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DEFENSE ACQUISITION: OBSERVATIONS TWO YEARS AFTER THE PACKARD COMMISSION

Volume I: Main Report

David R. Graham
Barbara A. Bicksler
Robert P. Hilton, RADM, USN (Ret.)
Marshall Hoyler
Herschel Kanter
Walter M. Locke, RADM, USN (Ret.)
George H. Sylvester, LG, USAF (Ret.)
John R. Transue

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The 1986 Packard Commission report recommended changes in the defense acquisition process to reduce development times and costs and to produce weapons better suited to war fighters' needs. These recommendations included restructuring the acquisition organization, improving the work force, overhauling the acquisition decision-making process, and reforming regulations.

The Office of the Under Secretary for Acquisition requested this study to help inform the next administration about the current status of acquisition reform: what has been tried, what is working and what isn't. It asked IDA to review developments within the Department in the last two years, and to solicit the views of officials responsible for making the acquisition process work. It directed IDA to provide a progress report on acquisition reform, to make observations on the current status of the acquisition process, and to recommend priorities for further actions.

This report summarizes IDA's findings and recommendations. It describes Presidential Directives and legislation resulting from the Packard Commission, and subsequent activity within the department. IDA's findings are based in part

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on a review of recent legislation, directives and other documents. In addition, IDA conducted interviews with more than 100 individuals during the Summer and Fall of 1988. The interviewees include officials in the Under Secretary's organization and other OSD components, as well as the Services, and the Joint Staff. IDA also solicited the opinions of former DoD personnel, academic experts, and officials outside of DoD.

IDA provides an assessment of the extent of which DoD has implemented the kind of management that the Packard Commission advocated. It notes several improvements but concludes that DoD has not yet made the fundamental changes required to implement the Commission's basic philosophy.

IDA recommends actions in several areas in the next administration. To improve organization, DoD should resolve ambiguities in acquisition officials' functions and authorities, eliminate management by staffs at all levels, emphasize the strategic planning role of the OSD acquisition staff and reduce its size. To improve decision-making, DoD should make internal plans consistent with funding that Congress can realistically be expected to provide and seek executive-congressional agreement to stabilize funding. In addition, DoD should use the Defense Guidance as a planning tool, discipline the resource-allocation process to comply with the Guidance, and improve techniques for long-range planning. Finally, DoD should upgrade the training and experience of acquisition personnel, adopt commercial practices, and use commercial products wherever militarily appropriate.

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PREFACE

This study was requested by the Under Secretary of Defense for Acquisition to provide an independent review of the progress that has been made in the defense acquisition process in response to the Packard Commission, and to determine what, if any, further improvements might be possible. In its report, *A Quest for Excellence*, published in 1986, the Commission recommended a number of changes in defense organization, decision-making practices, policy and regulation, and infrastructure management. This study describes the changes that have resulted, assesses the degree to which the acquisition process complies with the Commission's management principles, and offers an agenda for the next administration.

This study was conducted under contract MDA903 84 C 0031; task order number T-G6-599, The Defense Acquisition Process.

The study relied on interviews with more than 100 acquisition officials and experts to describe the current process, and to obtain their views on how well it is working. The authors thank these interviewees for their time and for providing their candid views.

The authors also thank the IDA review panel, which provided helpful guidance at several stages of the study, and reviewed an earlier draft of this report. The panel was chaired by W.Y. Smith, General, USAF (Ret.), and included Mr. Seymour Deitchman, Dr. Thomas L. McNaugher, Dr. Herbert Stein, Mr. John Walsh, A.J. Whittle, Admiral, USN(Ret.), and Mr. R. James Woolsey. J. Ronald Fox and Robert D. Turner also provided valuable comments at several stages in the project.

Finally, we thank research assistants Michael Gilligan and Tara Santmire; our editor, Dorothy Mendonsa; and most especially Teresa Dillard who typed several drafts and the final manuscript.

TABLE OF CONTENTS

APPENDIX

TABLES

FIGURES

EXHIBITS

EXECUTIVE SUMMARY

In its 1986 report, the Packard Commission called for radical change in the defense acquisition process and made recommendations in several areas: organization, decision making, policy, and management.[1] President Reagan and the Congress directed the Department of Defense (DoD) to implement nearly all of the Packard Commission recommendations. Consistent with this guidance, two Under Secretaries for Acquisition, Richard Godwin and Robert Costello, have attempted to implement acquisition reform within the DoD following distinctly different approaches. This study describes what has been accomplished over the last two years and proposes an agenda for continued improvements.

The assessment of the current process is intended to reflect the extent to which DoD decision-making and business practices embody the following management characteristics as proposed by the Packard Commission.

- **Organization** - A streamlined organization with centralized policy making and decentralized execution;
- **Decision Making** - Processes that
  - Provide adequate and stable funding,
  - Make informed cost-performance trade offs that yield "affordable" programs,
  - Involve military operators in decisions, and
  - Employ extensive prototyping and testing;
- **Acquisition Policy** - Simplified and unified acquisition regulations and policies that delegate authority to the working level; and
- **Management** - Policies that promote excellence in the work force, and ensure an adequate technology and industrial base.

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1 *A Quest For Excellence*, Report of the President's Blue Ribbon Commission on Defense Management, 1986.

These management characteristics represent ideals for the defense acquisition process. Implementing them requires fundamental changes that in many cases conflict with longstanding DoD practices, and long-held beliefs. Making these changes would have been difficult in any circumstances. Additional impediments arose because the mandates of the President and Congress in support of the Commission recommendations were not specific in several areas, allowing broad interpretation, and because the Commission proposal came too late in the Administration to override existing working relationships.

Despite these impediments, many improvements have been made in the defense decision making and acquisition process. While some officials maintain these changes have fully implemented the Packard Commission recommendations, they have not *yet* made the fundamental changes in DoD practice required to implement the Commission's basic philosophy.

This assessment is based on over 100 interviews with OSD, Service, and JCS officials, and other acquisition authorities. The interviews were complemented with a review of documents and publications describing the evolution of the acquisition process and the views of acquisition experts. The determination of what additional improvements might be possible is derived in large measure from interviewees' opinions of what additional changes are feasible and beneficial. Since opinions were mixed, this determination necessarily is partly subjective, reflecting the judgments of the study team.

The experience of the last two years suggests some lessons for fully implementing the Commission's reforms.

- Implementation of the Packard Commission's goals requires major changes in DoD *practice*, but not necessarily in organization.
- Implementation requires the active support of the Secretary of Defense as well as the Under Secretary for Acquisition.
- Quick action at the beginning of the new Bush Administration is critical--particularly because Congress will be watching to see whether the next administration is commited to defense management improvements.
- The Secretary's and Under Secretary's reform agenda must be specific, particularly in areas where there is a clash between Packard Commission philosophy and DoD practice.

In some areas, the experience suggests that progress is being made and will continue if senior officials continue to push in that direction. It also suggests the need to pursue specific near-term actions within the broad organizations presently in place. The agenda summarized below (and discussed in Chapter VIII) is therefore intended to resolve

ambiguities in functions and authorities, simplify acquisition policy and oversight within each Service, improve the Under Secretary's ability to advise the Secretary on long-term acquisition issues, provide a more disciplined decision-making environment, and ensure high-level emphasis on the areas of regulation and management. Many of the recommendations relate to the ongoing functions of the Secretary and Under Secretary for Acquisition; several require new initiatives.

It should be noted that some important acquisition issues were not extensively covered in this review. The most important of these involves ethics, and has made front page news recently. This issue is discussed in dealing with personnel management issues, but it was not made a major focus of the study because of the belief that the problem is more one of enforcement than of the operation of the acquisition system.[2] Secondly, while the Packard Commission emphasized that improvement in the acquisition process requires substantial changes in national-level decision making within the Executive Branch and Congress, the main focus of this study is on the issues and problems with decision making within the Pentagon. Finally, because this review focuses primarily on procedural and organizational issues, there are a number of substantive acquisition-policy issues that are not dealt with here. These include such areas as profit policies, allowable costs, independent research and development funding, tax and depreciation treatment, and progress payments.

A. ORGANIZATION

The Packard Commission found that responsibility for acquisition policy in the DoD had been fragmented, and that program managers responsible for acquiring new systems had not been given the authority they needed to do their jobs. The Commission recommended that DoD create an Under Secretary of Defense for Acquisition and establish a short chain of authority--for acquisition matters--with no more than two layers between the Defense Acquisition Executive and the program manager. In each Service, the intermediate positions would be occupied by one Service Acquisition Executive and a number of Program Executive Officers, each of whom would supervise several program managers. Although these positions have been established, program managers still find that they lack authority commensurate with their responsibilities: they must placate many parties outside the "streamlined" acquisition chain to keep their program going.

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2 One change that has been made in response to the recent scandal is to change contracting procedures to eliminate multiple rounds of best and final offers from competing contractors.

The Packard Commission also found that success in new programs depends on "an informed trade off between user requirements, on one hand, and schedule and cost, on the other" and that the Defense Systems Acquisition Review Council was not a good forum for *challenging requirements* and making such trade offs. It therefore recommended creation of a new body representing both military users (who have special insight into operations) and acquisition/technology experts (who have expertise in what requirements imply for schedule and costs). This body would make both "affordability" decisions (how much is a new military capability worth?) and "make-or-buy" decisions (should the U.S. develop a unique item or buy something similar that already exists?) for joint-Service and appropriate single-Service programs.

DoD established the Defense Acquisition Board (chaired by the Under Secretary with the Vice Chairman of the Joint Chiefs of Staff as vice chairman) and the Joint Requirements Oversight Council (chaired by the Vice Chairman). These new organizations and positions have created an organizational structure that is adequate for making informed acquisition decisions. However, in practice, neither of these bodies provides the dialogue on trade offs between military users and acquisition/technology experts or the regular practice of challenging requirements that the Commission sought. Both consider acquisition issues one, or a few, systems at a time rather than in a strategic context.

The Commission also recommended streamlining of the organizations within OSD and the Services. Organizational changes have been made, but the management concept of centralized policymaking and decentralized execution has not been put in place.

In sum, the progress made in defense organization, the problems that remain, and a suggested agenda are as follows:

Progress:

- The Under Secretary's authority has been defined by law. He has shaped his staff to provide integrated decision-making and policy-making support.
- The Defense Acquisition Board has been formed with the Under Secretary and Chairman and the Vice Chief of Staff of the JCS as the Vice-chairman.
- A Vice Chairman of the JCS has been created; this office provides a focal point for participation by military operational commanders in the DAB and JROC. The Chairman of the JCS represents them in the DRB.
- The Services have reorganized their acquisition organizations.

Problems:

- In practice, the Under Secretary's authority in "matters of acquisition" is weakened by successful appeals to the Secretary or the Deputy Secretary.
- The Commission's recommended shift of OSD staff functions from involvement in program management to broader planning and policy issues has been slow to occur.
- The Services' reorganizations have generally not increased program managers' authority. Program managers consequently see little difference in their jobs.
- None of the Services has created a central full-time authority for acquisition policymaking.
- No progress has been made in limiting the involvement of Congressional Staff in detailed defense decisions and policies.

Agenda:

- The Secretary should delegate acquisition policy authority to the Under Secretary for Acquisition. To signal the Under Secretary's preeminent role, he should also revise directives (including 5000.1, and 5134.1) to strengthen the Under Secretary's functions within current organizations; and establish clear working relationships among senior acquisition officials, to include coordination among Secretary of Defense, Deputy Secretary Defense and Under Secretary Defense for Acquisition before the Under Secretary Defense for Acquisition issues major decisions.
- The Secretary should act to standardize and simplify acquisition oversight and policy responsibilities within the Services.
- The Secretary should revise directives to clearly establish the program manager's decision authorities, and eliminate management involvement by staffs at all levels.
- The Under Secretary should emphasize the strategic planning roles of his staff, and delineate their oversight responsibilities.
- The Under Secretary should review his staff for possible reductions if he finds the Service's acquisition chains of command can fulfill for him responsibility for program oversight.
- The Secretary should direct the Under Secretary and Service Acquisition Executives to consult with Congress in developing a plan for reducing the micro-management of programs by Congressional staff, and for consolidating reporting requirements.

B. DECISION-MAKING PROCESSES

The Packard Commission found that DoD was not employing technology to reduce cost as has occurred in the private sector, and stated that DoD should use state-of-the-art technology only when essential to meet military needs. The Commission also said that the only consistently reli ble means of learning about such benefits and risks was via building prototypes that embodied the new technology. The Commission therefore recommended that DoD build and test prototypes to demonstrate new technology and provide a basis for realistic cost estimates prior to entering full-scale development. It also recommended that DoD begin operational testing early in advanced development, using prototype hardware.

Although the Commission believed that prototyping had not been sufficiently emphasized for several years, interviewees in DoD contend that prototyping has been going on all along, albeit at the component and subsystem level more often than at the system level. Experience since the Commission's findings is mixed: of the three major defense programs that have been approved for demonstration/validation since the Commission Report was published, one is slated to develop competitive fighter and engine prototypes, another will require competitive subsystem prototypes, a third plans no competitive prototyping. The Commission also believed that DARPA should play an expanded role, especially in technology areas OSD believes are not adequately emphasized by the Services. Interviewees at DARPA think that they have had a good record of prototyping both before and after the Packard Report; however, DARPA funding has not been increased to support a larger role.

The Packard Commission noted that DoD has suffered from instability in both top-line funding and funding for particular programs. Several recommendations were offered for stabilizing the overall defense budget through improved national-level strategy and planning, and longer-term Congressional commitments to funding support. To produce stability at the program level, the Commission recommended "baselining," "milestone authorization," and "multi-year procurement." Baselining involves drawing up a "contract" between the program manager, others in the acquisition chain, and those that provide the funding. The contract specifies system characteristics, cost, and schedule. Milestone authorization entails Congressional approval to proceed with a particular phase of a program. Multi-year procurement involves asking Congress to authorize funding not for a single year but through the production phase of a particular high-priority program. Secretary Carlucci has recommended a substantial number of programs for multiyear procurement in the FY1990 budget, however little headway has been made in implementing baselining and milestone authorization.

Within the DoD decision-making process, our review indicates that the Chairman and Vice Chairman of the JCS now have ample authority and opportunity to provide a joint military perspective in acquisition decision-making. The Under Secretary for Acquisition also has adequate influence over resource-allocation decisions through his participation in the Defense Resources Board and the Defense Acquisition Board. Within these organizations, the Under Secretary can advise the Secretary on the links between acquisition decisions and resource decisions in order to achieve a coherent acquisition program. His current role is consistent with the general view that overall resource decisions must be made by the Secretary, and that acquisition decisions must follow from, not dictate, resource decisions.

The Department can further the Packard Commission goal of improving acquisition decisions by improving long-range planning and by disciplining the decision-making processes to adhere to the Secretary's guidance. To aid in this process, the Under Secretary should eliminate two deficiencies in the current decision-making framework. First, he should develop longer-range acquisition plans, because the five-year defense planning time horizon is too short for "affordability" assessments. Second, he should work with the Services to develop mission area plans, major product area plans, and technology area plans. These analytical tools would serve as a basis for issuing a Defense Guidance that provides a meaningful long-range plan for acquisition programs, which are grounded in strategy and consistent with realistic resource projections.

In sum, the progress made in defense decision making, the problems that remain, and a suggested agenda are as follows:

Progress:

- The national security planning process has been changed to promote stability by increasing planning realism:

  (a) It incorporates budget constraints in developing force projections for the Defense Guidance, and

  (b) Secretary Carlucci has set more realistic budget projections as a basis for planning.

- The Chairman of the JCS, the Vice Chairman of the JCS, the CINCs, and the Joint Staff are playing a larger role in acquisition and resource allocation, potentially increasing the influence of military operational commanders in decision making.

- The Under Secretary advises the Secretary in the Defense Resources Board and chairs the Defense Acquisition Board, giving him the potential to link resource allocation decisions and acquisition program decisions.
- The Services are better defining "requirements," expressing them initially (Milestone 0) as broad mission needs rather than in terms of specific hardware parameters.
- Prototyping has raised important issues in recent Defense Acquisition Board reviews of the Advanced Tactical Fighter and the Army's Light Helicopter.
- Improvements in Operational Test and Evaluation have been achieved in recent years.
- Live-fire testing has led to survivability improvements in the Bradley fighting vehicle; it promises to improve programs if applied judiciously.

Problems:

- National budgeting instability undermines DoD procedures designed to promote program stability:
  - -- Months into the planning cycle, the FY 89 plans and programs were undermined when the projected budget was cut by 10 percent to meet Gramm-Rudman spending limits.
  - -- Current planning projections of 2 percent real defense spending growth are probably overly optimistic, providing an unsound basis for current acquisition planning.
  - -- Actions to stabilize individual programs are also undermined by the recent substantial changes in the budget.
- Despite Packard Commission recommendations, Congress has not issued five-year budget guidelines, nor has it adopted two-year defense budgeting as as a means to stabilize defense budgets.
- There is no systematic framework in place to assess long-range affordability and cost-performance trade offs. As a general practice, the DAB examines programs one-at-a-time so it cannot consider broad affordability and trade off issues, and the primary DRB focus extends only one to five years into the future.

Agenda:

- The Secretary and the Chairman of the JCS should review the defense program and budget with the President and Congress as soon as possible after taking office in order to achieve an agreement on stable defense funding.

- In support of his overall program review, the Secretary should direct the Under Secretary and the DAB to review the ongoing acquisition program and offer alternative acquisition programs that meet conservative fiscal guidance.
- To promote program stability in the longer term, the Secretary should enforce a long-range strategic approach in the acquisition decision-making process, and direct the Under Secretary to develop better long-range planning tools.

  (a) The Secretary of Defense should direct the continued development of long-range planning estimates to provide a framework for assessing long-term affordability, there by permitting informed cost-performance trade offs.

  (b) The Under Secretary, in conjunction with the Chairman of the JCS, should develop long-range investment area assessments that should form a basis for developing the Defense Guidance.
- The Secretary should use the Defense Guidance as a strategic planning tool, and discipline the resource-allocation process and acquisition process to comply with it.
- The Under Secretary should use the Defense Acquisition Board to discipline the acquisition process; in particular he should ensure consideration of options that meet the mission needs and funding goals specified in the Defense Guidance.

