter 5).

Chapter 4 contains material most directly relevant to users of this Reading Guide. In that chapter Wildavsky identifies the "program budget" as a reform of special interest and provides an extended evaluation and critique that conveys considerable skepticism and concern regarding the program budget approach as compared with the "traditional budgeting" approach. He is concerned that program budgeting will: (1) lead to considerable conflict among budget development participants; (2) be difficult and time-consuming to calculate; and (3) result in budget decisions that are "likely to be different" from those made using "traditional budgeting."

Chapter 4 is recommended reading for officials and analysts responsible for assisting foreign nations or non-DOD U.S. government organizations in adopting and implementing PPBS-related resource management reforms. Some or all of the PPBS concerns raised by Wildavsky in this chapter may parallel concerns—openly voiced or not—by officials in foreign nations or non-DOD U.S. government organizations that are considering adopting PPBS/multi-year programming-related resource management reforms. PPBS/multi-year programming proponents need to understand and be prepared to analytically address these concerns.

Wildavsky, Aaron. "Rescuing Policy Analysis from PPBS." *Public Administration Review* 29, no. 2 (March-April 1969): 189-202.

The author is well-known for his groundbreaking work on analysis of the U.S. federal budget and for his outspoken criticism of PPBS. In this article, Wildavsky expresses concern regarding the lack of good policy analysis within the nation and, as indicated by the article's title, seeks to make the case that PPBS is largely to blame. But careful readers of this article will find that Wildavsky's views on this issue are much more nuanced than the title would indicate.

As Wildavsky develops his argument, it becomes clear he is not issuing a wholesale condemnation of PPBS overall, and, in particular, is not addressing PPBS as practiced by the U.S. Department of Defense (DOD). Rather, his criticism is aimed at Lyndon Johnson's mid-1960s initiative to introduce PPBS within non-Defense departments and agencies. One of his principal concerns is that the preconditions that enabled PPBS to take root and flourish within DOD so successfully did not exist within the non-Defense departments and agencies. (Charles Hitch, the father of PPBS, essentially agrees with all of Wildavsky's concerns in a sidebar comment in *Management Problems of Large Organizations* [pp. 260-261]). Interestingly, at the end of his article (literally on the last page in a lengthy endnote [number 23]) Wildavsky compliments Charles Hitch for his ability to create an apparently effective policy analysis unit—along the lines of what Wildavsky advocates in this article—within the Comptroller's organization when Hitch served as DOD Comptroller in the early to mid-1960s.

This article provides important insights regarding the views of one of the harshest critics of PPBS and will be helpful to those who are responsible for assisting foreign nations in adopting and/or implementing PPBS-related resource management reforms.

Schick, Allen. "A Death in the Bureaucracy: The Demise of Federal PPB." *Public Administration Review* 33, no. 2 (March-April 1973): 146-156.

This article by Allen Schick—a visiting fellow in Governance Studies at the Brookings Institution, a professor of public policy at the University of Maryland, and an authority on budget theory and the federal budget process—discusses the failure of efforts to implement PPBS in U.S. Federal non-Defense departments and agencies in the mid-1960s to early 1970s, notwithstanding DOD's successful implementation of PPBS in the early 1960s and continued productive use of that process thereafter.

In the mid-1960s, following the widely acknowledged, highly successful introduction of PPBS within the Department of Defense, President Lyndon Johnson announced a sweeping decision to extend the use and benefits of PPBS throughout the entire Federal Government by mandating its adoption by all U.S. Federal departments and agencies. This initiative was

unsuccessful; six years later, the directive requiring that PPBS be used by all U.S. departments and agencies was quietly rescinded. This article provides Allen Schick's assessment of the myriad reasons for this turn of events and identifies the many factors he believes contributed to the demise of PPBS and the nature of the culpability of the major players. Simply stated, Schick believes that everyone involved in this undertaking was at fault, including the proponents of PPBS, the opponents, and the Bureau of the Budget leadership and staff responsible for monitoring and promoting this government-wide undertaking.

This article should be required reading for officials involved in efforts to implement PPBS/multi-year programming reforms in nations worldwide and in U.S. non-Defense agencies and organizations, as Schick highlights a number of issues and problems that they should consider carefully. Examples include the importance of: (1) carefully adapting PPBS processes to the specific needs of the new organization rather than just grafting an approach that was designed for a different type of organization into a new organization; (2) ensuring that an organization is properly staffed with an adequate number of good analysts who understand PPBS and know how to operate such a system; and (3) ensuring a high level of support, leadership, and commitment by the agency charged with overseeing the implementation of PPBS within an organization.

Business Executives for National Security (BENS). "Framing the Problem of PPBS." N.p., January 2000.

Business Executives for National Security (BENS). "Changing the Pentagon's Planning, Programming and Budgeting System: Phase 2 Report and Executive Summary." N.p., 2000.

BENS describes itself as a nationwide, non-partisan, public interest group composed of senior business executives with an interest in using their business experience to enhance the nation's security. In this regard, BENS conducted a broad evaluation of the U.S. DOD PPBS process and presented the results in two related reports.

