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NATIONAL DEFENSE UNIVERSITY
Washington, D.C.

LEVEL II

NATIONAL SECURITY MANAGEMENT

THE SYSTEMS ACQUISITION PROCESS
IN
THE DEPARTMENT OF DEFENSE
AND
ITS LIMITATIONS

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Research Report Submitted by

William G. Svetlich
Office of the Secretary of Defense

June 1978

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Acquisition of systems is an important part of the total budget of the DoD. Its importance can be appreciated in that about one third of the FY 79 budget is allocated for research, development, and procurement of systems. Consequently, effective measures to improve the process can add substantially to the savings that might otherwise be lost by using outdated methods. The purpose of the study, therefore, is to examine the process briefly, identify some of the major limitations, and recommend improvements to achieve better program development at reduced costs.		

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SECTION I

EXECUTIVE SUMMARY

LIMITATIONS OF THE ACQUISITION PROCESS

1. MISSION AREA NEED STATEMENT

a. The bottom-up approach of having the Services identify the mission need may cause a narrowing of the scope of the mission, and may result in advocacy and selection of a less effective system because of the roles and missions constraints imposed on the Services.

b. Also, the bottom-up approach of identifying mission needs can result in lengthy systems analyses by a Service to choose an "optimum" system. Once the system is chosen there is a tendency to become progressively more inflexible at evaluating other system alternatives, so that, by DSARC I, attempts by the DSARC principals, or the DAE, to explore other system alternatives become very difficult.

2. DECISION COORDINATING PAPER

a. The DCP is not updated and kept current as intended. Of 56 ongoing major programs, only 13 have current DCPs (i.e., updated within the past 12 months).

b. Major programs in various stages of development have no approved DCPs. Currently, six ongoing programs are in this category, among them the F-18, and the cruise missile.

c. There is no centrally located source of current and historical DCPs for ready reference to potential users. Rather, individual DCPs are scattered among the respective staff offices in various states of currency.

d. Many DCPs contain a great deal of lengthy, historical data no longer needed for the immediate program. They are not the short, explicit, concise, current agreement document between the Secretary of Defense and the Services that they were designed to be originally. Consequently, it can become tedious to separate the history from the contemporary material.

3. DSARC PROCESS

a. There has been a tendency in the recent past to increase the number of milestone decision points beyond the four (0-III) listed in the directives as adequate for program review and management. This trend has resulted in the involvement of the highest levels of OSD management in micromanagement of individual programs causing a considerable expenditure of additional time and effort by the staffs and principals in preparation for a review.

b. The DSARC recommendations and decisions are not always clear and explicit, and contain numerous caveats, for the Service and program manager to follow, permitting more than one interpretation of intent and direction. Part of this may be attributed to the complexity of each program, but a portion may be due to the difficulty the principals themselves, and their staffs, often have in agreeing on a unified program decision. Consequently, compromises produce caveats and vague direction.

4. PROCESS LACKS COMPLETE CYCLE COVERAGE

Individual systems are not managed throughout their complete useful lives, even though consideration of life cycle costs is a requirement in the acquisition directives. Once the system is deployed and leaves the DSARC management process there is no provision for a formal resource management successor to concern himself with system support costs, nor of their translation into funded programs in the PPBS. This task usually falls to a host of training, maintenance, logistics, and other functional organizations without being directly allocated to specific systems for traceable cost control for POM, budget, or FYDP purposes.

5. PROCESS NOT INTEGRATED WITH PPBS

Although adequate in theory, the practical interaction of the DSARC process with the PPBS is less than desired. The technically oriented

managers and engineers try to concentrate on practical aspects of program development, whereas planners and budgeteers tend to be more concept and cost oriented. Consequently, these differences in view point tend to degrade the theoretical aspects of both processes so that the actual results are below expectation.

6. CONSOLIDATED GUIDANCE

The document is not sufficiently clear on some key defense policy issues to provide the degree of planning guidance that might be desired. Also, its emphasis is on current programs (for POM requirements), rather than on future planning and force structure options to provide the Secretary of Defense with a broader choice of alternatives than that afforded him now. Nor is there a study plan to allow orderly evaluation of mission planning and requirements based on changes in defense policy and concepts.

7. DSARC DECISIONS vs. BUDGET PROCESS

A DSARC decision does not authorize the committment of funds for a program. This requires the Service to seek those funds from other parts of its approved budget, including other major programs. This can be particularly devastating when a Service makes significant cuts, and across each program, because it has the effect of slowing development, postponing contracting, and lengthening scheduled program completion.

This normally translates itself into increased program costs (overruns) for each affected program.

8. SERVICES PRIORITIZE PROGRAMS

Since the Services are forced to reallocate their resources to accommodate a new or redirected program, they are also forced to re-prioritize their programs. However, this may adversely affect a higher order of program priority from an OSD point of view. So, even though the Service is required to submit its proposed budget changes to OSD for approval, the degree of control on the Service may be limited, and any subsequent OSD directed programming re-direction can be lengthy and time consuming if the Service disagrees.

RECOMMENDED CHANGES TO THE ACQUISITION PROCESS

1. MISSION ELEMENT NEED STATEMENT

a. A top-down approach should be taken of the MENS concept by the OSD and the OJCS so that they have the lead in planning for, determining, and evaluating overall mission needs. This is a logical task for the organizations since they should have no conceivable conflict as the Services with respect to traditional roles and missions. Second, both

organizations formulate defense policies, and resource requirements, principally through the CG and JSPD documents, and should have a broader perspective of mission needs and possible alternative system concepts than the Services.

b. Principally because of their policy formulating activities, two organizations could be charged with this top-down function. One, OASD (PA&E), is responsible for drafting the CG document which contains the fundamental defense policies, strategies, and objectives, identifies program deficiencies, and fiscal guidance. The other, the Director J-5, Plans and Policy, OJCS, is responsible for preparing the JSPD, which precedes the CG and provides input to it and contains the military's appraisal of the threat to the U.S., and the recommended objectives, strategy, and planned force level, to attain the national goals.

c. In addition to their policy formulating activities both OASD (PA&E), and the Director J-5, Plans and Policy, OJCS, have, or are able to obtain, quantitative analytical support. This support capability could be used appropriately to quantify the resources needed for the objectives and strategies advocated in the CG and JSPD documents, and provide a more definitive set of conceptual systems options for a particular task than is now possible from the Services.

d. Once OASD(PA&E), and the Director J-5, Plans and Policy, OJCS, identify the basic resource requirements to satisfy U.S. national defense

policy, mission deficiencies, and possible alternative systems concepts, the task could then be assigned, at Milestone 0, to the appropriate Service(s) having the most related roles and missions that pertain to a particular mission area requirement. The Service would be able to evaluate the alternative systems concepts in the detail necessary to select leading contenders, and in consonance with the OSD and OJCS staffs, arrive at a preferred system at Milestone I.

2. DECISION COORDINATING PAPER

a. To reduce to some degree the problems of outdated, unapproved, inaccessible, and lengthy DCPs for major systems, a program planning office is needed in OUSDR&E to serve as program control for the major systems. This would include scheduling DSARC reviews and monitoring each program by preparing a program control schedule for it to insure that it has an approved, and updated DCP that is short, concise and contains only that which was agreed to at the DCP outline meeting.

b. Another important suggested function for the program planning office would be that it maintain a historical file of approved DCPs for each major program. It would permit action officers to reference approved DCPs readily available at a single central location. As a result, it should reduce the amount of historical data in current DCPs, and aid materially in producing DCPs that are short, concise, explicit, and current.

c. A third recommended function for the planning office that would be greater than the DCP requirements themselves, but directly associated with them, is its need to have a close relationship to the Analysis office of OUSDR&E to avail itself of the thinking concerning mission area needs, and the systems concepts that are being considered. As a result, it would have the opportunity to get a perspective on the trend of new programs, and be a focal point for guiding the timely preparation of MENS, DCPs, and other necessary program documents.

3. DSARC PROCESS

a. The number of DSARC process review milestones should not be increased from the current four listed in DoD Directive 5000.1. Instead, the Services and their program managers should manage their programs throughout the course of program development, with action officers at all staff levels monitoring their respective systems for potential and actual development and cost problems.

b. The problem that many DSARC decisions are not always clear and explicit, and contain numerous caveats could, at least partially, be solved by strengthening the DSARC decision making process by giving the DAE stature and authority of sufficient magnitude to integrate and unify the individual recommendations of the DSARC members. A major step in this direction was taken with the approval of DoD Directive 5000.30, defining the DAE's authority and responsibility. Also, the individual

designated the DAE has been elevated to an Undersecretary of Defense status.

4. LIFE CYCLE MANAGEMENT

a. There should be a more direct relationship between the support resources required for each system and the individual systems themselves that are listed in the mission programs of the FYDP. If this were implemented, the costs of support resources for each system could, to a large degree, be reflected separately in the POM, budget, and FYDP, to permit direct control and comparison of support costs to individual systems. This could be accomplished through a revised set of acquisition directives to include program management beyond production and deployment, and to encompass resource management of support programs (e.g., supply, maintenance) for each system throughout its life cycle.

b. Policy guidance and program management of the support resources should emanate most appropriately from OASD(MRA&L), similarly to the acquisition guidance of OUSDR&E, with staff assistants monitoring individual programs. As a part of this management, periodic evaluation of programs could be conducted using the DSARC process to permit the DSARC principals an opportunity to compare the effectiveness and costs of proposed systems as possible tradeoff candidates for current programs when more directly allocable support costs for both systems are developed and used.