C. POLICY AND REGULATION

The Packard Commission made several recommendations in the field of acquisition policy. It proposed replacing existing laws governing the process with a single greatly simplified statute. The Commission said that DoD should expand use of commercial-style competition. It argued for increased reliance on commercial products and recommended requiring a waiver before hardware could be uniquely developed for military use. Finally, it recommended that DoD change technical data rights policy to make it easier to purchase off-the-shelf hardware.

DoD has enjoyed some success in implementing the Packard recommendations just described. It has revised its technical data rights policy along the lines the Commission suggested. It has undertaken some initiatives that permit DoD buyers to more systematically take into account the past performance of potential suppliers and to avoid exhaustive inspection of suppliers that have maintained high standards. DoD has started to simplify regulations and to experiment with de-regulation of acquisition for Congressionally-mandated Defense Enterprise Programs.

In other areas, Packard recommendations have not been implemented and do not appear likely to be implemented. The Services continue to operate their own acquisition systems with separate directives, regulations and handbooks, sometimes lacking consistency even within the Services. The uniform procurement statute has been drafted but is given little chance of passage on the Hill. Waivers are not required to develop an item, and no one we interviewed judged such a waiver to be a good idea.

In still other areas, progress has been slow and much more needs to be done. One noteworthy example is that although a presumption in favor of commercial products whenever militarily appropriate has recently been established in law, regulation still mandates use of military specifications.

In sum, the progress made in defense regulatory policy, the problems that remain, and a suggested agenda are as follows:

Progress:

- DoD has revised its regulations concerning rights in technical data, which will make it easier to purchase some off-the-shelf items.
- DoD has taken some steps to simplify regulations.
- DoD has made some progress toward increased use of commercial-style competition.
- The Air Force has a promising approach for Defense Enterprise Programs.
- DoD has completed a study that recommends ways to improve management of DoD specifications and standards.
- DoD has established a Pilot Contracting Activities Program to identify and test regulatory simplification and taken steps to standardize government specifications.

Problems:

- Regulations have not been made uniform across the Services.
- Improved training and incentives for acquisition personnel are needed to reduce barriers to the use of commercial-style buying practices, and to make other regulatory reforms.

Agenda:

- The Under Secretary and the Service Acquisition Executives should develop more uniform regulations, and require that they are uniformly interpreted and applied.

- The Under Secretary should aggressively support Defense Enterprise Programs as a vehicle for experimental changes in regulations.
- The Under Secretary should strive to eliminate barriers to the use of commercial-style competition and the use of commercial products wherever militarily appropriate; training and better information should be stressed as the means to do this.

D. MANAGEMENT OF PERSONNEL, TECHNOLOGY AND THE INDUSTRIAL BASE

The Secretary's management of personnel, technology programs, and programs and policies relating to the technology base and industrial base are among his most important responsibilities. The Packard Commission and other recent studies have found significant problems and long-term neglect in managing the infrastructure. In the area of personnel management, there now are calls for radical changes in DoD organization that are intended to improve the skills, experience, independence, and accountability of individuals in the acquisition work force. In the area of science and technology there is national level concern that the US leadership in key military technologies is declining. In the area of the industrial and technology base, there is concern that domestic defense manufacturers often lag in productivity growth and that not enough is being invested in reserve emergency capabilities.

The Packard Commission specifically recommended new procedures for the compensation and management of civilian acquisition personnel. In addition, the Commission recommended that DoD improve the US capability for industrial mobilization. The Under Secretary is the principal advocate for these programs, but they are not always supported because their payoffs are indirect and long term. Greater attention is being given to them, but in most areas measurable change has not occurred.

In sum, the progress made in defense management, the problems that remain, and a suggested agenda are as follows:

Progress:

- The Services have made modest progress in training skilled program managers.
- Frameworks for better strategic planning in science and technology programs have been proposed.
- Under Secretary Costello has launched initiatives that if implemented could improve key process technologies, increase the productivity of defense manufacturers, and improve quality.

- Planning for industrial surge and mobilization is improving.

Problems:

- Program managers and their staffs do not always have the training and experience needed to assume the leadership role proposed by the Packard Commission.
- Progress in civilian personnel management is stymied by the unwillingness of the Office of Personnel Management to upgrade contracting officers to professional status, and by a general lack of commitment to develop highly skilled business managers.
- Proposals for extending the "China Lake Experiment" in flexible personnel management to additional facilities have not been adopted by Congress.
- No solution has been found to the dilemma presented by "revolving door" restrictions--how can managers experienced in defense acquisition be drawn from the private sector when they are restricted from returning upon completion of their government assignments.
- In the absence of an effective strategy and priorities, it appears too little is being invested to systematically address deficiencies in the defense industrial base.

Agenda:

- The Under Secretary should upgrade and standardize the criteria for experience, education, and training for all (military and civilian) acquisition personnel.
- The Secretary should direct the Under Secretary to establish program management career incentives to retain experienced program managers.
- The Under Secretary should assign a senior staff member to monitor programs and developments in acquisition personnel management.
- The Under Secretary together with the Defense Acquisition Board should conduct an annual strategic review of infrastructure programs relating to science and technology programs and the industrial and technology base. This review should provide a basis for setting priorities for needed investments for inclusion in the Defense Guidance.
- The Secretary should work with the Executive Branch and Congress to develop improved "revolving door" legislation that meets the publics concerns with ethics while reducing the financial barriers to government service.

E. IMPLEMENTATION

The prompt actions of the President and Congress in response to the Packard Commission's recommendations showed high-level commitment to changing the process, and suggested that dramatic changes in the process might be forthcoming. Upon closer inspection, however, it is clear that the specific changes ordered were narrow organizational ones, and that much of the burden of acquisition reform rested on the shoulders of the DoD leadership--with the Under Secretary for Acquisition at the point. Given that the new Under Secretary came into an administration in which many of the top officials had been on the job for up to six years, one should not have expected his job to be easy.

Although this review shows that, on balance, the acquisition system has made modest improvements over the past two years, it also finds that significant additional improvements are possible--within the current organization and under current law. Many of the basic problems identified can be solved if two steps are taken. First, the Secretary must delegate the Under Secretary for Acquisition sufficient authority to discipline the decision making processes for acquisition matters both in the Office of the Secretary of Defense and the Military Departments. Secondly, the internal reforms, which are the focus of this report should be accompanied by reforms in Congress. The Congress must structure itself so that it can better perform its oversight functions without disturbing orderly acquisition programs. In sum, this review concludes that the solutions to many of the basic problems with the acquisition process are within the authority of the Secretary or Under Secretary, but their implementation will require relentless high-level support.

INTRODUCTION

In its 1986 report, the Packard Commission called for radical change in the defense acquisition process.[1] It laid out several principles for acquisition, which if implemented would reduce development times and costs, and produce weapons better suited to war fighters' needs. The recommended changes included restructuring the acquisition organization, upgrading the work force, overhauling the acquisition decision-making process, and regulatory reform. President Reagan and the Congress quickly embraced the Packard Commission report and almost all of its specific recommendations, and directed the Department of Defense to implement the Commission's policy prescriptions. Consistent with this guidance, two Undersecretaries for Acquisition, Richard Godwin and Robert Costello, have attempted to implement acquisition reform within the Department of Defense following distinctly different approaches.

As part of DoD's ongoing efforts to improve the acquisition process and track its progress, the Office of the Under Secretary for Acquisition requested this study to review progress in the last two years, including the views of officials within the department who are responsible for making the acquisition process work. It will be important for incoming officials to know what has been tried, what is working and what is not, and to understand what the people within the system believe would be particularly beneficial.

A. THE ACQUISITION PROCESS

Acquisition encompasses a wide range of activities that comprise a major share of the Defense Department's peacetime duties and budgets. Acquisition related activities account for about 60 percent of the Department's FY 1989 budget.[2] About $80 billion is spent to purchase new hardware, and another $50 billion is spent to purchase operations and maintenance items such as spare parts, off-the-shelf commercial parts, foodstuffs,

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1 *A Quest For Excellence*, Report of the President's Blue Ribbon Commission, on Defense Management, June 1986.

2 These figures are based on the proposed FY 1989 budget. See Frank C. Carlucci, *DoD Annual Report to the Congress*, February 18, 1988.

fuels and materials, and contract services. An additional $38 billion is spent on research and development plus test and evaluation, and $10 billion is spent on construction and family housing.

Within DoD, the Secretary of Defense is the official who is ultimately responsible for assuring that these acquisition dollars are well spent. He must establish the organizations and procedures and appoint the officials to ensure that the system works. In the current structure of the Department, the Secretary has five senior civilian officials with line authority for acquisition matters. First is the Deputy Secretary, who acts as the alter ego of the Secretary in the internal management of the Department, and controls the resource allocation process. Next is the Under Secretary for Acquisition, the principal full-time official in the Office of the Secretary of Defense (OSD) who is dedicated to managing the acquisition process. Finally, there are the three Service Secretaries, who have a statutory responsibility for equipping their forces, and in fact oversee the majority of the acquisition work force and are responsible for oversight of the bulk of spending programs. In addition the Secretary receives operational military advice from the Chairman and Vice Chairman of the JCS, and he receives advice on selected acquisition matters from several other OSD officials as well. Defining the roles of these senior acquisition managers and advisors, delegating authority among them, and delineating their roles relative to other DoD official's is one of the most important steps the Secretary can take to ensure that the acquisition process operates effectively.

The focus of this review is on four major functions of the Under Secretary of Defense for Acquisition (USD(A)). These functions empower him to advise the Secretary on acquisition programs and shape the acquisition process. According to the official charter, the Under Secretary is

- a member of the Defense Resources Board (DRB);
- Chairman of the Defense Acquisition Board (DAB);
- the principal acquisition policy maker; and
- the principal manager of the acquisition organization and process, and science, technology, and industrial programs.

The Defense Resources Board is the focal point of the Department's Planning, Programming, and Budgeting System (PPBS). The Secretary and his staff shape resource-allocation decisions at three points in the process. First, the Secretary's Defense Guidance guides the Services in preparing their detailed proposed programs. These Service program

documents (including thousands of line items) are subsequently submitted to the Secretary for a program review, in which selected issues are examined. Finally, the Secretary reviews the Services' detailed budget submissions. The Under Secretary for Acquisition advises the Secretary at each step of this process, giving the Under Secretary considerable potential influence in his area of responsibility.

As Chairman of the Defense Acquisition Board, the Under Secretary oversees approximately one hundred major acquisition programs. (Oversight for the remaining programs is delegated to the Service Secretaries.) The DAB conducts reviews at "milestones" when a program moves from one phase of development to another. These reviews are designed to ensure that the programs are on track and executable, and that they are following DoD policies for examining trade-offs, assessing cost-effectiveness, prototyping and testing, contracting methods, etc. In his oversight role, the Under Secretary is responsible for ensuring that his acquisition policies and procedures are followed throughout DoD. He also is responsible for keeping the Secretary abreast of cost, schedule, and technology developments in the major acquisition programs for which OSD retains oversight responsibility.

The Under Secretary serves an important function in linking the resource-allocation and acquisition decision-making processes. The common view on the relationship between these processes is that the DAB is delegated responsibility to oversee programs and "authorize" a program as meeting threshold performance, cost, and procedural criteria, but that the resource-allocation decisions are the responsibility of the DRB. The Under Secretary must work to ensure that decisions made about individual acquisition programs in the DAB are consistent with the overall defense program decisions in the DRB, and that DRB decisions provide adequate and stable support for ongoing acquisition programs.

The Under Secretary is DoD's principal acquisition policy maker because he has substantial legal authority to establish procedures, policies, and regulations that shape the acquisition process. The "acquisition process" can be defined as including all of the procedures by which weapon systems are conceived, defined, evaluated, designed, prototyped, tested, produced, and incorporated into the force structure. His responsibility for shaping the acquisition process is therefore very wide reaching, encompassing much of the work of OSD and the Services.

Finally, the Under Secretary has several management responsibilities. These include a range of infrastructure programs, such as science and technology programs and

industrial base programs. His activities in these areas can affect the nation's ability to maintain leadership in military technology and related manufacturing capabilities. He is responsible for programs to surge production in emergencies, and support advance planning and preparation for industrial mobilization. He also is responsible for developing and maintaining the capabilities of his organization, and defining the experience and training requirements for the individuals working within the acquisition system.

B. THE REVIEW

This review is intended to provide a progress report on acquisition reform activities following the Packard Commission, observations on the current status of the acquisition process, and recommended priorities for further improvements. Throughout the review, the Packard Commission report has served as the benchmark for assessing the current status of the system, and for soliciting views on the need for change. The report provided a common frame of reference for interviews--Packard has indeed defined the terms of the debate about the acquisition process.

The three specific goals established at the outset of this study are as follows:

- Describe how the current acquisition process has evolved and is currently working;
- Provide a framework for how the process should be structured; and
- Determine what additional improvements might be possible.

The description of the acquisition process provided in this study is based in part on a review of formal changes in organizations and processes over the past two years. However, meaningful results from a review such as this can only be obtained if it is possible to distinguish between formal changes in processes and organizations, and substantive changes in the way business is conducted and decisions are made. Perhaps the ultimate measure of the acquisition process is the quality, cost, timeliness and suitability of the weapons it yields. Obviously, it is years too soon to see the effects of any recent changes, and some observers contend it is never possible to identify the effects of specific changes in acquisition policy, because so many factors change within the system.

Our framework is intended to reflect the extent to which DoD decision-making and business practices embody these management characteristics advocated by the Packard Commission:

- **Organization:** A streamlined organization with centralized policy making and decentralized execution at the program management level;
- **Acquisition Decision Making:** Processes that
  - Provide adequate and stable funding,
  - Make informed cost-performance trade-offs that yield "affordable" programs,
  - Involve military operators in decisions,
  - Employ extensive prototyping and testing;
- **Regulation and Policies:** Simplified and unified acquisition regulations and policies that delegate authority to the working level; and
- **Management:** Policies that promote excellence in the work force, and ensure an adequate industrial and technology base.

The determination of what additional improvements might be possible is based in part on this assessment, but in large measure it derives from interviewees' opinions of what additional changes are feasible and beneficial. Since opinions were mixed, this determination necessarily is partly subjective, reflecting the judgments of the study team.

In total, more than 100 individuals were interviewed during the summer and fall of 1988. In order to ensure that all sides of the issues were being heard, the study team attempted to cover a broad range of institutional perspectives. Coverage included the Under Secretary's organization and other OSD components, as well as the Services and the Joint Staff. Senior civilian acquisition executives were interviewed as well as career civil service and military officials who have longstanding familiarity with acquisition decision making and procedures. A substantial number of background interviews were conducted with former Packard Commission members and staff, DoD officials, academic experts, and government officials outside of DoD. Interviews were conducted with the understanding that they were not for attribution.

A structured interview format was developed in order to ensure the uniformity of the issues covered. However, because the interviews were neither highly formalized nor rigid, the results are necessarily somewhat impressionistic and anecdotal. Generally, the persons interviewed agreed on the facts as to what has happened over the past two years. As one might expect, there is less agreement on the wisdom of what has been done and on recommendations about what to do next.

The interviews were complemented with a review of documents and publications describing the evolution of the acquisition process and the views of acquisition experts.

These include legislation, directives and regulations, DoD internal documents, news articles, published papers, speeches and congressional testimony. The first items on this list are included because they provide a "paper trail" documenting the formal changes in the acquisition process. The views of many participants have been obtained through recent surveys, or through their participation in study groups or task forces. To the extent possible, the review has taken into account the contributions of other recent and ongoing studies of the defense acquisition process.

Some related topics were not extensively covered in this review. The most important of these involves ethics, and has made front page news recently. This issue is discussed in dealing with personnel management issues, but it was not made a major focus of the study because of the belief that the problem is more one of enforcement than of the operations of the acquisition system.[3] Secondly, while the Packard Commission emphasized the need for significant improvements in national-level decision making within the Executive Branch and Congress, the main focus of this study is on the issues and problems with decision making within the Pentagon. Finally, because this review focuses primarily on procedural and organizational issues, there are a number of substantive acquisition-policy issues that are not dealt with here. These include such areas as profit policies, allowable costs, independent research and development funding, tax and depreciation treatment, and progress payments.

C. ORGANIZATION OF THE REPORT

The results of the review are reported in two volumes. Volume I summarizes the findings of the study and provides our recommendations. Volume II contains several working papers that provide a more in-depth examination of selected issues. This volume is organized in three general areas. The first two chapters provide an overview of the Commission and implementation. Chapter I describes the Packard Commission report. Chapter II presents the ensuing implementation actions by the President, Congress, and DoD.

The central four chapters of the report describe changes in and the current status of the acquisition system. These chapters cover organization (Chapter III), decision-making

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[3] One change that has been made in response to the recent scandal is the elimination of multiple rounds of best and final offers.

processes (Chapter IV), policies (Chapter V), and management of personnel, technology and the industrial base (Chapter VI).

The final two chapters summarize the lessons learned from the review and present a proposed agenda for continuing reform efforts. Chapter VII provides an assessment of the reasons why the Commission's management principles have not been fully implemented, and then discusses the implications of this experience for further action. Chapter VIII briefly summarizes the progress made, and provides a proposed agenda that would implement many of the basic principles of the Commission within DoD's existing organizational structure.

I. THE PACKARD COMMISSION

The Packard Commission stated that reform of the acquisition system was needed to "improve" the overall defense decision-making system, to "strengthen and streamline the control and supervision of the entire acquisition system," to minimize "waste and delay in the development of new weapons," and to obtain "greater assurance that military equipment performs as expected." The report stated that the acquisition system "induced instability and was disruptive," and that the Congressional budget process creates instabilities by engaging in micro-management of individual line items. It argued that a major cause of program delay was a lack of discipline in deciding on program requirements.

The Commission outlined its view of a properly functioning acquisition system and an acquisition process to emulate, and offered numerous recommendations for bringing about needed changes. Several management principles for acquisition programs can be inferred from this model. This chapter reviews these principles and the Commission's specific recommendations.