The objective of this BENS study was to evaluate DOD PPBS "in a holistic way" in order to determine if this process is meeting senior defense officials' needs in providing a long-term defense program that is reflected in the annual budget. The study approach included a series of "non-attribution" interviews with staff personnel and senior managers in public and private organizations, many of whom, according to BENS, were intimately familiar with PPBS, and a review of selected publications. The study report consists of three parts. Section 1 identifies and describes the functions PPBS is intended to provide and provides BENS' assessment of how effectively those functions are being provided. Section 2 identifies possible solutions to problems identified in the previous section. Section 3 identifies recommended PPBS improvements. The BENS report concludes

that, even though PPBS “has generally served the Pentagon and the nation well,” a number of changes are needed to support improved current and future decision-making. The study results recommend, among other things: “A new [Future Years Defense Program] structure, possibly dividing programs into warfighting versus support”; a more detailed and specific Defense Planning Guidance (DPG) that describes desired capabilities in output terms and the relative priorities of each; shifting to a two-year budget cycle; a reduction and consolidation of PPBS staffing; and the establishment of a surrogate capital budget. However, none of the recommendations were adopted.

Given the wide distribution of this study, it would be reasonable to expect that some officials in current and potential new DRMS countries may be interested to know whether any of the BENS proposals should be considered for their resource management processes. DRMS teams interacting with such countries should be prepared to provide an objective analytical response to such inquiries.

Murdock, Clark A., Michèle A. Flournoy, Christopher A. Williams, and Kurt M. Campbell. *Beyond Goldwater-Nichols [BG-N] Phase 1 Report: Defense Reform for a New Strategic Era*. Washington, DC: Center for Strategic and International Studies (CSIS), March 2004.

The original Goldwater-Nichols initiative of 1986 addressed reforms to correct highly publicized U.S. military interoperability problems that had led to a series of operational military failures in the field. This BG-N report seeks to address and identify reforms for a different set of problems: inefficiency in U.S. military operations. Chapter 5 of this report (“Toward a More Effective Resource Allocation Process”) describes and provides a preliminary evaluation of DOD PPBS process reforms introduced in the early 2000s by Secretary of Defense Donald Rumsfeld.

Rumsfeld-era resource management reforms include: adoption of an internal DOD two-year budget process, merging DOD Comptroller and program analysis and evaluation (PA&E) data collection and management into a single program and budget system, merging the PA&E program review and Comptroller budget review—processes that heretofore were done sequentially—into a simultaneous review of both processes, and replacing the Defense Planning Guidance (DPG) document with two documents (the Strategic Planning Guidance [SPG] and the Joint Programming Guidance [JPG]). Other Rumsfeld-era changes discussed in the BG-N Phase 1 report include “joint military capabilities” processes and procedures for the Joint Capabilities Integration and Development System (JCIDS). BG-N’s assessment of these reforms is that they are steps in the right direction, “although it is too early to reach final judgment.”

For readers primarily interested in PPBS/defense resource management practices potentially applicable to a broad range of nations worldwide, the BG-N report may be of limited utility for several reasons: (1) the

discussion is written for an audience already familiar with details of the U.S. resource management and capability planning processes, and thus, may be difficult to comprehend by many readers; (2) many of the resource management reforms discussed are too complex for most countries (some address issues unique to the United States); and (3) at the time this report was written, the authors' overall assessment was that it was too early to render a firm judgment on the merit of those reforms. In addition, as of April 2010, most of the initiatives discussed above had been rescinded.

Group F: Open Source Defense Establishment Publications

Group F includes examples of open source defense resource management-related documents typically published by nations.

The documents listed here are intended to indicate the format and subject matter typically addressed by nations in such open source documents. The IDA study team solicits readers' recommendations on other documents that would be relevant examples for inclusion in future editions of this Reading Guide.

United Kingdom Ministry of Defence (MOD). *Strategic Defence Review: A New Chapter, vols. 1-2*. London, UK: The Stationery Office, July 2002.

This document—presented to the British Parliament by the United Kingdom (UK) Secretary of State for Defence in July 2002—is an addendum to the 1998 UK Strategic Defence Review (SDR) intended to reflect the worldwide, trans-Atlantic, and United Kingdom (UK) security challenges posed by the September 11, 2001 terrorist attacks in New York and Washington and how the British Government and defense establishment proposed to address those challenges.

The UK's 1998 SDR was one of a series of fundamental security assessments the UK has periodically conducted over the years—as have a number of other countries. Such reviews are typically conducted soon after a new government administration takes office and when there is a significant change in the security environment. The September 11, 2001 attacks were viewed by the UK as reflecting just such a fundamental security environment shift. However, rather than undertake an entirely new SDR in 2002, the UK chose to issue this “New Chapter” update to the 1998 SDR. The 1998 SDR received praise for its openness and inclusiveness. This transparency approach was innovatively incorporated into the New Chapter development work at the outset of that project through the issuance of a “Discussion Paper” questionnaire which sought ideas and input from the public, Parliament, and other interested parties on a wide range of issues that were going to be addressed in the New Chapter document. That questionnaire and a summary of the responses are discussed and included in the New Chapter publication.

The UK's approach in developing this New Chapter material and, in particular, the use of the Discussion Paper to achieve openness and inclusiveness may provide a model and insights for other nations seeking to develop strategic review publications and/or to enhance the transparency of their open source defense establishment publications.

Department of Defense. *National Defense Strategy of the United States*. Washington, D.C.: Department of Defense, June 2008.