5. CONSOLIDATED GUIDANCE

a. Rather than a bottom-up approach to defense policy and programming, as is largely the case in the first edition of the Consolidated Guidance document, it should be structured as a top-down long range policy instrument. It might best be organized to contain a 10-15 year plan to reflect a picture of the current programs and those planned for the future, their capabilities, and major program options based on national defense policy, strategy, and goals, besides the programming and fiscal guidance.

b. To assist in the long range planning effort in support of the CG, an OSD study plan would be highly desirable. It would permit the orderly development of a comprehensive study program in the DoD to assist in identifying the impact of new policies, strategies, technologies, and the like, on mission requirements and system deficiencies that would eventually translate itself into MENSs, and proposals for alternative system concepts. It would assist in guiding all of the DoD studies agencies to more wisely allocate their scarce resources and reduce unnecessary duplication in conducting the policy and force structure type studies and analyses. This was attempted in the previous administration with some success, but has since been discontinued.

c. If the study plan is to be implemented, consideration should be given to a change in organizational emphasis of some existing organi-

zations. Notable, OASD(PA&E) could be charged with long range planning in close partnership with OUSDR&E. Also, it should be responsible for the systems analysis/operations research capability to conduct its own analysis of force requirements based on the policies it developed for the Secretary in the CG document. To better accomplish this responsibility, consideration should be given to having it give up its programming and cost/economic analysis functions to the Comptroller.

6. DSARC DECISIONS vs. BUDGET PROCESS

To reduce the currently disruptive and time consuming effects of reprogramming a Service's budget necessitated by DSARC decisions, thought should be given to better plan program reviews so that the resulting DSARC decisions can be included as part of the normal yearly POM/budget cycle. Adoption of other recommendations such as the development of a long range planning function and study plan by OASD (PA&E), and program planning and Analysis organizations by OUSDR&E, should aid materially in evaluating the need and introducing, programs at the appropriate time in the POM/budget cycle. This would reduce the number of Secretary of Defense decisions needed for each program and would provide a budget for the program at the same time.

7. OSD PROGRAM PRIORITIZATION

In the rare instance where careful preplanning cannot prevent program decisions from falling outside the POM/budget cycle, the Secretary should provide programming guidance to the Service along with the DSARC decision. The guidance would be based on the long and short range planning of OASD(PA&E), and USDR&E in close coordination with the Comptroller. Again, this would reduce repetitive program evaluation and redirection for the Secretary since the Service would follow his stated programming guidance.

8. FUNDING BY ACQUISITION PHASE

A feature which would assist in the stability and predictability of program planning, development, and costs, and provide flexibility in relative development of programs, is funding of programs by development phase. The DSARC principals should be provided funding options (baseline, high, low) by phase for each program during DSARC reviews. This would give the Secretary an opportunity to select among a number of practical alternative options to begin, or accelerate, certain programs at the expense of others. Yet, once his decision was made, stable program development could be assured throughout the phase.

9. ORGANIZATIONAL REEMPHASIS

a. OASD(PA&E) should be strengthened in the systems analysis/ operations research areas to permit it to accomplish its planning and strategy aspects for OSD. Correspondingly, it should largely shed its programming, fiscal guidance, cost/economic analysis functions to the Comptroller.

b. In support of the long range planning by OASD(PA&E), OUSDR&E should provide the more scientific and engineering aspects of planning to closely interface with the mission area requirements identified in analysis. Interfacing both groups, there should be a strong OUSDR&E program planning staff to program individual system at the proper time for POM/budget reviews, and to provide strong administrative support to monitor each program in the acquisition cycle.

c. The Comptroller should work in close harmony with these organizations to provide reasonable certainty that programs are initiated only when adequate budget is available. It should be the prime organization for the programming (POM) aspects of the budget since it is responsible for the final budget, with OASD(PA&E) having a secondary responsibility in this, particularly in areas where analyses are required.

SECTION II

INTRODUCTION

Acquisition of systems is an important and costly part of the total programs and budget of the Department of Defense (DoD). Its importance can be gauged to some degree in that about one third of the FY 79 budget is allocated for research, development and procurement of systems.¹ Consequently, effective measures to improve the process can add substantially to the savings that might otherwise be lost by using outdated policies and procedures. The purpose of the study, therefore, is to examine the process briefly, identify some of the major limitations, and recommend possible improvements to it so as to contribute in achieving better program development at reduced costs.

BACKGROUND

The present systems acquisition and Planning, Programming, Budgeting System (PPBS) processes have their beginnings in the McNamara era of the early 1960s. It was during that period that the military planning, which was done largely in the Services, and the yearly budgeting which was done largely in the Office of the Secretary of Defense (OSD) were linked by a programming function to reflect the interaction that is necessary between the planners and those who control the budget. Among other things, it established a budget covering a five year period, the Five Year Defense Program (FYDP). It established program elements and

grouped them into nine (now ten) major programs permitting the Services to compete program by program (rather than on Service share of the budget), and it required Secretary of Defense review of Service programs along with supporting analyses for them.²

Along with the planning and budgeting changes came similarly significant changes in the manner in which systems were to be acquired. Policies were developed to acquire systems based on a more formalized and quantitative management review process. In addition, a requirement was established to use systems analysis and operations research techniques to justify and support mission needs and system alternatives.³ This was later included in a specific directive.⁴

More recently, the original directives have evolved into the now basic documents that guide the existing systems acquisition and PPBS processes. These include the Office of Management and Budget Circular A-109, and DoD Directives 5000.1, 5000.2, 5000.3, 5000.29, 5000.30, for the acquisition of systems, and 7045.7, for the PPBS. These directives are now implemented within the framework of requirements to satisfy national goals, as well as defense policies and strategies that have been developed to achieve those goals. To assist in better integrating the policy, programming and fiscal facets into an integrated whole, a new policy document, the Consolidated Guidance (CG) has been prepared. The study highlights some of the major aspects of this, and other pertinent documents, their major limitations, and some suggested approaches to improve the acquisition process.

STUDY METHODOLOGY

The basic approach taken to analyze the acquisition process is considerably less than a rigorous mathematical one. It consists essentially of a review of the several directives on the acquisition of systems as well as of the recent literature. This was complemented by brief interviews of about 35 individuals, who have, or recently had, responsibility in certain aspects of acquisition of systems in the DoD (Appendix).

The sample is exceedingly small in relation to the total number of participants in the process, and is due in large measure to a constraint imposed by time and resource limitations. Biases were removed as much as possible by asking the same question of individuals in different organizations to obtain an appreciation of the extent of agreement, if any.

SECTION III
PRESENT SYSTEM ACQUISITION PROCESS

The system acquisition process is a complex and detailed one. It is closely interrelated with the PPBS. Only the major aspects of that process are outlined below.

INTRODUCTION

OMB CIRCULAR A-109

A new policy for the acquisition of major systems was issued jointly by the Office of Management and Budget (OMB), and the Office of Federal Procurement Policy (OFPP), on 5 April 1976. This new policy, OMB Circular No. A-109, was issued to provide an orderly, systematic framework in the acquisition of any new system. It was also intended as a management tool to reduce cost overruns experienced on most major programs.⁵

IMPLEMENTING DOD DIRECTIVES

Within the DoD, this circular is implemented directly by several directives. The "Major System Acquisitions", Directive, DoDD 5000.1, defines the basic policy and systematic management decision steps to be used in acquiring any system, especially a major system.⁶ The second directive,

DoDD 5000.2, prescribes the acquisition review process to be followed by DoD management in evaluating the step by step progress of a major system through to its deployment. It identifies and describes necessary management tools to evaluate each system, among them the advisory councils: Defense and (Service) System Acquisition Review Councils (DSARC and (S)SARC, respectively), and program reviews and milestones. In addition, it stipulates program documentation requirements, including the Mission Element Need Statement (MENS), and the Decision Coordinating Paper (DCP).⁷ To integrate this management decision process, and to monitor the implementation of the policies in the above directives, a Defense Acquisition Executive (DAE) is designated by the Secretary of Defense under authority of DoDD 5000.30. He is the principal advisor and staff assistant to the Secretary for the acquisition of defense systems and equipment.⁸

Closely associated with these basic implementing DoD documents are a number of others. Probably the most important of these include DoDI 7045.7, "The Planning, Programming, and Budgeting System", which establishes procedural guidance for making changes to the approved resources of the FYDP, for the submission, analysis, review and approval of new and revised programs and budgets, and for updating and maintaining the FYDP.⁹ Policies relating to development and operational test and evaluation of systems are defined in DoDD 5000.3¹⁰, and those pertaining to design to cost of systems, subsystems and components are provided in DoDD 5000.28.¹¹

PROGRAM DOCUMENTATION

Although a great deal of documentation is required for any particular program, two basic and essential documents are identified in DoD Directive 5000.2.¹² These are the Mission Element Need Statement (MENS), and the Decision Coordinating Paper (DCP).

MISSION ELEMENT NEED STATEMENT

The MENS is intended to be a short document of 10 pages or less, used to justify a new mission need. It is normally a subset of a single mission area. Ultimately, a separate MENS is prepared for each individual proposed system.

The approval of a MENS by the Secretary of Defense constitutes the official beginning of a program (Milestone 0), and the beginning of the Program Initiation phase.¹³ However, a lengthy process may precede arrival at this milestone. First, a mission need must be perceived. This can occur from a variety of sources, among them being the national defense policy statements approved by the Secretary of Defense in the annual Consolidated Guidance from the Services' Program Objectives Memorandum (POMs) in response to the CG, from the long range plans, and war plans of the Joint Chief of Staff (JCS), and the Services, and from the operational unit itself which must carry out the mission stated in the policies and plans of higher command authority. Also, some degree

of influence has been exerted in the past through the publication of Mission Area Summaries (MAS) by the Office of the Director Defense, Research and Engineering (ODDR&E) which identified, by mission, U.S. force capabilities and possible deficiencies that might exist, or occur. These were generally qualitative assessments of capability against the projected threat, in many cases unsupported by rigorous analytical or simulation techniques.

