SCHOOL OF ADVANCED AIRPOWER STUDIES

THE DOD OPERATIONAL REQUIREMENT AND SYSTEMS CONCEPTS GENERATION PROCESSES: A NEED FOR MORE IMPROVEMENT

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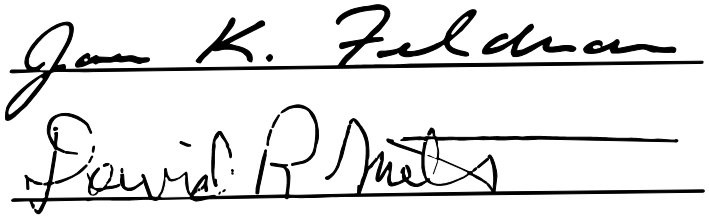
A Thesis Presented to the Faculty of
The School of Advanced Airpower Studies
For Completion of Graduation Requirements

School of Advanced Airpower Studies

Air University

Maxwell Air Force Base, Alabama

May 1992



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Abstract

Operational requirements generation and system concepts generation are the crucial processes by which the US decides what weapon systems it needs to develop and acquire to sustain the military national instrument of power for the sake of achieving national security objectives. This paper asserts that the current operational requirements and system concept generation processes can and should be significantly improved. To develop that assertion, the paper examines the evolution of the processes since the President's Blue Ribbon Commission on Defense Management (the "Packard Commission") made its recommendations in 1986. Examining this evolution reveals fundamental problems that have been alleviated to some extent by recent reforms but remain to such a degree that further improvement is warranted. Therefore, this paper makes six major recommendations for improving the operational requirements and system concepts generation processes. First, the DOD should fully institutionalize the strategies-to-tasks hierarchy to establish and maintain adequate links between national objectives and DOD budget requests. Next, the strategies-to-tasks hierarchy should be the basis for a master road map of future defense requirements and operational concepts to achieve better long- range defense planning. Third, the DOD should vest Milestone 0 approval authority in the Joint Requirements oversight Council (JROC) instead of the Defense Acquisition Board (DAB). This would streamline as well as increase CINC representation in the operational requirements process. Fourth, the Mission Need Statement (MNS) should be a pure requirements document with no place for potential solutions as is currently required. Formulation of potential solutions should be saved for the subsequent system concepts generation. Further, and fifth, the JROC should review all MNSs for Milestone 0 approval, not just those MNSs that the originators believe might lead to the largest of major acquisition programs. This would obviate the need to prematurely estimate the ultimate development and procurement costs of potential development and

acquisition programs before the associated operational requirements are even validated at the DOD level. Finally, operational (vice acquisition) planners should have the lead in Phase 0 system concept formulation and evaluation activities to facilitate better cost-schedule-performance trade-offs in development planning.

The implementation of these recommendations holds promise for significantly improving the nation's defense planning so as to better create a defense posture that is appropriate in type, quality, and quantity to meet the nation's military needs of the future.

BIOGRAPHY

Lieutenant Colonel Robert D. Dillman (BS Texas Tech; MS University of Southern California) is a Developmental Engineer. A recent graduate of the inaugural class of the School of Advanced Airpower Studies, he was just assigned to Space Systems Division, Los Angeles AFB, California. Also a graduate of Air Command and Staff College, he was previously Executive Officer to the Commander, Munitions Systems Division, Eglin AFB, Florida. Previous assignments were in ASAT programs at Peterson AFB, Colorado; ASTRA at the Pentagon; and laser weapons development at Kirtland AFB, New Mexico.

Chapter 1

Important Processes for Tough Questions

> "Problems with the present Defense acquisition system begin with the establishment of approved 'military requirements'..."
>
> The Packard Commission April 1986

The purpose of this paper is to explore how the current DOD operational requirements and system concepts generation processes might be improved. Indeed, the thesis of this paper is that these processes suffer from persistent problems that can and should be further resolved.

Decisions about developing and acquiring new weapon systems have always hinged on three critical assessments: operational requirements, technological feasibility, and financial capability. [1] These assessments prompt the critical questions: Do we really need a new weapon system? Can we build the new weapon system in a timely manner? Can we afford the new weapon system? These are exactly the tough questions that the operational requirements and system concepts generation processes must always strive to do a better job of answering. The first question is the focus of the operational requirements generation process; the second and third questions are the focus of the system concepts generation process. A sound answer to the first question is a prerequisite to answering the second and third questions. It is also a prerequisite for adequate justification for Congressional authorization and appropriation for weapons development and acquisition to fulfill an operational requirement.

Operational requirements and system concepts generation are the processes by which the DOD determines that new weapons development is necessary, what new weapons it should develop, how many it should acquire, and when those systems should be deployed. For the sake of clarity, operational requirements are derived from deficiencies in operational capabilities -- mission needs --a capability that US military forces need but lack.[2] Thus, the purpose of the

operational requirements generation process is to determine military deficiencies or needs and their priorities; the output of the process is an approved, documented military need that requires development and acquisition of a new weapon system to fulfill the need. Operational requirements are not to be confused with system requirements which are the desired performance and supportability characteristics of a specific weapon system concept. In other words, an operational requirement describes a problem, system requirements describe the characteristics of system concepts which are potential solutions to the problem. It follows then, that the purpose of the system concepts generation process is to formulate and evaluate system concept alternatives to fulfill approved military needs; the output of this process is one or a very few system concepts deemed best suited for further development and future acquisition.

The operational requirements and system concepts generation processes constitute what will be called in this paper, development planning. Thus, development planning is the determination of operational requirements and the formulation of operational concepts which describe how people and systems will operate to fulfill those requirements. Development planning should not, of course occur in a vacuum. Indeed, development planning is a subset of national defense planning. In defense planning, the nation determines how it will use the military instrument of power in conjunction with the political and economic instruments to achieve national security objectives. Figure 1 depicts the relationship of defense and development planning.

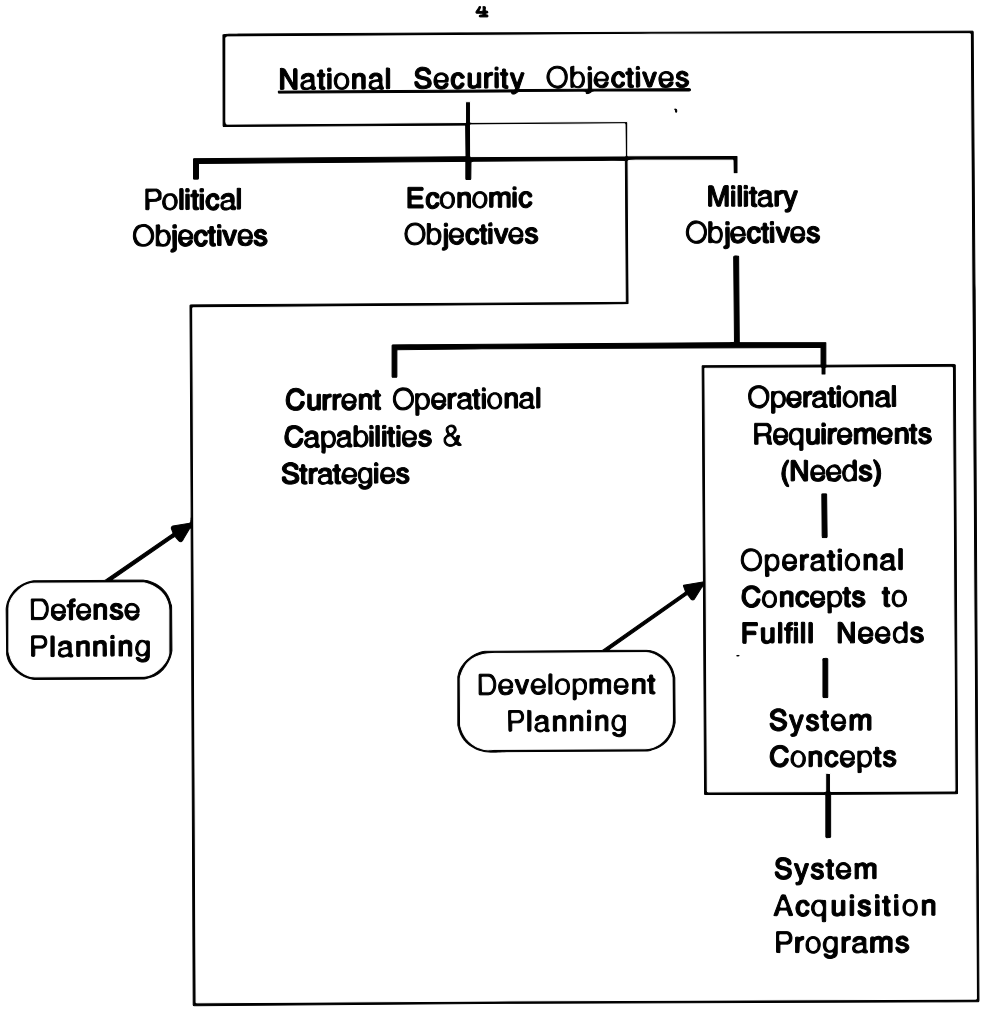

Figure 1. Defense and Development Planning

Defense and development planning, and more specifically, the operational requirements and system concepts generation processes, are important and warrant continued examination and improvement for two fundamental reasons. First, they are the initial steps in the overall acquisition process and are thus the first steps in determining the future national defense capabilities of the US. Second, these operational planning processes are major inputs into the decisions regarding how a large portion of the nation's resources will be spent. In fact, the allocations for DOD Research, Development, and Acquisition (RD&A) and procurement for the

past five years (FY 87-91) have ranged from $99 billion to $118 billion. This represents from 36 to 42 percent of the total DOD budget for those years.[3]

Due to the high costs and major implications for national defense capabilities, decisions about developing and acquiring weapon systems (what kind, how many different types, how many of each type, when) and allocating resources for those systems have been and always will be important, but also difficult and contentious. These decisions are further complicated by uncertainty and risk. In fact, uncertainty and risk are quite probably more prevalent in weapons requirements, concepts, and acquisition decisions than in any other economic activity.[4] The international arena with its ever-changing threats to US interests, variances in domestic policies, the accelerating evolution of technology, and tightening fiscal constraints all contribute to the uncertainty and risk, and thus, the difficulty, inherent in major weapon acquisition decisions.

Because of their importance and difficulty, the DOD processes of determining operational requirements and systems concepts have been subjected to much scrutiny and revision in recent years, especially since the President's Blue Ribbon Commission on Defense Planning (the "Packard Commission") started their work in 1985. Therefore, the Packard Commission provides an excellent starting point from which to track the evolution and understand the problems of the operational requirements and system concept generation processes.

Since 1985, there have been five major works that have directly influenced the operational requirements and system concepts generation processes: the Packard Commission reports issued from February to June 1986; the National Security Decision Directive (NSDD) 219, issued April 1986; the Goldwater-Nichols Department of Defense Reorganization Act of 1986, enacted October 1986; the Defense Management Report (DMR) issued by the Secretary of

Defense to the President in July 1989; and Rand Corporation's Frameworks for Defense Planning and for Enhancing Operational Capabilities, released August 1989 and November 1991 respectively.

On July 15, 1985, President Reagan issued Executive Order 12526, entitled "President's Blue Ribbon Commission on Defense Management." The Executive Order directed the establishment of a small commission of highly qualified persons in the areas of commerce, industry, government and national defense to examine and make recommendations for improving the DOD acquisition process.[5] The President's establishment of the Packard Commission was prompted by suggestions that the Joint Chiefs of Staff and the Service secretaries were ineffective and dominated by Service bureaucracies, and that even the influence of the Secretary of Defense in these bureaucracies was tenuous at best.