The National Defense Strategy (NDS) describes U.S. defense strategy and policy from the perspective of the U.S. Secretary of Defense. In addition, it represents one of three major strategy documents typically promulgated by the United States and some other nations. The other two are the President's National Security Strategy (NSS) and the U.S. military establishment's National Military Strategy (NMS). The three documents are interrelated, with the President's National Security Strategy providing the broadest perspective for all aspects of the nation's security as a whole and serving as the foundation for the National Defense Strategy, which in turn serves as the foundation for and informs the National Military Strategy.

These overarching strategy documents are typically issued in the early stages of a new administration. Typical contents of the National Defense Strategy document—as shown in this example—are an overview statement describing the country's defense policy, a discussion of the strategic environment, a listing and discussion of threats and challenges (and, in some cases, opportunities), a broad statement of overarching objectives (e.g., Defend the Homeland), and a statement of the general approach for achieving those objectives (e.g., strengthen and expand alliances and partnerships). Such unclassified strategy publications serve several important purposes, including: informing the nation's population of the strategy the country's leaders intend to follow and the rationale for that approach, with a view toward gaining political support; informing the nation's allies and partners and explaining the rationale in order to engender alliance and partner support; and ensuring that potential foes understand what the country does and does not intend to do, to try to avoid misunderstanding that could lead to security crises and potential conflicts. In this regard, such unclassified publications contribute to enhanced transparency regarding the nation's security interests, objectives, and intentions.

Resource management experts assisting countries in implementing improved resource management processes should encourage those countries to examine several sample strategy documents—such as the one discussed here—to determine the format and structure that best meets the nation's needs.

Users of this Reading Guide are encouraged to submit examples of such documents for incorporation into future editions of the guide. The goal is to have examples representing a wide range of countries.

Group G: Country-Specific

Group G consists of a collection of publications addressing the experiences of individual nations regarding PPBS/multi-year programming and related topics. The publications are presented in alphabetical order by country name. The documents in this group have received less screening and review than those in the other categories, and thus, are listed with bibliographic information (author, title, publisher, etc.), but without annotated citations.

Armenia

Bagratuni, Suzan. “[Armenia Best Practice in Performance Budgeting]”, n.d.

Australia

Hawke, Lewis. “Performance Budgeting in Australia.” *OECD Journal on Budgeting* 7, no. 3 (2007): 134-147.

Robinson, Marc. “Financial Control in Australian Government Budgeting.” *Public Budgeting & Finance* 22, no. 1 (March 2002): 80-93.

Austria

Blöndal, Jón R., and Daniel Bergvall. “Budgeting in Austria.” *OECD Journal on Budgeting* 7, no. 3 (2007): 40-75.

Bulgaria

Tagarev, Todor. “Bulgaria: Integrated Defense Resource Management.” *Harmonie Papers* 17 (2004).

Canada

Government of Alberta, Canada. “Module 5: Performance-Based Budgeting – Overview for Workshop Participants,” n.d.

McCormack, Lee. “Performance Budgeting in Canada.” *OECD Journal on Budgeting* 7, no. 4 (2007): 50-66.

Croatia

Kraan, Dirk-Jan, Daniel Bergvall, Iris Müller, and Joachim Wehner. “Budgeting in Croatia,” *OECD Journal on Budgeting* 5, no. 4 (2006): 8-60.

Denmark

Ginnerup, Rikke, Thomas Broengjörgensen, Anders Møller Jacobsen, and Niels Refslund. “Performance Budgeting in Denmark.” *OECD Journal on Budgeting* 7, no. 4 (2007): 68-90.

Georgia

Anonymous. “Interview with Deputy Defense Minister Nodar Kharshiladze.” *Georgia Today* 492 (January 1-14, 2010).

Latvia

Ministry of Foreign Affairs of the Republic of Latvia. "Timetable for Completion of Reforms 2003." Riga, Latvia: Ministry of Foreign Affairs, 2003.

Malawi/Ghana

Anipa, Seth, Felix Kaluma, and Elizabeth Muggeridge. "Case Study MTEF in Malawi and Ghana." Paper presented at the Department for International Development (DFID) Seminar on Best Practice in Public Expenditure Management, June 1999.

Netherlands

Debets, Raphael. "Performance Budgeting in the Netherlands." *OECD Journal on Budgeting* 7, no. 4 (2007): 104-122.

Norway

Anderson, Barry, Teresa Curristine, and Olaf Merk. "Budgeting in Norway." *OECD Journal on Budgeting* 6, no. 1 (2006): 8-43.

New Zealand

Goldman, Frances, and Edith Brashares. "Performance and Accountability: Budget Reform in New Zealand." *Public Budgeting & Finance* 11, no. 4 (Winter 1991): 75-85.

Pallot, June, and Ian Ball. "Resource Accounting and Budgeting: The New Zealand Experience." *Public Administration* 74, no. 3 (Autumn 1996): 527-541.

Pallot, June. "A Decade in Review: New Zealand's Experience with Resource Accounting and Budgeting." *Financial Accountability & Management* 17, no. 4 (November 2001): 383-400.

Russia

Zatsepin, Vasily. "Performance-Oriented Budgeting: A Russian Perspective." Paper presented at CATE 2005, Brno, Czech Republic, May 4, 2005.

Singapore

Blöndal, Jón R. "Budgeting in Singapore." *OECD Journal on Budgeting* 6, no. 1 (2006): 46-85.

Pugh, Cedric. "Budget Innovation in Singapore." *Asia Pacific Journal of Management* 3, no. 3 (May 1986): 157-175.