Once the functional requirement is identified, the actual preparation and submittal of a MENS is done by a Service, either in response to a request by the Secretary of Defense, or upon determination by a Service that a valid mission requirement exists. To support the MENS, one or more systems analyses (to address the broader functional policy aspects) and mission analyses (for more specific alternative system concepts) are normally conducted by the Service. Assessment is in the form of deficiencies in existing capability, force size, system vulnerability, and the like. However, various aspects of these studies have been conducted at different DoD staff policy levels in the past, from OSD to the Service headquarters, to the major and subordinate command levels.¹⁴ Taking the officially approved projected threat, these studies use simulations (and other analyses techniques) to evaluate existing and/or planned capabilities to accomplish the mission. Assessments are made of the effectiveness and cost of alternative programs. Once a gross measure of the cost of the conceptual system is determined, the Service(s) produces a tentative funding profile to show how it would fit into its overall budget, the relative priority it would have to its other programs, and the total

resources and schedule to complete program initiation (ie., to meet Milestone 1). These are the essential areas of consideration in completing a MENS and submitting it for comment to the Defense Acquisition Executive, and subsequently, for its review and approval by the Secretary of Defense to begin program initiation.¹⁵

Upon approval of the MENS (at Milestone 0), to begin officially the acquisition cycle for a program, the Secretary of Defense directs one or more of the Services to explore and develop the most promising alternative system concepts to satisfy the approved mission needs. Now begin in earnest the systems analyses and mission analyses studies, along with exploratory development programs (6.2 Program Element funding) to help reduce the possible number of system concept alternatives to those which appear will be the most effective and possible candidates (from an engineering point of view) at the lowest (RDT&E, acquisition, operating, and support) cost to accomplish mission requirements.

DECISION COORDINATING PAPER

The Decision Coordinating Paper (DCP) is prepared by the Service tasked with the prime responsibility for the system's development. Its principal purpose is to support the (S)SARC and DSARC reviews, and the Secretary of Defense decisions, once the various tasks associated with a phase have been completed. Consequently, it is the principal summary document used for recording the essential program information developed

during a particular program phase, and the related decision it is prepared to support.¹⁶

Although the basic document is limited to 20 pages of summary information, there is no stated limit imposed on the number and length of supporting annexes. As a result, it can, and often does, become extremely lengthy, detailed, and historical in nature. For example, a DCP for Milestone I, contains the basic essential 'contractual' agreement between the Secretary of Defense and the head of the military department, including such required data as the updated MENS (as an annex), a description of alternative systems concepts and their anticipated performance, a summary of the acquisition strategy, business planning information, program organizational structure and management plan, areas of program uncertainty and probable impact, a Technology Assessment Annex (for technological risk), a resource annex for each system alternative, a logistics annex (one page only), program management constraints for allocated program factors for each alternative, test and evaluation planning and status, program issues and their assessment, the (S)SARC and DSARC findings and recommendations, and the Secretary of Defense' decisions and direction.¹⁷

Since approval for the continuation of a program is required by the Secretary of Defense at Milestones I, II and III to begin demonstration and validation, full-scale engineering development, and production and deployment, respectively, the DCP must be maintained and updated to

reflect the intervening changes which may have occurred. To insure this takes place in time for each DSARC review, some Directorates in the Office of the Undersecretary of Defense Research and Engineering (OUSDR&E) have prepared a tentative procedure and schedule for review and update of the DCP.¹⁸ Also, the OSD staff specialist works closely with his Service counterparts to insure that all issues and alternatives are resolved or identified by the date of the DSARC review.

When, for example, upon completion of exploration of alternative design concepts during the Program Initiation phase, the DoD Component Head(s) concludes that the program is ready for the next, or Demonstration and Validation, phase, he so informs the DAE and requests a DCP outline meeting. This meeting normally precedes the DSARC review by four to six months. The purpose of the meeting is to:

- a. Approve the DCP outline proposed by the Service(s)
- b. Determine tentative dates for the (S)SARC and DSARC reviews
- c. Determine the content of the DCP
- d. Establish a schedule listing the important actions to be completed prior to the reviews
- e. Identify specific program issues to be included in the DCP.

The meeting is chaired by the appropriate OUSDR&E Assistant Director and attended by staff representatives of the DSARC principals, OJCS, test and evaluation, and the Cost Analysis Improvement Group (CAIG).¹⁹

Based on the outline approved for the DCP at the meeting, the DoD Component prepares a draft DCP labeled "For Comment" and forwards it to the DAE 60 days prior to the (S)SARC review (and about 80 days prior to the DSARC). This draft is circulated for coordination within the OUSDR&E, other OSD, OJCS, and the DoD Component staffs. Any disagreements which cannot be resolved are brought to the attention of the DSARC principals as early as possible, and are included in the DCP as issues if they remain unresolved after being raised to the OSD principal/DoD Component Head level.

A second draft DCP, "For Coordination" is prepared by the DoD Component based on the comments received on its first draft and sends it to the DAE at least 15 working days prior to the DSARC review. This draft is distributed to the other DSARC principals, Chairman of the JCS, Directors of Development and Operational Test and Evaluation (D&OT&E), and Chairman of the CAIG. If the draft DCP contains no unresolved issues, and the OSD approves program status and direction, the planned DSARC review is cancelled and the DCP is approved by the principals. However, if issues remain, the DSARC review is held and comments are provided to the DAE by the other principals to be given to the DoD Component, along with the DSARC decision.

Within 45 days after the DSARC review, and 30 days after the Secretary of Defense' decision in a DSARC Action Memorandum to the DoD Component regarding the program direction on any given system, the DoD Component

will distribute a revised, updated DCP reflecting all issues and decisions made at the review.

The procedure outlined above for preparing a DCP is the same whether it be for Milestone I, II, or III.

In addition to DCP updates in anticipation of DSARC reviews, the DoD Component is responsible to review and update annually each of its DCP's. It is particularly important that this is accomplished after preparation of the final FYDP and submission of the budget to the President every January. The resource annex to the DCP should be revised as needed to assure consistency with the past, current and out-year funding.

DEFENSE SYSTEM ACQUISITION REVIEW COUNCIL

In addition to the directives and program documentation just reviewed, DoD Directive 5000.2 provides for an orderly management review structure and process for each major defense program, as well as guidance for programs other than major.²⁰ A principal function of the DSARC review is to permit the OSD staff and senior management to conduct a relatively detailed examination of the status of technical, cost, and schedule aspects of DoD program.

For all practical purposes, this review begins at the OSD level with the announcement by the DoD Component Head to the DAE of the completion of a

particular program phase, and his request for a DCP outline meeting. This meeting precedes the planned DSARC review by four to six months. During this time, the responsible OUSDR&E action officer, particularly, and to a lesser degree the responsible staff members in the other OSD functional areas, and the DSARC principals themselves, became progressively more familiar with the program and its status.²¹ Through their involvement in such activities as determining the content of the DCP (from the DCP outline meeting), reviewing, evaluating and providing comments on two submittals of the DCP ("For Comment" and "For Coordination") by the Service, staff planning meetings (including the pre-DSARC review) to discuss program progress and possible issues, and preparation of the Test and Evaluation report (T&E), and Cost Analysis Improvement Group (CAIG) report, the responsible OSD staff can get to know the program fairly well.

About one week prior to the scheduled DSARC meeting, a pre-DSARC review is held. Its major purpose is to brief the principals on the background and current status of the program and to present all issues and problem areas identified by the OSD staff in their review of the DCP. Any additional issues, or revisions to those previously raised, which the principals believe should be addressed at the DSARC are noted and added as part of the final agenda.

The DSARC review itself can vary. The DAE may begin by identifying the issues of concern to the OSD principals and staff. This can be followed

by a formal presentation of the program status by the DoD component program manager, the test and evaluation report (by DDT&E), and the program cost analysis report (by the CAIG). The meeting is concluded usually with a comment that the principals, and often the Service program manager and other key representatives, continue the meeting in executive session. The purpose of the session is to discuss and summarize the results of the DSARC review and formulate recommendations for the Secretary of Defense.

Based on the review and executive session, the DAE sends a DSARC Action Memorandum to the Secretary of Defense within 15 working days of the review. In it he states all of the issues and recommendations of the DSARC regarding the program. He also prepares a proposed action memorandum for the Secretary's signature that reflects the DSARC recommendations. If one or more DSARC principals differs significantly from the DAE on any issue, a copy of the dissenting position is attached to the action memorandum along with the non-concurrence.

The Secretary of Defense acts on the recommendations of the DSARC principals and either continues the program or terminates it. However, his decision to continue the program does not authorize the commitment of funds. As a result, appropriate action must be taken by the DoD Component to reflect this decision in the PPBS documentation for budget approval and funding. However, approved changes by the Secretary of Defense to the program through the POM submission or Program/Budget decision process

of the PPBS constitutes budget approval and funding and the Service will incorporate this change in the DCP within 30 days of the decision.²²

Following the Secretary's decision, OSD staff reviews are made to insure that the direction is carried out by the Service. If necessary, corrective action memoranda are sent to the Service.

The membership of the DSARC is comprised of the following:

Defense Acquisition Executive (Chairman) - currently also the
USDR&E

Undersecretary of Defense Research and Engineering - currently
also the DAE

Assistant Secretary of Defense (Manpower, Reserve Affairs and
Logistics)

Assistant Secretary of Defense (Comptroller)

Assistant Secretary of Defense (Program Analysis and Evaluation)

Special Advisor for NATO Affairs

Other OSD staff principals when essential to the program under
review.

In addition, advisors to the principals include:

Director of Development Test and Evaluation (OUSDR&E)
Deputy ASD(PA&E) for Operational Test and Evaluation
Chairman, Cost Analysis Improvement Group
Joint Chiefs of Staff, J-5, Representative
DoD Component Head, (or his representative)
Defense Intelligence Agency, Representative

The DSARC chairman will determine any added participation that may be needed at a specific DSARC review.²³

SYSTEM ACQUISITION CYCLE

In brief, the directives, the major program documents, and the program review management structure provide the DoD with a process to acquire new systems, or to modify existing ones. It is an orderly process which permits management to make program decisions within a paced, step-by-step sequence of specified phases and decision points. While all DoD programs are guided by this management process, those which are designated as major are required, by direction, to adhere to it.²⁴

Essentially, a typical program goes through an acquisition cycle, from its conception to its deployment to the operating units. The phases comprising this cycle are: (1) program initiation, (2) demonstration and validation, (3) full scale engineering development, and (4) production and deployment. Since all programs are unique to some degree, the

relative emphasis of each phase for any particular program can vary greatly, to the extent that a phase (demonstration and validation) can be omitted if it is deemed appropriate.