A. MANAGEMENT PRINCIPLES

The Commission's model for defense acquisition suggests some basic management principles for developing and acquiring weapon systems. The principles motivate the specific recommendations, and provide insights into what the Commission saw as the fundamental problems with the existing system.

Principle 1: Adopt development and decision processes that permit "an informed trade-off between quantity and quality" in defining weapon systems. The key point here is that, "At some point, more weapons of lower performance can overcome fewer weapons of higher performance";[1] however, making such trade-offs requires the consideration of complementary systems and support activities as well as consideration of the capabilities of potential adversaries. The Commission emphasized that a mechanism for making such trade-offs needed to be created in the

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1 The quotations in this paragraph are from The President's Blue Ribbon Commission on Defense Management, *A Quest for Excellence*, June 1986, p. 52.

acquisition decision-making process. Such a mechanism would encourage competition in exploring options for meeting military needs, involve military operators in making decisions, and provide adequate test information for making informed choices.

Principle 2: Provide adequate and stable resource commitments to programs. Stability in national security planning is necessary to overcome inconsistencies between the DoD's resource planning and its acquisition management. Hence, a central issue in acquisition as seen by the Commission is stability:

> Action within the Administration and in Congress to improve national security planning and budgeting and military organization -- as recommended by the Commission -- will provide the element of stability required for substantial improvement in the acquisition system. This element is critical and has been missing. While significant savings can be and have been made through better procurement techniques, more impressive savings will come from eliminating the hidden costs that instability imposes.[2]

Principle 3: Concentrate acquisition policy making to promote integration and uniformity. The Commission reported that:

> Responsibility for acquisition policy has been fragmented. There is no single official in the Office of Secretary of Defense (OSD) working full-time to provide overall supervision of the acquisition system.... In the absence of a single senior OSD official, policy responsibility has tended to devolve to the Services, where at times it has been exercised without the necessary coordination or uniformity.[3]

Principle 4: Decentralize program execution to put "responsibility and authority...firmly in the hands of those at the working level."[4] One observer has noted that Packard sees "gridlock" when he looks at the defense acquisition process, because it is often so difficult and time consuming for working level managers to obtain necessary reviews and approvals in the current oversight and decision-making processes. In such circumstances, the program manager and his technical staff do not have adequate responsibility and authority to keep their programs moving.

The Commission carefully reviewed management practices for several successful defense programs as well as commercial practices for managing projects, and concluded that adopting the practices common to these successful programs would yield major reductions

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2 Ibid., p. xxi.

3 Ibid., p. xxii.

4 Ibid., p. xii.

in time and cost. To explain its position, the Commission cited six features of successful commercial programs, which are summarized in Table I-1. These include small, high-quality project teams, which have a clear mandate and commitment from top management, limited reporting requirements, and substantial independence from outside interference with the program. These teams explore and test options through extensive prototyping and maintain close communications with users to ensure their products will be marketable. The superiority of this model for project management is a central theme of the Commission's report, and it clearly motivates several of the specific recommendations.

Table I-1. Management Features for Decentralized Program Execution[5]

" (It is)...POSSIBLE TO MAKE MAJOR IMPROVEMENTS IN DEFENSE ACQUISITION BY EMULATING THE...MOST SUCCESSFUL...COMPANIES."
" SIX...FEATURES (TYPIFY)...SUCCESSFUL COMMERCIAL PROGRAMS."
1. CLEAR COMMAND CHANNELS
2. STABILITY
3. LIMITED REPORTING REQUIREMENTS
4. SMALL, HIGH QUALITY STAFFS
5. COMMUNICATIONS WITH USERS
6. PROTOTYPING AND TESTING

As Mr. Packard said recently,

> I think, if you could get them [SecDef, USD(A) and SAEs] down to the place where they're determining policy and are able to enforce policy and they're not trying to do all the work themselves, it would be constructive.... These people [the managers of successful programs] were put in charge. They were given the responsibility and the authority to do the job. *And they were left alone.* And that's why those programs were successful.... Every time you look at this issue, you come back to the conclusion that, if you could just get a team of knowledgeable people assigned to these programs, assigned so that they would work with the programs long enough to really have a big impact, it would probably do as much as anything else to improve our acquisition program....[6] [Emphasis added.]

While most of these features are straightforward and mutually reinforcing, there is always an inherent tension between the desire to adopt expedited development practices which allow technologists to forge ahead with their work and the need to maintain close

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5 Ibid., p. 50.

6 *The Washington Post*, August 1, 1988, p. A11, "Packard's Keys to Procurement: Autonomy and Expertise," comments before the Senate Armed Services Committee.

communications with users to ensure suitability of the end product.[7] In the commercial world, the Commission notes the following model:

> A "...commercial program manager establishes a dialog with the customer or user, at the conception of the program when the initial trade-offs are made, and maintains that communication throughout the program. Generally, when developmental problems arise, performance trade-offs are made--with the user's concurrence--in order to protect cost and schedule."[8]

The problem in defense programs lies precisely in this "dialog" between the program manager and all the layers of management and functional specialists who consider themselves representative of the "user" community. Discipline is lacking among the layers of oversight, and across the various communities that review programs, making it difficult for program managers to obtain "concurrence" on program matters. This is reflected both in lengthening the development cycle and in reducing a manager's flexibility to make technical decisions and the trade-offs necessary to control program costs. Therefore an important corollary of the proposal to adopt the commercial approach is the need to clearly define the relationship between program managers and the rest of the Service and OSD organizations.

Principle 5: Develop a professionalized acquisition work force: Again, to quote a recent statement of Mr. Packard:

> I think it's very desirable, perhaps even essential...to keep the involvement of military people in acquisition. But I think if they are involved, they must be officers who have opted for a career in procurement. And this commission makes this comment about the subject: "It has become quite clear that the DoD acquisition process has become too complex to be managed by military non-careerists who will be rotated to other unrelated assignments as often as every two years."[9]

B. COMMISSION RECOMMENDATIONS

The Commission's "formula for action" offered recommendations to translate its management principles into action. These are summarized in Table I-2. Two specific

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7 One criticism of the commercial approach is that although small teams may be quite efficient in achieving the technical goals of the task, they don't always produce a marketable product. Examples include the IBM PC Junior computer, or the Apple LISA computer.

8 *A Quest for Excellence*, p. 50.

9 *The Washington Post*, August 1, 1988, p. A11, "Packard's Keys to Procurement: Autonomy (and) Expertise," Comments before the Senate Armed Services Committee.

Table I-2. Packard Commission Recommendations

ORGANIZATION	A.[a] Streamline Organization • Create Under Secretary for Acquisition • Establish Service Acquisition Executives and Program Executive Officers • Reduce Acquisition Personnel C. Replace the DSARC with the Joint Requirements Management Board (JRMB) • Create Vice Chairman of JCS to Co-Chair JRMB with the Under Secretary
DECISION MAKING	B. Use Technology to Reduce Cost • Require Early Testing and Prototyping to Explore Options and Facilitate Trade-offs • Choose State-of-the-Art Technologies Only When Cost-Effective C. Balance Cost and Performance • Challenge "Requirements" D. Stabilize Programs • Baselining • Develop Budget Constrained Program Options • Congressional Five-Year Budget Level; Two-Year Budget • Congressional Milestone Funding of Programs • Multi-year Procurement
ACQUISITION POLICY	A. Streamline Procurement Statutes and Regulations E. Expand Use of Commercial Products • Switch Burden of Proof to Favor Commercial Products • Adopt Commercial Standards F. Expand Use of Commercial-Style Competition G. Adopt New Technical Data Rights Policy
MANAGEMENT	H. Enhance Personnel Quality I. Improve Capabilities for Industrial Mobilization

[a] The letters refer to the notation used by the Commission in discussing its recommendations.

organizational changes were recommended along with several changes in decision-making practices, and policies and procedures. The discussion of the recommendations provides a set of specific goals for the system.

1. Organization

The organizational recommendations are shown at the top of the table. The foremost of these was the creation of the Under Secretary for Acquisition. The Under Secretary would:

> "...supervise the performance of the entire acquisition system and set overall policy for R&D, procurement, logistics, and testing. He should have the responsibility to determine that new programs are thoroughly researched, that military requirements are verified, and that realistic cost estimates are made before the start of full-scale development....He should assure that an appropriate type of procurement is employed and that adequate operational testing is done before the start of high-rate production. He also should be responsible for determining the continuing adequacy of the defense industrial base."[10]

The Packard Commission specified that an Under Secretary for Acquisition should be the Defense Acquisition Executive (DAE), should assume overall responsibility for the system, and should devote full time to acquisition. With creation of the Under Secretary would come the consolidation of a number of acquisition related OSD offices under him, which would serve to integrate their participation in the acquisition process. The Under Secretary would supervise several major offices, including the Offices of the Director for Defense Research and Engineering, Assistant Secretary for Production and Logistics, and Assistant Secretary for Command, Control, Communications and Intelligence.

For streamlining program oversight, the Commission proposed reducing to two the number of levels and people between the Under Secretary and program managers for major programs. To accomplish this, Service Acquisition Executives (SAEs) and Program Executive Officers (PEOs) would oversee major acquisition programs, and the SAEs would report directly to the Under Secretary. The intervening layers of SAEs and PEOs were seen as necessary because the Under Secretary could not deal personally with the more than 100 major programs ongoing within the department. The creation of this new organizational structure was to be a centerpiece implementing the commercial style of

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10 *A Quest for Excellence*, p. 53.

program management, because it reduced the potential for intervention in program matters by officials outside the streamlined chain of command.

In a related recommendation, the Commission called for reducing the number of acquisition personnel in the Service staffs and OSD. It believed that the streamlined process would limit the need for many of the members of the oversight and functional specialty communities that now are involved in program management. The Under Secretary would set policy and have authority over a personnel system that would run the acquisition system from top to bottom, although within the current Service structures.

The final organizational change was creating the Joint Requirements and Management Board.[11] The JRMB would replace the Defense Systems Acquisition Review Council (DSARC) in oversight of ongoing major programs. The board would be co-chaired by the Under Secretary and the Vice Chairman of the Joint Chiefs of Staff (JCS). The Vice Chairman would bring together and harmonize the conflicting demands of the Services and would represent the Commanders in Chief (CINCs) as "users." The board would oversee a process in which program managers would explore a wide range of options for meeting military operational needs, the test community would provide adequate test information on which to base choices, and operational users would participate in choices.

The JRMB represented an attempt to create a deliberate process for introducing new technology into the field. It was to improve cost-performance trade-offs by providing a forum in which the military and the technical community could work together to *manage* requirements in order to avoid "gold-plating" of hardware performance requirements by the military system development communities, and "technology push" by the technologists.

2. Acquisition Decision Making

At the core of the Under Secretary's responsibilities is his role as the senior acquisition decision maker. In this role the Under Secretary must create an acquisition decision-making system, develop an investment strategy, and use the strategy to review individual programs and integrate individual program decisions within the DoD's resource-allocation process. The Under Secretary's authority for carrying out these tasks would

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11 As discussed in Chapter III, the JRMB was created, but was subsequently reconstituted as the Defense Acquisition Board. This board is Chaired by the Under Secretary and Vice-chaired by the Vice Chairman of the JCS.

stem from his role as chairman of the JRMB, and as a member of the Defense Resources Board. Several of the specific recommendations reinforce the Packard Commission's management principles by guiding the Under Secretary's participation in these processes, and by developing mechanisms that contribute to program stability.

As the co-chairman of the JRMB, the Under Secretary would determine whether programs had progressed sufficiently to move into a new program phase, and determine whether DoD policies with respect to testing, costing, contracting, and acquisition strategy were being followed. The recommendations emphasized three imperatives for JRMB decision making. The first is to "use technology to reduce costs." The Commission noted that in the commercial world technology has simplified products, increased reliability, and reduced their cost, but that weapon systems typically continue to grow more expensive and complex at a pace that exceeds the growth in the defense budget. As part of this recommendation, the Commission said that DoD should expand the use of early prototyping and testing to actually explore options, and ensure that informed program decisions are made using some experimental data rather than paper studies. The Commission also advocated that the decision-making process keep open a number of options for meeting operational requirements.

The second decision-making imperative is to make cost-performance trade-offs within the JRMB. The Commission emphasized the importance of two decisions "commonly made in industry, but not now an explicit part of DoD's decision-making process."[12] The first is to explicitly consider a judgment of whether the proposed capability is worth the cost. The second is to consider whether a unique new development program is required to obtain the needed capability. These decisions would be emphasized in initiating full-scale development (Milestone II).

The second major decision point for the JRMB would come prior to initiating full-rate production (Milestone III). At this point "available test results should provide a realistic portrait of the weapon's probable performance under operational conditions, current intelligence data should yield a realistic threat estimate, and low-rate production should provide a realistic estimate of production costs."[13]

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12 *A Quest for Excellence*, p. 58-59.

13 *A Quest for Excellence*, p. 60. There is some disagreement as to whether the Commission's emphasis on Milestones II and III implies that the other milestones should be eliminated. It appears the report is purposefully vague on this point. However, there is agreement that the milestone review process should be simplified, especially in the early stages of a program.

Finally, a third imperative is to promote program stability by the baselining of programs. Baseline agreements would be established for full-scale development (Milestone II) and for full-rate production (Milestone III), and would essentially serve as contracts between program managers and the Under Secretary. A program manager would be delegated authority to manage a program within the parameters stipulated in the baseline agreement. Baselines would also serve to provide the commitment needed to stabilize programs and to delegate clear authority and responsibility to the program manager.[14]

As a member of the DRB, the central forum for resource-allocation decisions, the Under Secretary plays an important role in trying to ensure stable resource commitments to allow programs to proceed smoothly. Acquisition decision making would be made in a budget-constrained, long-range planning context, in which the higher levels of the government would make longer-term commitments of funding.

The Commission recommended several procedural tools for accomplishing program stability. First were changes in the national security planning process. The Commission offered a number of recommendations that would substantially change the development of national strategies and their translation into programs. The National Security decision-making system from the White House to the Pentagon was to start with provision by the White House of a "comprehensive statement of national security objectives and priorities" that would generate provisional five-year budget levels to be given to the Secretary of Defense, that would in turn guide or constrain the military strategy from the Chairman of the Joint Chiefs of Staff to support the national objectives.[15] The Chairman was also to provide options on operational concepts and key defense issues.

Secondly, the Commission sought to impart stability to this planning process through two budgeting innovations: biennial budgeting including Congressional authorization and appropriation, and five-year budget projections also agreed to by Congress.

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14 This implements Packard's practice when he was Deputy Secretary. Several observers believe that baselining requires the Under Secretary to have resource authority for acquisition programs. This was essentially the approach proposed by Godwin. There now is a general consensus in Congress that resource authority should remain with the Secretary and his Deputy, so that the Under Secretary has no formal precedence in acquisition resource decisions. Hence this interpretation of Packard is maintained throughout this report.

15 *A Quest for Excellence*, p. xix.

The Commission sought to achieve individual program stability through: (1) early agreement on requirements in the JRMB (co-chaired, as noted above, by the Under Secretary and the Vice Chairman, JCS); (2) at Milestone II, by baselining as a contract between the program manager and the DAE, followed by milestone authorization by the Congress; (3) requests for multi-year commitment for procurement and approval of multi-year contracting in the Congress; and (4) the adoption of Congressional review at key program milestones that would result in long-term Congressional commitments for funding individual programs. The purpose of all these recommendations is to implement Packard's belief that programs should be allowed to proceed at a pace that makes sense from a technical standpoint.

The Commission believed these mechanisms to stabilize the overall budget and individual programs would reconcile acquisition decision making with the resource-allocation process. Hence, DoD was given little specific guidance in how national security planning and budgeting was to be integrated with the acquisition system to fall back on in cases where these mechanisms were not working. Nor did the Commission provide any explicit guidance on the role of the Under Secretary in the resource-allocation process.

3. Acquisition Regulation and Policy

The Under Secretary was intended to provide a major focal point for unifying and rationalizing the Department's acquisition process. This function was emphasized in the description of the Under Secretary's duties. As part of streamlining the process, the Commission recommended the unification of procurement statutes and regulations in order to make them more understandable and to reduce the burdens of compliance.

In specific policy areas, the Commission emphasized a policy of expanding the use of commercial products and components, as well as expanding the use of commercial-style competition. Greater use of commercial products simplifies acquisition by allowing DoD to rely on the competitive discipline of market forces to ensure low prices and high quality, rather than relying on specifications and regulations. Commercial-style competition does not require a burdensome process, and it emphasizes quality and reliability as well as price. Hence, it would help contribute to low costs and high quality for all procurement actions.

Closely related is the recommendation to clarify technical data rights for products purchased from commercial suppliers. Commercial suppliers had been reluctant to sell to the DoD when the data requirements would force them to divulge commercially valuable product information.

4. Management of Personnel, Technology, and the Industrial Base

The Commission recognized that the soul of the acquisition process lies in the people that make it work. Because the Packard Commission's principles depend on streamlined organizations and increased individual responsibility, implementation requires a skilled and highly motivated acquisition work force. Therefore the Commission recommended improvements in the experience, training, and pay for civilian acquisition personnel. One particular recommendation was to establish an alternative personnel management system similar to the experimental system adopted at the China Lake facility. In addition, it recommended steps to professionalize civilian contracting personnel, and to expand education and training opportunities for all civilian acquisition personnel.

The Commission also endorsed the recommendations to reduce barriers to public service for senior defense managers offered in 1985 by the National Academy of Public Administration.[16]

The Commission noted that the 1986 defense authorization legislation had increased the experience and training requirements for military program management personnel. While no specific recommendations relating to military personnel were provided, the Commission supported the legislation to increase experience requirements for program management personnel.

Finally, the Commission noted that industrial mobilization capabilities were an element of national security policy that had too long been neglected. Therefore it recommended steps to improve mobilization capability. First, the Under Secretary should formulate an acquisition policy that would be consistent with the President's mobilization guidance. Second, program managers should incorporate industrial surge and mobilization considerations in their programs. The Commission included in the Under Secretary's job description the responsibility for "determining the adequacy of the defense industrial base." This recommendation is directed at an area that many consider deserves more resources.