Weapons development and acquisition were often put forth as examples supporting these assertions.[6] Contributing to the perceived need for improvement in the development and acquisition processes were the revelations of spare parts overpricing and defense contractor scandals that appeared to corroborate charges of waste and mismanagement.[7] Even the failure of the Iranian hostage rescue attempt and the blunders made in the Grenada invasion (although the latter was generally considered a success) highlighted system interoperability problems among the Services which cast a disparaging light on the development planning and acquisition processes.[8]

Several of the commission's objectives specified in the Executive Order 12526 related directly to the operational requirements and system concepts generation processes. Among these objectives were the review of "the adequacy of the defense acquisition process"; review of the roles and responsibilities of the Joint Chiefs of Staff and the Unified and Specified Commands in

providing joint military advice and force planning and development within a resource-constrained environment; review of "the procedures for developing and fielding military systems incorporating new technologies in a timely fashion"; and recommendations for improving "the effectiveness and stability of resources allocation for defense..."[9] As a result of Executive Order 12526, a sixteen member commission chaired by Mr. David Packard, was established. The Commission issued its first preliminary findings by the end of February 1986 in "An Interim Report to President" and made its final report to the President on June 30, 1986. The Commission's review and recommendations constitute the basis for the subsequent implementing vehicles: NSDD 219, the Goldwater-Nichols Act, and the DMR.

On April 1, 1986, close on the heels of the Packard Commission's Interim Report, the President issued National Security Decision Directive (NSDD) 219, the first of the three implementing vehicles for the Packard Commission's recommendations. This directive implemented all of the Packard Commission's recommendations that were within the purview of the Executive branch. The President's purposes in issuing NSDD 219 included improving military strategic planning at the national level; strengthening "command, control and military advice"; and improving acquisition management. [10]

On October 1, 1986, Congress passed the Goldwater- Nichols Department of Defense Reorganization Act of 1986, more commonly known as the Goldwater-Nichols Act, into Public Law 99-433. Congress derived much of this legislation directly from the Packard Commission's recommendations. Congress' intentions in passing this law included improving the military advice to the president, the National Security Council, and the Secretary of Defense about the development and uses of US forces; increasing "attention to the formulation of strategy..." and more clearly linking that strategy to DOD budget requests; and providing for "more efficient

use" of DOD resources.[11] About three years later, the Secretary of Defense issued the third implementor of the Packard Commission's recommendations, the Defense Management Report.

In February 1989, the President directed the Secretary of Defense to develop a plan to further improve the DOD acquisition process. The President's direction included the full implementation of the Packard Commission's recommendations. [12] The resulting "Defense Management Report" (DMR) clarified and expanded the roles and responsibilities of key acquisition positions and groups. By the time the Secretary issued the DMR, Rand Corporation had already started work on their first framework for further improving the DOD planning and acquisition processes. The Frameworks for Defense Planning and for Enhancing Operational Capabilities provide recommendations for improving the entire defense planning and systems acquisition processes from the top-down direction and guidance at the national level down to the selection and acquisition of systems for development and procurement. The Rand Frameworks are the latest in the series of the five major works that directly pertain to the operational requirements and system concept generation processes. Together, these five works identify and address six major problem areas of these processes and each of these problems fit under one of the two planning areas mentioned earlier: defense planning and its subset, development planning.

The first problem in the area of defense planning is the inadequate linkage between national security objectives and DOD budget requests for weapon system development and procurements. Contributing to this problem is the fact that many, if not all, sub-organizations (e.g., the military Services) take on identities, norms, and standard operating procedures within themselves that function to sustain the sub-organization. [13] Thus, decisions made within these sub- organizations are frequently tilted toward optimization and preservation of that sub-organization even though the decisions may be sub-optimal for the overall organization (e.g., the

nation). The most clear examples occur when a sub-organization decision requires resources that could be better used somewhere else in the overall organization. In the US military, much of the traditional interservice rivalry can be and is viewed in this way. The current defense planning processes appear to have provided good systems that are consistent with national objectives and strategies but Congress' perception is that too often, the military Services allow Service objectives to take precedence over national considerations meaning that the fit is more by chance than by good planning.[14]

The second problem is that defense planning is too near- sighted and lacks a basis in long-term planning. This has led to "defense management by fits and starts" due to a lack of understanding of the long-term effects of defense decisions and of changes in the domestic and international arenas. [15] As a result, weapons development and procurement takes too much money and too much time.

Focusing on development planning, there are four interrelated problems that warrant attention. First, the operational requirements and system concepts processes need to be streamlined --they are too cumbersome and lack clear delineation of purpose between themselves and between the subsequent acquisition processes. This occurs primarily due to top-level acquisition groups and individuals having predominant roles and responsibilities in development planning before an acquisition program has even been initiated. Closely related, the second problem is an inadequate degree of operational perspective in development planning due to less than needed representation of the warfighting commands. This condition can and has led to domination by cost and schedule considerations in acquisition programs at the expense of system performance --that which counts in battle. This leads to the third problem, poorly made cost-schedule-performance trade-offs.

Finally, the operational requirements generation process also requires the premature formulation of system concepts as potential solutions before the requirements are even validated and approved. These premature solutions can become accepted as "the solution" and thus preclude the formulation of potentially superior solutions in the systems concepts process.

As will be seen, each of these problems has been alleviated to some extent by revisions in defense and development planning in recent years. But all of them still remain to such a degree that there is a need for more improvement. Indeed, there are solutions to further improve each.

Notes Chapter 1

1. Michael Howard, “Military Science in an Age of Peace,” Journal of royal United Service Institute for Defense Service 119, no 1 (1 March 1974): 5

2. DOD Directive 5000.1, Major and Non-Major Defense Acquisition Program (Washington D.C.: GPO, 23 February 1991), 2-2 -2-3.

3. Dick Cheney, Secretary of Defense, Annual Report to the President and the Congress (Washington D.C.: GPO, January 1991), 109.

4. Merton J. Peck and Frederick M. Scherer, "The Unique Environment of Uncertainty in weapons Acquisition,” The Weapons acquisition Process: An Economic Analysis (1962): 17-54. Peck and Scherer offer the following definitions. Uncertainty: "... the relative unpredictability of the outcome of a contemplated action." Risk: "... the level of the consequences of a wrong prediction."

5. President's Blue Ribbon Commission on Defense Management, David Packard, Chairman, An Interim Report to the President (Washington D.C.: GPO, 19B6), 5.

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9. Interim Report to the President, 27-28.

10. Ibid., 33-35

11. Public Law 99-433 [H.R. 3622], Goldwater-Nichols Department of Defense Reorganization Act of 1986, 993-994.

12. Dick Cheney, Secretary of Defense, Defense Management: Report to the President (Washington D.C.: GPO, July 1989), i (letter of transmittal)

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14. Congress, Senate, Staff Report to the Committee on Armed Services, Defense Organization: the Need for Change, 99th Cong., 1st sess., 1985, Senate Print 99-86, p. 537-538.

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Chapter 2
Improving Defense Planning

Section 1

The Case for Strategies-to-Tasks for Objectives-Budget Links

Problem and Previously Proposed Remedies

Congress has rightly deemed that compelling operational requirements are essential to justify budget requests for new weapons systems. To be compelling, operational requirements and the associated system concepts and acquisition budget requests must clearly and significantly contribute to national security objectives. The Packard Commission recognized the significance of this link between national objectives and DOD budget requests and made recommendations to strengthen it, but the Commission's reports shed little light on the background of Congress' discontent in this regard. [1]

According to an October 1985 Congressional staff report to the Armed Services Committee, many new operational requirements (and the associated weapon systems) do fit the national military strategy; Congress' question, the staff report asserts, is if that fit occurs due to good planning or due to chance. A related question is whether the requirements and systems are optimal for national objectives or for Service objectives. The report states, "The issue is whether the platforms and weapons that are identified as new requirements are the most appropriate platforms and weapons to execute an integrated, unified military approach, not the approach of a single Service."[2] The National Military Strategy is cast as an "integrated, unified approach" to achieve national objectives. Therefore, any operational requirement and system concept that does not reflect an "integrated, unified military approach" lacks clear linkage to the national military

strategy and is likely the product of a Service's desire for self-preservation or for maintaining its parochial norms as opposed to optimally contributing to national level objectives. With this perspective, one can see that Congressional concern about inadequate linkage between national objectives and operational requirements is perpetuated by such issues as lack of weapon system commonality among the Services, interservice rivalry over roles/missions and the associated requirements/systems, resistance to joint programs, and lack of interservice coordination.

To help strengthen the link of national objectives to DOD budgets, the Packard Commission recommended a top-down defense planning and budgeting process based on an annual, comprehensive statement of national security objectives issued by the President along with a provisional five-year defense budget. From these, the Chairman of the Joint Chiefs of Staff (CJCS), with the assistance of the JCS and the Unified and Specified Commanders in Chief (CINCS), would determine fiscally constrained strategies to achieve the President's national security objectives. These strategies would include options for fulfilling new operational requirements identified in the process. The President would then choose among the strategies and options to establish the basis for his defense budget submission to Congress.[3]

Implementation and Current Status

A major thrust of the Goldwater-Nichols Act was the establishment of clear and direct links between national security objectives, strategic planning, and defense budgets.4 So the Goldwater-Nichols Act, in accord with the Packard Commission's recommendations, mandated several high-level, periodic reports. Primary among these was a new report, the President's annual National Security Strategy Report to Congress. [5] As implied by the title, this Presidential report to Congress is a comprehensive statement of the national security strategy of the United States. It is submitted each year to Congress along with the President's budget for the next fiscal

year. The report states and discusses "the worldwide interests, goals, and objectives of the United States that are vital to the national security of the United States... The proposed short-term and long-term uses of political, economic, military, and other elements of the national power... The adequacy of the capabilities of the United States to carry out the National Security Strategy..."[6] Thus, the National Security Strategy Report shows how the military works in conjunction with the other instruments of national power to achieve national objectives; serves as the top-level link between national objectives, military strategies, and DOD budget requests; and provides the basis from which military needs are derived. To ensure that the link between national objectives and military needs is maintained, the Goldwater-Nichols Act requires the Secretary of Defense to base his Annual Secretary of Defense Report to Congress and his annual Guidance to the DOD components and the CJCS on the National Security Strategy Report.[7]

The Annual Secretary of Defense Report to Congress focuses on the near-term major military missions, strategies, and associated force structures in terms of meeting the national security strategy. The report contains descriptions, explanations of the relationships, and justifications for the military missions, strategies, and force structures applicable to the next fiscal year.[8] This report further establishes the link between military needs and near-term budget requests as does the Secretary's annual guidance to the DOD components and the CJCS. For the DOD components, the Secretary's guidance --the "Defense Guidance" --must state the national security objectives and policies based on the President's report, provide a prioritization of military missions, and project funding levels expected from the next budget. With this guidance, the DOD components prepare program recommendations to fulfill military needs and establish their associated budget proposals.[9] For the CJCS, the Secretary's guidance must provide direction regarding specific force levels and the projected funding levels expected from the next budget.[10]

Thus, the Secretary provides near-term, fiscally constrained guidance on which the DOD components base their program planning and on which the Unified and Specified CINCs (represented by the CJCS) base their contingency planning for the subsequent fiscal year. Since the Secretary's guidance is derived from the President's National Security Strategy Report, it contributes to a more direct relationship between national objectives and the military programs, plans, and budgets proposed to achieve those objectives.

In addition to the top-level reports which the Goldwater-Nichols Act mandated, the DMR reemphasized the criticality of the link between national strategy and the budget by establishing the Defense Planning and Resources Board (DPRB) chaired by the Deputy Secretary of Defense.