PROGRAM INITIATION

The program officially begins with a decision by the Secretary of Defense at Milestone 0 that a mission need exists. With that approval the program initiation phase begins. Events leading up to that approval include a perception of mission requirements identified in the CG document, the Services' POMs, long range plans, and war plans. The need is based on such considerations as deficiencies in force size, obsolescence and vulnerability of systems and equipment, technological advancement, and potential for life cycle cost savings.²⁵ The Service initiates appropriate action in terms of the operational tasks needed to be performed. The Service Secretary approves and submits a statement of the mission need to the Secretary of Defense which is documented in the MENS. He requests the Secretary's approval to proceed to identify and explore alternative solutions to the mission need.

Based on OSD staff inputs, if the mission need is determined essential and within the resources and priorities established, the Secretary of Defense will approve the need for the mission. He will then direct one or more of the Services to explore and develop alternative systems concepts to satisfy the approved mission need.

After Milestone 0 approval, the responsible Service begins exploring alternative system concepts so that the selected few (usually two or three) that appear most promising can be identified and further evaluated. The Service prepares a DCP that will be used eventually to support the (S)SARC and DSARC I reviews. By the end of the phase, the DCP is prepared that contains an updated MENS reaffirming the essentiality of the mission need, along with a revised threat assessment. It has been determined that the alternative system design concepts adequately reflect a broad segment of the technology base and provide an acceptable competitive environment. Also, the alternatives recommended for demonstration and validation satisfy the mission element needs. The established program constraints remain valid. Operational and logistical considerations are adequate. The acquisition strategy is complete, effectively integrates the program's technical, business, and management elements and supports the achievement of program goals and objectives. The short and long term business planning effectively supports the acquisition strategy, and producibility and production risks, and other uncertainties have been identified and adequately considered. Also, adequate planning has been done for joint Services program requirements, as well as for preparation of the Test and Evaluation Master Plan (TEMP).

This activity will be accomplished under the direction of a program manager who is selected to establish a program office cadre to assist in the development of the program and its advocacy. The group is used to answer many questions concerning the proposed system, assess alterna-

tives, estimate costs, and conduct other paper studies in addition to assisting in the preparation of the DCP. The cadre is expected to expand if the principals approve the program at the DSARC I milestone.

DEMONSTRATION AND VALIDATION

When the Service completes exploring alternative system concepts, the Service Secretary requests approval of the Secretary of Defense at Milestone I DSARC to proceed with the demonstration and validation effort. His recommendations are based on the data summarized in the DCP, developed from the numerous conceptual analyses studies and management evaluations during the Program Initiation phase, and subsequently reviewed by the (S)SARC and DSARC.

A favorable reaffirmation of mission needs by the Secretary and his approval of one or more selected alternatives for competitive demonstration and validation begins the second or Demonstration and Validation phase of the cycle.²⁶ During this phase the mission element need is reaffirmed and the threat updated. It is determined that the system selected satisfies the mission element needs, is cost-effective, is acceptable within stated constraints, and that the demonstration and validation results support the system recommended. System trade-offs are made to select the most effective balance in cost, performance, and schedule and include operational, logistical and energy considerations. Also, uncertainties and risks have been identified and are acceptable,

with realistic fall-back alternatives established. The acquisition strategy is updated, and short and long term business planning supports the strategy. Design-to-cost and life cycle cost requirements are realistic and effective in achieving cost objectives.

Cost, performance, and schedule estimates are thoroughly reviewed, are well defined, and consistent with the risks involved. Action is completed to submit the initial Selected Acquisition Report (SAR). Demonstration and validation testing is completed with results supporting the recommendations. Requirements are established for long-lead procurement items and for initial limited production to support operational test and evaluation needs, for verification of production engineering, and for the establishment of the production base. The TEMP identifies and integrates the testing and evaluation to be accomplished prior to Milestone II and III program decisions. Operational and logistical support requirements are established, and the program management structure and plans are evaluated for their adequacy and soundness. Also, the DCP is updated to reflect a summary of progress during this phase.

FULL SCALE ENGINEERING DEVELOPMENT

When the demonstration and validation activity has been completed, the Service Secretary selects the preferred system for full scale engineering development and requests a Milestone II DSARC review to obtain approval of the Secretary of Defense for this selection, and to proceed

to the next phase. His request will be based on program progress to date summarized in the DCP that is updated during the four to six months prior to the (S)SARC and DSARC II reviews.

A favorable reaffirmation of mission needs by the Secretary of Defense, and approval of the preferred system, begins the next phase: Full Scale Engineering Development. During this phase the mission element need is reestablished and the threat updated. Program development has progressed satisfactorily and the initial operational test and evaluation (IOTE) results support a decision to proceed with production and deployment. The acquisition strategy has been updated and is being executed. Business planning supports the acquisition strategy and provides flexibility for production rates and quantities for different options. Schedule and cost estimates (including support and operating costs) are realistic and acceptable, as are design-to-cost and life cycle costs. The system is cost-effective, affordable, and remains the best alternative. Effective tradeoffs have been made to balance cost, schedule, and performance. Program and fiscal year thresholds are reaffirmed. Production quantity requirements are valid. Issues relating to production are identified and managed satisfactorily. The program management structure and plan are sound and adequately supported. Major problems are identified and satisfactorily resolved. Planning for deployment is adequate, including manpower and training, logistics readiness, and operational considerations. A production readiness review is completed showing that the contractor is capable of manufacturing the system as designed and in the quantities planned.

PRODUCTION AND DEPLOYMENT

Upon completion of the engineering development above, including the IOTE leading to the Milestone III production and deployment decision, the Service Secretary recommends that the developed system be committed to production and deployment. He requests this approval of the Secretary of Defense at the DSARC III Milestone. His recommendations are based on the program process so far as summarized in the updated DCP and reviewed by the (S)SARC and DSARC III groups.

A favorable reaffirmation of mission need by the Defense Secretary that the system is ready for production will result in his approval of the system for production and its deployment by the Service to the using activity. During this phase, the system will be produced in quantity for operational use. In addition to the system itself, things such as training equipment, spares, facilities, and support equipment must be provided. More intensive, and extensive, operational tests and evaluations (OT&E) are performed on the production items. Throughout this period the DCP is maintained and updated to reflect program progress.

The Service Secretary makes quarterly reports to the Secretary of Defense on key program issues. Similarly, the Service staff keeps the DAE and the OSD staff informed on all key actions as the program progresses. As program production continues, the Service Secretary decides when the system is ready to be deployed to the using activity, and will so advise the Secretary of Defense.

INTERFACE WITH THE PPBS

The system acquisition process is intimately associated with the PPBS. In the DoD, as elsewhere, programs cannot be considered in their proper perspective without considering at the same time the PPB system. Similarly, the PPBS is incomplete without a consideration for the acquisition of systems needed by the DoD to accomplish its mission requirements.

In order to fully understand this truism, one merely has to recall that the PPBS comprises the various aspects of a system (that includes planning and programming documents) that permit the establishment, maintenance, and revision of the Five Year Defense Program (FYDP), and the DoD budget. The FYDP itself, is the official DoD document which summarizes the plans into tangible programs (and associated budgets) approved by the Secretary of Defense.²⁷ As a result, a change in program content in the acquisition of a system, a change in the FYDP, or a change in the budget, affects the other two also.

CONSOLIDATED GUIDANCE

As part of the total system which supports the PPBS a number of documents have been used in the past. Currently, a new approach is being attempted in the Office of the Secretary of Defense to combine previously used planning, programming and fiscal guidance documents into one: the

Consolidated Guidance document. It has tentatively replaced the Defense Planning and Programming Guidance (DPPG), the Planning Programming Guidance Memorandum (PPGM), and the Fiscal Guidance.

The CG document is designed to serve as an authoritative statement of the fundamental strategy, issues, policies, and objectives of the Department of Defense, and of the forces and other resources programmed to support these policies, within the fiscal constraints of a prescribed budget. In support of this role, the CG serves as a guide to the DOD Components in the preparation of their current year POMs, (eg., FY80-84). "However, its intent is not only to inform but to encourage and to shape debate and dialog on the initial issues facing us in the area of national security."²⁸

In accomplishing these objectives, the CG of necessity must identify areas where deficiencies exist, or are contemplated, in force structure, systems, and other resources. Each of these resource deficiencies (other than manpower) equates to a potential acquisition program of the Department of Defense to satisfy that deficiency. This may manifest itself in an early acquisition planned the current fiscal year, or at some future time. In any event program acquisition and the PPBS are closely related.

JCS DOCUMENTS

In conjunction with these changes in OSD planning, the Joint Chiefs of Staff (JCS) have changed their planning and programming efforts as well. Beginning in November 1978, a new document will be issued, the Joint Strategic Planning Document (JSPD), to replace the two volumes of the Joint Strategic Objectives Plan (JSOP). It will be used as an input in the development of the draft CG. It is intended to be a concise comprehensive military appraisal of the threat to U.S. interests and objectives worldwide. It will contain a statement of the recommended military objectives derived from national objectives, and the desired military strategy to attain the national objectives. Also, it will provide a summary of the JCS planning force levels which could successfully execute the approved national military strategy.

A second JCS document is planned, the Joint Program Assessment Memorandum (JPAM). This report together with the JSPD will replace the Joint Force Memorandum (JFM). The JPAM is to be issued in June, following the issuance of Service POMs, to provide a risk assessment on the composite of the Service POM force recommendations and include the views of the JCS on the balance and capabilities of the overall POM forces and support levels to execute the national military strategy.²⁹

POM, BUDGET, FYDP

The Program Objective Memorandum comprises the recommendations to the Secretary of Defense of the total resources that each Service Secretary and Agency Director needs for the next five years to support their portion of the total defense mission. These program recommendations are made within the policy and fiscal guidance constraints of the CG document. The Secretary's decisions regarding the various Defense programs are in the form of Program Decision Memoranda (PDMs).³⁰ These decisions are then reflected in an updated FYDP.