C. A CHANGE IN PHILOSOPHY

The Packard Commission's management principles and recommendations clearly intended fundamental changes in defense procurement. A number of current and past DoD officials have pointed out that in many cases the Commission's recommendations are at

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[16] *Leadership in Jeopardy: The Fraying of the Presidential Appointments System.* Final Report of the Presidential Appointees Project, National Academy of Public Administration, November 1985.

odds with very basic and strongly held philosophies within the Pentagon. Several important cases of this are:

- The program manager's role: There are two distinct views of the program manager. One is that he is a business manager who coordinates the decisions made by various communities within a Service; the other is that he is the Service's point man for program decisions and leadership. The Commission's model of delegating authority to the working level strongly emphasized the second view.
- Determining who should define weapons: Generally the Service operational and systems commands have defined weapons programs; the Commission's model would shift much more responsibility to the Joint Chiefs of Staff and the CINCs.
- The meaning of "requirements": The Services commonly express "requirements" in terms of "needed" hardware performance parameters rather than operational needs. The Commission's philosophy is to express them as operational needs, such as the need to attack armored vehicles in Europe or even more broadly as deep interdiction of theater ground forces, and then to explore a wide range of options for meeting these needs.
- Program development approaches: The Commission advocated "fly-before-buy" approaches in which extensive prototyping and testing is done prior to major program decisions; the Service communities believe it is not always cost-effective to do this.
- Centralized policy making: The Commission advocated that OSD develop uniform acquisition policies and procedures. This conflicts with the philosophy of delegating authority to the Services.
- Budget "affordability" philosophy: Secretary Weinberger believed in a budget approach in which the Pentagon asked for what it thought it needed for defense, not what it thought Congress would approve. The resource-constrained planning recommended by the Commission emphasizes the second philosophy.

In advocating basic philosophical changes in budgeting for defense and acquiring weapon systems, the Commission was calling for actions requiring substantial managerial commitment from the Secretary and his senior staff. Even with such commitment, it is reasonable to expect that such fundamental changes would take a substantial amount of time. In view of this, most outside observers have been pessimistic that much would have changed within the Pentagon in the two years following the Commission. The following

chapters describe the efforts on the part of the President, Congress, and DoD in response to the Commission's call for these fundamental changes.

II. IMPLEMENTING THE MANDATE

Quickly following publication of the Packard Commission's interim report on acquisition, President Reagan ordered a number of changes. He also requested that Congress legislate the recommended organizational changes. The Congress responded with the *Defense Acquisition Improvement Act of 1986* and subsequent legislation. President Reagan and Congress limited their mandate to a few specific organizational changes, providing the Department substantial discretion in implementing the remaining recommendations.

Because substantial discretion was left to implement the Commission's recommendations, Under Secretary Godwin focused much of his time and energy on defining the role of the Under Secretary and shaping his organization. Under Secretary Costello is focusing on solving problems within the system he inherited. He has also begun a substantial number of initiatives that address manufacturing and industrial base issues. While some of these initiatives address concerns raised by the Packard Commission, Costello's agenda represents a marked shift of emphasis from Godwin's approach.

This chapter reviews these implementation actions and the tenures of Under Secretaries Godwin and Costello.

A. NATIONAL SECURITY DECISION DIRECTIVE 219

Although the Packard Commission provided a vision for the acquisition process, DoD's actual instructions for implementing changes were provided subsequently by the President and the Congress. On April 1, 1986, the President signed National Security Decision Directive (NSDD) 219 implementing most of the recommendations presented to him in the Packard Commission interim report. The directive outlined the "steps approved

for implementation of the initial recommendations" and urged the Department to "move quickly and decisively to implement those changes approved in this directive."[1]

Much of NSDD 219 focused on organizational changes in the Department (military command and control and acquisition) and to a lesser extent on procedural changes (planning and programming). Packard Commission recommendations that focused on acquisition policies such as commercial products and practices, regulatory streamlining, and technical data rights or on management issues such as personnel and infrastructure investment are addressed in the directive only at the broadest level, or in many cases were not mentioned at all. Other recommendations addressing program stability and decision making such as the use of technology to reduce cost, the use of prototypes, program baselining, multi-year procurement, and Congressional milestone funding for programs are not specifically addressed in the directive. Guidelines for implementing Packard Commission recommendations in these areas were left up to the Secretary of Defense, or to the extent that legislation was drafted, to Congress.

1. Key Provisions of NSDD 219

NSDD 219 addressed four specific areas in which the Packard Commission had made recommendations.

a. National Security Planning and Budgeting

NSDD 219 stressed the importance of stable and effective strategic planning, particularly within an environment of constrained resources. Defense planning must be consistent with and convey the guidance of senior civilian and military officials. The Secretary of Defense was directed to recommend procedures to improve the integration of national security strategy with fiscal guidance. These procedures were to include: (1) issuing provisional five-year budget levels to DoD; (2) developing a military strategy to support national objectives within the provisional five-year budget levels; (3) conducting a net assessment of military capabilities; and (4) Presidential selection of a military program and associated budgets.

The National Security Council and Office of Management and Budget (OMB) were directed to ensure that these provisions were put in place prior to the FY 1989 budget cycle and the Secretary was directed to integrate improvements in preparing the FY 1988 budget.

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1 *A Quest for Excellence*, June 1986, Appendix, p. 34.

In addition, OMB and DoD were to put in place the steps necessary to produce a two-year defense budget for FY 1988-1989.

b. Military Organization and Command

NSDD 219 fully endorsed the Commission's recommendations concerning military organization and command toward the goal of increasing the effectiveness of communications between the Secretary of Defense and the CINCs. Changes in this area include improved procedures for incorporating the views of the CINCs into the planning process through the JCS and the Chairman of the JCS, and for streamlining the organizational structures within and among the CINCs.

c. Acquisition Organization and Procedures

To continue to improve acquisition management, the President endorsed the establishment of the position of Under Secretary of Defense for Acquisition to serve as the Defense Acquisition Executive. The directive also directed the Military Departments to establish SAEs and PEOs, thus creating direct reporting channels for program managers. By reducing the levels within the system, DoD was to be able to reduce the number of acquisition personnel. In addition the JRMB was to be restructured to be co-chaired by the Under Secretary and the Vice Chairman, JCS, and to play a major role in providing input for early cost and performance trade-offs in weapon system programs.

The directive called for streamlining and simplifying the federal procurement statutes and for strengthening personnel management policies for procurement personnel. Finally, the Secretary of Defense was directed to report to the President on measures to enhance the "cost-efficiency, quality, and timeliness of procurements."[2]

d. Government/Industry Accountability

NSDD 219 endorsed and called for implementation of the Packard Commission recommendations relating to government/industry accountability, but cautioned against reducing DoD's ability to effectively monitor and audit contractor performance.

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2 Ibid., p. 37.

2. Secretary Weinberger's Implementation Memorandum

Many of the specific acquisition policies addressed at only a broad level in NSDD 219 were spelled out in a memo from Secretary Weinberger in response to the Presidential directive. The memo specified increasing the use of off-the-shelf purchasing of supplies and services, prototyping in the early stages of R&D, marketplace competition, baselining for major weapons systems, and multi-year procurement for high-priority systems.

A report on measures to strengthen personnel management policies was directed to include proposals for increased authority for the Secretary to establish flexible personnel management policies, education and experience criteria, and expanding education and training programs for civilian acquisition personnel.

The memo also called for recommendations to expand the role of the Defense Advanced Research Projects Agency (DARPA) to include prototyping and other development work, and laid out more specific issues to be addressed in implementing Packard Commission recommendations relating to government/industry accountability.

B. ACQUISITION LEGISLATION

Congress responded to the Presidential directive and to the recommendations of the Packard Commission. Two major pieces of procurement reform legislation were passed in 1986: the *Goldwater-Nichols DoD Reorganization Act*, and the *Defense Acquisition Improvement Act*. The measures contained in these laws were responsive to the Packard Commission. However, Congressional involvement in procurement reform had been ongoing for several years before the creation of the Packard Commission, largely in response to the spare parts scandals of the early 1980s. Both this earlier legislation and subsequent laws have played a major role in DoD's efforts to implement improvements in the defense procurement system.

1. *Goldwater-Nichols DoD Reorganization Act*

The *Goldwater-Nichols Act* reorganized the Department of Defense. Its effects on procurement, while they may be substantial, are only indirect. Goldwater-Nichols enhanced the role of the Chairman of the Joint Chiefs of Staff in the planning and budgeting processes and inserted him into the defense acquisition process. Goldwater-Nichols also established the position of Vice Chairman of the Joint Chiefs of Staff to assist the Chairman in his augmented duties.

Thi bill also enlarged the role of the combatant commands in policy formulation, including procurement policy, and specified the JCS Chairman as the primary spokesman for the CINCs. In addition, the bill reaffirms authority of the Service Secretaries over their branches, including *sole authority for acquisition* in their Service.

Goldwater-Nichols enacted many of the reorganization measures specified in the Packard Commission report. In particular, it consolidated power over the acquisition process in the civilian offices of DoD while at the same time ensuring that the combatant commands had access to the decision process so that their needs would not be overlooked.

2. *Defense Acquisition Improvement Act of 1986*

In a message to Congress on April 24, President Reagan asked for Congressional support to implement the Packard Commission recommendations, but in doing so he urged lawmakers to use restraint in drafting legislation necessary to put in place the changes proposed by the Packard Commission report. Though a new law was required to create the position of Under Secretary of Defense for Acquisition, the President urged that "further change to the acquisition organization of the Department of Defense should be left to the Executive branch. ... we should refrain from further action to add new procurement laws to our statutes ...."[3]

In keeping with the President's request, minimum legislation was drafted to implement the Packard Commission recommendations. The *Defense Acquisition Improvement Act* laid out the broad authorities and responsibilities of the Under Secretary, but relied on the Executive Branch to further support the Under Secretary with the necessary authority to reorganize DoD acquisition.[4] The duties of the Under Secretary included supervising the entire Department of Defense acquisition system and establishing policies relating to acquisition. The Under Secretary was also given the duties of coordinating audit and oversight activities, establishing policies for maintenance of the defense industrial base, and directing the Secretaries of the military departments and OSD personnel on matters for which the Under Secretary is responsible.

The *Defense Acquisition Improvement Act* also set out several measures designed to enhance program stability and streamline program management, including program

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3 Congressional Record, April 24, 1986, p. S4852.

4 The position of Under Secretary of Defense for Acquisition was established in the Military Retirement Reform Act of 1986.

baselining, the establishment of defense enterprise programs, milestone authorization funding, and multi-year procurement. The bill also addressed other acquisition policies including establishing a preference for the use of commercial products, endorsing the expanded use of competitive prototyping, adjustments to the use of small business set-asides, clarifying the need for cost and pricing and work measurement data, and establishing provisions for technical data rights.

3. Other Acquisition Legislation

Several additional legislative actions were taken in the 1980s. These cut across a broad area of acquisition policy, and are an important influence on developments within the Department in recent years. Two pieces of legislation establish independent test and auditing functions, and therefore run counter to the Commission's intent that the Under Secretary provide centralized control of acquisition-related functions. Several additional actions emphasize the need for competition in defense acquisition, and their implementation within DoD appears to be undermining the Commission's recommendation to use commercial-style competition.

The *National Defense Authorization Act for FY 1984* contained landmark legislation in test and evaluation. It was this legislation that advocated the introduction of operational test and evaluation early in a system's acquisition cycle and that created the OSD office of Director, Operational Test and Evaluation (OT&E) with sweeping powers to oversee and control the OT&E function within the DoD. The Director's charter included the authority to approve Service OT&E plans before they can be executed and the requirement that he report to both the Secretary and to Congress that a system is effective and suitable for combat before it can be approved for full-rate production. By creating an independent office responsible for OT&E, it was believed that the lack of adequate and effective operational testing within the Department would be reversed.

The 1984 *Competition in Contracting Act* (CICA) established new requirements, guidelines and proceedings to achieve "full and open competition" in federal procurement. The law was designed to provide for all sellers to have the opportunity to submit proposals for a proposed procurement. In addition the law recognized negotiation and open bids as acceptable forms of competitive procurement. CICA also created offices of "competition advocates" to challenge barriers to and promote competition in federal procurement. Furthermore, the law established new procedures for businesses to protest government contract awards.

This legislation has met with mixed reviews. On the one hand there has been clear evidence of an increase in the use of competitive contracts between FY 1983 and FY 1987. On the other hand, CICA is frequently cited as a primary cause for increased administrative lead times and for more conservative behavior among contracting officers trying to reduce the risk of protests and comply with DoD's strict interpretation of the law.

The Department of Defense Procurement Reform Act and the *Small Business and Federal Procurement Competition Enhancement Act*, both passed in 1984, also aimed primarily to foster competition in defense contracting. The Procurement Reform Act added miscellaneous provisions to eliminate the middle man, establish contractor guarantees, increase the quality of defense procurement personnel, and achieve certain social objectives through defense contracting, but the overall thrust of this legislation was to increase the use of competition to bring down the cost of defense purchases. The second act added little to existing law except for the establishment of "breakout procurement center representatives" to foster the use of competition.

The *Defense Procurement Improvement Act of 1985* once again attempted to increase competition in federal procurement. In addition the law more extensively addressed two other areas included in prior legislation: cost and price controls and measures to increase the quality and integrity of procurement personnel. The bill called for efforts to regulate unallowable costs in defense contracts and for controlling the problems of high costs in DoD contracts. Personnel reforms focused on slowing the "revolving door" to combat conflict of interest among defense procurement officers and on encouraging the Secretary of Defense to establish prerequisites of education, training, and experience for procurement officers. Finally, the legislation mandated strict penalties and new statutes for unacceptable behavior for both contractors and procurement officers.

The 1987 procurement reforms were far less encompassing than the legislation passed in prior years. The legislation makes amendments to familiar areas of the U.S. Code on issues such as oversight, truth-in-negotiations, small business set-asides and technical data rights. In addition, one section of the law directs the Secretary of Defense to establish a uniform policy addressing contractor costs for special tooling and special test equipment, an issue of high concern within industry in recent years.

Procurement reform remains on the Congressional agenda this year. The *National Defense Authorization Act for FY 1989* contains a number of provisions relating to acquisition policy and management. Among these provisions, the Secretary of Defense is

directed to create an advisory board to recommend an appropriate methodology to determine contractor profits. In addition, DoD is directed to establish criteria for evaluating bids for professional and technical services; the Under Secretary is required to report to Congress on the current programs regarding simplification and streamlining of acquisition procedures; and an advisory panel is to be established on industry-government relations to discuss issues such as the use of debarment and suspension. Congress is also strengthening the quality requirements for the procurement of spare parts, and precluding the use of firm fixed-price development contracts in excess of $10 million without approval from the Under Secretary. The bill contains comprehensive provisions intended to foster revitalization of the U.S. defense industrial base including centralized policy guidance through the Under Secretary of Defense for Acquisition, the requirement for analyses on industrial base capability, and establishes an industrial base office within the Under Secretary's organization. Other provisions address a critical technologies plan, offset policies, extend the 5 percent contract goal for disadvantaged businesses an additional year, and establish protections for military whistle blowers.

4. The Legislative Agenda for the Next Congress

The subjects of several bills proposed this year are likely to be raised again during the next administration. In an effort to improve professionalism and pay in some areas of acquisition personnel, a bill sponsored by Senator Jeff Bingaman would create demonstration projects patterned on the Navy "China Lake" pay experiment, which gives managers increased flexibility for pay and promotion of engineers, technicians, and scientists. The bill would create 10 demonstration pay projects, five in the Department of Defense. Another bill, sponsored by Senator Alan Dixon, is intended to enhance and strengthen the authority of the Under Secretary for Acquisition by making the Service acquisition chiefs directly responsible to him.

Three bills propose the creation of a professional acquisition corp. Rep. Barbara Boxer introduced a bill to create an Independent Procurement Corp to reside outside of the Pentagon, that would manage the acquisition of weapons and equipment over $300 million. Rep. Dennis Hertel proposed a similar bill creating a Defense Acquisition Agency, but one that would reside within DoD. A third proposal by Senator William Roth calls for DoD to set up a civilian defense acquisition agency headed by the Under Secretary of Defense for Acquisition. The agency would be made up of civilian personnel who would perform all weapons acquisition functions within DoD, effectively removing the Services from

management of the entire acquisition process. The Services would continue to identify threats and develop weapon system requirements.[5]

Congressional concerns over the defense acquisition process are likely to remain high on the agenda in the coming year, fueled in part by the recent scandals that have developed. The past five or six years have witnessed a proliferation of legislation dealing with various aspects of defense acquisition, but the system still suffers from many of the same problems identified repeatedly by those who study the process. Congress sees the need for a fundamental change in the system, and is beginning to consider major organizational changes, such as a centralized acquisition agency, as the solution. This is among the issues on which the acquisition debate is likely to focus in the next Congress.

C. GODWIN'S TENURE

Richard Godwin was appointed the first Under Secretary for Acquisition in September of 1986, shortly after Congress had created the new position. His responsibilities required him to establish an acquisition process consistent with the Packard mandate. Godwin had set the goal of introducing good business practice in defense acquisition. He believed this required fundamental changes in acquisition decision making, as well as a "major cultural change" in the acquisition process, which required moving away from traditional government decision-making processes relying on consensus building, to an industry model that relies on the delegation of authority to responsible individuals.[6] Hence, he set out to make radical changes in the process, not "just an adjustment to the existing system." Observers generally agree that Godwin gave top priority to making these institutional changes.

Godwin took up the challenge of developing a uniform acquisition process. He wanted to be able to set acquisition policy and procedures for all participants in the process. He was frustrated to find that when the new DoD Directive 5000.1 was published in September 1987 to reflect the Packard mandate, it granted the Under Secretary the responsibility to "*Develop* policy for acquisition plans and strategies..." whereas in his

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5 Morrison, David C. "Tinkering with Defense," *The National Journal*, September 3, 1988, p. 2178.

6 The quotes in this paragraph are taken from Godwin's testimony to the House Armed Services Committee. See *Report on the Duties and Authority of the Under Secretary of Defense (Acquisition)*, November 16, 1987.

original draft the word "establish" had been used.[7] This among other disagreements with the directive is believed to have led to Godwin's resignation days after the directive was issued.