DPRB membership includes the CJCS, the Under Secretary of Defense for Acquisition (USD(A)) and other senior operational and acquisition officials. Generally, the DPRB provides top- level guidance to the military departments and agencies on defense planning topics and issues including those related to establishing operational requirements and system concepts. In carrying out these responsibilities, the DMR specifically charged the Deputy Secretary, through the DPRB, to "help develop stronger links between our national policies and the resources allocated to specific programs and forces. "[11]

However, despite the intents of the Goldwater-Nichols Act and the increased DOD emphasis, congressional concern about the lack of a clear relation between national objectives and defense budget requests has only increased.

Recommendations for Improvement

Lt Gen Glenn A. Kent, USAF (Ret), of the Rand Corporation, points out that despite improvements in the requirements generation process, "Members of Congress are increasingly concerned that military strategies and military budgets [driven by requirements] are not clearly

linked and, in fact, may not be linked at all."[12] To help remedy this, in A Framework for Defense Planning, General Kent recommended two more reports in addition to the President's National Security Strategy Report and the Secretary's Annual Report to Congress and guidance to DOD components and the CJCS: the "National Military Strategy Report" by the CJCS, and "Presidential guidance on national military strategy and fiscal constraints."[13] The National Military Strategy Report would provide the President with alternative national and regional military strategies along with provisional budget levels and the associated near-term and long-term effectiveness toward achieving national objective, with this report, the President would choose a national military strategy and, based on that choice, issue his guidance on national military strategy and fiscal constraints.[14] These additional reports would serve to document and tighten the link between military strategies and national objectives by consolidating at the Presidential level the formulation of national objectives and the selection of the fiscally constrained national military strategy that best fulfills those objectives. In fact, these additional reports would formally implement recommendations made by the Packard Commission.[15]

On 30 January 1990, the year after Rand published A Framework for Defense Planning, the CJCS issued Memorandum of Policy (MOP) number 7 which implemented a "significant revision" of the JCS Joint Strategic Planning System (JSPS) .[16]

According to MOP 7, "The JSPS is the formal means by which the Chairman, in consultation with the other members of the Joint Chiefs of Staff and the CINCs, carries out his statutory responsibilities to assist the President and the Secretary of Defense in providing strategic direction of the armed forces ..." which includes providing advice on operational requirements, acquisition programs, and budgets.[17] A key product of this revised system is the National Military Strategy Document (NMSD). The NMSD is the Chairman's recommendation

to the President, the National Security Council, and the Secretary regarding the national military strategy and the fiscally constrained force structure required to achieve the national security objectives. The NMSD includes:

> -Assessments of the threat, US defense policies, and current US military capabilities and requirements,
>
> -Recommended national military objectives based upon national security objectives,
>
> -Military strategy and force options to frame the President's decision on the national military strategy,
>
> -The recommended National Military Strategy.[18]

Thus, regardless of whether or not it was prompted by A Framework for Defense Planning, the current NMSD appears to fulfill General Kent's proposal for a "National Military Strategy Report."

The final NMSD goes to the Secretary of Defense for review and comment and then to the President for decision and approval. The approved NMSD is then included in the Secretary's subsequent Defense Planning Guidance.[19] In the current defense planning process, the presidentially approved NMSD appears to fulfill General Kent's proposed "presidential guidance on national military strategy and fiscal constraints." Figure 2 shows how the National Security Strategy report, the NMSD, and the DPG constitute the top levels of defense planning.

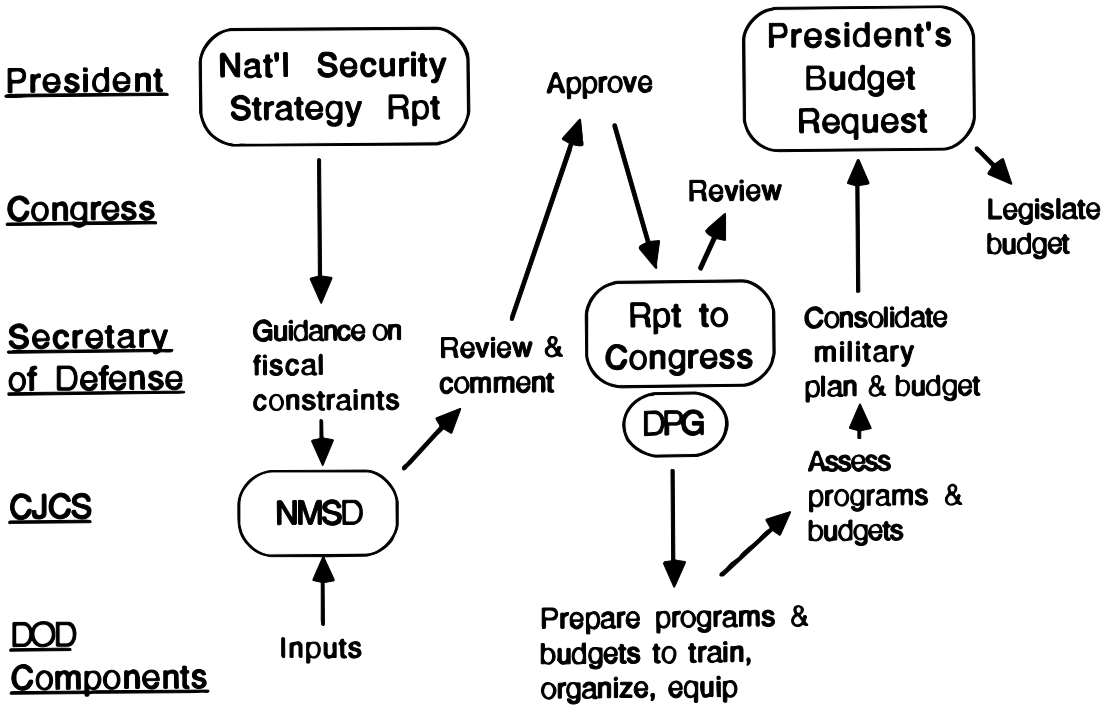

Figure 2. Defense Planning Process

The President's approval of military strategy and the Secretary's Defense Guidance complete the top levels of planning needed to derive operational tasks, operational concepts and, in turn, to develop the acquisition programs for systems to carry out the operational tasks. The Framework for Defense Planning proposes a framework which provides a coherent way of tracking the downward evolution of the linkage between national security objectives and operational requirements. This framework is termed "strategies-to-tasks" (although the subsequent Framework for Enhancing Operational Capabilities implies that "objectives- to-tasks" would be the more appropriate term) .[20] Figure 3 illustrates this "strategies-to-tasks" hierarchy of defense planning and its relation to operational requirements, system concepts and acquisition programs. The following definitions

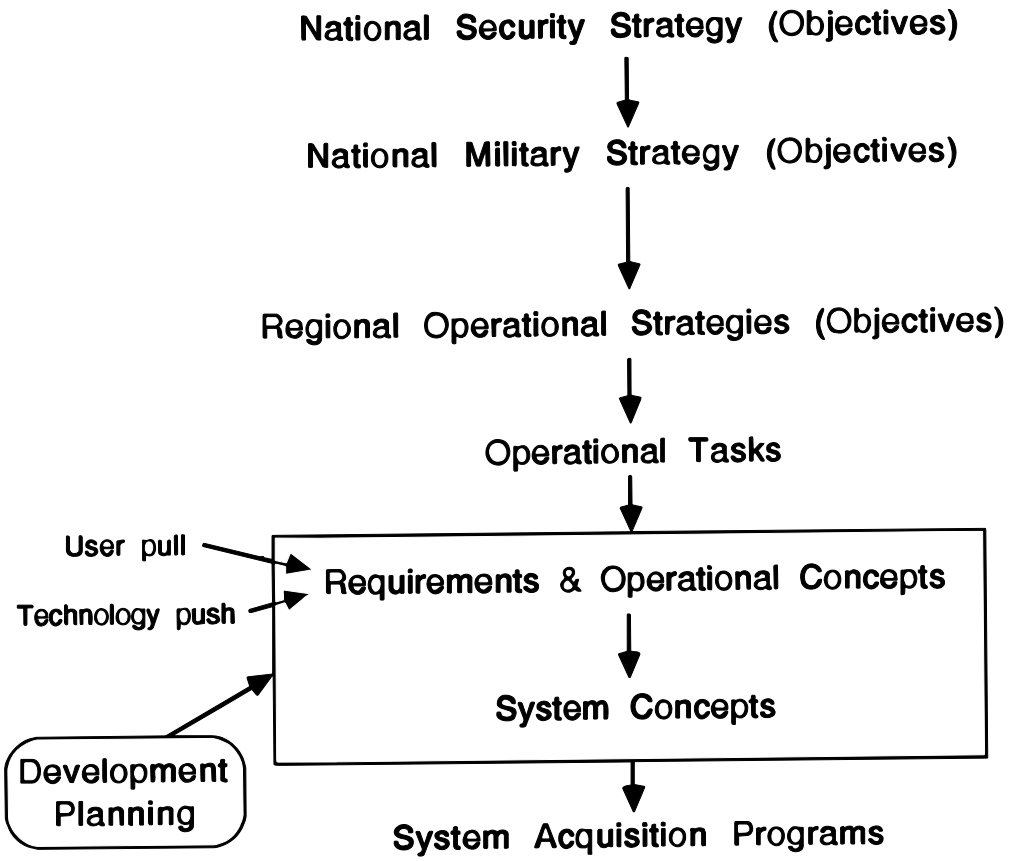

Figure 3. Strategies-to-Tasks

are helpful understanding the strategies-to-tasks framework. National security objectives are the desired outcomes from applying the political, economic, and military instruments of national power. National military objectives are the desired outcomes from applying the military instrument of national power. Operational objectives are the desired military outcomes in a specific region of the world. Operational tasks are the tasks that are necessary to achieve an operational objective. Operational concepts describe how people and systems will accomplish an operational task.

System concepts, derived from operational concepts, describe a specific weapon system, its performance parameters and projected cost and schedule for development and procurement.[21]

As the figure shows, the focus of development planning should be operational tasks and concepts; that is, development planning should not focus on just the hardware at the system concept level. Indeed, the operational focus is the centerpiece of the framework.[22] Interestingly, the "strategies-to-tasks" concept is already institutionalized to some degree. The newest version of Air Force Regulation 57-1, "Air Force Needs and Operational Requirements Process," specifically cites "strategies-to- tasks" for determining operational requirements.[23] However, the DOD 5000 series directives and instructions for defense acquisition, management policies and procedures do not include this or any other methodology for linking national objectives to operational requirements and DOD budgets.

Strategies-to-tasks is an effective method for establishing and maintaining clear links from the national strategy level all the way down to budget requests for specific weapon systems to fulfill operational requirements. The DOD 5000 series directives and instructions should specifically include the strategies-to-tasks methodology and mandate its institutionalization. These directives and instructions should also emphasize that not only must this linkage be established and maintained, it must also be demonstrated as a regular part of any advocacy for fulfilling an operational requirement via an acquisition program. It follows, therefore, that the strategies-to-tasks linkage should be a mandatory part of every milestone approval decision which certainly includes Milestones 0 and I. This linkage must also, of course, be a standard part of the budget requests for each weapon system acquisition program regardless of where that program is in the acquisition cycle.

There is another argument for thoroughly institutionalizing the strategies-to-tasks approach for maintaining a clear national objectives link to budget requests. The Packard Commission strongly recommended that Congress change its budget review process from the

minutiae of line items to one focused at the operational concepts level.[24] During the time when the Commission was doing its work, Senator Barry Goldwater, then Chairman of the Senate Armed Services Committee, provided candid insight to the reason for this recommendation when he observed, "The budget process distorts the nature of congressional oversight by focusing primarily on the question of how much before we answer the key questions of what for, why, and how well."[25] Recall that operational concepts describe how people and systems will accomplish operational tasks which contribute to achieving operational objectives. With an operational concept focus, Congress would gain a far better understanding of how their budget adjustments affect operational capabilities --the "what for, why, and how well." It may be unrealistic to expect Congress to make such a major change in their budget process, but if they ever do, it will be because the DOD demonstrated that such a focus is not only viable, but better. Therefore, the DOD should adopt strategies-to- tasks with its operational concepts focus and consistently apply it in defense budget advocacy activities. Only then will there be any significant probability for Congress to switch from the current line item budget review approach.