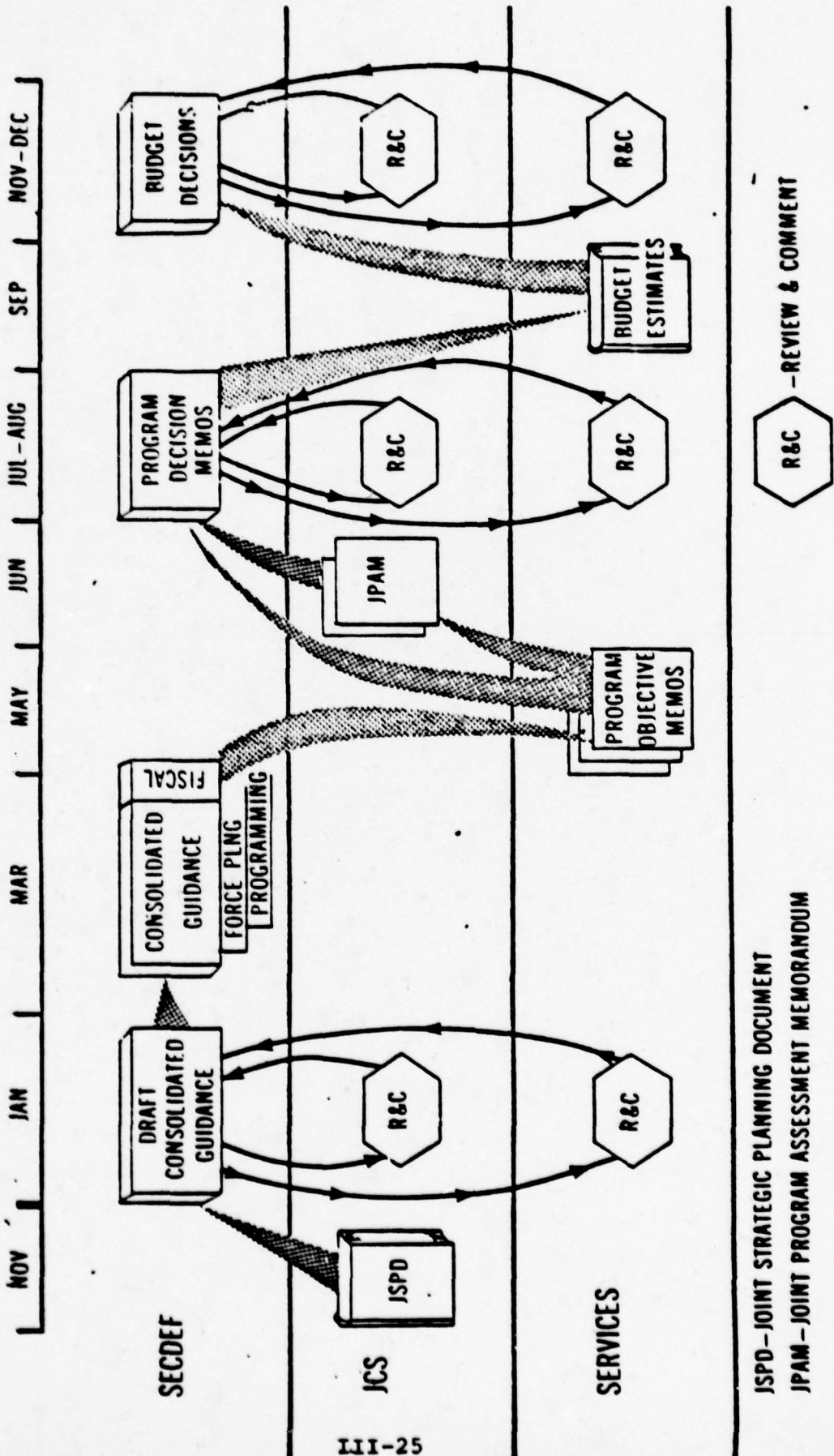
The defense budget is a document which contains a detailed relationship of the major programs and their subelements to the projected costs associated with these programs. The DoD Components' budget estimates are further refinements of the guidance and decisions reached earlier by the Secretary of Defense on the various programs identified in the POMs of the Components. The Secretary's subsequent and more detailed evaluation of these programs at the budget review permits him to make more detailed adjustments to his previous POM decisions on defense programs before submitting the total budget to the President. His final decisions relative to the program elements and their corresponding budget are issued in the form of Program/Budget Decisions (PBDs).³¹ These decisions are also reflected by an update of the FYDP.

INTERRELATIONSHIPS

Briefly, the current PPBS process is expected to follow the depiction shown in Figure 1, and interrelate with the acquisition process throughout its cycle. After the JSPD is published (November), the OSD staff prepares a draft CG (January) for review and comment by the Service staffs. The revised and approved CG document is published in March, to be used by the Services as a basis for their respective planned programs, reflected in their Program Objectives Memoranda (POMs) that were submitted to OSD in May. Program issues which are raised by the OSD staff in their reviews of the POMs are sent to the Services in June. At the same time, the JCS reviews the POMs, and prepares the JPAM (June) based on its analysis of the content of the POMs in relation to force capabilities and national objectives. Following negotiations with the Services with respect to any remaining substantive program issues, the Secretary issues his PDMs and APDMs in August. These serve as authority to update the FYDP.

Completion of the program reviews provides the Services with a base from which to refine their programs. Based on the program guidance (and decisions) from the Secretary of Defense, the Services prepare budget estimates (September) and assign dollar costs to each specific program element in their budgets to a much greater degree than that done during the program review. Based on this review in October, the Secretary completes his decisions on the budget by November or December through a series of PBDs and APBDs for submittal of the total defense budget to the President in January.

PLANNING PROGRAMMING BUDGETING



JSPD - JOINT STRATEGIC PLANNING DOCUMENT
 JPAM - JOINT PROGRAM ASSESSMENT MEMORANDUM

Figure 1

SECTION IV

LIMITATIONS OF THE ACQUISITION PROCESS

Before identifying the shortcomings in the acquisition process, and in the portion of the PPBS which pertains directly to it, a generalization appears to be appropriate. In discussions with the individuals interviewed during the course of this study, as well as with others closely associated with aspects of the process, there is general agreement that the overall process is theoretically sound and should not be changed for something different. The consensus of opinion tends to be that problems are created in the practical application of the theory. A review of recent technical publications confirms this generalization. These limitations, along with some in the PPBS that relate directly to program acquisition, are discussed below.

MISSION ELEMENT NEED STATEMENT

As stated in the Undersecretary's memo, "the intent of the MENS is to provide justification for beginning or continuing (in the case of an on-going program) a major system acquisition program on the basis of mission needs."³² Further, in DoD Directive 5000.2 there is both an implication (in the MENS section), and a statement that "the DoD Component Heads are responsible for the identification and definition of mission element needs and for initiatives to acquire new systems capabilities essential to meet these needs."³³

This bottom-up approach of having the Services identify the mission need, and then, in conjunction with that, to select the type of system which they believe will best meet that need, can have its limitations. First, this has the tendency for the Service to narrow the scope of the mission so that only a portion of the total mission need may be considered. Second, the Service may propose a system that can only partially fulfill the mission requirements. Or, it may fulfill it, but not as effectively as another system might. These limitations are inclined to occur generally because of the Services' requirements to stay within their prescribed roles and missions, along with their desire to fulfill the mission need.

Also, as the Services have continued traditionally along their path of analysis to determine a mission need and an "optimum" system to satisfy that need, they have tended to get progressively more inflexible at evaluating other system alternatives. Consequently, by the time the systems analyses and mission analyses are completed with respect to a projected threat and a MENS is prepared by the Service, a great deal of planning effort has been completed in terms of what system will accomplish a particular mission need. Once the MENS is approved (at Milestone 0), this planning of the previously selected system continues. Ultimately, this can so focus the Service on the single option selected long ago, that by DSARC I, any attempt by the DSARC principals, or the DAE, to explore other system alternatives becomes very difficult.

DECISION COORDINATING PAPER

Although the DCP is intended to be a concise summary document of current status for each program of no more than 20 pages in length, plus appropriate annexes, with a definite schedule for update, in actual practice the document often falls short of the ideal. One of its most prominent shortcomings is that the DCP is not updated and kept current as intended. Of 56 ongoing major programs, only 13 of them have current DCP's, to the extent that they were updated within the past 12 months. Because of the rapidly changing, volatile status of the programs themselves brought about by DSARC and other management decisions, along with program and budget changes resulting from the Secretary's decisions during POM and budget reviews, the need is to be certain that Services update the DCPs for which they are responsible. It appears that the Services are particularly lax when there is an after the fact bookkeeping change, a time when there is not the press of urgency to report accurately as it would be were it in preparation for a DSARC review. As a result of this tendency toward out-of-datedness of so many of the DCPs, the use of the document generally gets put off in favor of other sources that are more accurate and recent for the purpose of monitoring program progress and related costs (eg., the quarterly Systems Acquisition Report).

Probably of equal significance as the out-of-date nature of the DCP, is that major programs are in various stages of development without having approved DCPs. Currently, six ongoing programs are in this category, among them the F-18, and the cruise missile.

At least some of this is the result of high priority program requirements that begin in haste, and the supportive documentation, including the DCP, must, by necessity, follow at some more convenient date.

A third problem area concerns, not the DCPs themselves, but rather, the limitation on the physical access to them. It becomes apparent very quickly, that if one needs access to the DCPs of ongoing programs, or is seeking historical information on completed, or nearly completed, programs there is no readily available, centrally located source. Consequently, a DCP for a particular system may be located in any one or more offices depending largely on each individual office's procedures regarding DCPs. Normally, action officers in OUSDR&E, the Service's headquarters R&D staff, the Service's acquisition command headquarters R&D staff, and the individual program management office do have the DCPs for the programs for which they are responsible. However, to conduct any sort of historical or current analysis on these documents, as are, for example, the RAND Corporation and OASD (Comptroller), then each must go to the appropriate individual action office for a specific system and request the DCP, yet not knowing whether that document is the latest and properly updated version or not.

A fourth limitation voiced by many of those interviewed is that the DCP is not the short, explicit, concise, current agreement document between the Secretary of Defense and the Service that it was designed to be. Besides not being updated many DCPs contain a great deal of historical

data no longer needed. Consequently, it can become tedious to separate the history from the contemporary material. For example, many DCPs exceed 100 pages or more in length and often contain the detail required for previous DSARCs, as well as that of the immediate action. Such degree of historical detail reduces the quality and intent of the working document.