Baselining was to become a primary means for managing acquisition programs, providing mechanisms for both linking the acquisition process with the resource-allocation process and delegating responsibility to the program manager. To carry through this idea, Godwin believed it was necessary for the Under Secretary to be delegated authority to allocate resources to acquisition programs. Once a baseline was established his concurrence would be required to change it, so neither the Services nor the DRB could independently change resource-allocation commitments to baselined programs. This proposed approach was very controversial, because it implied the Under Secretary would take precedence in resource allocation for acquisition over the Defense Resources Board. He did not succeed in getting this authority.

Godwin also set out to establish an extensive management information system. He planned to revise the Defense Acquisition Executive Summary (DAES) to provide extensive data on all programs for which he was responsible. Whereas existing data flows were limited to major programs, this system would provide data on a much wider range of activities, including laboratories, test facilities, arsenals, repair facilities, and construction projects.

During 1987 the OSD acquisition staff was reorganized by Godwin. The primary changes were the development of a new committee structure for supporting the Defense Acquisition Board, and the creation of a new Office of Program Operations (later renamed Program Integration) to help the Under Secretary develop more coherent positions on acquisition issues.

Godwin resigned his position in September of 1987, less than a year after assuming office. In resigning, he stated that he believed the Department had not made the commitment necessary to bring about needed changes. He continued to believe that a greater role of the Under Secretary as the focal point for acquisition and resource decision making was essential. Just after resigning he and other officials testified before the House

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7 The directive was changed to incorporate "establish" shortly after Godwin resigned. Hearings of the Senate Armed Services Committee, *Oversight of Legislation Establishing the Position of Under Secretary of Defense for Acquisition*, September 22, 1987, p. 11.

Armed Service Committee on the proper roles and functions of the Under Secretary. The Committee drew the following conclusions:

COMMITTEE FINDINGS[8]

> The position of Under Secretary of Defense for Acquisition was created for the purpose of leading a fundamental change -- a cultural change -- in the way the Department of Defense goes about acquiring equipment. The hopes bound in that office have not materialized....
>
> ...Under Secretary Godwin was refused factual data he had requested. The Defense Acquisition Board, which should have been advising the Under Secretary, was converted into a committee that was supposed to take action. Directives permitted the Under Secretary's decisions on program matters to be altered by the services and other Office of the Secretary of Defense officials (OSD) at will....
>
> ...Thus, while the committee found that the statute establishing the office of Under Secretary of Defense (Acquisition) was not deficient, it did find that the bureaucratic infighting during the drafting of necessary regulations resulted in final regulations which were, and in some cases still are, contrary to the spirit of the law.

The Committee also concluded that Godwin's inexperience was part of the problem he faced in carrying out his agenda. He was faced with the challenge of establishing his own credibility and personal authority at the same time he was attempting to restructure the process. The Committee report states:

> "Because Mr. Godwin came to his position without experience in either Pentagon politics or the hundreds of acquisition issues within his jurisdiction, he found himself at a disadvantage when dealing with subordinate organizations and officials within the Department of Defense....
>
> ...Thus, Mr Godwin, who intended to devote himself to constructing a new DoD acquisition system, found that he had to spend much of his time fighting to gain the authority needed to accomplish his tasks." [9]

D. COSTELLO'S AGENDA

Robert Costello has taken a very different approach to the office. The general consensus is that he has focused on working within the system he inherited from Godwin's

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[8] Hearings of the House Armed Services Committee, *Report on the Duties and Authority of the Under Secretary of Defense (Acquisition)*, November 16, 1987, pp. 3-4.

[9] Ibid., p. 44.

tenure, rather than trying to restructure it.[10] As detailed in subsequent chapters, Costello has been very active and aggressive in both the Defense Acquisition Board and in the Defense Resources Board. Some observers credit Costello with building an informal relationship with other key decision makers in order to better integrate decisions relating to acquisition. Costello has said he believes he has adequate authority to do his job, and is satisfied that he is given a fair hearing in decision making.[11]

Several of the initiatives Costello has launched reveal much about his approach to the job of Under Secretary and the issue areas where he believes the Under Secretary can contribute. In general Costello's initiatives tend to focus more extensively on manufacturing and industrial issues than did the Packard Commission.

In an article written earlier this year Costello described his agenda for improving defense acquisition.[12] Ten goals were described:

1. Bolster the defense industrial base;
2. Improve the effectiveness of the acquisition work force;
3. Improve product quality and reduce the cost of poor quality through total quality management;
4. Forge a new relationship between government and industry;
5. Augment acquisition regulatory reform;
6. Reduce the lead time 50 percent for introduction of new technology;
7. Develop a strategy for international technology, acquisition and logistics programs;
8. Institute a cost estimating process called "could-cost," or competition in a sole-source environment
9. Exert a definite influence on our management of [Definitely influence how we manage] special access programs;
10. Additionally, emphasize always DoD's commitment to small and disadvantaged businesses.

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10 To clarify Costello's functions, Under Secretary Taft issued a memorandum in December 1987. This memorandum is reproduced in Chapter III.

11 Hearings before the House Armed Services Committee, June 29, 1988.

12 Robert B. Costello, "Ten Agenda Items for Improving Defense Acquisition." *Program Manager*, Defense Systems Management College, May-June, 1988.

Some of the goals clearly correspond to the Commission recommendations: bolstering the industrial base (although Costello's initiatives are broader than the Commission's recommendations), improving the work force and government industry relations, regulatory reform, and reducing program development lead times. However, Costello sets out some major new objectives that do not correspond to the Packard Commission recommendations, and several of the Commission recommendations are not addressed. Hence, Costello's agenda demonstrates a clear change in emphasis from Godwin's attempts to implement the Packard Commission reform agenda.

Some of Costello's goals have motivated extensive initiatives. The three most significant of these are the industrial base initiatives, total quality management, and "could cost." There are elements in each of these initiatives that support or complement the Packard Commission reform efforts. The industrial base and quality initiatives are discussed in Chapter VI, could cost is discussed below.

"Could cost" is defined as what costs could be if the most cost-effective acquisition policies were used, requirements were carefully scrubbed to balance cost and performance, off-the-shelf items were used to the fullest extent possible, and the most efficient design and manufacturing approaches were used. It is described as a method for obtaining the benefits of competition in a sole-source contract. "Could cost" embodies many of the Packard Commission principles for acquisition management, including cost-performance trade-offs and program stability. In addition, it appears to encompass the total quality management approach. Hence, it could be viewed as way to implement these approaches one program at a time.

Costello has asserted that implementing "could cost" would save substantially on procurement contracts. "Could cost" is being applied to the Air Force B-2 Stealth bomber, the Navy's Trident D-5, and the Army's AH-64 Apache. The DoD recently reported that Northrop, the B-2 contractor, agreed to implement "could cost" and cut the program's price tag by about $4 billion.

E. THE LEGACY

The next Under Secretary will inherit an acquisition system shaped by the actions of the President, Congress, and DoD. He should be able to learn much from the experience of Under Secretaries Godwin and Costello. Godwin was frustrated in his attempts to change the system. It appears extremely unlikely that his view of the Under Secretary's role will ever be fully implemented. Nevertheless Godwin's tenure served to define the

role of the Under Secretary and to develop an organization to support him. Costello has worked within this system. He has been active and influential in the DRB and DAB, and therefore is positioned to push for implementing Packard's principles in defense decision making. As his broad agenda for acquisition improvement indicates, he has been active in revising policies in some important areas and improving the technology and industrial infrastructure.

Both of these Under Secretaries have worked to improve the acquisition system, although each has emphasized different aspects. The remaining chapters examine the results of their efforts.

III. ACQUISITION ORGANIZATION

In response to the Packard Commission's recommendations on organization, summarized in Table III-1, there have been major changes in the formal DoD organization for acquisition. The Under Secretary for Acquisition and the Office of the Under Secretary have been established and given policy and supervisory responsibility over the DoD acquisition organization. Organizations for reviewing acquisition programs were altered to increase the representation of military operators. Within each of the Services, a Service Acquisition Executive was established along with a number of Program Executive Officers to supervise the project managers.

Table III-1. The Packard Commission's Recommendations on Organization and Oversight

Streamline Organization

- Create Under Secretary for Acquisition
- Establish Service Acquisition Executives and Program Executive Officers
- Reduce Acquisition Personnel

Replace the DSARC with the Joint Requirements and Management Board (JRMB)

- Create Vice Chairman of JCS to Co-Chair JRMB with the Under Secretary

The Commission did not try to tell the DoD how to integrate the proposed new organization into the existing structure. So although the new positions have been created and the position filled, many ambiguities remain in how the DoD is to operate in the "streamlined" fashion proposed by the Packard Commission. In particular, the following issues are of central importance in assessing how well the organization operates:

1. **The relationship of the Under Secretary to the Secretary, the Deputy Secretary, and Service Secretaries.** The superior position of the Under Secretary to the Service Secretaries in acquisition matters can only be established by the extent to which the Secretary and Deputy Secretary back up the Under Secretary in specific decisions.

2. **The breadth of the authority of the Under Secretary for Acquisition within the DoD.** His authority may cover only "acquisition policy" or may extend to all acquisition matters, including the oversight and direction of specific programs.

3. **The role and size of the Under Secretary's staff.** The Under Secretary requires support to carry out his functions. The Under Secretary may rely on staff--his own or the Service Acquisition Executives'--but there is uncertainty about how much should be delegated.

4. **The relationships of the SAE, PEOs, and program managers with existing Service organizations.** Pre-Packard Commission lines of communication and authority relationships still exist within the Services, and resources are controlled outside the acquisition chain. It is not clear how the new channel should relate to (or replace) these existing channels.

This chapter provides an overview of organizations and focuses on how these issues have been resolved. The formal and informal roles of the Under Secretary, as the Defense Acquisition Executive, have largely been defined through the experience of Under Secretaries Godwin and Costello. The full impact of each Service's internal reorganization has not yet been realized. In each of these areas, we provide assessments of the adequacy of these organizations for running the acquisition process.

A. THE UNDER SECRETARY

The legislation which defined the role of the Under Secretary included in his powers "supervising Department of Defense acquisition" and "establishing policies for acquisition for all elements of the Department of Defense." (See Exhibit III-1 at the end of this chapter.) It also included "authority to direct the Secretaries of the military departments ... with regard to matters for which the Under Secretary has responsibility." Within DoD the authority of the Under Secretary was established first in the DoD Directive which established the acquisition system and then in the DoD Directive which established specific duties of the Under Secretary.

1. Functions: Deputy Secretary Taft's Memorandum

The problems of defining the role of the Under Secretary Godwin have been discussed in Chapter II and are well documented in the public record.[1] To avoid misunderstanding, Deputy Secretary Taft defined the role more precisely in a memo to his new Under Secretary. On critical organizational and oversight issues he told Under Secretary Costello:[2]

> You take precedence, for acquisition matters, after the Secretary and Deputy Secretary of Defense and have the authority to direct the Service Secretaries and the heads of other DoD components on policy and execution matters involving the Defense Acquisition System.
>
> The Secretary and I expect you to make decisions on major defense acquisition programs, except for milestone decisions.
>
> Your oversight includes: accommodation of mission needs, concept exploration, research, development, developmental testing, production, procurement, industrial surge and mobilization, logistics, facilities, manpower and logistics support systems requirements, safety, readiness and maintainability, modifications, and disposition.
>
> We also look to you to establish policies for, and manage, the structure and processes through which acquisition decisions are made and implemented and to oversee and evaluate the implementation of acquisition policies and programs to ensure that they are carried out effectively and efficiently and that they are achieving their intended objectives.
>
> Milestone decisions on major defense acquisition programs will be made by the Secretary of Defense...based on recommendations from you, based on advice received from the Defense Acquisition Board.
>
> As a member of the Defense Resources Board, you participate in the development of the Secretary's planning guidance to the Military Departments, participate in the selection of Defense Program Issues to be debated before the Defense Resources Board during the Program Review phase of the PPBS and contribute to the discussion on issues before the Board. In addition, you review proposed Program Budget Decisions and have the opportunity to recommend alternatives, participate in the Secretary's Major Budget Issue meetings with the Military Departments,

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1 Two hearings reviewed Under Secretary Godwin's brief tenure: *Oversight of Legislation Establishing the Position of Under Secretary of Defense For Acquisition*, Hearing before the Committee on Armed Services, United States Senate, 100th Congress, 1st Session, September 22, 1987; and *Report on the Duties and Authority of the Under Secretary of Defense (Acquisition)*, Committee on Armed Services, House of Representatives, 100th Congress, 1st Session, November 16, 1987.

2 "Authorities and Relationships of the Under Secretary of Defense (Acquisition)," Memorandum for the Under Secretary of Defense (Acquisition), from William H. Taft, IV, Deputy Secretary of Defense, 29 December 1987.

and review reprogramming actions involving acquisition programs or funds. In all of these activities, you are recognized as having primary cognizance over acquisition resources and your active participation and counsel on acquisition related issues is essential to the Secretary.

The Defense Acquisition Board is the principal management body of the Defense Acquisition System and plays a significant management role by conducting reviews of major systems, formulating policy, and developing acquisition resource recommendations. As Chairman of the Board, you are in a position to ensure that these activities are conducted in a manner that strengthens the overall combat capabilities of our Armed Forces and reflects the best interests of the nation for the efficient and effective procurement of military equipment, materiel, facilities, and services. Furthermore, since you serve as Chairman of the Defense Acquisition Board, and as a member of the Defense Resources Board, the Secretary relies on you to provide the linkages between the PPBS and the Defense Acquisition System that are necessary to ensure that acquisition matters are appropriately integrated with other DoD programs and activities.

Secretary Taft's memo clarifies the role of the Under Secretary. It defines the relationship of the Under Secretary to the Secretary and Deputy Secretary, establishing his position as superior to Service Secretaries, having "the authority to direct the Service Secretaries...on policy and execution matters involving the Defense Acquisition System." It extends beyond policy to execution. It underscores the role of the Under Secretary as both manager and planner. The extent to which he carries out these roles using his own staff or others in OSD, the Joint Staff or the Service staffs is left to him.

Of course only actual practice will make clear the extent of authority of the Under Secretary, because the DoD directives continue to provide a clear avenue for the Service Secretaries to appeal the Under Secretaries' decisions to either the Secretary or his deputy.

It is noteworthy that the memo gives the Under Secretary no authority to organize the Services or to intervene in their decision making. Thus, it remains up to the Services to reorganize as they see fit in order to follow the admonitions of the Packard Commission. The Service Secretaries had earlier each been given "lead responsibility for implementation of the NSDD [219]."[3]

2. Organization of the Office of the Under Secretary

The Under Secretary requires an organization to carry out his functions in acquisition and PPB decision making, acquisition policy, and infrastructure management.

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3 "Implementation of the Recommendations of the President's Commission on Defense Management," Memorandum for Secretaries of the Military Department and Others, from the Deputy Secretary of Defense, William H. Taft, IV, p. 2.

The Office of the Under Secretary was created by bringing a number of existing organizations under his control. In addition, a coordinating directorate was created in the Office of Program Integration. The current organization is shown in Figure III-1.

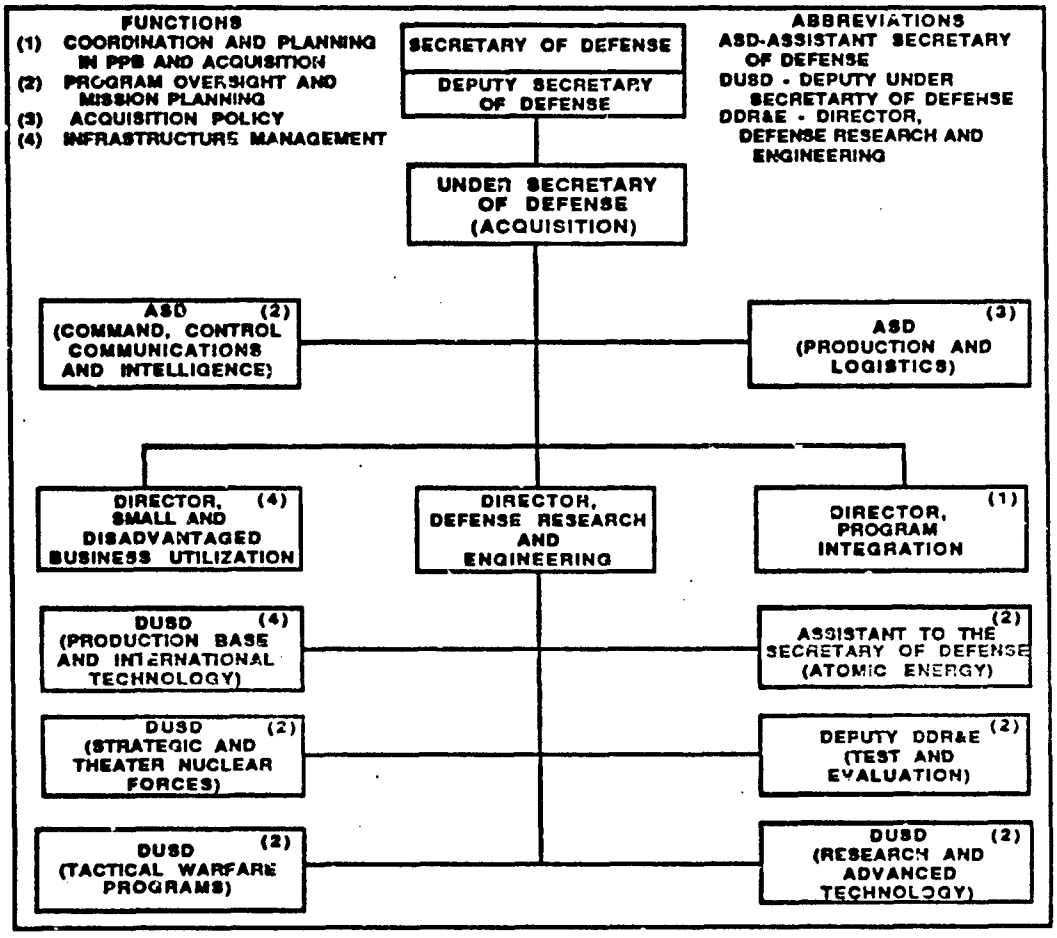

Figure III-1. The Office of the Under Secretary for Acquisition

In performing his major functions, the Under Secretary is supported by organizations that answer to him, as follows:

- Coordination in PPB and Acquisition Processes: Program Integration
- Program Oversight and Mission Planning: Command, Control, Communications and Intelligence; Tactical Warfare Programs; Strategic and Theater Nuclear Forces; Atomic Energy; Development Test and Evaluation
- Acquisition Policy: Production and Logistics

- Infrastructure Management: Production Base and International Technology; Research and Advanced Technology

In addition to his organization, the Under Secretary is also responsible for a number of field activities and other DoD components. These include: the Defense Advanced Research Project Agency, the Defense Logistics Agency, the Defense Nuclear Agency, the Defense Communications Agency, and the Defense Systems Management College. Each of these components has been set up to provide a central focus in a functional area, and the ability to directly fund these activities.