As a final point, it would be absurd to presume that a clear objectives-budget link via strategies-to-tasks (or any other method) would transcend all or even some of the political machinations to which a defense development and acquisition program can be subjected. Nevertheless, a sound link is a fundamental step in achieving a viable weapon system acquisition program --it is essential.

Section 2

The Case for Strategies-to-Tasks for Long-Range Planning

Problem and Previously Proposed Remedies

The Packard Commission reported to the President that "... there is a need for more and better long-range planning to bring together the nation's security objectives, the forces needed to achieve them, and the resources available to support those forces."[26] The Commission also stipulated that long-range planning should be fiscally constrained, based on sound military advice and, of course, forward looking.[27] The Packard Commission's recommendations for improving long-range planning encompassed several of the recommendations to improve other areas. As a vehicle for tieing together the national security objectives, forces, and resources, the Commission recommended the top-down planning process with the President's National Security Strategy Report followed by the Secretary's Defense Guidance based on the President's choice from national military strategy options formulated by the Secretary and the CJCS. Each of these options would be fiscally constrained by provisional five-year budget levels, also formulated by the Secretary and the CJCS. Integral to the military strategy options would be future projections of threats to U.S. interests and corresponding U.S. military capabilities to counter those threats.[28]

Implementation and Current Status

NSDD-219 adhered to the Commission's recommendations for long-range planning by directing the Secretary of Defense to recommend procedures for developing five-year provisional budgets upon which the CJCS, with the other members of the JCS and the CINCs, would formulate military strategy options.[29] The Goldwater-Nichols Act did not mandate a specific process for long-range defense planning but it did, as seen, mandate the President's annual National Security Strategy Report and the Secretary's report to Congress along with Defense guidance to DOD components and the CJCS.. The Act also charged the Secretary of

Defense with ensuring that this planning and guidance was based on national security, strategy and policies, and was fiscally constrained by projected budget levels.[30]

Despite the implementation of the President's National Security Strategy Report and the Secretary's Defense Guidance based on that report, three years later the DMR cited long- range planning as insufficient. To help remedy this, the DMR bolstered the Secretary's Defense Guidance (renamed the "Defense Planning Guidance") by including "... a rough, 20- year 'road map' of the modernization needs and investment plans of DOD...against realistic levels of future funding." [31]

Currently, the Secretary's Defense Planning Guidance (DPG) based on the President's National Security Strategy Report provides the basis for the DOD's long-range planning. Fiscal constraints are provided by provisional budget levels that the DOD has extended to six instead of five years to better fit the biennial budgeting process which, under Congressional mandate, the DOD started in 1988.[32] Additionally, the Chairman's NMSD serves as a major input to long-range defense planning. Annex G of the NMSD is titled "Long-Range Planning Guidance" and contains plausible projections of international and domestic factors that influence defense planning. These projections extend 14 years beyond the six year defense planning period and include international political, social, economic, technological and threat trends. Associated with these projections are proposed military strategies that provide a basis from which the CINCs can assess the adequacy their future plans and operational requirements.

Recommendations for Improvement

A long-range plan can be an invaluable tool for better understanding the systemic and long-term effects that decisions will have on resources and capabilities. Such a plan can also provide insight regarding how changes in the international and domestic environments might

affect those decisions. This is especially true in cases where the results of the decision won't come to fruition for a long period as in major weapon systems which typically take seven to fifteen years from conception to deployment. Of course, the nation cannot afford to get locked into a long-range plan that is so rigid that it precludes flexibility to compensate for changes in military needs or to accommodate new, significant opportunities afforded by technological advances. A long-range plan should and must be a living instrument ready to account for the changes which the pertinent military, political, economic and technological actors and factors of the domestic and international environments impose. This is much more palatable when one remembers that it is not the plan itself that is of the most value, but rather, the planning process that affords the most benefit. Since the planning process identifies the actors and factors that constitute the spectrum of threats and derives operational concepts and requirements to counter those threats, the process is a mechanism that provides insight to the relation between threat variables and operational requirements with their associated system concepts. Long- range plans also serve the same purpose in accounting for changes in domestic policies as well as changes in approval and funding of weapon systems. Therefore, a long-range plan is the best vehicle for predicting the long-term effects of current decisions and how changes in the environment affect those predictions.

Institutionalizing the strategies-to-tasks methodology for linking national objectives to DOD budget requests would afford an excellent structure for the DOD's long-term defense planning since it depicts the interrelationships among national security objectives, threats, resources, and military forces. Implementation of this recommendation would provide a common, long-range planning framework for all DOD components and should include a master road-map based on strategies-to-tasks, projected 20 years out, and kept by the Strategic Plans and

Policy Directorate (J-5) of the Organization of the JCS (OJCS). As shown in Figure 4, this master road map would be a 20 years projection of the major levels of the strategies-to-tasks framework from national military strategies to operational concepts. Note that the focus of this road map is at the operational level; while

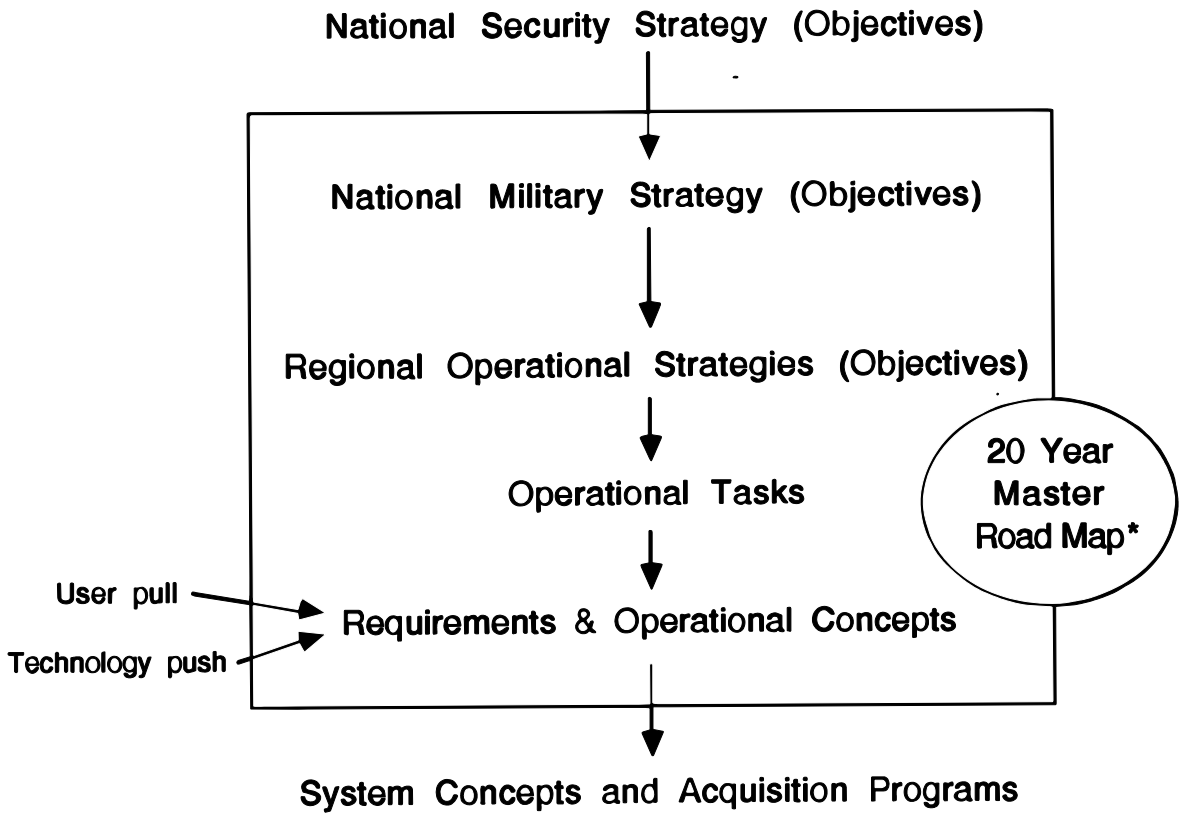

Figure 4. Strategies-to-Tasks for Long-Term Defense Planning

- Operational road maps account for variables in the international and domestic environments including threats, fiscal constraints, and national policies.

"modernization" road maps for system technology and hardware have their place, they should be derived from and secondary to those for operational objectives.

This master road map should be a standard part of all program milestone decisions and

DOD budget avocations before Congress since it would show how systems and associated budgets fit within the overall defense plan over time. This is particularly appropriate for systems in the early phases of development planning or acquisition since these systems won't be deployed until well beyond the six year defense planning period.

Institutionalizing strategies-to-tasks throughout the DOD defense planning process would provide an excellent method for establishing and demonstrating the linkage between national objectives and DOD budget requests. It would also significantly improve the DOD's long-range planning as well as other aspects of development planning. There are other recommendations which would also improve the operational requirements and system concepts generation processes involved in development planning.

Notes Chapter 2

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2. Congress, Senate, Staff Report to the Committee on Armed Services, Defense Organization: the Need for Chang, 99th Cong., 1st sess., 1985, Senate Print 99-86, p. 537-538.

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9. Ibid., 996.

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11. Dick Cheney, Secretary of Defense, Defense Management: Report to the President (Washington D.C.: GPO, July 1989), 5.

12. Glenn A. Kent, A. Framework for Defense Planning (Rand Corporation Report, 1989. R-3721-AF/OSD), 1.

13. Ibid., 3-9.

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16. Chairman of the Joint Chiefs of Staff Memorandum of policy (MOP) No.7, Joint strategic Planning System (30 January 1990), Cover Letter, 1.

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21. Framework for Defense Planning, 12-15.

22. Ibid.

23. Air Force Regulations 57-1, Air Force Mission Needs and Operational Requirement Process (Washington D.C.: DOD, 15 November 1991), 8.

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25. Ibid., xviii

26. Quest for Excellence, 10.

27. Ibid.,xvii

28. Ibid., 10-12

29. President's Blue Ribbon Commission on Defense Management, David Packard, Chairman, A Quest for Excellence: Appendix: Final Report to the President (Washington D.C.: GPO, 1986), 34-35.

30. Goldwater-Nichols, 999-1000.

31. Defense Management Report, 5-6.

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Chapter 3

Improving Development Planning

Section 1

The Case for Vesting the JROC with Milestone 0 Approval Authority

Problems and Previously Proposed Remedies

Among the Packard Commission's objectives was the review of "the responsibilities of the Organization of the Joint Chiefs of Staff in providing for joint military advice and force development within a resource-constrained environment. "[1] In this regard, the Commission believed that the CINCs were not adequately represented in the operational requirements and system concepts generation processes and pointed out that there was no "one uniformed officer" responsible for integrating the views of the CINCs and the Service Chiefs -- the warfighters and acquirers.[2] Indeed, the CINCs are the nation's warfighting commanders. They are closest to the threats, directly tasked to counter those threats, and thus, have the best expertise and experience for determining what they need to achieve their missions. The Services, on the other hand, are tasked by law to train, organize and equip forces for the warfighting commands.