Slovenia

Kraan, Dirk-Jan, and Joachim Wehner. "Budgeting in Slovenia." *OECD Journal on Budgeting* 4, no. 4 (2004): 56-98.

South Korea

Choi, Hyun Deok. "Participatory Budgeting in Buk-Gu, Korea," in OECD, *Focus on Citizens: Public Engagement for Better Policy and Services*. OECD Publishing, 2009.

Switzerland

Kraan, Dirk-Jan, and Michael Ruffner. "Budgeting in Switzerland." *OECD Journal on Budgeting* 5, no. 1 (2005): 38-78.

United Kingdom

Heald, David. "Fiscal Transparency: Concepts, Measurement and UK Practice." *Public Administration* 81, no. 4 (December 2003): 723-759.

Hirsch, Werner Z. "Program Budgeting in the United Kingdom." *Public Administration Review* 33, no. 3 (March-April 1973): 120-128.

Appendix A.

Publications by Major Functional Topics

Appendix A lists the publications addressed in this paper by group (A, B, C, etc.) and provides a matrix display relating them to nine functional topics. An “X” at the intersection of a publication and functional topic indicates the topic is substantively addressed in that publication. The functional topics include:

- PPBS Resource Management Overall / Multiple Topics
- Planning
- Programming
- Budgeting
- Execution and performance review
- Systems analysis and cost effectiveness analysis
- Cost analysis
- Capability and acquisition planning and analysis; defense mission area analysis
- Transparency and combating corruption

PPBS Reading Guide										
Group A: PPBS/Multi-Year Programming Overall with Special Focus on Programming										
Functional Topic										
Author	Publication	PPBS/Resource Mgt Overall/Multiple topics	Planning	Programming	Budgeting	Execution/Performance Review	Systems Analysis/Effectiveness Analysis	Cost Analysis	Capability & Acquisition Planning & Analysis; Mission Area Analysis	Transparency/Combating Corruption
Hitch, Charles J.	<i>Decision-Making for Defense.</i>	X	X	X	X		X			
Enthoven, Alain C., and K. Wayne Smith	<i>How Much is Enough? Shaping the Defense Program, 1961-1969.</i>	X	X	X	X		X			
Novick, David	<i>Current Practice in Program Budgeting (PPBS): Analysis and Case Studies Covering Government and Business.</i>	X	X	X	X					
IDA DRMS Task	<i>Modular DRMS Concept.</i>	X	X	X	X	X	X		X	
Sullivan, Raymond E.	<i>Resource Allocation: The Formal Process.</i>	X	X	X	X		X		X	
Tagarev, Todor	<i>"Introduction to Program-Based Defense Resource Management."</i>	X	X	X	X				X	
Hitch, Charles J.	<i>"Management Problems of Large Organizations."</i>	X	X	X	X					
Hitch, Charles J.	<i>"The Systems Approach to Decision-Making in the Department of Defense and the University of California."</i>	X	X	X						

		Group A: PPBS/Multi-Year Programming Overall with Special Focus on Programming									
		Functional Topic									
Author	Publication	PPBS/Resource Mgt Overall/Multiple topics	Planning	Programming	Budgeting	Execution/Performance Review	Systems Analysis/Cost-effectiveness Analysis	Cost Analysis	Capability & Acquisition Planning & Analysis, Mission Area Analysis	Transparency/Combating Corruption	
Rostker, Bernard, and Lewis Cabe	<i>Naval Studies Group Proceedings: Conference on the Defense Planning, Programming, and Budgeting System (PPBS): Past, Present, and Future.</i>	X	X	X	X		X	X	X		
United States. Senate. Committee on Government Operations. Subcommittee on National Security and International Operations	<i>Planning-programming-budgeting. Inquiry of the Senate Subcommittee on National Security and International Operations of the Committee on Government Operations, US Senate.</i>	X	X	X	X		X				
United States. Congress. Joint Economic Committee. Subcommittee on Economy in Government	<i>The analysis and evaluation of public expenditures: the PPB system; a compendium of papers submitted to the Subcommittee on Economy in Government of the Joint Economic Committee, Congress of the United States.</i>	X	X	X	X		X				

Group B: History		Functional Topic									
Author	Publication	PPBS/Resource Mgt Overall/Multiple topics	Planning	Programming	Budgeting	Execution/ Performance Review	Systems Analysis/Cost-effectiveness Analysis	Cost Analysis	Capability & Acquisition Planning & Analysis; Mission Area Analysis	Transparency Combating Corruption	
Kraft, Jonathan	"The Evolution of Program Budgeting in the United States Government."										
Novick, David	"The Origin and History of Program Budgeting."										
Massey, Robert J.	"Program Packages and the Program Budget in the Department of Defense."			X	X						
Gordon, C. Vance, David L. McNicol, and Bryan C. Jack	"Revolution, Counter-Revolution, and Evolution: A Brief History of the PPBS."	X	X	X			X				
Grimes, Steven R.	"PPBS to PPBE: A Process or Principles?"	X	X	X	X	X					
Anonymous	"Mel Laird: Coach, Quarterback, or Both?"										