It appears the Under Secretary's staff is suitably organized to provide him the support he needs. The views of persons interviewed regarding this subject varied depending upon where they sat within the organization. In several offices, the creation of a new Under Secretary for Acquisition and a new Director, Defense Research and Engineering was viewed as a demotion for them, because they are now one layer farther from the Secretary. Other interviewees said the new organization is an improvement, because there now is a single more powerful spokesman for dealing with the other components in DoD.

A similar diversity of views was expressed about the Office of Program Integration. On one hand, this office was viewed in some organizations as another layer between them and the Under Secretary. On the other hand, it appears this office is serving to unify the organization, so that the Under Secretary is provided with coherent staff positions. The office also serves to coordinate staff support for the Under Secretary's participation in the resource-allocation process, thus furthering the Packard Commission aim of centralizing acquisition policy making.

In sum, the range and span of control of the Under Secretary is quite broad. We conclude he has adequate formal authority to carry out his responsibilities, and his organization is well suited to support him.

B. DECISION-MAKING ORGANIZATIONS

The Packard Commission stated that success in new programs depends on "an informed trade-off between user requirements, on one hand, and schedule and cost, on the other" and argued that the Defense Systems Acquisition Review Council was not a good forum for challenging requirements and making such trade-offs. It therefore recommended creation of a Joint Requirements Management Board, which would represent both military users and acquisition and technology experts. No single organization now performs this

role. Instead, the current process splits such functions between the Defense Acquisition Board, the Defense Resources Board, and the Joint Requirements Oversight Council, and the Chairman of the Joint Chiefs of Staff, supported by the Joint Staff. These four bodies have overlapping memberships and are the major DoD-wide organizations for acquisition decision making.

1. Defense Acquisition Board

The DAB was formerly the Defense Systems Acquisition Review Council. For a short while it was named the Joint Requirements and Management Board (JRMB), as suggested by the Packard Commission, although it never performed the functions proposed by the Commission.[4]

The membership of the Defense Acquisition Board is shown in Table III-2. The Under Secretary and his organization plays the major role, but the membership extends to

Table III-2. Defense Acquisition Board Membership

a	Under Secretary for Acquisition (DAB Chairman)
	Vice Chairman, Joint Chiefs of Staff (DAB Vice Chairman)
	Service Acquisition Executives: Army, Navy, Air Force
a	Director, Defense Research and Engineering
a	Assistant Secretary of Defense (Production and Logistics)
a	Assistant Secretary of Defense (Comptroller)
a	Assistant Secretary of Defense (Program Analysis and Evaluation)
a	Assistant Secretary of Defense (Force Management and Personnel)
a	Director, Operational Test and Evaluation
	Director, Program Integration
	Appropriate Committee Chairman

[a] indicates membership on the Defense Resources Board

Source: "Defense Acquisition Board," DODD 5000.49, September 1, 1987, pg 2.

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[4] See *Joint Requirements and Management Board*, Memorandum for Secretaries at the Military Departments and Others, from Deputy Secretary of Defense, William H. Taft, IV, 3 June 1986.

the Services and Joint Staff. The DAB oversees the acquisition process and in particular conducts the milestone reviews. The DAB is chaired by the Defense Acquisition Executive; the Vice Chairman, Joint Chiefs of Staff serves as the Vice Chairman of the Defense Acquisition Board. Program managers play a central role in the reviews by presenting the status of their programs, issues pertaining to execution and their recommendations as to resolution of the issues.

Although the DAB plays a role similar to its predecessor, the Defense Systems Acquisition Review Council, it has one important difference. Whereas the staffing of the milestone reviews in the DSARC process was unstructured and informal, the Defense Acquisition Board is supported by ten Acquisition Committees. (See Exhibit III-2 at the end of the chapter.) These committees consolidate the activities of the more than 100 committees and working groups established under the DSARC. They also resolve minor issues, and frame important issues for DAB deliberations.[5]

The ten committees have oversight responsibilities for (1) science and technology, (2) nuclear weapons, (3) strategic systems, (4) conventional systems, (5) command, control, communications and intelligence, (6) test and evaluation, (7) production and logistics, (8) installation support and military construction, (9) international programs and (10) policy and initiatives. Acquisition Committee chairmen attend meetings of the Defense Acquisition Board "as appropriate."[6]

Three of these committees review programs for milestone reviews: strategic systems, conventional systems, and command control, communications and intelligence. These committees identify and resolve program issues prior to the Defense Acquisition Board's milestone reviews.[7] Prior to meetings of the Acquisition Committees, selected individuals and organizations are briefed by the Service staff as follows:

- program status: Acquisition Committee action officer;[8]
- program baseline, independent cost estimate: Cost Analysis Improvement Group;

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5 Richard Godwin, "Statement before the Research and Development Committee, House Armed Services Committee," March 4, 1987, p. 6.

6 "Defense Acquisition Board," DoD Directive 5000.49, September 1, 1987.

7 "Major and Non-Major Defense Acquisition Board," DoD Directive 5000.1, p. 5, "Every effort shall be made through the committee process to reach consensus on issues before the DAB meeting."

8 "Major and Non-Major Defense Acquisition Board," DoD Directive 5000.1, p. 10.

- test activity results and plans: Director, Operational Test and Evaluation and the Deputy Under Secretary of Defense (Test and Evaluation);
- acquisition strategy, transition from development to production: Assistant Secretary of Defense (Production and Logistics);
- readiness and support planning: Director, Weapons Support Improvement Group;
- manpower: Assistant Secretary of Defense (Force Management and Personnel);
- threat definition: Director, Defense Intelligence Agency; and
- additional subjects specified by the cognizant Acquisition Committee chairman.

The committees have reduced the volume of review and briefings, but it remains an elaborate process. With the added structure, there have been improvements in OSD staff reviews. More issues are resolved prior to DAB meetings, and it is believed that the issues that are raised are better formulated. As a result, some progress is being made in accelerating final milestone decisions. Some officials expressed the hope that the DAB would some day become a decision-making body, so that the program decisions would be made at the time the meeting is held.

The remaining seven committees rarely meet. However, they could form the nucleus of a working-level policy body to support a redirection of the Defense Acquisition Board toward greater emphasis on overall policy and management issues in milestone reviews.

2. The Defense Resources Board

The Defense Resources Board has 20 members (as shown in Table III-3) and is thus much larger than the DAB. The Defense Resources Board is the central body within the PPB process for recommending program choices to the Secretary. Since the Under Secretary is the chief advisor on acquisition matters, and a member of the inner circle meeting on major budget issues, the structure is in place to permit him to play a major role in the PPB process. Whether or not the Under Secretary remains a member of the inner circle, is critical to his success. His influence in setting acquisition policy and addressing acquisition issues will depend importantly on whether he is merely one vote of 20 or whether he is one of the two or three who confer with the Deputy Secretary on major issues.

The DRB is the principle decision-making body at all stages of the PPB process. The Deputy Secretary has told the Under Secretary that "[he] is recognized as having primary cognizance over acquisition resources" during all phases of the PPB process.[9] Of course all this depends on execution, but the formal structure has probably gone as far as it can in giving the Under Secretary control over resources, without making him the Deputy Secretary.

Table III-3. Defense Resources Board Membership

	Deputy Secretary of Defense - Chairman
a	Under Secretary of Defense (Acquisition)
	Under Secretary of Defense (Policy)
a	Assistant Secretary of Defense (Comptroller)
a	Assistant Secretary of Defense, (Program Analysis and Evaluation)
a	Director, Defense Research and Engineering
a	Assistant Secretary of Defense (Production and Logistics)
	Assistant Secretary of Defense (Command, Control, Communications and Intelligence)
a	Assistant Secretary of Defense (Force Management and Personnel)
	Assistant Secretary of Defense (Reserve Affairs)
	Assistant Secretary of Defense (Health Affairs)
	Assistant Secretary of Defense (International Security Affairs)
	Assistant Secretary of Defense (International Security Policy)
	General Counsel
a	Director, Operational Test and Evaluation
	Director, Strategic Defense Initiative Office
	Chairman, Joint Chiefs of Staff[10]
	Secretary of the Army
	Secretary of the Navy
	Secretary of the Air Force
	Associate Director of OMB, National Security and International Affairs
By Invitation:	
	Chief of Staff of the Army
	Chief of Naval Operations
	Chief of Staff of the Air Force
	Commandant of the Marine Corps
	National Security Council Staff Representative
a	Also serves on the Defense Acquisition Board

Source: DoD Instruction 7045.7, "Implementation of the Planning, Programming and Budgeting System (PPBS)," Enclosure (I), May 23, 1984.

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9 "Authorities and Relationships...", op. cit., p. 2. See footnote 2 above.

10 The Vice Chairman has been tasked to attend DRB meetings as well.

Through his role in this process, the Under Secretary plays a major role in developing the Defense Guidance, program reviews, and budget reviews. In addition, the Under Secretary supervises a number of Defense Agencies and exercises control over a number of defense-wide program elements. He is the Department's senior advocate for these programs.

3. The Joint Requirements Oversight Council

As noted earlier, the Packard Commission recommended creation of a Joint Requirements and Management Board that would represent both military users and acquisition and technology experts. The Board would challenge requirements in light of their implications for schedule and cost. Since such a board does not exist, some observers have suggested that the function of challenging requirements should be performed by the Joint Requirements Oversight Council. We disagree with this suggestion.

The Joint Requirements Oversight Council began with the purpose of promoting inter-operability among the Services, and of examining systems that might satisfy joint requirements, that might involve joint development, or that might involve an operational interface. Since the passage of the *Goldwater-Nichols Act*, the Council broadened its perspective and is beginning to look at other major systems at the point where initial requirements are being defined.

The Council is not, and was not chartered to be, an organization that would challenge requirements. Instead it is a committee intended to review the requirements for joint programs and Service programs from an operational perspective. It does not consider the affordability of programs. Thus, it is ill-suited to consider cost implications, -- a function critical to challenging requirements.

4. Military Representation in Acquisition Decision Making

A body for representing the military operators in acquisition decision making does exist within the JCS, however. It includes the Chairman and Vice Chairman of the Joint Chiefs of Staff, supported by the Joint Staff. The *Goldwater-Nichols Act* specified that the Chairman, Joint Chiefs of Staff should

> [advise] the Secretary...on priorities of requirements identified by the commanders of the unified and specified commands [and submit] to the Secretary alternative program recommendations and budget proposals to

achieve greater conformance with the priorities [established in strategic plans].[11]

In order to perform these and similar functions specified in the DoD directives, the Joint Staff, working for the Chairman and Vice Chairman, must be able to offer advice to the Defense Resources Board and Defense Acquisition Board on the military value and the priorities for various systems, based on the cost and military effectiveness of various alternatives. The Joint Staff has been reorganized to perform such functions for the Chairman. A new branch, the Force Structure, Resource and Assessment Directorate (J-8) supports him in this role.[12] This joint perspective is needed to carry out the Goldwater-Nichols Act mandate.[13]

It should be noted that the Vice Chairman of the JCS plays a central role in linking the major acquisition-related decision-making organizations. He is the Vice Chairman of the Defense Acquisition Board, Chairman of the Joint Requirements Oversight Council, and he attends the Defense Resources Board meetings with the Chairman. Because of these positions, and his status as a senior military commander, the Vice Chairman potentially possesses considerable authority for shaping the acquisition program and processes to meet Packard Commission goals. And along with the Under Secretary, he shares a great responsibility for implementing the Commission's recommendations.

C. ACQUISITION ORGANIZATION IN THE MILITARY SERVICES

The military services acquire weapons as part of a larger process of developing additional or modernized force capabilities. In addition to acquiring weapons, they are

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11 *Goldwater-Nichols Department of Defense Reorganization Act of 1986*, 99th Congress, 1st Session, House Report 99-824, September 12, 1986, pp. 17-18.

12 See, "Remarks prepared for General Robert Herres, Vice Chairman, Joint Chiefs of Staff, for a luncheon meeting of the Washington Chapter of the Armed Forces Communications and Electronics Association, Washington, D.C., December 10, 1987, p. 3.

13 As elaborated in a directive from the Secretary, the JCS is responsible to:

> Prepare military strategy and assessments of the associated risks (to include) a military strategy to support national objectives within policy and resource-level guidance provided by the Secretary of Defense.
>
> Advise the Secretary of Defense on the priorities of the requirements, especially operational requirements, identified by the Commanders of the Unified and Specified Combatant Commands.

See, "Functions of the Department of Defense and its Major Components," DoD Directive 5100.1, Section D, "Functions of the Joint Chiefs of Staff," p. 3-8. Cf. p. 5.

responsible for training personnel to man and maintain the systems, integrating them into existing forces and doctrine, and supporting them logistically. Each of the Services has a extensive organization that is intended to integrate all of these considerations. Functional experts, and oversight personnel are assigned to help coordinate an array of activities and decisions that comprise a weapon program. The Packard Commission was concerned that these personnel were hindering the progress of programs rather than helping.

The Services were instructed to establish a new "streamlined" acquisition system, but no suggestion was made on how to change the existing structure. This process was meant to centralize policy and to shorten the organizational distance from the senior decision maker to the program manager. An idealized version of this process is presented in Figure III-2. The Packard Commission stated that the Under Secretary for Acquisition, as the Defense Acquisition Executive, should have not more than two levels between himself and the program manager.

The Services were not told to dismantle their existing Command and Requirements processes, and would have found it difficult to do so in any case. Each of the Services therefore had to settle major organizational problems. One set of problems involved the relationship of the new Service Acquisition Executive to his boss, the Service Secretary. A second set of problems related to the relationships between the Program Executive Officers and program managers, on the one hand, and the command structure, material commands, and operational users, on the other.

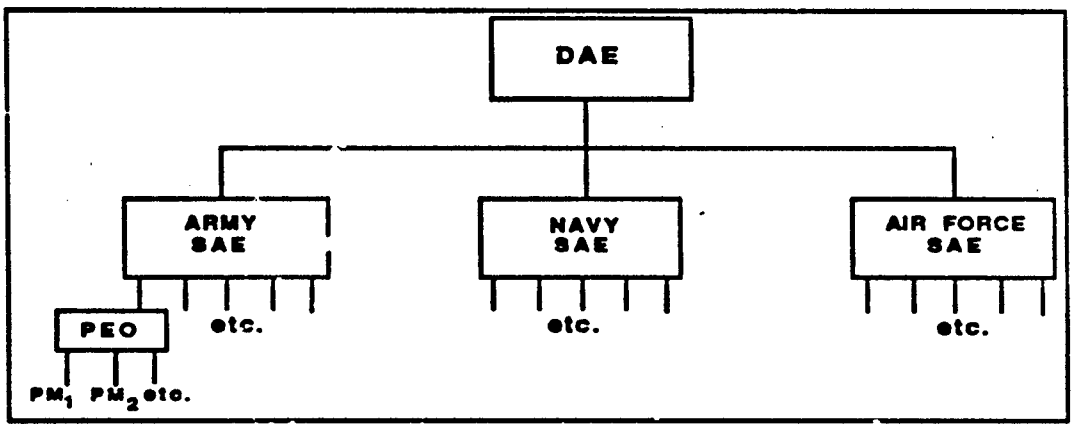

Figure III-2. Idealized DoD Acquisition Organization

Generally, the new structures are far more complex than the ideal, as illustrated in Figure III-3. There persist multiple channels of command and oversight, with interactions among them at various levels. There are many ambiguous relationships, few of them yet settled.

The implementation actions of the Services reflect independent interpretations of the best way to meet the newly imposed organizational structure, and adapt it to fundamentally different management systems. The Navy and the Air Force tried to adapt to the Commission's streamlined organizational system with minimum disruption to existing organizations, while the Army made significant changes in its existing structure. The Navy and Air Force assigned the new Program Executive Officer responsibilities to current officials--systems commanders in the Navy and product division commanders in the Air Force. This authorized the officials to *communicate* directly with the Service Acquisition Executive without going through normal channels. However, day-to-day operation is essentially unchanged.[14] In contrast, the Army Program Executive Officer positions were not made a part of the systems commands, and they separated the program managers from the systems commands and made them subordinate to the Program Executive Officers. However, they have not been staffed to perform the necessary coordinating functions.[15]

When viewed from the program manager's perspective, no Department has eliminated the layers of oversight, and the parallel channels of command. In all three Services, existing chains of command continue to be responsible for the control of program resources, the assignment of program office staff resources, and the interpretation of instructions, directives, and regulations. (See Table III-4.)

The single real change brought about by the Packard recommendations is that they have authorized more direct communication to the Service Secretariat than was routinely possible in the past.