DSARC PROCESS

With respect to the DSARC reviews themselves, there has been a tendency in the recent past to increase the number of milestone decision points. Whereas the acquisition directives list the four milestones (0-III) as adequate for program review and management, the trend toward more control has increased, correspondingly, the number of reviews between these major milestones. This has resulted in such program review milestones as: IB, IIA, and the like. A basic difficulty with this trend is that it involves the highest levels of OSD decisionmakers in micromanagement of individual programs, a task normally assigned to the program manager, with assistance from his Service. As a result, preparing for, and conducting, these additional milestones becomes time consuming for all of the staffs involved, as well as for the (S)SARC and DSARC principals. The amount of time and effort expended in preparation for a review is considerable, and with rapidly dwindling resources, this added burden gets increasingly more difficult to bear.

Generally, the reason for the intermediate milestone reviews has been to examine those programs experiencing some problems in their development and/or cost. Undeniably, some programs in trouble need management review and direction at the highest levels of the DoD. However, a trend appears to be emerging that as programs encounter problems during their development a DSARC review should be conducted, perhaps, mostly on the rationale that preceding programs with problems had DSARC reviews. This has happened even though the program was well on the road to recovery before the review was made. (e.g., NAVSTAR GPS, DSARC I B).

Besides too many intermediate milestones, a second aspect of the process was raised by a number of interviewees. That is, the DSARC recommendations and decisions are not always clear and explicit for the Service and program manager to follow. Decisions may contain numerous caveats often permitting more than one interpretation of intent and direction. Part of this can be attributed to the general nature and complexity of each program. But a portion may also be the result of the difficulty the principals themselves, and their staffs, often have in agreeing on a unified decision in guiding a particular program along its path of development. Consequently, compromising produces caveats, and program direction can become diluted.

PROCESS LACKS COMPLETE CYCLE COVERAGE

Individual systems are not managed throughout their complete useful lives, even though consideration of life cycle costs is a requirement in the acquisition directives. A requirement to consider life cycle cost begins with the MENS. It continues throughout all phases of acquisition through production. However, the actual DSARC management process ends essentially upon system deployment. That is, there is no provision for a formal resource management succession after the acquisition program manager, the (S)SARCs, and DSARCs who were concerned with individual program development end their control.

Once the individual systems are deployed to operational units, there is no resource manager to concern himself with system support costs, nor with their translation into funded programs in the PPBS. This task usually falls to a host of training, maintenance, logistics, and other functional organizations within OSD and the Services in an attempt to insure that the system is combat ready. However, these support functions are treated in a generic sense, and not necessarily allocated to specific systems. Consequently, support costs are not traceable directly to system costs, nor are they carried as line item support in the POM, budget, or FYDP.

PROCESS NOT INTEGRATED WITH PPBS

Again, although many interviewees generally concede that there is in theory, at least, adequate interface and interaction among the various phases and activities of acquiring a system and the planning, programming and fiscal mechanisms, in practice the interactions can be considerably less than desired. From the inception of the planning process beginning with the CG, through the current programming and budgeting exercises, there is a tendency on the part of the planners and budget people to somewhat separate this from the practical aspects of programs being developed. Similarly, the technically oriented managers and engineers try to concentrate on practical aspects of program development and less on policy planning and budget requirements. Consequently, these differences in viewpoint tend to interpose themselves on the theoretical workings of both processes with a net result that the actual results are below expectation.

CONSOLIDATED GUIDANCE

The Consolidated Guidance document which replaces the previously used DPPG, PPGM, and Fiscal Guidance is too recent a publication to assess adequately. However, the contents of this past issue are not sufficiently clear on some key defense policy issues to provide the degree of planning guidance that might be desired. Nor is its emphasis on future planning, but rather on current programs. Consequently, it is limited largely to

a listing of Service programs to assist them in their programming requirements to prepare their POMs within fiscal constraints. Generally, what is lacking in the document is adequate provision for policy and force structure options. This omission prevents the Secretary of Defense from making broader choices than that afforded him now, which essentially limits him to an evaluation of alternatives derived from incremented or decremented budgets. Also, there is no study plan to permit an orderly mechanism with which to identify and study mission planning and requirements based on proposed changes in defense policy, strategy, and concepts.

DSARC DECISIONS vs BUDGET PROCESS

One point commented on by many of the interviewees is the relationship of the DSARC decision to the subsequent addition of the program to the budget process. The acquisition directive permits the "Secretary of Defense (at) milestone decisions to initiate system acquisitions or to redirect the program (but) do(es) not authorize the commitment of funds. Appropriate action will be taken (by the Service) to reflect the decisions in the PPBS documentation for budget approval and funding."³⁴ Normally, this stipulation means that the Secretary's approval of a program previously unfunded, or underfunded, in the POM/budget processes causes the Service to seek these funds from other parts of its approved budget, including other major acquisition programs. Since the Service has a fixed budget it must reallocate its resources to accommodate the addition. Budget reallocation can have differing effects on the programs

which are slated for cuts. But it can be particularly devastating on other major acquisition programs, especially when the cuts become significant, and across each of the programs. It has the effect of slowing down development work, postponing contracting, and lengthening the scheduled dates for program completion. The penalty for this normally translates itself ultimately into an increased overall program cost, or overrun, for each of the affected programs.

SERVICES PRIORITIZE PROGRAMS

Also, since the Services are forced to reallocate their resources, to accommodate a new or redirected system acquisition, it means they are forced to re-prioritize each of their programs. With respect to systems acquisitions, the Service may reduce funding uniformly for all, or cut one as opposed to all others. Requiring the Services to make these types of decisions may result in programs being adversely affected that may have a high order of priority from an overall OSD point of view. Even though the Service is required to submit its proposed budget changes to OSD, and particularly to OASD (Comptroller), for approval, the amount of control on the Service as to its desires can be limited, and any subsequent OSD directed programming re-direction can be lengthy and time consuming if the Service disagrees.

SECTION V

RECOMMENDED CHANGES TO THE ACQUISITION PROCESS

As already noted, there is general agreement among DoD policy officials and their staffs that the current acquisition process is a sound one, in theory at least, and should not be changed for something new. Consequently, the following recommendations are intended as suggestions to improve upon the present framework, rather than any advocacy for an entirely new approach.

MISSION ELEMENT NEED STATEMENT

A top-down approach to the MENS question should be adopted as a matter of principle. Firm initiative by the OSD and the Organization of the Joint Chiefs of Staff (OJCS) to take the lead in planning for, determining, and evaluating overall mission needs is both essential and logical. It is necessary that these organizations accept this important task, and do so with a strong conviction, rather than leaving it largely up to the Services to fulfill. It is a logical task for them for at least two reasons. Both OSD and OJCS should be more objective in evaluating total mission needs, and alternative system concepts, than individual Services because they have no conceivable conflict as the Services might with respect to traditional roles and missions. Second, both organizations formulate defense policies, strategies, and resource requirements, principally through the CG and JSPD documents, and as a

result, should have a broader perspective of mission needs and possible alternative system concepts than the Services.

Principally because of their policy formulating activities, but also due to their analytical capabilities, two organizations that could be charged with this top-down function are the Office of the Assistant Secretary of Defense (Program Analysis and Evaluation) (OASD(PA&E)), and the Director J-5, Plans and Policy, OJCS (in close coordination with OUSDR&E). The former organization is responsible for drafting the CG document which contains the fundamental defense policies, strategies, and objectives, identifies and evaluates program deficiencies, and defines fiscal guidance for all of the defense programs. The latter organization is responsible for preparing the JSPD. It precedes the CG, and provides input to it, and contains the military's appraisal of the threat to the U.S., and the recommended objectives, strategy, and planned force level, to attain the national goals.

In addition to their policy formulating activities both organizations have, or are able to gain, quantitative analytical support.³⁵ This analytical capability could be used appropriately to quantify the resources needed for the objectives and strategies advocated in the CG and JSPD documents. As a part of this quantification process both organizations might identify current and projected mission deficiencies, and evaluate preferred system concepts for those missions, both as generated internally, or as recommended by the Services. Conducting these quantit-

ative analyses systematically would provide the staffs of the Services, OJCS, and OSD, and the DSARC principals, with a more definitive set of conceptual systems options to do a particular task than is now possible from the Services. It would assist in answering questions concerning the effects of greater quantities for reduced quality, as well as other typical questions such as system retrofit (rather than new procurement), and the effects of slipped schedules. This analytical capability could also be used to evaluate the consequences of developing a new system in terms of the probable response in the threat forces to the new proposed system. ³⁶

Once these two organizations identify the basic resource requirements to satisfy U.S. national defense policy, the accompanying mission deficiencies, and possible alternative systems concepts, the task could then be assigned, at Milestone 0, to the appropriate Service(s) having the most related roles and missions that pertain to a particular mission area requirement. The Service would be able to evaluate the alternative systems concepts in the detail necessary to select leading contenders. The Service would periodically brief OSD and OJCS on the results of studies of selected system alternatives, as well as permitting both organizations to participate in the analyses if necessary. Or, the Service would provide them the data for their own systems analyses. This interaction should preclude any surprises relative to preferred systems concepts at Milestone I. Also, it would permit all affected staffs a better discussion and evaluation of alternative concepts to solve a common problem.

DECISION COORDINATING PAPER

To reduce at least to some degree the problems of outdated, unapproved, inaccessible, and lengthy DCPs for major systems, a program planning office is needed in OUSDR&E to serve as program control for the major systems. This would include, but not necessarily be limited to, monitoring of each of the major programs in coordination with the responsible OUSDR&E action officer. Besides scheduling DSARC program reviews, the office would undertake such tasks as preparing a program control schedule for each program to insure that it has an approved DCP, that the DCP for each program is updated at each required point, and that the content of the document is short, concise, and contains only that which was agreed to at the DCP outline meeting.

Another, and very important, suggested function for the planning office would be that it maintain a historical file of approved DCPs for each major program. It would permit the individual program action officers to reference approved DCPs with confidence, knowing that the reference is available in one central location and readily accessible to potential users. Consequently, this historical repository should reduce compulsion to include historical material in current DCPs, and it should aid materially in producing DCPs that are short, concise, explicit, and perhaps, current. Also, it would allow many types of useful analyses to be conducted on both historical and present DCPs by the DoD and selected contractors were these documents available.