Group C: Individual Components of PPBS										
		Functional Topic								
Author	Publication	PPBS/Resource Mgt Overall/Multiple topics	Planning	Programming	Budgeting	Execution/ Performance Review	Systems Analysis/Cost-effectiveness Analysis	Cost Analysis	Capability & Acquisition Planning & Analysis; Mission Area Analysis	Transparency/ Combating Corruption
Lloyd, Richmond M., and Dino A. Lorenzini	"A Framework for Choosing Defense Forces."		X				X		X	
Murray, Russell, and Les Aspin	Searching for a Defense Strategy.		X							
Australian Government Department of Defence	Defence Capability Development Manual.						X	X	X	
United Kingdom Ministry of Defence	JSP 507 Ministry of Defence Guide to Investment Appraisal and Evaluation.						X	X	X	
United Kingdom Ministry of Defence	"Defence Acquisition."						X	X	X	
Fisher, Gene H.	Cost Considerations in Systems Analysis.						X	X	X	
Hitch, Charles J., and Roland N. McKean	The Economics of Defense in the Nuclear Age.						X	X	X	

Group D: Best Practices										
			Functional Topic							
Author	Publication	PPBS/Resource Mgt Overall/Multiple topics	Planning	Programming	Budgeting	Execution/ Performance Review	Systems Analysis/Cost-effectiveness Analysis	Cost Analysis	Capability & Acquisition Planning & Analysis; Mission Area Analysis	Transparency/ Combating Corruption
World Bank	<i>Public Expenditure Management Handbook.</i>				X					X
International Monetary Fund	<i>Manual on Fiscal Transparency; "Code of Good Practices on Fiscal Transparency."</i>				X					X
Schiavo-Campo, Salvatore, and Daniel Tommasi	<i>Managing Government Expenditures.</i>				X					X
Potter, Barry H., and Jack Diamond	<i>Guidelines for Public Expenditure Management.</i>				X					
Organisation for Economic Co-operation and Development	<i>"OECD Best Practice for Budget Transparency."</i>				X					X

Group D: Best Practices										
		Functional Topic								
Author	Publication	PPBS/Resource Mgt Overall/Multiple topics	Planning	Programming	Budgeting	Execution/ Performance Review	Systems Analysis/Cost-effectiveness Analysis	Cost Analysis	Capability & Acquisition Planning & Analysis; Mission Area Analysis	Transparency/ Combating Corruption
Pyman, Mark	<i>Building Integrity and Reducing Corruption Risk in Defence Establishments: Ten Practical Reforms.</i>									X
Organisation for Economic Co-operation and Development	<i>Integrity in Public Procurement: Good Practice from A to Z.</i>				X					X
Lawrence, Dennis L., Kenton G. Fasana, and Alfred H. Gollwitzer Tagarev, Todor	<i>Good Defense Resource Management Practices.</i> "A Means of Comparing Military Budgeting Processes in South East Europe."	X	X	X	X	X				
Meyers, Roy T.	"Is There a Key to the Normative Budgeting Lock?"				X					

Group E: Critiques										
Author	Publication	PPBS/Resource Mgt Overall/Multiple topics	Planning	Programming	Budgeting	Execution/ Performance Review	Systems Analysis/Cost-effectiveness Analysis	Cost Analysis	Capability & Acquisition Planning & Analysis; Mission Area Analysis	Transparency/ Combating Corruption
Wildavsky, Aaron	<i>The Politics of the Budgetary Process.</i>				X					
Wildavsky, Aaron	"Rescuing Policy Analysis from PPBS."				X					
Schick, Allen	"A Death in the Bureaucracy: The Demise of Federal PPB."									
BENS	"Framing the Problem of PPBS." "Changing the Pentagon's Planning, Programming and Budgeting System: Phase 2 Report and Executive Summary"					X				
Murdock, Clark A., Michele A. Flournoy, Christopher A. Williams, and Kurt M. Campbell	<i>Beyond Goldwater-Nichols Phase 1 Report: Defense Reform for a New Strategic Era.</i>					X				

Group F: Open Source Defense Establishment Publications										
		Functional Topic								
Author	Publication	PPBS/Resource Mgt Overall/Multiple topics	Planning	Programming	Budgeting	Execution/ Performance Review	Systems Analysis/Cost-effectiveness Analysis	Cost Analysis	Capability & Acquisition Planning & Analysis; Mission Area Analysis	Transparency/ Combating Corruption
United Kingdom Ministry of Defence	Strategic Defence Review – A New Chapter, vols. 1-2.		X							
Department of Defense	National Defense Strategy of the United States.		X							

Appendix B. Publications by Author

The number at the end of each entry refers to the page number in this Reading Guide where the publication can be found.

- Anderson, Barry, Teresa Curristine, and Olaf Merk. “Budgeting in Norway.” *OECD Journal on Budgeting* 6, no. 1 (2006): 8-43.....51
- Anipa, Seth, Felix Kaluma, and Elizabeth Muggeridge. “Case Study MTEF in Malawi and Ghana.” Paper presented at the Department for International Development (DFID) Seminar on Best Practice in Public Expenditure Management, June 1999.51
- Anonymous. “Interview with Deputy Defense Minister Nodar Kharshiladze.” *Georgia Today* 492 (January 1-14, 2010).50
- Anonymous. “Mel Laird: Coach, Quarterback, or Both?” *Armed Forces Management* 15 (October 1969): 34-36.....28
- Australian Government Department of Defence. *Defence Capability Development Manual*. Canberra: Department of Defence, Commonwealth of Australia, 2006. ..31
- Bagratuni, Suzan. “[Armenia Best Practice in Performance Budgeting]”, n.d.....50
- Blöndal, Jón R. “Budgeting in Singapore.” *OECD Journal on Budgeting* 6, no. 1 (2006): 46-85.51
- Blöndal, Jón R., and Daniel Bergvall. “Budgeting in Austria.” *OECD Journal on Budgeting* 7, no. 3 (2007): 40-75.50
- Business Executives for National Security (BENS). “Changing the Pentagon’s Planning, Programming and Budgeting System: Phase 2 Report and Executive Summary.” N.p., 2000.45
- Business Executives for National Security (BENS). “Framing the Problem of PPBS.” N.p., January 2000.45
- Choi, Hyun Deok. “Participatory Budgeting in Buk-Gu, Korea,” in OECD, *Focus on Citizens: Public Engagement for Better Policy and Services*. OECD Publishing, 2009. 52
- Debets, Raphael. “Performance Budgeting in the Netherlands.” *OECD Journal on Budgeting* 7, no. 4 (2007): 104-122.51
- Department of Defense. *National Defense Strategy of the United States*. Washington, D.C.: Department of Defense, June 2008.49