In the past, the Services have had the predominant roles in the operational requirements and system concepts generation processes. To give the CINCs a greater voice in these processes, the Packard Commission recommended that the responsibilities of the CJCS include representing the CINCs in operational requirements and other JCS decisions. To assist in this responsibility, the Commission recommended the creation of a new JCS position, the Vice Chairman of the Joint Chiefs of Staff (VCJCS).[3] This stronger representation, the Commission believed, would better facilitate the Chairman's impartial and objective integration of the CINCs' and Service Chiefs' views in operational requirements, system concepts, and other JCS decisions.[4]

Another primary role of the Vice Chairman would be to review the need for new weapon

systems by challenging the necessity of newly identified operational requirements. These roles of CINC representation and requirements review would be formalized in a restructured Joint Requirements and Management Board (JRMB). At the time, the JRMB dealt solely with operational requirements, procedures, and issues for multi-Service or "joint" programs. [5] The restructured JRMB, however, was to ensure the validity and necessity of all new operational requirements (not just joint requirements) for major programs and was to achieve a balance between programmatics (program cost and schedule) and operational warfighting requirements (system performance, including supportability) in making decisions about new operational requirements and associated system concepts.6 To achieve this balance, the restructured JRMB would be co-chaired by the VCJCS and another new position which the Commission recommended, the Under Secretary of Defense for Acquisition (USD(A). The USD(A) "would be a full-time Defense Acquisition Executive" with authority to set policy and supervise "the entire acquisition system" including research, development, and procurement.? In addition to the inadequate CINC representation in development planning, the Packard Commission was also concerned about the overly long acquisition cycle.

The Packard Commission cited the entire development and acquisition process as inordinately long (10-15 years from conception to deployment for major systems) and pointed out the pernicious aspects of this length. First, the longer the period for system development and acquisition, the higher the real cost since the defense contractors developing and producing a system must be retained over a longer period. "Time is money." Also, as a system takes longer to acquire, the technology used in the system is all that much closer to obsolescence when the system is finally deployed. Thus, we forfeit some or possibly all of the technological lead we may have started with. Another reason that long acquisition time is detrimental is that it compels

the user who originated the operational requirement to overstate the threat in hopes of compensating for long-term uncertainties about how the threat will evolve. This does two things. It puts additional demands on technology for system capabilities to meet the overstated threat. These additional demands cause even further increases in development time. Overstating the threat also fosters systems that possess some capabilities that are not actually worth the time and money needed to develop and procure them --what the Commission referred to as "goldplating."[8] Finally, and perhaps most importantly, an overly long acquisition time simply means that the user's operational need goes unfulfilled longer than necessary.

In light of all the detrimental aspects of an overly long acquisition cycle, the Packard Commission made recommendations to streamline the acquisition process. Most of these centered on shortened and simplified command channels for the acquisition cycle that emulate commercial industry practices. These recommendations, however, were applicable to the post-Milestone I acquisition activities and therefore, did not affect the development planning processes. Figure 5 shows the milestones and phases of the development planning and acquisition processes. Like the Packard Commission, NSDD-219 did not contain any specific direction for streamlining the operational requirements and concept generation processes; nor did the Goldwater-Nichols Act which left such matters in the hands of the DOD.

Implementation and Current Status

Among the Packard Commission's recommendations implemented by NSDD 219, one that bore directly on the requirements process was the restructuring of the JRMB with the VCJCS and the USD(A) as co-chairs.[9] But NSDD 219 could only set the stage for the new JRMB since the new positions

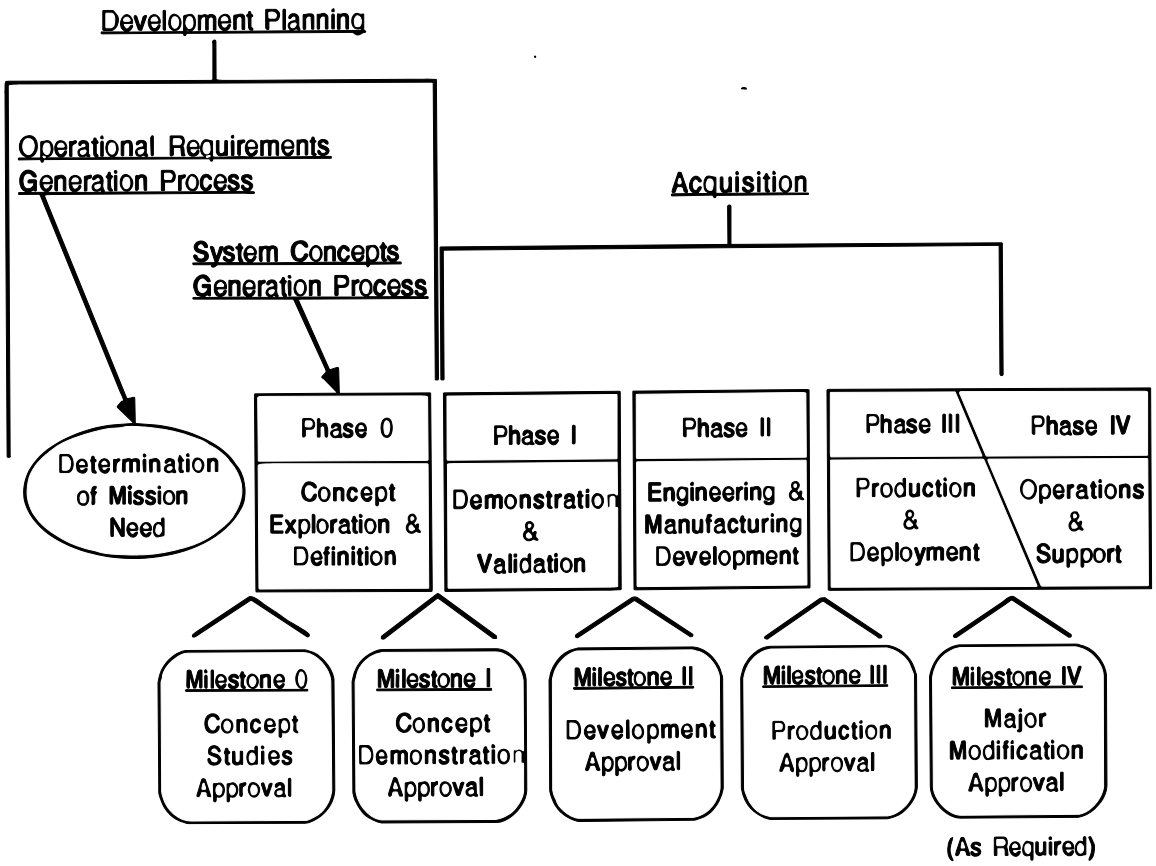


Figure 5. Milestones and Phases of Development Planning and Acquisition[10]

of the VCJCS and the USD(A) required legislation to become reality.

The Goldwater-Nichols Act did, indeed, create the positions of the VCJCS and the USD(A) so that the DOD could implement the Packard Commission's recommendations that centered on these positions. To the credit of this legislation, the specifics of the Vice Chairman's duties were left to the discretion of the CJCS with approval of the Secretary of Defense.[11] The Vice Chairman's fundamental duties were, of course, already prescribed in the Packard Commission reports and in NSDD 219. Likewise, the USD(A) 's duties were left to the discretion of the Secretary of Defense with the Commission's recommendations and NSDD 219 providing the primary guidance.[12]

Among the responsibilities for the VCJCS was to represent the Commanders-in-Chief (CINCs) of the Unified and Specified Commands --the warfighters --in the operational requirements generation process.[13] Toward this end, the role of this new position evolved in the subsequent months after NSDD 219 and the Goldwater-Nichols Act such that the VCJCS became the Chairman of the Joint Requirements Oversight Council (JROC). After the JRMB's restructuring and assumption of its much broader role in development planning and acquisition, the Secretary of Defense and the CJCS formed the JROC to assume the JRMB' s former role in joint programs. Early in 1988, the restructured JRMB was reorganized and renamed the Defense Acquisition Board (DAB) with the USD(A) as chairman and the VCJCS as the vice-chairman.[14] The JROC has the Service's Vice Chiefs of Staff as its permanent members. [15] With this membership and the VCJCS as chairman, the JROC is oriented toward operational considerations. As such, the JROC first served to "validate" operational requirements that were submitted as multi-Service or "joint."[16]

In addition to creating the VCJCS and USD (A) positions, the Goldwater-Nichols Act, per the Commission's recommendations, designated the CJCS as "the principle military advisor to the President, the National Security Council, and the Secretary of Defense."[17] Three years later, the DMR reemphasized the expanded responsibilities which the Goldwater-Nichols Act vested in the CJCS as the principal top-level military advisor and as the spokesman for the JCS and the CINCs, "especially on the operational requirements of their commands."[18] The DMR recognized the increasingly effective interaction between the JROC and the DAB for reviewing and approving joint operational requirements. Building on this, the DMR formalized the JROC's validation and prioritization role for all operational requirements (not just joint requirements) prior to DAB consideration for Milestone 0 approval. Thus, the JROC considers all operational

requirements that represent potential major programs, regardless of source, for validation and for joint versus single-Service acquisition programs. The DMR also broadened the JROC's role to include the validation of performance goals and baselines of all major programs prior to DAB reviews for all subsequent milestones.[19]

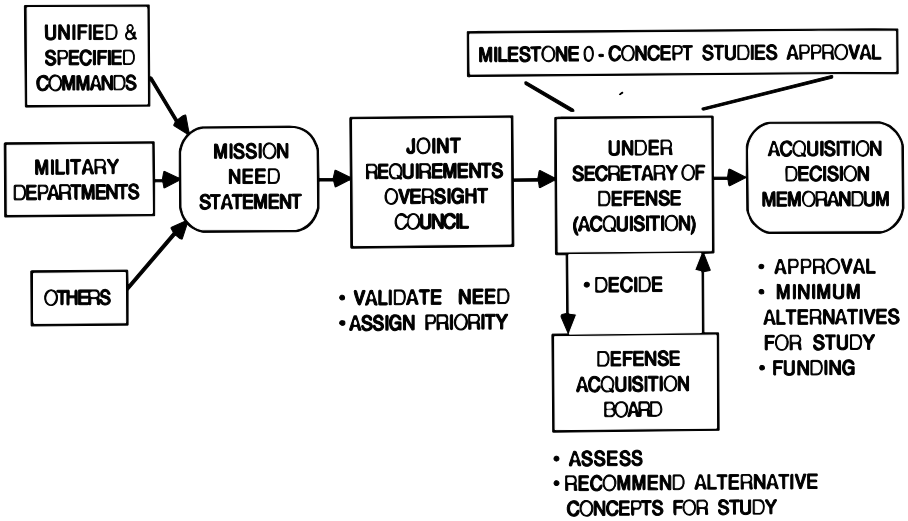
Currently, once a warfighting command or a Service has fully staffed a Mission Need Statement (MNS) that could potentially result in a major acquisition program, it goes to the JROC for validation and then to the DAB for Milestone 0 approval.[20] This JROC/DAB validation and approval process has proven to be a viable arrangement, but the process can be improved.

Recommendations for Improvement

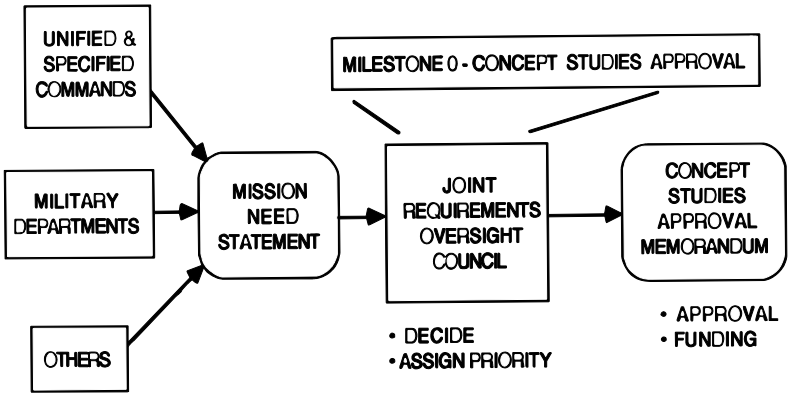
Rand's Framework for Enhancing Operational Capabilities would eliminate the redundant JROC/DAB validation and approval process by making the JROC the Milestone 0 approval authority. This would achieve two things: it would streamline the Milestone 0 approval process and it would take the DAB out of the process.[21] Taking the DAB, an acquisition oriented group, out of the requirements approval process is appropriate, the framework asserts, since system concepts have not yet been defined and therefore, no acquisition program yet exists. Figure 6 illustrates the removal of the DAB and the streamlining effect of this recommendation. In fact, for the sake of clarifying planning versus acquisition, the framework would designate Milestone 0 as strictly a development planning function, not an acquisition function.[22] The framework makes a similar argument for Milestone I.