This planning office could also undertake additional planning functions greater than the DCP requirements themselves, but directly associated with them. One such aspect of planning should be a close relationship to the Analysis office of OUSDR&E to avail itself of the thinking concerning mission area needs that are being explored, and the systems concepts that are being considered that may enter the acquisition cycle. Along with a close monitoring of the progress of MENS development by OSD and OJCS, as recommended above, this close association with the Analysis office would provide the planning organization with an opportunity to get a perspective on the trend of new programs. Consequently, it could be a source of information and a focal point for guiding the timely preparation of MENS, DCPs and other documents for programs. It would be prepared for contingencies such as a sudden policy shift from one system to another (e.g., the cruise missile vs. B-1 bomber production) and guide the affected organizations smoothly and quickly in the proper direction. (e.g., to prepare new MENS, DCP, historical references, etc.).

DSARC PROCESS

The number of DSARC process review milestones should not be increased from the current four listed in DoD Directive 5000.1. Except in extreme instances, the DSARC principals should not be involved in added formal program reviews. Rather, the Services and their designated program managers ought to be permitted to manage their programs throughout the

course of each development phase as intended by the directive. This is not to say that action officers at all staff levels should not monitor their respective systems, and be aware of potential and actual program development and cost problems. In fact, with updated DCPs, quarterly SARs, POM and budget reviews and decisions, and other program documentation requirements, each program should be amply monitored.

The problem that many DSARC decisions are not always clear and explicit, and contain numerous caveats, could, at least partially, be solved by strengthening the DSARC decision making process by giving the DAE stature and authority of sufficient magnitude to integrate and unify the individual recommendations of the DSARC members. A major step in this direction was taken with the approval of DoD Directive 5000.30, defining the DAE's authority and responsibility.³⁷ More important, perhaps, was the elevation of the former Director of Defense Research and Engineering to an Undersecretary of Defense status, each of whom also has occupied the other position as DAE.

LIFE CYCLE MANAGEMENT

There should be a more direct relationship between the support resources required for each system and the individual systems themselves that are listed in the mission programs of the FYDP. Each system in the FYDP's mission programs I-V (strategic and general purpose forces, intelligence and communications, airlift and sealift, Guard and Reserve forces)

should be closely managed, and treated as uniformly as possible, with respect to the support resources it requires, and those that are allocated to it. If this were implemented, the costs of support resources for each system could, to a large degree, be reflected separately in the POM, budget and FYDP, to permit direct control and comparison of support costs to individual systems. This could be accomplished by revising the acquisition directives to include program management requirements beyond production and deployment, and to encompass resource management of support programs such as supply, maintenance, and training for each system throughout its life cycle.

Policy guidance and program management of the support resources should emanate most appropriately from OASD (Manpower, Reserve Affairs and Logistics), (MRA&L), similarly as the acquisition guidance of OUSDR&E. This could be accomplished (within OASD(MRA&L)) by designating staff assistants for overall monitoring of individual programs (similar to OUSDR&E action officers) with assistance from other staff members. As a part of this management, periodic evaluations of programs could be conducted using the DSARC process to permit the DSARC and (S)SARC principals an opportunity to compare the effectiveness and costs of proposed systems as possible tradeoff candidates for current programs when more directly allocable support costs for both systems are developed and used.

CONSOLIDATED GUIDANCE

Rather than a bottom-up approach to defense policy and programming, as is largely the case in the first edition of the document, the Consolidated Guidance should be structured as a top-down long range policy instrument. To a large degree it should stress policies, issues and options for the Secretary, with a lesser emphasis on purely programming aspects of defense programs. It might best be organized to contain a 10-15 year plan to reflect a picture of the current programs and, those planned for the future, their capabilities, and major program options based on stated national defense policy, strategy, and goals, besides the programming and fiscal guidance.

To assist in the long range planning effort in support of the CG, a study plan prepared by OSD would be highly desirable.³⁸ Among its functions would be to develop a comprehensive study program in the DoD to assist in identifying the impact of new policies, strategies, concepts, tactics, technologies, and the like, on mission requirements and system deficiencies that would eventually translate itself into the preparation of MENSs, and into proposals for alternative system concepts. Preparation of the OSD study plan would assist greatly in providing the necessary direction and in improving cooperation and coordination among analysis organizations and activities in OUSDR&E, OASD(PA&E), other functional areas of OSD, OJCS (Studies, Analysis & Gaming Agency, (SAGA)), the Service and agency headquarters analysis staffs, and lower echelons

of command. It would help to more wisely allocate and guide the scarce analysis resources available in the DoD to reduce unnecessary duplication in conducting the policy and force structure type studies and analyses. A rudimentary study plan effort to accomplish this was approved by Leonard Sullivan, Jr., Assistant Secretary of Defense (PA&E), in 1975, with some success.³⁹ However, it was not continued by the incumbent Administration. Recent attempts have been made to revive and strengthen the whole study effort, among them being the referenced memorandum.⁴⁰

If the study plan is to be implemented, consideration should be given to a change in organizational emphasis of some existing organizations. One organization, notably OASD(PA&E), could be charged with long range planning functions in close partnership with OUSDR&E. Along with that responsibility should go the systems analysis/operations research capability, so that it would be able to conduct its own analyses of force requirements based on the policies it developed for the Secretary in the CG document, as well as being able to recommend cost-effective systems concepts, and evaluating pertinent analyses of other DoD organizations. To better accomplish this responsibility, consideration should be given to having it give up its Comptroller related programming, cost and economic analyses functions to the Comptroller. Similarly, the Service and agency headquarters, and subordinate, staff studies organizations should be patterned to support the planning and analysis charter imposed on OASD(PA&E).

BUDGET PROCESS

The following recommendations are principally oriented to the budget aspects of the acquisition process.

DSARC DECISIONS VS BUDGET PROCESS

To reduce the currently disruptive and time consuming effects of reprogramming a Service's budget necessitated by DSARC decisions (since a DSARC decision does not include authorization to commit funds, per DoDD 5000.1), thought should be given to better plan program reviews so that the resulting DSARC decisions can be included as part of the normal yearly POM/budget cycle. Adoption of other suggestions such as the development of a long rang planning function and study plan, by OASD (PA&E), and program planning, and Analysis organizations by OUSDR&E, (in close harmony with Comptroller), should contribute materially in evaluating the need for specific programs and then of introducing them at the appropriate time in the POM/budget review cycle. This would reduce the number of Secretary of Defense decisions needed for each individual program. Also, it would provide a budget for the program at the same time (without the need for an additional Secretarial decision following the DSARC decision during POM/budget reviews).

OSD PROGRAM PRIORITIZATION

In the rare instance where careful preplanning cannot prevent program decisions from falling outside the POM/budget cycle, the Secretary should provide programming guidance to the Service along with the DSARC decision. The guidance would be based on the long range planning and shorter range program planning of OASD(PA&E) and OUSDR&E in close coordination with Comptroller. Again, this would reduce repetitive program evaluation and redirection for the Secretary since the Service would follow his stated programming guidance.

FUNDING BY ACQUISITION PHASE

A feature which would assist in the stability and predictability of program planning, development, and costs, and provide flexibility in relative development of programs, is funding of programs by development phase. That is, program budgets might best be developed and approved for the entire phase, rather than on a yearly basis. Programs should be considered by the principals at each DSARC review in terms of a baseline effort and cost for the whole phase, as well as practical alternative options above and below that baseline program (as in the CG document currently). Based on overall requirements, of the on-going and projected acquisition programs, and anticipated DoD and Service budgets based on planning projections in the CG document and study plan, the principals could recommend to the Secretary the program option that is most practical

in terms of the level of effort and dollars to be pursued during the acquisition phase following the DSARC review. This feature would provide the Secretary with an opportunity and flexibility to select among a number of practical alternative options regarding particular program development. In this way he would be able to accelerate certain programs while others could be programed for a slower pace. Yet, once his decision was made, stable program development and funding could be assured throughout the phase. The advantages of this would include better and more assured program planning, procurement, and development to maintain the program on schedule and costs within budget. Yet it would give the Secretary the flexibility to choose the relative speed of development of programs.

ORGANIZATIONAL REEMPHASIS

If the changes suggested above are adopted, a slight reemphasis in the current OSD organizational structure would prove beneficial. These changes have been mentioned elsewhere in the study. They are reiterated here in summary.

First, to permit it to accomplish properly its planning and strategy aspects for OSD, OASD(PA&E) should be strengthened in the systems analysis/operations research areas. Correspondingly, it should largely shed its programming, fiscal guidance, cost and economic analysis functions to the Comptroller.

In support of the long range planning by PA&E, OUSDR&E should provide the more scientific and engineering aspects of planning to closely interface with the mission area requirements identified in analyses. Interfacing with both groups, there should be a strong OUSDR&E program planning staff to program individual systems at the proper time for POM/Budget reviews, and to provide strong administrative (including historical DCP files) support to monitor each program in the acquisition cycle.

Finally, the Comptroller should work in close harmony with these organizations to provide reasonable certainty that programs are initiated only when adequate budget is available. It should be the prime organization for the programming (POM) aspects of the budget since it is responsible for the final budget, with PA&E having a secondary responsibility in this, particularly in areas where analyses are required.

APPENDIX
LIST OF INTERVIEWEES

Allen Ahearn, Deputy Director, Weapon System Acquisition Support,
Deputy Undersecretary of Defense Research and Engineering (Acqui-
sition Policy), Office of the Undersecretary of Defense for Research
and Engineering.

Thomas Burley, Chairman Research and Development Committee,
National Security Industrial Association (NSIA).

Robert Calaway, Assistant for Program Planning, Office of the
Undersecretary of Defense for Research and Engineering.

Brig. Gen. Phillip Conley, USAF, Formerly Chief of Staff, Headquarters
Air Force Systems Command; currently, Commander, Air Force Flight
Test Center, Edwards AFB, Nevada.

Albert Conte, Staff Assistant, Director for Operations, Deputy
Assistant Secretary of Defense (Program/Budget), Office of
the Assistant Secretary of Defense (Comptroller).

Edward P. Cresswell, Staff Assistant, Acquisition and Support Planning,
Office of the Assistant Secretary of Defense (Manpower, Reserve
Affairs, and Logistics).