Enthoven, Alain C., and K. Wayne Smith. <i>How Much is Enough? Shaping the Defense Program, 1961-1969</i> . New York: Harper & Row, Publishers, Inc., 1971.	17
Fisher, Gene H. <i>Cost Considerations in Systems Analysis</i> . New York: American Elsevier Publishing Company, 1971.....	33
Ginnerup, Rikke, Thomas Broengjörgensen, Anders Møller Jacobsen, and Niels Refslund. “Performance Budgeting in Denmark.” <i>OECD Journal on Budgeting</i> 7, no. 4 (2007): 68-90.	50
Goldman, Frances, and Edith Brashares. “Performance and Accountability: Budget Reform in New Zealand.” <i>Public Budgeting & Finance</i> 11, no. 4 (Winter 1991): 75-85.	51
Gordon, C. Vance, David L. McNicol, and Bryan C. Jack. "Revolution, Counter-Revolution, and Evolution: A Brief History of the PPBS." Unpublished paper, n.d. [2002]	27
Government of Alberta, Canada. “Module 5: Performance-Based Budgeting – Overview for Workshop Participants,” n.d.....	50
Grimes, Steven R. “PPBS to PPBE: A Process or Principles?” Carlisle, PA: U.S. Army War College, March 15, 2008.....	27
Hawke, Lewis. “Performance Budgeting in Australia.” <i>OECD Journal on Budgeting</i> 7, no. 3 (2007): 134-147.	50
Heald, David. “Fiscal Transparency: Concepts, Measurement and UK Practice.” <i>Public Administration</i> 81, no. 4 (December 2003): 723-759.	52
Hirsch, Werner Z. “Program Budgeting in the United Kingdom.” <i>Public Administration Review</i> 33, no. 3 (March-April 1973): 120-128.....	52
Hitch, Charles J. “Management Problems of Large Organizations.” <i>Operations Research</i> 44, no. 2 (March-April 1996): 257-264.	21
Hitch, Charles J. “The Systems Approach to Decision-Making in the Department of Defense and the University of California.” Special Conference Issue: Decision-Making, <i>Operational Research Quarterly</i> 19 (April 1968): 37-45.....	22
Hitch, Charles J. <i>Decision-Making for Defense</i> . Berkeley and Los Angeles, CA: University of California Press, 1965.....	16
Hitch, Charles J., and Roland N. McKean. <i>The Economics of Defense in the Nuclear Age</i> . Santa Monica, CA: RAND, March 1960.....	34
IDA DRMS Task. <i>Modular DRMS Concept</i> . Alexandria, VA: Institute for Defense Analyses (IDA), 2006.	19
International Monetary Fund (IMF). <i>Manual on Fiscal Transparency</i> . Washington, D.C.: IMF, 2007.	36
Kraan, Dirk-Jan, and Joachim Wehner. “Budgeting in Slovenia.” <i>OECD Journal on Budgeting</i> 4, no. 4 (2004): 56-98.	51

Kraan, Dirk-Jan, and Michael Ruffner. “Budgeting in Switzerland.” <i>OECD Journal on Budgeting</i> 5, no. 1 (2005): 38-78.....	52
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Kraft, Jonathan. “The Evolution of Program Budgeting in the United States Government.” <i>Armed Forces Comptroller</i> 54, no. 1 (Winter 2009): 40-41.....	25
Lawrence, Dennis L., Kenton G. Fasana, and Alfred H. Gollwitzer. <i>Good Defense Resource Management Practices</i> . Alexandria, VA: IDA, 2007.....	40
Lloyd, Richmond M., and Dino A. Lorenzini. “A Framework for Choosing Defense Forces.” <i>Naval War College Review</i> (January/February 1981): 46-58.....	30
Massey, Robert J. “Program Packages and the Program Budget in the Department of Defense.” <i>Public Administration Review</i> 23, no. 1 (March 1963): 30-34.	26
McCormack, Lee. “Performance Budgeting in Canada.” <i>OECD Journal on Budgeting</i> 7, no. 4 (2007): 50-66.	50
Meyers, Roy T. “Is There a Key to the Normative Budgeting Lock?” <i>Policy Sciences</i> 29, no. 3 (September 1996): 171-188.	41
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Murray, Russell and Les Aspin. <i>Searching for a Defense Strategy</i> . Washington, D.C.: House of Representatives, 1987.....	31
Novick, David. “The Origin and History of Program Budgeting.” RAND Paper P-3427. Santa Monica, CA: RAND, 1966.	26
Novick, David. <i>Current Practice in Program Budgeting (PPBS)—Analysis and Case Studies Covering Government and Business</i> . New York: Crane, Russak, 1973. ...	18
Organisation for Economic Co-operation and Development (OECD). <i>Integrity in Public Procurement: Good Practice from A to Z</i> . Paris, France: OECD Publishing, April 2007.	39
Organisation for Economic Co-operation and Development (OECD). “OECD Best Practices for Budget Transparency,” <i>OECD Journal on Budgeting</i> 1, no. 3 (2002): 7-14.	38
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Potter, Barry H., and Jack Diamond. <i>Guidelines for Public Expenditure Management</i> . Washington, D.C.: IMF, 1999.	37
Pugh, Cedric. "Budget Innovation in Singapore." <i>Asia Pacific Journal of Management</i> 3, no. 3 (May 1986): 157-175.	51
Pyman, Mark. <i>Building Integrity and Reducing Corruption Risk in Defence Establishments: Ten Practical Reforms</i> . London, UK: Transparency International, April 2009.	38
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Sullivan, Raymond E., Jr. <i>Resource Allocation: The Formal Process</i> , 8 th ed. Newport, RI: U.S. Naval War College, July 1, 2002.	20
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Appendix D. Abbreviations