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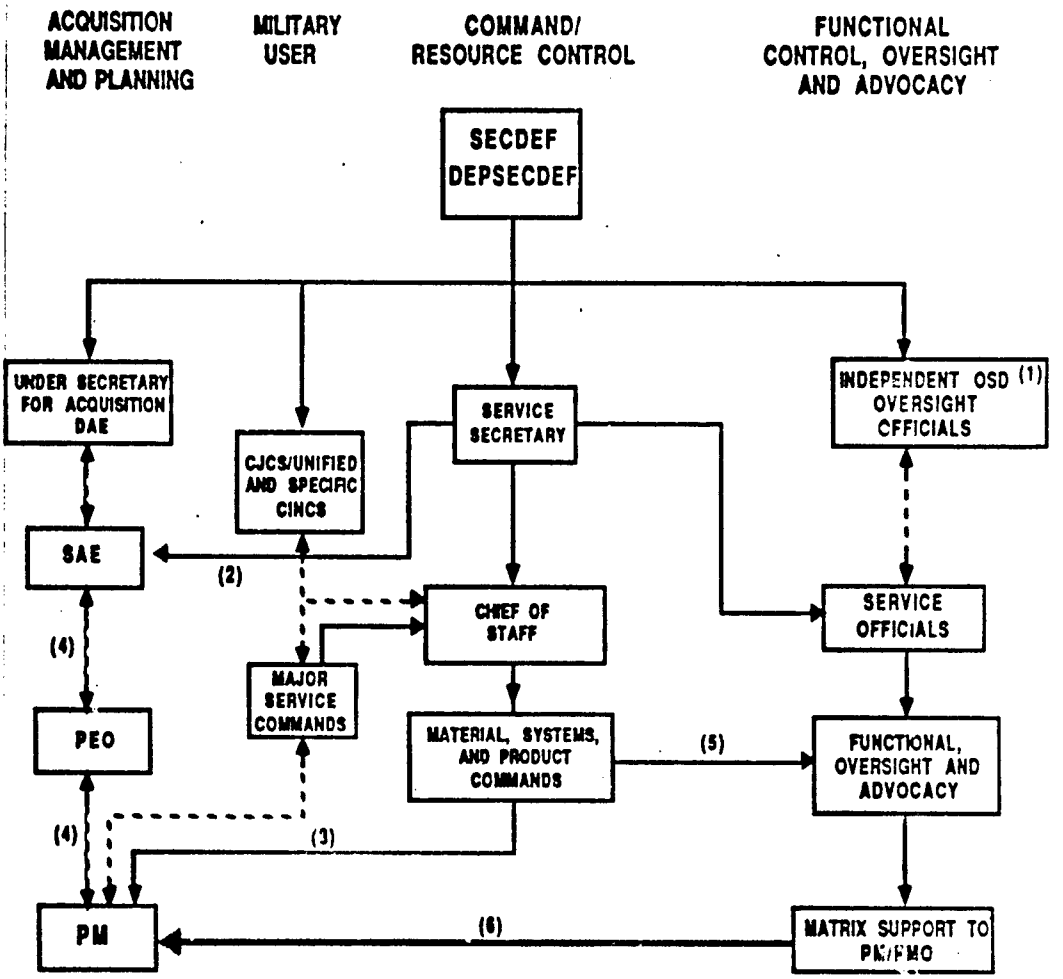
[14] For example, General Randolph, Commander of the Air Force Systems Command, makes his role clear in "Air Force Acquisition: Toward the Direct Route," *Program Manager*, September-October, 1988, p. 2-8.

[15] The Army, in setting up its new management chain, explicitly precluded autonomous staffing for the Program Executive Officers' offices. See, "Implementation of the Program Executive Officer (PEO) Concept," Memorandum for Commanding General AMC and others, from James R. Ambrose, Army Acquisition Executive, April 29, 1987.



Notes:

(1) Includes Comptroller, Inspector General and Director, Operational Test and Evaluation
(2) For acquisition this a communication and support link.
(3) In the Army this a communication and support link.
(4) In the Army this is a command link.
(5) In the Navy some functions in this category are within the Service Secretariat.
(6) In this Air Force this support (in terms of personnel) is ordinally assigned on a long term basis to project offices.

Figure III-3. Acquisition-Related Chains of Authority And Communication with the Department of Defense

Table III-4. Chains of Command and Oversight

	Acquisition Communication to DAF	Control of Program Resources	Control of Program Office Resources	Enforcements of laws, regulations directives, standards	Promotion and Assignment of Project Personnel
Army	Through PEO and SAE	Service Secretary/ Chief of Staff	Army Materiel Command	Army Materiel Command through Functional Channels	Chief of Staff
Navy	Through PEO and SAE	Service Secretary/Chief of Naval Operations (CNO)	Systems Commands	SAE, Systems Command through Functional Channels	CNO or Systems Commands depending on speciality
Air Force	Through PEO and SAE	Service Secretary/ Chief of Staff	Air Force System Command, (AFSC), Product Division functional channels	AFSC, Product Divisions through functional channels	Commander AFSC depending on specialty

The interviews reveal a diversity of opinion on these changes among people involved in the acquisition process. At the highest levels--officials in OSD and the Service Secretariats--each official believes that his organization has implemented the legislation and directives in the best way but that the other organizations have not. These officials are convinced that the changes they have made have improved the system for themselves and for subordinates. Service officials think things have not improved much in the Office of the Secretary of Defense, and some think things are worse. The major complaints are that the process of getting a decision from OSD is longer and more complex now that OSD has established Committees, that there is a reluctance to make decisions in OSD, that decisions in OSD are not firm, and that there are too many advocates of single interests making demands--effectively the price of their support.

Among lower ranking service officials--Service Program Executive Officers and program managers--the view is different. These people generally consider the changes to have been inconsequential. Some people think the changes have made things a little worse; some think things are a little better.

The Services have reorganized as if they did not realize there was a functional problem to be resolved, or any conflict between the Packard principle of decentralized program execution and their existing procedures. The reorganizations that have occurred have improved the channels of communication, but the control of everything that is important to the program manager has remained essentially unchanged. Control of

resources for programs has not changed at all, in any of the Services. Review procedures for compliance with laws, regulations, and directives; personnel assignments; and personnel evaluations are all outside the control of this new "streamlined" chain. And--apart from reduced briefing requirements--program managers consider their task about as difficult as ever.

The Services cannot be said to have violated the letter of their instructions from the Secretary of Defense in executing their reorganizations or in managing their programs. For example, DoD Directives say that "the Government program manager shall...have authority and be accountable for determining what requirements should be incorporated in the contract, *subject to appropriate review by the established DoD and cognizant DoD Component (Service) review procedures.*" [emphasis added].[16] The italicized phrase admits demands by any single-interest advocate, any functional manager or any commander.

To continue with such wording, which may be necessary to conform to law and regulation, may require as an offset someone in authority at the OSD and Service level who will exercise good judgment regarding what is "appropriate review" for each program--a "program manager advocate" one might say. Implicitly, one might assume that the Service Acquisition Executives and the Under Secretary are serving that function, but it has not yet worked out that way.

D. SUMMARY

The DoD has created new acquisition positions that set up a new chain of communication and, in limited cases, of authority. Apart from senior Service officials, participants in the process do not yet see major changes in action as a result of the creation of the new organization.

Within the JCS, organizational changes have created the real prospect of bringing the joint military perspective to bear in decision making. These changes include: the creation of the position of the Vice Chairman of the Joint Chiefs of Staff; participation of the Chairman of the JCS and the the Vice Chairman in the Defense Resources Board and the Defense Acquisition Board; and the creation with the Joint Staff of analytical capabilities to support JCS participation in acquisition decision making.

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16 *Acquisition Streamlining*, DoD Directive, 5000.43, January 15, 1986, p.3.

The Under Secretary's authority has been defined through experiences; under the current directives his decisions remain subject to appeal to the Secretary or his Deputy, so his real authority depends on the degree to which they back him up.

The appropriate role of the Under Secretary's staff is still being worked out, but a structure is in place to emphasize mission-wide analyses and long-range planning.

In the Services, some improvements in communication appear to have occurred as a result of organizational changes. However, it appears the reorganization has not substantially changed or clarified lines of authority for things that matter: resources, promotions and assignments, and functional support. Hence, program managers do not feel they enjoy any increased authority, and see their jobs as being about the same as they have been.

Exhibit III-1. Duties and Precedence of Under Secretary of Defense For Acquisition

Sec. 901. DUTIES AND PRECEDENCE OF UNDER SECRETARY OF DEFENSE FOR ACQUISITION

Section 133 of title 10, United States Code (as redesignated by section 101(a) of the Goldwater-Nichols Department of Defense Reorganization Act of 1986 (Public Law 99-433)), is amended to read as follows:

"§133. Under Secretary of Defense for Acquisition

"(a) There is an Under Secretary of Defense for Acquisition, appointed from civilian life by the President, by and with the advice and consent of the Senate. The Under Secretary shall be appointed from among persons who have an extensive management background in the private sector.

"(b) Subject to the authority, direction, and control of the Secretary of Defense, the Under Secretary of Defense for Acquisition shall perform such duties and exercise such powers relating to acquisition as the Secretary of Defense may prescribe, including-

"(1) supervising Department of Defense acquisition;

"(2) establishing policies for acquisition (including procurement, research and development, logistics, developmental testing, and contract administration) for all elements of the Department of Defense;

"(3) establishing policies of the Department of Defense for maintenance of the defense industrial base of the United States; and

"(4) the authority to direct the Secretaries of the military departments and the heads of all other elements of the Department of Defense with regard to matters for which the Under Secretary has responsibility.

"(c) The Under Secretary-

"(1) is the senior procurement executive for the Department of Defense for the purpose of section 16(3) of the Office of Federal Procurement Policy Act (41 U.S.C. 414(3));

"(2) is the Defense Acquisition Executive for purposes of regulations and procedures of the Department providing for Defense Acquisition Executive; and

"(3) to the extent directed by the Secretary, exercises overall supervision of all personnel (civilian and military) in the Office of the Secretary of Defense with regard to matters for which the Under Secretary has responsibility, unless otherwise provided by law.

"(d)(1) The Under Secretary shall prescribe policies to ensure that audit and oversight of contractor activities are coordinated and carried out in a manner to prevent duplication by different elements of the Department.

"(2) In carrying out this subsection, the Under Secretary shall consult with the Inspector General of the Department of Defense.

"(3) Nothing in this subsection shall affect the authority of the Inspector General of the Department of Defense to establish audit policy for the Department of Defense under the Inspector General Act of 1978 and otherwise to carry out the functions of the Inspector General under that Act.

"(e)(1) With regard to all matters for which he has responsibility by law or by direction of the Secretary of Defense, the Under Secretary of Defense for Acquisition takes precedence in the Department of Defense after the Secretary of Defense and the Deputy Secretary of Defense.

"(2) With regard to all matters other than matters for which he has responsibility by law or by direction of the Secretary of Defense, the Under Secretary of Defense takes precedence in the Department of Defense after the Secretary of Defense, the Deputy Secretary of Defense, and the Secretaries of the military departments."

Source: "Defense Acquisition Improvement Act of 1986," Title IX-Procurement Policy Reform, of the National Defense Authorization Act For Fiscal 1987, Conference Report to accompany S.2638, House of Representatives, Report 99-1001, 99th Congress, 2nd Session, October 14, 1986, pp. 98-99.

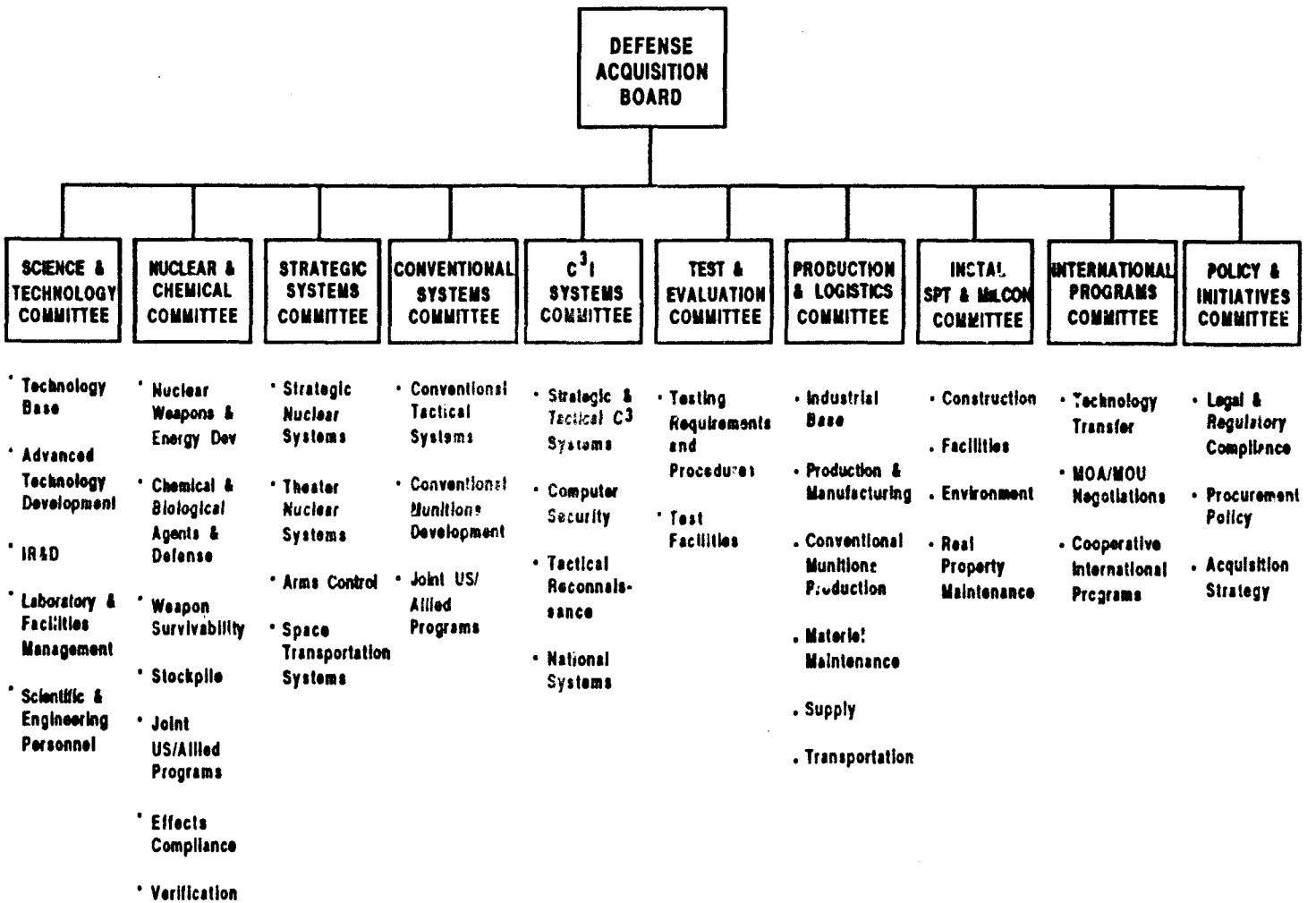

Exhibit III-2. Acquisition Committees Supporting The Defense Acquisition Board

IV. DECISION-MAKING PROCESSES

The Packard Commission recommended that the DoD adopt decision-making processes that would assure programs are defined to be cost-effective, and would reflect war-fighters needs. It also recognized the importance of adequate and stable program funding. The specific recommendations are summarized in Table IV-1.

Table IV-1. Packard Commission Recommendations: Decision Making

Use Technology to Reduce Cost

- Require Early Testing and Prototyping to Explore Options and Facilitate Trade-offs
- Choose State-of-the-Art Technologies Only When Cost-Effective

Balance Cost and Performance

- Challenge "Requirements"

Stabilize Programs

- Baselining
- Develop Budget Constrained Program Options
- Congressional Five-Year Budget Level; Two-Year Budget
- Congressional Milestone Funding of Programs
- Multi-year Procurement

Implementation of these recommendations falls within the domain of the decision-making organizations described in the preceding chapter (the DAB, JROC, and DRB), and relates to the department's two principal decision-making processes: the acquisition process, in which programs are developed and produced; and the Planning, Programming, and Budgeting System, which allocates resources. This chapter provides an overview of the operation of these two processes, and describes how they have changed in response to the Commission's recommendations.[1]

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1 In this paper, the more generic word "process" will be used rather than "System" to make clear that the description encompasses more than the formal "Systems."

A. DOD ACQUISITION DECISION-MAKING PROCESS

The Packard Commission recommendations highlighted the need to explore a wide range of options for meeting military operational needs, and to focus on solutions that are cost-effective. As discussed in Chapter III, the principal forum for making these decisions for major programs is the Defense Acquisition Board (DAB).[2] This Section describes the Board's functions in acquisition decision making in relation to the life-cycle of a major program, and then assesses how well its current operation conforms to the Commission's recommendations.

In principle, the DAB serves three major purposes. First, it provides a forum for OSD oversight of major weapon programs. The DAB process keeps OSD officials abreast of problems and progress on major weapon programs.

Second, along with the newly consolidated staff committee structure, the DAB provides a mechanism for organizing and disciplining OSD staff involvement in program matters; the Under Secretary can use the DAB and committees to define the oversight functions of his staff. It should be noted that the DAB offers the program manager an opportunity to discuss his program with top level managers; hence depending upon the approach taken by the Under Secretary, the DAB could be a forum for problem solving, or just another hurdle for managers to get over.

Finally, the DAB offers the Under Secretary a way of disciplining the acquisition process to ensure that programs are being run according to the Packard Commission principles. In particular, at the appropriate times he should emphasize the need to explore options within a reasonable range, and the need to prototype and test them. If he insists on informed cost-performance trade-offs, then the program manager will develop the needed information.

Although the DAB reviews programs, it must be noted that it does not directly approve them, nor does it allocate resources for them. The DAB advises the Secretary of Defense, who makes the final decision on whether a program should move to the next phase of the acquisition process. Funding for the program depends on program and budget

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2 The DAB is chaired by the Defense Acquisition Executive, who is the Under Secretary of Defense for Acquisition. A program is subject to milestone review by OSD when it involves significant funding ($200 million for research, development, test, and evaluation; or $1 billion in procurement dollars (1980 dollars)). They may also be eligible for review because of urgency of need, development risk, joint funding, significant Congressional interest, or other considerations.

Major defense acquisition programs are designated by the Secretary of Defense, on recommendation of the Defense Acquisition Executive, as Defense Acquisition Board programs or as Component programs. Designation as a Component program implies that the authority to make milestone decisions is delegated to the Component head. The description presented in this paper refers to the former category.

decisions handled by the Defense Resources Board. Of course, many DAB members are also Defense Resources Board members, so the information gained in the milestone review is likely to be considered in resource decisions.