At Milestone I, a selected concept is approved or disapproved for implementation as an acquisition program.[23] Currently, this is a DAB decision but again, the framework identifies this DAB approval authority as premature and as a blurring of the delineation between systems

development planning and systems acquisition.[24] Instead of the DAB, the framework proposes the Defense Planning and Resources Board (DPRB) as the more appropriate forum for Milestone I approval



a. According to DODD 5000.1



b. According to the Rand Framework for Enhancing Operational Capabilities

Figure 6. Mission Need Statement Flows (Major Programs)

since the DPRB is directly concerned with determining the most important military capabilities

to which resources should be allocated in conjunction with the Planning, Programming, and Budgeting System. [25] The DAB would then serve as approval authority for the three subsequent milestones that are clearly in the realm of acquisition.

Should the JROC be the Milestone 0 approval authority and should the DPRB be the Milestone I approval authority vice the DAB in both cases? To answer these questions, a look at the membership of the JROC, DAB and DPRB is revealing. As shown in Table 1, the JROC is oriented toward operational considerations while the DAB leans more toward acquisition. The DPRB, on the other hand is more balanced between operational and acquisition representation, albeit, a higher level forum than the DAB or JROC. The recommendation to make the JROC the Milestone 0 approval authority instead of the DAB depends largely on how one answers the question, "Where does the planning process stop and acquisition begin?" The DOD 5000 series is not completely clear about this since DODD 5000.1, states that Milestone 0 is "the initial interface between the requirements generation and the acquisition management systems" and DODI 5000.2 says that Milestone I marks the start of a new acquisition program.[26] However, since Milestone 0 initiates Phase 0 for exploring alternative system concepts --a development planning function --the best answer appears to be in DODI 5000.2: Milestone I, not 0, marks the transition from planning to acquisition. Thus, for Milestone 0, a planning function which fundamentally serves as the approval point of an operational requirement and for the direction of system concept studies to fulfill that

Table 1. Memberships of the JROC, DAB, and DPRB			
Members	**JROC**	**DAB**	**DPRB**
Dep Secretary of Defense			(Chair)
	- Operational Related Positions -		
Chairman of the JCS			X
Vice Chairman of the JCS	(Chair)	(V. Chair)	X
Service Chiefs of Staff			X
Vice Chiefs of Staff	X		
Unified & Specified CINCs			X
	- Acquisition Related Positions -		
USD (Acquisitions)		(Chair)	X
MILDEP Secretaries			X
USD (Policy)			X
ASD (Prog Anal & Eval)		X	X
Other ASDs			X
DOD Comptroller		X	X
OMB Representative			X
Assistant to the President on National Security Affairs			X
Director, Defense Research & Engineering (R&E)		X	
Director, Operational Test & Evaluation (OT&E)		X	
Service Acquisition Executives		X	

requirement, the JROC's operational orientation appears most appropriate.[27] It also seems

appropriate that the JCS, via the JROC, have full responsibility and authority for approving operational requirements for system concept studies vice the current JROC/DAB process which dilutes authority and accountability for these operational requirements decisions. Note that the JROC would not make recommendations for concepts to be studied as the DAB does now in the Acquisition Decision Memorandum (ADM) that documents Milestone 0 approval. That narrowing of potential system concepts would be appropriately reserved for Phase 0, Concept Exploration and Definition. This serves to keep the pre-Milestone 0 activities focused purely on operational requirements and thus clearly delineates the requirements generation process from the system concepts generation processes (post-Milestone 0).

There is an issue, however, in recommending the JROC as the Milestone 0 approval authority --legality. By law, specifically, Sections 152(c) and 154(c) of Title 10, the CJCS and the VCJCS do not have command authority over the JCS or any of the armed forces.[28] Therefore, is a Service obligated to respond to a JROC decision to conduct concept studies in Phase 0? Two factors make the answer to this question "yes." First, the JROC is co-chartered by the CJCS and the Secretary of Defense.[29] Certainly, the Services are obligated to respond to the decisions of a Secretary of Defense chartered council. Second, Section 163 (b) (2) (D) of Title 10 states that the CJCS shall "...communicate, as appropriate, the requirements of the combatant commands to other elements of the Department of Defense." Such communication is obviously not just for information, it's for action on the part of the Services which are charged to organize, train, and equip the military forces.

Since Milestone I marks the transition from development planning to acquisition, having an acquisition oriented approval authority --the DAB --does not confuse the distinction between development planning (pre-Milestone I) and acquisition (post-Milestone I). Should the DPRB

have Milestone I approval authority instead of the DAB? Note in Table 2 that the DPRB and the DAB share some key membership, most notably, the CJCS or the VCJCS for CINC representation, the USD(A), the ASD(PA&E), and the DOD Comptroller. Because of this common membership, the CINC representation in the DAB by the VCJCS (which would have approved the initial requirement at Milestone 0), and the necessary tilting toward acquisition due to the transition to an acquisition program, there appears little, if any, utility in replacing the DAB with the higher level DPRB as Milestone I approval authority. Substantiating this position is the DOD policy that milestone approval be delegated to the lowest level deemed appropriate by the USD(A) .[30]

In sum, while the DAB appears appropriate as the Milestone I approval authority, vesting Milestone 0 approval authority in the JROC holds promise for significantly improving development planning. Not only would it streamline the Milestone approval process, it would also more clearly delineate development planning from the acquisition program process. But most importantly, it would strengthen the JROC's, and hence the CINCs', role and responsibility in challenging and approving operational requirements --a role for which the JROC is best suited.

Section 2

The Case for a Pure Mission Need Statement, No Early Acquisition Category, and the JROC for All Mission Need Statements

Problem and Past Remedies

Despite the Packard Commission's criticisms about determining operational requirements and system concepts -- overstating requirements which leads to "goldplated" concepts --the Commission did not specifically address the interface between these needs (operational requirements) and solutions (system concepts). That is, where does determining needs end and formulating solutions begin? NSDD-219 and the Goldwater- Nichols Act did not address the need/solution interface either. The DMR reemphasized the necessity for continuing improvements in the operational requirements process and in determining system concepts to meet those requirements but again, made no mention of the need/solution interface.

The primary vehicle for stating operational requirements has traditionally been a document generated by the user (a Unified or Specified Command or a Service major command such as the Air Force's Tactical Air Command or Strategic Air Command) or other DOD components that have recognized a deficiency in military capability or a technological opportunity to significantly increase military capability or efficiency. In the past, this document has been known by various names including Statement of Need (SON), Joint Statement of Operational Requirements (JSOR), Required Operational Capability (ROC), and Mission Element Need Statement (MENS) .[31] Currently, that document is called the Mission Need Statement (MNS) regardless of its source within the DOD. The generation of a MNS marks the initial steps in the operational requirements generation process.[32] However, the MNS is not the pure operational requirements document that it should be.

Current Status

The current operational requirements and system concepts generation processes are fundamentally flawed since they require premature consideration of solutions and perhaps even invite writing requirements around preconceived solutions. This blurred interface between determining needs and formulating solutions is detrimental to the requirements and concepts decision processes since it potentially precludes the formulation and consideration of a comprehensive set of alternative solutions.

Lieutenant General Glenn A. Kent, USAF, retired, points out that the MNS format still requires proposed solutions from the originators.[33] DOD Manual 5000.2-M, "Defense Acquisition Management Documentation and Reports," February 1991, prescribes the purpose & format for all MNSs. This manual provides that any DOD Component may prepare and submit a MNS (Unified and Specified Commands, Service major commands, DOD agencies, etc) .[34] This is as it should be since the quest for deficiencies should be open to all in the DOD. 5000.2-M also states that a MNS is "a nonsystem-specific statement of operational capability need."[35] This nonsystem- specific approach is reiterated in the format description for Section 2 of a MNS, "Mission and Threat Analysis" which states, "Do not discuss the need in terms of equipment or system specific performance characteristics." Section 3 of the MNS format requires the preparing organization to describe why nonmateriel alternatives --changes in doctrine, operational concepts, tactics, organization, training --are inadequate for satisfying the need.[36] Although this section gets into the realm of solutions, it is appropriate since it compels the originator to think hard in terms of potential nonmateriel solutions before submitting the MNS for a "materiel" solution --a new system.

Section 4, however, belies the "nonsystem" approach that MNSs are supposed to adhere

to. Section 4 is titled "Potential Materiel Alternatives" and requires the originator to identify any known deployed systems or development programs for similar needs and/or potential areas of study for Phase 0, Concept Exploration and Definition.[37] The MNS is not the place for stating potential alternatives since it compels the originator to think in terms of solutions before the operational requirement is even validated or approved. Also, the proper forum for formulating potential solutions to an operational requirement includes not only operational expertise but also technological and programmatic (cost, schedule, and contracting) expertise as well. The originator of a MNS most often does not have the benefit of such a complete forum in the requirements generation process. In addition to stating potential solutions, the originator of a MNS is also required to estimate if the operational need will potentially result in initiation of a new major program versus a non-major program.[38] In the current process, this estimate is needed to determine the validation and subsequent milestone approval authorities. More specifically, DOD Instruction 5000.2 directs a MNS originator to determine what Acquisition Category (ACAT) the future program will come under. ACAT I represents the largest programs and requires JROC/DAB validation and approval for Milestones 0 and I. Lesser ACAT programs (II, III and IV) have milestone approval authorities a lower DOD and Service levels.[39] So how does the originator of a MNS make such a determination? Both DODD 5000.1 and DODI 5000.2 state that this preliminary determination is "highly subjective. "[40] The guidance these directives and instructions provide for determining the ACAT is general and solution oriented. For example, "... an identified need should be considered as acquisition category I when...it could potentially result in a capability that may require the use of new, leading edge technologies and an extensive development effort..."[41] Actually, ACATs are much more specifically defined and are based primarily on cost estimates as shown in Table 2.

Requiring an ACAT estimate with a MNS compels the originator to think in terms of solutions well before the operational requirement is even validated or approved. If the MNS originator believes that lower cost programs are more likely to survive the budget process, the originator might be inclined toward citing certain solutions in the MNS that would potentially stay below the ACAT I or II thresholds.

Table 2. Acquisition Categories [42]		
	ACAT I	ACAT II
Total RDT&E	>$200M	>$75M
or		
Total Procurement	>$1B	>$300M
(Fiscal year 1980 constant $; ACAT III and IV fall below the ACATII $ thresholds)l		

The final determination of acquisition category is made at the right point --Milestone I -- after system concepts have been formulated and evaluated, but the requirement for preliminary ACAT estimates coupled with potential solutions in the MNS is a flaw in the initial requirements/concepts processes that should be corrected.[43] It is a flaw worthy of correction because it burdens the MNS originator with developing potential solutions and rough acquisition cost estimates before requirements approval; it confuses the distinction between the operational requirements process and the system concepts process; and, perhaps most importantly, it denies the JROC better and centralized control over the spectrum of new operational requirements throughout the DOD.

Recommendations for Improvement

The MNS should be a pure operational requirements document with no place for potential solutions and no ACAT estimate to accompany it. This would relieve MNS originators from the burden of having to estimate the ACAT before the Phase 0 concept generation has even begun. It also affords a clear delineation between the operational requirements and system

concepts processes. Without the ACAT estimate, no preliminary determination can or should be made as to the Milestone 0 authority. This, however, is more of an advantage than a drawback.