BENS	Business Executives for National Security
BG-N	Beyond Goldwater-Nichols
CAPE	Cost Assessment and Program Evaluation
CNA	Center for Naval Analyses
DAS	Defense Acquisition System
DCAF	Geneva Centre for the Democratic Control of Armed Forces
DFID	Department for International Development
DOD	Department of Defense
DOTMLPF	Doctrine, Organization, Training and Education, Material, Leadership, People, Facilities
DPG	Defense Planning Guidance
DRMS	Defense Resource Management Studies
IDA	Institute for Defense Analyses
IMF	International Monetary Fund
JCS	Joint Chiefs of Staff
JCIDS	Joint Capabilities Integration and Development System
JPG	Joint Programming Guidance
JSPS	Joint Strategic Planning System
MTEF	Medium-Term Expenditure Forecast
MOD	Ministry of Defense
NATO	North Atlantic Treaty Organization
NDS	National Defense Strategy

NMS	National Military Strategy
NOAA	National Oceanic and Atmospheric Administration
NSS	National Security Strategy
OECD	Organisation for Economic Co-operation and Development
OUSD(P)	Office of the Under Secretary of Defense for Policy
OSD (PA&E)	Office of the Secretary of Defense (Program Analysis & Evaluation)
PEM	Public Expenditure Management
POM	Program Objective Memorandum
PA&E	Program Analysis & Evaluation
PfP	Partnership for Peace
PPB	Planning, Programming, Budgeting
PPBE	Planning, Programming, Budgeting, Execution
PPBES	Planning, Programming, Budgeting, Execution System
PPBS	Planning, Programming, Budgeting System
OECD	Organization for Economic Co-operation and Development
OSD	Office of the Secretary of Defense
SDR	Strategic Defence Review
SPG	Strategic Planning Guidance
UK	United Kingdom
U.S.	United States
WPB	War Production Board

Appendix E.

Glossary

Acquisition	Encompasses a wide range of activities related to acquiring equipment, facilities, and services, including setting requirements, procuring those items, and supporting them through the entire life cycle.
Budget Guidance	Information typically issued by Ministry of Defense chief financial officer providing detailed instructions for preparing and submitting annual budget request to all defense establishment budget-submitting components.
Budget Planning	The process of translating the completed resource plan into an annual budget request.
Capability (General)	An organization's ability to preplan and accomplish an objective and achieve the effects desired in a specified time period and operating environment. Capability is generally a function of organizational structure, including personnel and equipment on hand, the readiness of personnel and equipment, training, and sustainment.
Capability (Military)	A military unit's ability to preplan and accomplish a mission and achieve the effects desired in a specified time, operational environment, and state of preparedness, where preparedness is the sum of readiness and sustainment.
Capability Planning	A deliberate process that provides a coherent basis for (1) implementing the major missions or objectives assigned in a strategic plan; and (2) assessing the capability [see also Capability] to accomplish assigned major defense missions or objectives and developing broadly stated non-materiel or materiel-related approaches that address the most important capability-related challenges that have been identified.

Cost Analysis	An economic evaluation process involving a wide range of techniques including gathering (and assessing the accuracy and reasonableness of) cost-related data, disaggregating, aggregating, categorization, and analysis of cost information to obtain insights on relevant cost issues.
Crosswalk (in program budget context)	A tabular display that relates output-oriented program categories to input-oriented budget categories.
Defense Acquisition System	A systematic approach for assessing potential materiel options and developing affordable acquisition proposals that are designed to meet broadly stated operational needs in a timely manner and at a reasonable price.
Defense Budget Request	An agency or department's formal submission to higher headquarters officially seeking resources to be used to operate that organization for the coming year and providing formal justification for the requested level of funding.
Defense Capability Analysis	Assessment and evaluation of a military organization's ability to accomplish an objective and achieve the effects desired in a specified time period and operating environment. Capability is generally a function of organizational structure, including personnel and equipment on hand, the readiness of personnel and equipment, training, and sustainment.
Defense Planning Guidance	A principal consolidated document within Planning, Programming, and Budgeting systems used by the defense establishment leadership (typically Minister of Defense) to provide guidelines to the military services and other defense components for preparing their multi-year defense program proposals.
Defense Program	A program for the defense establishment as a whole, developed based on a review, assessment, and consolidation of the approved programs of all of the individual major components of the defense establishment.
Defense Systems Analysis	A systematic interdisciplinary approach to assessing the implications of defense policy issues.