Maj. William Ellis, USAF, Systems Staff Officer, Directorate of Space and Ballistic Missiles, Deputy Chief of Staff/Systems, Headquarters, Air Force Systems Command.

Howard B. Ellsworth, Staff Assistant, Standardization and Support, Office of the Undersecretary of Defense for Research and Engineering.

Brig. Gen. Alfred L. Esposito, USAF(Ret), Consultant, Deputy Undersecretary of Defense Research and Engineering (Acquisition Policy), Office of the Undersecretary of Defense for Research and Engineering.

Harry Gunther, Planning Advisor, Defense and Electronics Systems Center, Westinghouse Electric Corp.

David J. Hessler, Director for Research and Development, Deputy Comptroller (Program/Budget), Office of the Assistant Secretary of Defense (Comptroller).

Dr. Kenneth L. Jordan Jr., Principal Deputy Assistant Secretary for Research and Development, Office of the Assistant Secretary of the Air Force (Research, Development and Logistics).

Robert R. Kemps, Director of Acquisition Management Information Division, Deputy Assistant Secretary of Defense (Management Systems), Office of the Assistant Secretary of Defense (Comptroller).

Lt. Dewey A. Lopes, USAF, Staff Assistant, Assistant for Program Planning, Office of the Undersecretary of Defense for Research and Engineering.

Lt. Gen. Robert C. Mathis, Vice Commander, Air Force Systems Command.

Gregg Maust, Staff Assistant, Acquisition Management Information Division, Deputy Assistant Secretary of Defense (Management Systems), Office of the Assistant Secretary of Defense (Comptroller).

George R. McAleer, Jr., Professor Systems Acquisition Management, Defense Systems Management College.

John. A. Mittino, Deputy Director Standardization and Support, Office of the Undersecretary of Defense for Research and Engineering.

Robert A. Moore, Deputy Undersecretary of Defense Research and Engineering (Tactical Warfare Programs), Office of the Undersecretary of Defense for Research and Engineering.

Calvin R. Nelson, Staff Assistant, Directorate for Program and Financial Control, Deputy Assistant Secretary of Defense (Program/Budget), Office of the Assistant Secretary of Defense (Comptroller).

Captain Denny Olivier, USN, Staff Assistant, Force Planning and Programming Division, Directorate, J-5 (Plans & Policy), Organization of the Joint Chiefs of Staff.

Robert N. Parker, Former Director Defense Research and Engineering, Office of the Secretary of Defense.

Maj. Gen. Lawrence A. Skantze, USAF, Deputy Chief of Staff/Systems, Headquarters Air Force Systems Command.

Orville L. Smiley, Director Automated Systems Office, Deputy Undersecretary of Defense (Program Development), Office of the Assistant Secretary of Defense (Manpower, Reserve Affairs, and Logistics).

Dr. Giles Smith, Project Manager, Acquisition Policy, RAND Corporation.

Donald E. Sowle, President, Don Sowle Associates, Inc.

Leonard Sullivan, Jr., Former Assistant Secretary of Defense
(Program Analysis and Evaluation), Office of the Secretary of
Defense.

Maj. John W. Thau, USAF, Systems Staff Officer, Directorate of Space
and Ballistic Missiles, Deputy Chief of Staff/Systems, Head-
quarters, Air Force Systems Command.

Ronald D. Thomas, Staff Assistant, Deputy Undersecretary of Defense
Research and Engineering (Tactical Warfare Programs), Office
of the Undersecretary of Defense for Research and Engineering.

Maj. Gen. Robert F. Trimble, USAF (Ret), Consultant, Deputy Undersec-
retary of Defense Research and Engineering (Acquisition Policy),
Office of the Undersecretary of Defense for Research and Engineering.

Dr. Albert C. Vosburg, Deputy for Strategic & Space Systems,
Office of the Assistant Secretary of the Air Force (Research,
Development and Logistics).

Dr. James P. Wade, Assistant for Analysis, Office of the Under-
secretary of Defense for Research and Engineering.

Capt. John D. Yamnicky, USN, Staff Assistant, Deputy Undersecretary
of Defense Research and Engineering (Tactical Warfare Programs),
Office of the Undersecretary of Defense for Research and Engineering.

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- ¹ DoD Budget For Fiscal Year 1979, Financial Summary Tables, January 23, 1978, Table A, p. 1.
- ² Joseph L. Sessum, and Charles H. Showell, An Investigation of the Revised Planning-Programming-Budgeting System in the Department of Defense, Air Force Institute of Technology, Wright-Patterson AFB, Ohio, 1971, pp. 16-24.
- ³ E.S. Quade, editor, Analysis in Military Decisions, Charles J. Hitch, "Analysis for Air Force Decisions," Report, (Santa Monica: RAND Corp, November 1964) pp. 13-23.
- ⁴ DoD Instruction 7041.3, Economic Analysis of Proposed DoD Investments, December 11, 1967, p. 1. This was the original version of the current DoDI 7041.3, Economic Analysis and Program Evaluation for Resource Management, October 18, 1972, p. 1-6.
- ⁵ OMB Circular A-109, Major System Acquisitions, April 5, 1976. Also, see Office of Federal Procurement Policy Pamphlet No. 1, "Major System's Acquisition. A Discussion of the Application of OMB Circular No. A-109," August 1976, p. 1.
- ⁶ DoD Directive 5000.1, Major System Acquisitions, January 18, 1977, p. 1-9.
- ⁷ DoD Directive 5000.2, Major System Acquisition Process, January 18, 1977, p. 1-10.
- ⁸ DoD Directive 5000.30, Defense Acquisition Executive, August 20, 1976, p. 1.
- ⁹ DoD Instruction 7045.7, The Planning, Programming, and Budgeting System, October 29, 1969, p. 1.
- ¹⁰ DoD Directive 5000.3, Test and Evaluation, April 11, 1978, p. 1.
- ¹¹ DoD Directive 5000.28, Design to Cost, May 23, 1975, p. 1-7.
- ¹² DoD Directive 5000.2, p. 3-4.
- ¹³ DoD Directive 5000.1, p. 3, and also Dr. William J. Perry (Undersecretary of Defense Research & Engineering) Memorandum to the DoD Components, Mission Element Need Statement, 18 January 1978.

NOTES (cont'd)

- 14 William G. Svetlich, OSD, Robert W. Beckstead, ICAF, "Evaluation of the Defense Economic Analysis Council (DEAC) and its Role in Promoting Economic Analysis in the DoD," Study, (Washington: Defense Documentation Center, DDC # A039837, December, 1976), p. VI-10.
- 15 Memorandum, William J. Perry, USDR&E, Mission Element Need Statement, Attachment, p. 1-2.
- 16 DoD Directive 5000.2, Enclosure 2, p. 1.
- 17 DoD Directive 5000.2, p. 4, and Enclosure 2.
- 18 Draft Memorandum, Robert A. Moore, Deputy Director, Tactical Warfare Programs, OUSDR&E, to Assistant Directors, DCP/DSARC Process, August 4, 1977.
- 19 Draft Memorandum, Robert A. Moore, p. 6.
- 20 DoD Directive 5000.2, p. 4, and Enclosure 1.
- 21 This is not to say that the OUSDR&E action officer, particularly, does not monitor the status of each of his programs throughout the year, rather, that he is at the forefront during this period.
- 22 DoD Directive 5000.1, para IV. L., p. 6, and DoD Directive 5000.2, p. 8.
- 23 Participants are listed in the DSARC charter, Encl. 1, DoD Directive 5000.2, and in DoDD 5000.3, p. 9 and p. 12.
- 24 DoD Directive 5000.1, p. 2. Major programs are defined as those which may be so designated upon the recommendation of the DoD Component Head and/or OSD officials, as well as those programs involving an anticipated cost of \$75 million in research, development, test and evaluation, or \$300 million in production.
- 25 Memorandum, William J. Perry, Attachment, p. 1.
- 26 DoD Directive 5000.2, p. 6. The Demonstration and Validation phase can be omitted if agreement is reached by the DoD Component, the DSARC principals, and the Secretary of Defense that the program needs no demonstration and should proceed directly to full scale engineering development.
- 27 DoD Instruction 7045.7, p. 3-4.

NOTES (cont'd)

- ²⁸Department of Defense, Draft Consolidated Guidance, FY 1980-1984, (Secret), March 7, 1978, P. A-2.
- ²⁹Memorandum, David C. Jones, Acting Chairman of the Joint Chiefs of Staff, to the Secretary of Defense, Subject: Improvements in the Planning Programming, and Budgeting System, JCSM-94-78, 10 April 1978, Appendix, p. 1-2.
- ³⁰Amended PDMs (APDMs) as well, as necessary.
- ³¹Amended PBDs (APBDs) as well, as necessary. More recently (CY 77), PBDs have been called Decision Package Sets (DPS) to reflect the Zero Based Budgeting requirements. For CY 78, they will be known as budget decision documents, and will be called this in the revised Budget Manual.
- ³²William J. Perry's memorandum, Mission Element Need Statement, p. 2.
- ³³DoD Directive 5000.2, p. 5.
- ³⁴DoD Directive 5000.1, p. 6.
- ³⁵Director J-5, Plans and Policy, can obtain analytical support of this nature from the Studies, Analysis and Gaming Agency (SAGA), of the OJCS.
- ³⁶For example, developing a SAM-D without an ABM capability can drive the enemy to cease building attack aircraft to destroy NATO bases, and divert its effort to building missiles to accomplish the same mission.
- ³⁷DoD Directive 5000.30, p. 1-3.
- ³⁸The basis for this study plan is DoD Directive 5010.22, The Management and Conduct of Studies and Analyses, November 22, 1976, p. 1.
- ³⁹William G. Svetlich, OASD(PA&E), "Department of Defense List of Combat Analysis Studies and Analyses, November 1974-May 1976," Revised Edition, Report, (Washington: Defense Documentation Center, DDC # ADB010502, December 1, 1975).
- ⁴⁰Memorandum, William G. Svetlich, OASD(PA&E), to the Assistant Secretary of Defense (Program Analysis and Evaluation), Subject: Management of the DoD Studies Effort, June 8, 1977.

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