The JROC should be the Milestone 0 approval authority for all MNSs, regardless of the source or potential acquisition program costs. In this way, the JROC, with a strategic perspective for interservice coordination, will have better control over the spectrum of new operational requirements from throughout the DOD and can better preclude redundant system concept, development and acquisition efforts among the services. What's more, this centralized control and approval of all operational requirements would not inordinately increase the JROC's work load since the JROC already has to review all new operational requirements for potential joint program application regardless of potential ACATs.[44]

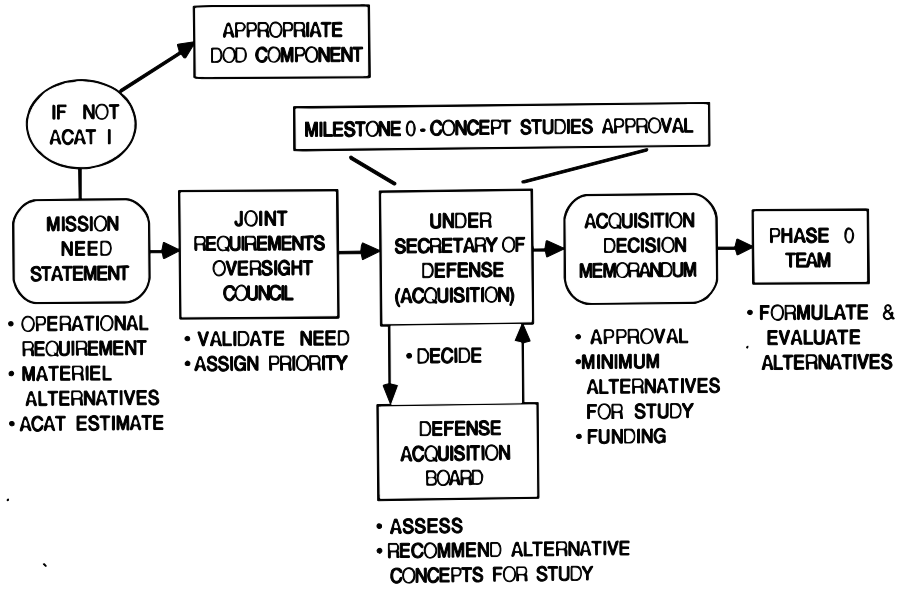
The Rand Framework for enhancing Operational Capabilities recommends that operators (unified and specified commanders or Service chiefs) should have the authority to determine and approve their own operational requirements and initiate Phase 0 within a Service. The Service would then produce system concept and acquisition plan packages for presentation to the Milestone I approval authority. However, this approach appears to lack a centralized control mechanism for early interservice coordination and would potentially lead to Service parochialism and/or redundancy of system concept (Phase 0) efforts among the Services. This process would leave it to the Milestone I approval authority to sort out the potential parochialism and redundancy at the Milestone I decision point. This is the type of activity that invites Service objectives and parochialism to take precedence over national military objectives in development planning --a result which, as shown earlier, Congress is more wary and less tolerant of. As the Milestone 0 approval authority for all MNSs, the JROC would designate the appropriate Service or Agency responsible for Phase 0 and determine a funding source for Phase 0 activities but

would make no recommendations for system concepts that should be pursued in Phase 0. Note that in the current Milestone 0 process, the approval authority directs the study of a minimum set of materiel alternatives for Phase 0. This direction does not preclude the study of other alternatives. There is a danger, however, that after certain alternatives have been cited as potential solutions by the MNS originator and directed for study by the Milestone 0 approval authority, those alternatives might become sacrosanct as "the solution" at the expense of other possibly better solutions. The proposed process would avoid this danger since no potential solutions would be formulated prior to Phase 0.

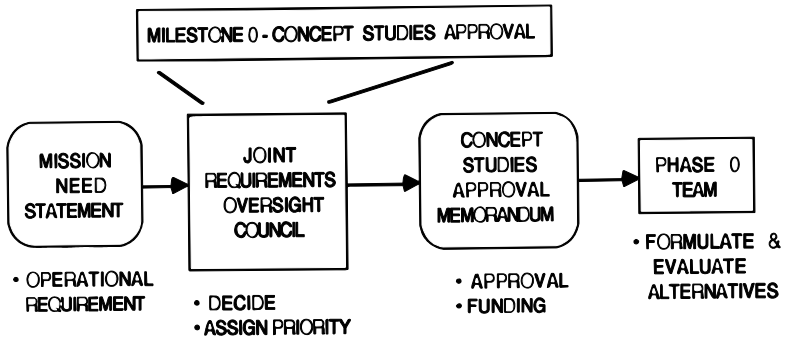
Under the proposed process, during the initial stages of phase 0, the designated Service or Agency would assemble a team comprised of operational planners, operators, technologists (scientists and engineers), and programmatic personnel (for cost estimates, acquisition schedules, and contracting). The operators and all other participants would then have ample opportunity to submit a spectrum of concept ideas for consideration in this forum specifically chartered and equipped for the purposes of concept formulation and evaluation. The Phase 0 team would then evaluate and adjust the potential concepts by making the appropriate cost-schedule-performance trade-offs, and narrow the field of concepts to one or a very few for Milestone I approval. Since the Phase 0 team would determine a projected acquisition program cost and schedule for each proposed concept, the Milestone I approval authority and ACAT are then readily determined based on sound concept planning and the current guidelines in the DOD 5000 series directives and instructions. Figure 7 provides a comparative depiction of the current and proposed processes.

In summary, three fundamental and related changes would significantly improve development planning by eliminating premature solutions in the requirements generation

process: make the MNS a pure operational requirements document by removing the "Potential Materiel Alternatives" section; eliminate the early ACAT estimate which is currently submitted in conjunction with a MNS; and give the JROC Milestone 0 approval authority over all MNSS regardless of source or potential acquisition program costs.



a. According to DODI 5000.2,



b. According to Proposed Process

Figure 7. Operational Requirements Approval and Phase 0

Section 3

The Case for Operational Planners Leading Phase 0

Problems and Previously Proposed Remedies

Among the Packard Commission's directed objectives was to review "the procedures for developing and fielding military systems incorporating new technologies in a timely fashion. "[45] Toward this end, the Commission cited the two most common approaches of originating requirements: "user pull" and "technology push. "[46] User pull refers to an operational requirement prompted by an inadequacy of current military systems to achieve a specified mission; technology push occurs when new technology affords a significant improvement in combat capability or efficiency (e.g., reduced operating costs). Unfortunately, according to the Commission, both approaches foster "goldplating" --"the inclusion of features that are desirable but whose cost far exceeds their real value." As mentioned earlier, the commission found that overstating the threat leads to goldplating since such overstatements thwart adequate trade off decisions between cost, schedule, and performance early in the system concepts generation process; specifically, in Phase 0.[47] The lack of such trade-offs reflected a fundamental flaw in the charter of the Defense Systems Acquisition Review Council (DSARC) which advised the Secretary of Defense on new acquisition program decisions at Milestones I and II. Specifically, the DSARC was chartered to review if proposed system concepts would meet the user's operational requirements and to determine if the estimated acquisition program costs and schedules were credible.[48] The fundamental flaw was that the DSARC, or any other group, was not chartered to first challenge the essential nature of requirements (Do we really need a new weapon system?) and then to ensure adequate trade-offs among system performance, acquisition cost and program schedule (Can we build the new weapon system in a timely manner? Can we afford the new weapon system?) .[49] The Commission therefore recommended the restructured

JRMB, co-chaired by the VCJCS and the USD(A), to replace the DSARC. As mentioned earlier, the new JRMB would provide a balanced combination of CINC requirements representation (i.e., performance, supportability), via the VCJCS, and programmatic expertise (i.e., cost, schedule), via the USD(A), that would hold much greater potential for challenging requirements and approving only those requirements that provide significant increases in combat capability or efficiency while avoiding goldplating. The JRMB would determine the "affordability" of fulfilling a new requirement by making cost-performance trade-off and "make-or- buy" decisions; that is, whether to develop a new item or buy commercially available items "off the shelf. "[50] Thus, according to the Commission, the restructured JRMB in conjunction with the Commission's other recommendations would significantly improve the efficiency of resource expenditures toward achieving the associated defense plans. The President and Congress agreed.

Implementation and Current Status

As recommended by the Packard Commission, NSDD 219 directed the restructured JRMB would be responsible for challenging and defining weapons requirements, selecting programs for development, and making early cost-performance trade-off decisions.[51] The Goldwater-Nichols Act specifically charged the CJCS with the responsibility of assessing operational requirements, a function which the VCJCS was to focus upon.[52] The VCJCS and USD(A) positions instituted by the Goldwater-Nichols Act therefore served, among the other things, to help fulfill Congress's intent "to provide for more efficient use of defense resources" via the JRMB's charter to challenge operational requirements and strike a balance between operational and acquisition considerations in formulating and evaluating system concepts.[53] The mechanism for this balance would be the early cost-schedule-performance trade-offs recommended by the Packard Commission and reflected in NSDD-219.

The JRMB is not mentioned in the DMR since, by then, the JRMB had evolved into the JROC and the DAB. The DMR specifically charged these two groups to challenge the validity of requirements and to ensure that sensible cost- schedule-performance trade-offs were achieved in the operational requirements, concepts, and acquisition processes.[54] DODD 5000.1 reflects these roles and processes and also points out that the operators Operational Requirements Document (ORD), which specifies the minimum acceptable system performance requirements, constitutes the basis for cost-schedule-performance trade-offs.[55]

The operational perspective, via CINC representation, is provided in both the JROC and the DAB by the VCJCS which serves as chairman and vice-chairman of the two respective groups. However, the CINCs (operators) could and should have more of a leading role in the system concepts generation and selection that occurs in Phase 0, Concept Exploration and Definition, vice the acquisition organizations that traditionally have the lead in this phase.

Recommendations for Improvement

As shown earlier, giving the JROC Milestone a approval authority would further enhance the CINC's representation in the requirements generation process. In addition to this, the Rand Framework for Enhanced Operational Capabilities asserts that the operators should have a larger role in formulating, evaluating, and demonstrating new weapon concepts to meet operational needs. The Framework, therefore, proposes that "operators and operational planners" be the key players in Phase 0. According to the framework, operational planners should lead the Phase a activities while other operators would participate in Phase 0. In these leadership and participative roles, the operational planners and operators would be the key players that provide the operational perspectives to formulating, evaluating, and demonstrating new system concepts.[56]

In the current process, the Acquisition Decision Memorandum (ADM) which the

USD(A) issues from the DAB's Milestone 0 approval designates one or more of the Military Departments (the Services) or Defense Agencies --not the Unified and Specified Commands --to conduct the system ;concept studies in Phase 0.[57] The Military Departments or Defense Agencies then normally assign the system concept studies to their respective acquisition organizations such as the Air Force's Systems Command (to become the Air Materiel Command as of 1 July 1992). The operators participate in Phase 0 by providing an Operational Requirements Document (ORD) which specifies the minimum acceptable system requirements, i.e., performance characteristics, for each system concept that goes before the DAB for Milestone I approval.[58] Additionally, DODI 5000.2 states, "The user or user's representative will participate with the lead organization(s) during [Phase 0] to assist in evaluating potential materiel alternatives and identifying opportunities for cost-schedule-performance trade-offs within and among the various alternatives."[59]

Should this be changed to put operational planners in the lead of Phase 0 efforts? From the perspective of strengthening CINC representation in the concept generation process, the answer is "yes." Indeed, the operational perspective is most important for system concept generation since it bears most directly on the operational tasks and strategies to be achieved --the operators do bear the ultimate consequences of system concept decisions since they must use the end product. This is probably justification enough for an operational planner to lead system concept activities; more justification is provided when considering the cost-schedule-performance trade-offs that are the crux of Phase 0.