Fiscal Guidance	A document typically issued by the senior leadership or chief financial officer that specifies the annual aggregated funding level to be used in resource planning by major components of the defense establishment for a multi-year medium-term planning period (e.g., three to six years).
Fiscal Transparency	An important attribute of well-designed resource planning processes that enables stakeholders to readily comprehend the major functioning and results and obtain clear information on key aspects of those processes.
Force Planning	Process of identifying forces and capabilities needed to implement national policy and strategy.
Joint Strategic Planning System	The process used by the U.S. Chairman of the Joint Chiefs of Staff to give strategic direction to the nation's armed forces and to provide advice to the President and the Secretary of Defense on defense capability requirements, programs, and budgets.
Major Program	Within Planning, Programming, and Budgeting systems, a set of program elements that comprises a major defense capability, reflecting a key defense establishment mission or support function and including the resources needed to accomplish its mission or function objectives.
Major Program Structure	Within Planning, Programming, and Budgeting systems, a list of the Major Programs that comprise all of the components, activities, and resources of the defense establishment.
Multi-year programming	One of several terms used to describe a defense resource management process comparable to the Planning, Programming, and Budgeting System process.
Multi-year resource management	One of several terms used to describe a defense resource management process comparable to the Planning, Programming, and Budgeting System process.
National (Military) Strategy	The overarching basis for developing military plans and applying military power during peace and war to attain national objectives.
Operations Plan	A plan for accomplishing a stated objective using assigned and attached forces.

Participatory Management	Terminology used by former U.S. Secretary of Defense Melvin Laird to describe the decentralized management concept he introduced within the Department of Defense when he succeeded Robert McNamara as Secretary of Defense in 1969.
Partnership for Peace (PfP)	NATO program of partnership between NATO and individual European and former Warsaw Pact countries and former Soviet Union republics, aimed at enhancing security and stability and addressing such issues as terrorism, disaster response, and proliferation of weapons of mass destruction. Current PfP countries are: Armenia, Austria, Azerbaijan, Belarus, Bosnia and Herzegovina, Finland, Former Yugoslav Republic of Macedonia, Georgia, Ireland, Kazakhstan, Kyrgyzstan, Malta, Moldova, Russia, Serbia, Sweden, Switzerland, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.
Planning, Programming and Budgeting System (PPBS)	A systematic, calendar date-driven process for identifying and funding defense and security-related needs; and assessing results achieved against established programmatic and financial management objectives.
Program Budget	One of several terms used to describe a defense resource management process comparable to the Planning, Programming, and Budgeting System process.
Program Element	The smallest aggregation of functional or organizational entities and related resources that are needed to perform a specific mission. For programming and budgeting purposes, each program element should be mutually exclusive and only assigned to one defense mission area. For mission area assessment purposes, “multi-purpose” program elements (e.g., units that can perform more than one mission) can be identified and attributed to more than one defense mission area.
Program Objective Memorandum (POM)	Within the U.S. Planning, Programming, and Budgeting System process, the service-proposed multi-year defense program based on fiscal guidance targets and program development guidance issued by the US Secretary of Defense. The POM typically encompasses a comprehensive collection of data and narrative material, including a cover memorandum that summarizes the objectives of the program that is being proposed.

Program Package	An alternative term for major program. Within Planning, Programming, and Budgeting System processes, a set of program elements that comprises a major defense capability, reflecting a key defense establishment mission or support function and including the resources needed to accomplish its mission or function objectives.
Public Expenditure Management	The process the government of a country uses to orchestrate the expenditure of resources to provide for the needs of the nation and its populace.
Resource Forecast	Within Planning, Programming, and Budgeting systems (and similar resource management processes), the analytical activity that entails projecting funding expected to be available to the defense establishment for the multi-year planning period to ensure that resource planning is financially realistic.
Resource Management	The process by which the resources (funding, personnel, equipment, facilities, etc.) of an organization are used in the most efficient and effective manner to achieve desired objectives.
Resource Planning	A systematic basis for identifying the resources required to accomplish assigned or potential objectives or provide a capability [see also Capability]. In resource-constrained environments it usually entails developing multi-year plans or annual budget proposals that allocate limited resources to the highest-priority objectives.
Service Budget Proposal	A proposed budget submitted by each of the military services.
Service Program	The total set of related activities and resources a military service has been authorized to implement to achieve specific capability or performance-based objectives.
Smart Procurement Initiative	UK Ministry of Defence (MOD) defense-acquisition concept intended to transform process and organizational structures, with the objective of achieving faster, cheaper, and better procurement of defense equipment.
Strategic Planning	A deliberate process that identifies mid- and long-term challenges and planning options.

Systems Analysis	A systematic interdisciplinary approach to assessing the implications of defense policy issues.
Threat assessment	An estimate/evaluation of the potential defense capabilities potential foes could draw on in threatening or attacking a country or group of countries.
Transparency in government expenditures	An important attribute of well-designed resource planning and government expenditure processes that enables stakeholders to readily comprehend the major functioning and results and obtain clear information on key aspects of those processes.

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