Earlier, the question was posed if DODD 5000.1 should be changed so that the operator leads instead of "assists" in the Phase 0 effort. Actually, this question is somewhat misleading. The crux of phase 0 is really about a proper blending of operational, technical, and programmatic

(cost, schedule, and contracting) expertise to make balanced cost-schedule-performance trade-offs in formulating and evaluating operational and system concepts. So the real question is will the operator being in the lead better facilitate achievement of sensible balance in making the critical trade- offs when formulating and evaluating system concept alternatives? The answer to this question is "yes" if, historically, cost and schedule have received the preponderance of consideration, thus upsetting the balance. This appears to be the case.

As already mentioned, the operational perspective is the most important for formulating and evaluating system concepts to fulfill operational requirements. However, cost and schedule, not operational considerations, tend to dominate the planning and acquisition process.[6O] From another point of view, the operator is concerned about the output --the new weapon system -- while the Services' bureaucratic planning and acquisition processes are more geared to controlling the inputs --money, time, and technology --which have tended to dominate. [61] Therefore, it appears reasonable that an operational planner leading a phase 0 team would be in better position to ensure proper cost-schedule-performance balances in the end product --system concepts. Would this tip the scale too far toward performance? Possibly, but the operator must be sensitive to cost and schedule issues since it is the operating commands that must advocate new systems and associated budget requests in the programming and budgeting processes and the operators certainly want new capabilities in a timely manner. In short, development planning will be better with operational planners leading the Phase 0 system concept generation process. Furthermore, operational planners leading Phase 0, in conjunction with the previously covered improvements, would make development planning the purview of operators --as it should be. Operators bear the ultimate consequences of development planning in the form of fielded systems, and so should have the dominant role and responsibility in that planning process.

Notes Chapter 3

1. President's Blue Ribbon Commission on Defense Management, David Packard, Chairman, A Quest for Excellence: Appendix: Final Report to the President (Washington D.C.: GPO, 1986), 27.

2. President's Blue Ribbon Commission on Defense Management, David Packard, Chairman, An Interim Report to the President (Washington D.C.: GPO, 1986), 9.

3. Ibid., 57-58

4. President's Blue Ribbon Commission on Defense Management, David Packard, Chairman, A Quest for Excellence: Final Report to the President (Washington D.C.: GPO, 1986), 53.

5. JCS Joint Secretariat, "Charter for the Joint Requirements and Management Board" (20 March 1984), 3. The JRMB was chartered by the JCS in 1984 and consisted of the Vice Chief of each of the four military services with the Director of the Joint Staff as chairman. The JRMB was "... to provide for early linkup with the front end of the acquisition process in order to review potential system new starts for determination of joint program feasibility."

6. Quest for Excellence, 53

7. Interim Report, 16.

8. Quest for Excellence, xxiii

9. Quest for Excellence: Appendix, 37.

10. DOD Instruction 5000.2, Defense Acquisition Program Procedures (Washington D.C.: GPO, 23 February 1991), 2-1.

11 Public Law 99-433 [H.R. 3622), Goldwater-Nichols Department of Defense Reorganization Act of 1986, 997; 1008-1009.

12. Ibid., 997.

13. Quest for Excellence, 35.

14. Caspar W. Weinberger, Secretary of Defense, Annual Report to the Congress: Fiscal Year 1987 (Washington D.C.: GPO, February 1986), 107. Caspar W. Weinberger, Secretary of Defense, Annual Report to the Congress: Fiscal Year 1988 (Washington D.C.: GPO, January 198?), 114, 117. Frank C. Carlucci, Secretary of Defense, Annual Report to the Congress: Fiscal Year 1989 (Washington D.C.: GPO, February 1988), 134, 137.

15. DOD Directive 5000.1, Major and Non-major Defense Acquisition Programs (Washington D.C.: GPO, 23 February 1991), 2-4.

16. Annual Report to the Congress: 1988, 117.

17. Goldwater-Nichols 1005.

18. Ibid, 1013.

19. Dick Cheney, Secretary of Defense, Defense Management: Report to the President (Washington D.C.: GPO, July 1989), 7; 17-18.

20 DODD 5000.1 (1991), 2-4.

21. Glenn A. Kent and William E. Simons, A Framework for Enhancing Operation Capabilities (Rand corporation Report, 1991. RAND/R-4043-AF), 37.

22. Ibid., 39.

23. DODI 5000.2 (1991),2-2.

24. Framework for Enhancing Operational Capabilities, 38-41.

25. Ibid., 38.

26. DODD 5000.1 (1991), 2-5; DODI 5000.2 (1991), 2-2.

27. DODI 5000.2, 3-6.

28. Title 10, United States Code, Section 152, "Chairman: appointment; grade and rank,"64; Section 154, "Vice Chairman, "65.

29. Goldwater-Nichols, 1013.

30. 00DD 5000.2. (1991), 1-2.

31. For ROC, Air Force Regulation 57-1, Policies, Responsibilities and Procedures for Obtaining New and Improved operational Requirements, (Washington D.C.: DOD, 17 August 1971), 4. For SON and MENS, Air Force Regulation 57-1,Statement of Operation Needs (SON) (Washington D.C.: DOD, 12 June 1979), 1. For SON and JSOR, Air Force Regulation 57-1, Operational Needs, Requirements and Concepts, (Washington D.C.: DOD, 7 October 1988), 3.

32. DODD 5000.1 (1991), 2-3.

33. Lt Gen Glenn A. Kent, interview by author, 19 October 1991, Maxwell AFB, notes. Lt Gen Glenn A. Kent, USAF (Ret), now works at the Rand Corporation and is the primary author of the Frameworks for Defense planning and for Enhancing Operational Capabilities.

34. DOD Manual 5000.2-M, Defense Acquisition Management Documentation and Reports (Washington D.C.: GPO, 23 February 1991), 2-1.

35. Ibid.

36. Ibid., 2-1-1.

37. Ibid.

38. DODD 5000.1 (1991), 2-3.

39. DODI 5000.2 (1991), 3-2 -3-4.

40. DODD 5000.1 (1991), 2-3. DODI 5000.2, 3-2.

41. DODI 5000.2 (1991), 3-2.

42. Ibid., 2-3.

43. Ibid., 2-2.

44. DODI 5000.2 (L991), 3-3, 13-D-l

45. Quest for Excellence: Appendix, 27.

46. President's Blue Ribbon Commission on Defense Management, David Packard, Chairman, A Formula for Action: A Report to the President on Defense Acquisition (Washington D.C.: GPO, 1986), 6.

47. Ibid., 21.

48. DOD Directive 5000.1, Major System Acquisitions (Washington D.C.: GPO, 12 March 1986), 13-15; DOD Instruction 5000.2, Major System Acquisition Procedure (Washington D.C.: GPO, 12 March 1986), 19. The DSARC was chaired by the Under Secretary of Defense for Research and Engineering (USDRE) with the following permanent members: the Under Secretary of Defense for Policy (USD(P)), the Assistant Secretary of Defense for Acquisition and Logistics (ASD(A&L)), the Assistant Secretary of Defense for Force Management and Personnel (ASD(FM&P)), the Assistant Secretary of Defense, Comptroller (ASD(C)), the Director, . Operational Test and Evaluation (DOT&E), the Director, Program Analysis and Evaluation (DPA&E), the Chairman, Joint Chiefs of Staff (CJCS) or designee, and each Secretary of the Military Departments or designee for major acquisition programs involving their department. DSARC reviews were normally held at Milestones I and II.

49. Quest for Excellence, 57.

50. Formula for Action, 21.

51. Quest for Excellence: Appendix, 37.

52. Goldwater-Nichols, 1007-1008; 1013.

53. Ibid., 944.

54. Defense Management Report, 17-18.

55. DODD 5000.1 (1991), 2-4,2-5.

56. Framework for Enhancing Operational Capabilities, 20.

57. DODD 5000.1 (1991), 2-5.

58. DOD Manual 5000.2-M, 3-1.

59. DODI 5000.2 (1991), 4-B-4.

60. Congress, Senate, Staff Report to the committee on Armed Services, Defense Organization: the Need for Change, 99th cong., 1st sess., 1985, Senate print 99-86, p. 495.

61. Ibid., 503.

Chapter 4
Conclusion

In all, this paper advocates the implementation of six recommendations to improve the DOD's operational requirements and system concepts generation processes. These recommendations are interrelated in addressing the identified problem areas. As established in the previous chapters and shown in Table 3, each recommendation helps remedy one or two of the six problem areas.

Institutionalizing the strategies-to-tasks methodology throughout the DOD defense planning process would complete the linkage between national objectives and defense budget requests. A comprehensive long-range plan based on strategies-to-tasks and maintained by the OJCS J-S directorate would project the objectives-budget link into the future and serve as a baseline for determining how international and domestic changes affect long-range military decisions and plans. Both of these improvements would significantly enhance the sound advocacy of defense budget requests for new weapon systems development and acquisition.

For development planning, vesting the JROC with Milestone 0 approval authority would streamline the operational requirements and system concepts generation processes by eliminating the DAB approval layer for Milestone 0; it would improve CINC representation in the process since the JROC is chaired by the VCJCS. JROC Milestone 0 approval would also clearly place complete responsibility and authority for challenging operational requirements from a joint operational perspective in the hands of the JCS instead of dividing that responsibility and authority with the acquisition oriented DAB.

Table 3. - - Problems and Recommendations

	Defense Planning		**Development Planning**			
Problem Areas:	Inadequate objectives – budget link	Lack of long – range planning	Need stream – lining & delineation	Lack of CINC representation	Premature solutions to unapproved requirements	Poor cost/sched /perf trade-off
Recommendation						
Institutionalize Strategies-to-Tasks	X					
OJCS J-5 master Road map		X				
Give the JROC MS-0 approval authority			X	X		
Make MNS pure operational requirements w/o potential solutions			X		X	
JROC review of all MNSs – no ACAT estimates				X	X	
Give oper'l planners Phase 0 team lead				X		X

Eliminating "Potential Materiel Alternatives" from the MNS format would make the MNS a pure operational requirements document. This would preclude the need for the MNS

originator to prematurely consider alternative system concepts before a requirement is approved at Milestone O. It would also reduce the possibility of premature concepts becoming accepted solutions prior to the start of Phase 0 during which other alternatives may have been deemed more viable. And since Phase 0 constitutes the designated time and the most complete forum for formulating and evaluating alternative system concepts, making the MNS a pure requirements document accommodates a clear delineation between the operational requirements process (pre-Milestone 0) and system concepts process (post-Milestone 0) and leaves Milestone 0 as a pure requirements approval event. The operational requirements process should direct JROC review of all MNSs regardless of the potential cost of associated future acquisition programs. This would eliminate the need for pre-Milestone 0 ACAT estimates which prompt MNS originators to prematurely consider (before Phase 0) materiel alternatives. Eliminating the need for premature ACAT estimates would also contribute to a clear delineation between the requirements and concepts processes. Finally, CINC representation in the operational requirements generation process would be increased since the JROC would review all MNSs instead of just those estimated to result in the largest major acquisition programs.

Finally, giving operational planners the lead of Phase 0 teams would increase the CINC representation in the system concept formulation and evaluation process. Since the operator must be sensitive to cost and schedule issues as well as performance, operational planner leadership of Phase 0 also holds the potential for facilitating better cost-schedule-performance trade-off decisions that are the crux of Phase 0. It would also be the last step needed to make development planning the purview of operators just as it should be.

The implementation of these recommendations holds promise for significantly improving the nation's defense planning (and development planning) so as to better create a defense posture

that is appropriate in type, quality, and quantity to meet the nation's military needs of the future. These recommendations warrant implementation.

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