Extensive documentation is required in support of the acquisition decision-making process. Cognizant committees and DoD officials begin their reviews 3 to 6 months before the DAB. Documents are submitted in draft form by the component to the Defense Acquisition Executive and the cognizant committee chair three months before review by the acquisition committee. Comments of the Defense Acquisition Board members are transmitted to the component two months before the meeting of the Defense Acquisition Board, and the component transmits final updates of the documentation to the Defense Acquisition Executive and the cognizant acquisition committee chairman three weeks before the DAB's meeting.

1. Programs and Milestones

DAB oversight consists of a discrete sequence of decision points, referred to as *milestones*.[3] These reviews are keyed to broad phases of a program, as described below. Each decision milestone focuses on a wide range of issues, including both the work accomplished in the phase prior to the milestone and plans for the phase to follow the milestone. A milestone is generally not a go, no-go decision point; instead, if aspects of the documentation or the program itself are unsatisfactory the program manager is directed to fix them.

Figure IV-1 shows the relationship between milestones and the life cycle for a hypothetical program. The figure displays the phases of the program, the milestones at which the program is reviewed, and a cumulative spending profile. It illustrates an important relationship between the acquisition process and the resource-allocation process. A small fraction of program dollars are spent in the first phases of a program, prior to Milestone II; however, the engineering design decisions made in these early stages will largely determine the eventual costs of production, maintenance, and operation. In most cases these costs extend well beyond the five-year planning horizon of the current resource-allocation process. Hence, acquisition decision makers must link near-term acquisition decisions with long-range considerations of affordability.

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3 "Major and Non-Major Defense Acquisition Programs," DoD Directive 5000.1.

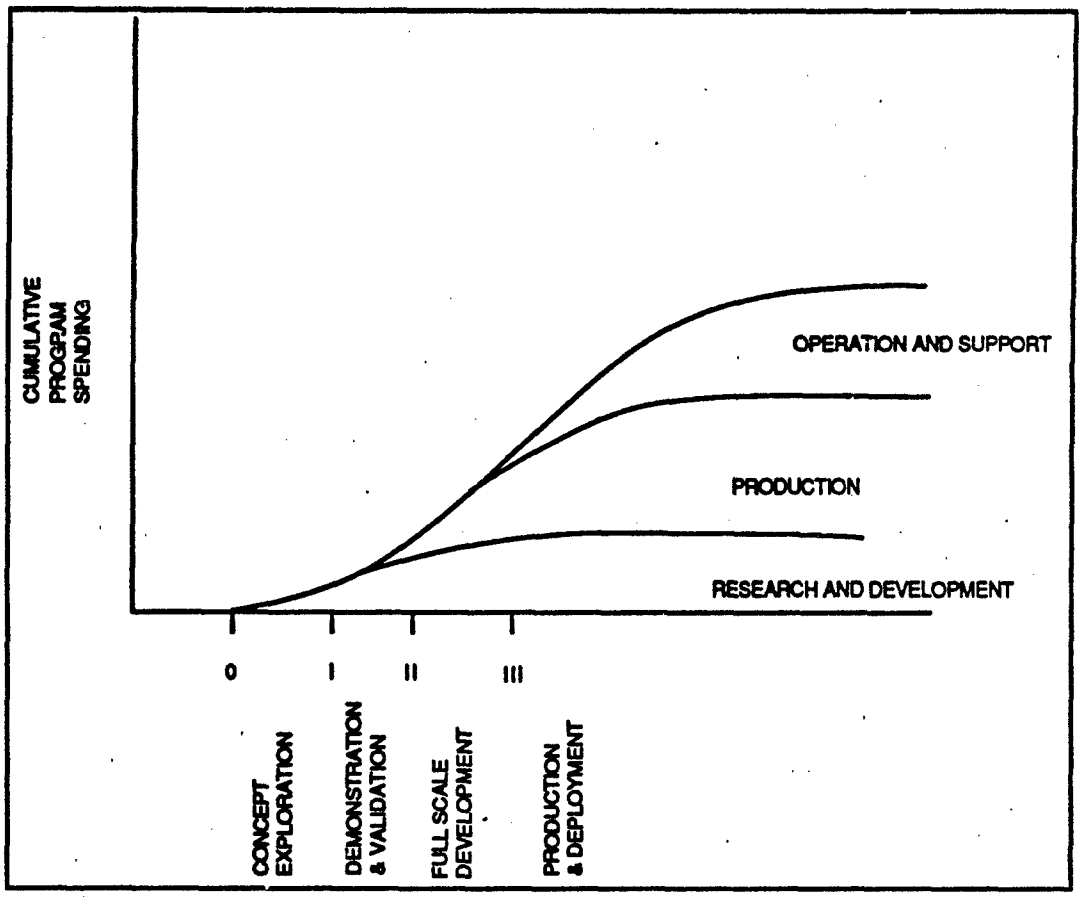

Figure IV-1. Life Cycle Of A Major Program

It is useful to consider the milestone decisions in the context of what is happening in a program, because the relevant financial and technical issues change over the life of the program. The steps in the process are summarized in Table IV-2. The remainder of this section briefly discusses the early milestones, and emphasizes the review issues relating to enforcement of the Packard Commission recommendations.

A program begins officially at Milestone 0, in which a new mission need is formally acknowledged. In principle, Milestone 0 kicks off the concept exploration phase, which includes a study of options for meeting the need. In practice, however, the sponsoring Service or component usually has a good idea of what it wants to buy, because the Services maintain extensive "requirements" exploration activities, which are generally run outside of an official acquisition program. These activities include the work of many Service and DoD labs, and contractor and government research, design, operational planning, intelligence, or study activities. These requirements activities constitute an informal and diverse network in which military applications of technology are explored,

opponent capabilities are examined, and research in military science suggests new tactics, strategies or missions.

Table IV-2. A Hypothetical Program and Milestone Review

Milestone	Review Issues	Baseline Agreement	Subsequent Phase[1]		
			Tasks	Time Frame	Percent of Overall Program Cost
0 Program Initiation	Is there mission need? Is there a good plan to proceed?	No	Concept Exploration: Systems Analyses Studies of alternatives.	1-2 years	<1 pct
I Concept Selection	What concepts should be explored? Is there a good plan to proceed?	No	Demonstration and Validation: Prototyping and testing of critical technologies and components.	2-5 years	1 pct
II Program Go Ahead	Is the program cost effective; have appropriate options been explored; have cost performance trade-offs been performed? Is acquisition strategy adequate?	Yes	Full Scale Development: Operational testing; transfer from development to production. Low rate production.	3-6 years	10 pct
III Production Ratification	Is program adequately defined to proceed to production? Are appropriate strategies and policies being followed? Are test results adequate and supportive?	Yes	Full-Rate Production: Production for fielding; continued testing. Deployment: Support and Operation	10+ years	90 pct

One purpose of this milestone is to ensure that the sponsor has developed an adequate plan for exploring options during the program's concept exploration phase, and that the options being explored are within overall guidance. OSD program reviews do not directly influence this "requirements" process, but they can influence the translation of its activities into programs. For example, in this summer's Milestone 0 reviews of new programs for the FY 1990 budget, the Under Secretary and the Vice Chairman of the JCS enforced a policy of limiting the scope of their approval to the mission need, rather than

allowing specific designs and concepts to be approved. Although the Services had come in with specific hardware concepts, these decision makers in effect forced them to consider other options. Such actions help ensure that the review process does not allow options to be foreclosed early in the process.

When Milestone I is reached, the range of potential solutions to a mission need has been narrowed by systems analysis studies, and the subsequent phase focuses on demonstrating and validating concepts. The Milestone I review emphasizes procedures appropriate for this phase, such as prototyping and testing high-risk technologies. During this phase, many technical issues are explored, and presumably, the process of exploring cost-performance trade-offs can begin. Hence, an important consideration for implementing the Packard Commission recommendations is to ensure that the program manager has developed a good prototyping and testing plan for exploring a range of alternatives.

Milestone II begins the phase of full-scale development of the proposed system, or of competing systems. At this milestone, the range of alternatives has been narrowed considerably, and resource commitments generally increase dramatically because hardware fabrication is beginning. This phase continues the process of exploring options and developing data for cost-performance trade-offs.

Milestone III is the decision to begin full-rate production. At this point the design should be mature, and the costs and performance characteristics relatively well understood. In principle, this milestone represents a major decision point, because the bulk of program spending occurs afterwards. However, by the time a program reaches this point there generally is no turning back, so the major focus is on a range of acquisition strategy and policy issues, rather than on the core issue of whether the resource commitment should be made to begin production.

Subsequent milestones deal with issues of supporting equipment in the field, and with decisions on program upgrades. These milestones were added by Under Secretary Godwin; there have been no meetings for either of them yet. (See Exhibit IV-1 at the end of the chapter.)

In sum, the DAB offers a number of opportunities for the Under Secretary to review and pass judgment on the conduct of major programs. Hence, it provides an important vehicle for shaping the conduct of major programs. The remainder of this section considers how this authority has been used in recent years, and the extent to which it has promoted the Packard Commission's goals relating to prototyping, testing, cost-performance trade-offs, and baselining. The review shows there have been some

improvements; however, the process does not presently provide the kind of informed cost-performance trade-offs the Packard Commission recommended. In the main, the Defense Acquisition Board milestone review process is generally acknowledged to be similar to the Defense Systems Acquisition Review Council it replaced.

2. Prototyping

Prototyping is not a recent innovation. During Mr. Packard's tenure as Deputy Secretary of Defense (1969-1972), prototyping was enshrined in the phrase "Fly Before You Buy," and embodied in such well-known competitive programs as the A-9/A-10 and YF-16/YF-17 prototypes.[4] But the Packard Commission believed that the concept had become dormant and needed to be resurrected. Many in the Pentagon will say, on the contrary, that prototyping has been going on all along, albeit at the component and subsystem level more often than at the system level, and not always on a competitive basis.

Neither the Packard Report nor the recent competitive strategy legislation dictated that prototyping had to be at the system level, only that it should be conducted as a matter of course on all new major system developments.[5]

In its implementation directives, DoD has addressed the subject as follows:

> Competitive prototyping of critical components, subsystems, or system and early operational test and evaluation beginning in the concept demonstration/validation phase *are encouraged* and shall be emphasized.[6] (Emphasis added.)

The related instructions also state that:

> During the development of all major defense acquisition programs, CPS should be used if practicable. A CPS is defined as a strategy that requires that contracts be entered into with not less than two contractors, using the same combat performance requirements, for the competitive design and manufacture of a prototype system or subsystem for developmental test and evaluation. In addition, a CPS requires that all systems so developed be tested in a comparative side-by-side test.[7]

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4 For histories on the use of prototypes, see: Edmund Dews, Giles K. Smith, Allen Barbour, Elwyn Harris, and Michael Hesse, *Acquisition Policy Effectiveness: Department of Defense Experience in the 1970's*, The RAND Corporation, R-2516-DR&E, October 1979; and G.K. Smith, A.A. Barbour, and T.L. McNaugher, *The Use of Prototypes in Weapon System Development*, The RAND Corporation, R-2345-AF, March 1981.

5 Sec. 909, "Competitive Prototype Strategy Requirement For Major Acquisition Programs," *National Defense Authorization Act For Fiscal Year 1987*, Conference Report to Accompany S.2638, House of Representatives, 99th Congress, Report 99-1001 pp. 110-111 and 498.

6 "Major and Non-major Acquisition Programs," DoD Directive 5000.1, September 1, 1987, p. 6.

7 "Defense Acquisition Program Procedure," DoD Instruction 5000.2, September 1, 1987, p 7.

In the post-Packard Report era only three major defense programs have cleared Milestone I, where prototyping strategies are a major consideration. The Air Force's Advanced Tactical Fighter (ATF) program adopted a competitive prototyping approach at its Milestone I review on 14 October 1986. During its demonstration and validation phase the ATF will develop and demonstrate flying prototypes of airframes and engines, and will develop and demonstrate ground-based avionics subsystem prototypes.[8]

The Army's LHX helicopter program (Milestone I on 9 June 1988) will prototype major subsystems of the avionics package, known as the Mission Equipment Package "either in the laboratory or on surrogate aircraft during the demonstration-validation phase of development."[9] The air vehicle (aircraft and rotor system) will be competitively evaluated utilizing wind tunnel models but will not be flight tested during the demonstration and validation phase.

The third major system, the Navy's Advanced Air-to-Air Missile (AAAM) met its Milestone I on 17 August 1988. There is no competitive prototyping planned on this program.[10] Risk reduction will be based on "the integration of known technologies into the total system rather than new technology demonstration," using the traditional approaches of laboratory and field tests hardware-in-the-loop simulations, control test vehicles, and captive flight tests.

Thus, although the sample size is small, the prototyping response on major new systems has run the gamut from competitive system prototypes (ATF), to ground-based testing of competitive subsystems on surrogate aircraft (LHX), to no prototypes (AAAM).

DARPA's role in prototyping has not greatly changed as a result of the Commission. Some DARPA officials believe that the Commission did not understand the already significant prototyping role being played by DARPA (e.g., in non-traditional technologies such as low observables and Assault Breaker). Nevertheless, the DARPA charter was revised to include the language of the Commission Report, broadening its mission so that the prototyping role was made explicit. This prototyping could support ideas of the CINCs or OSD thus providing an alternative mechanism for developing new weapon concepts.[11]

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8 *ATF System Concept Paper*, 18 November 1986.

9 *LHX System Concept Paper*, April 1988.

10 *AAAM System Concept Paper*, 1988.

11 "The Defense Advanced Research Projects Agency," DoD Directive 5105.41, 30 September 1986.

A small shift of a few percent in resources (professional staff and dollars) was effected, and a small Prototype Office was established. There was no overall increase in DARPA's professional staff or dollar resources to accommodate prototyping. Therefore DARPA has not embarked on an aggressive prototyping program as a result of the changes in its charter.

There have been important new prototyping initiatives since the Commission Report. Two are in highly classified areas. They differ from predecessor prototype programs in that DARPA will manage them through Milestone II rather than transferring them to the Services at Milestone I. It is expected that the shorter lines of management and the streamlined decision process within DARPA will enable these programs to progress more quickly to Milestone II. Additionally, DARPA currently plans to conduct a Pilot's Associate prototype program with the Air Force, starting in Fiscal Year 1990. This program will explore the value of artificial intelligence in the performance of pilots in single seat aircraft, with potential use in the Advanced Technology Fighter.

In sum, DARPA senior management believes that they have had a very positive attitude toward prototyping, both before and after the Packard Report. While the DoD has not provided additional resources (professional staff and funds) to increase emphasis on prototyping, the vehicle exists to do so.

3. Testing

The Commission emphasized the need to test weapon prototypes in order to obtain valid data on operational characteristics. To a large extent, the Packard proposals in the realm of testing were already being implemented when the Report was published. The independent Operational Test and Evaluation Directorate had been established as a result of earlier legislation.[12] Since that time there has been substantial progress in implementing the concepts of earlier operational testing in the acquisition cycle, and in using the results to confirm combat effectiveness and operational utility prior to full-rate production.

The professional staff of the new Directorate has virtually doubled (from 16 to 30) since early 1986, and at all levels of the DoD acquisition organization there is evidence that its mandate from the Congress is being implemented. It can be said that a true cultural change in the conduct and utilization of operational testing is being achieved. Examples include testing in such programs as SADARM, Rail Garrison Peacekeeper, and Forward Area Air Defense Non-line of Sight Programs.

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12 *National Defense Authorization Act of 1984.*

The necessary institutional machinery has been put in place, and the authority of the Director for Operational Test and Evaluation as the DoD point man has been established, recognized, and accepted by the Services. The remaining question relates to the quality of the tests being accomplished: with limitations in test resources (especially test articles, test facilities, and test instrumentation) and the inherent inability to fully replicate the combat environment, how valid are the test results rendered at the acquisition decision milestones?[13]

A more recent development is the requirement for live fire testing to examine the survivability of weapon systems. DoD has taken a number of steps in response to the Live Fire Test and Evaluation (LFT&E) legislation. First, within the Office of the Deputy Director of Defense Research and Engineering a new office for Test and Evaluation has been established. The Test and Evaluation Committee (a permanent committee of the DAB) has published guidelines that were forwarded to the Service Acquisition Executives in June 1988. Meanwhile, tests were conducted on the Bradley fighting vehicle and the M1 tank, both of which are in full- rate production. (Ensuing design and configuration changes in the Bradley have reduced vulnerability by a factor of 2 to 2.5.) Finally DoD plans to conduct LFT&E on systems that have not yet reached full-rate production.

In sum, the department has made significant progress in the area of test and evaluation in recent years. While these efforts were not directly the result of the Packard Commission recommendations, they support its goals of more realistic testing.

4. Cost-Performance Trade-offs

The Packard Commission clearly envisioned a development and decision-making process in which a number of options for meeting military requirements would be explored, and in which choices among them would be based on cost-performance trade-offs. Options could include developing alternative new systems, purchasing more of systems currently in production, and upgrading old systems.

Presently, there exists no comprehensive mechanism for making such trade-offs. The commission intended that for major programs, program managers would explore options and make decisions subject to the review of the Joint Requirements Management Board. However, our review concludes that this process is not in place. Like its predecessor, the Defense Systems Acquisition Review Council, the DAB reviews

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13 A recent GAO study criticizes the test programs for these reasons. See General Accounting Office, "Weapons Testing: Quality of DoD Operational Testing and Reporting," GAO/PEMD-88-32BR, July 1988.

programs individually and generally is not presented with a range of options for meeting mission needs. Therefore it does not have the breadth of focus necessary for considering trade-offs among substitute weapon systems such as the F16 vs. the F15, or the F18 vs. the F14.

Moreover, the DAB often takes a very narrow perspective on financial issues. The DAB examines program "affordability," but this is generally addressed in the limited terms of "program executability," which is to say that the DAB determines whether the program is adequately funded in the five-year program to carry out the proposed work. Even by this standard, many programs that are not executable are reported to have passed milestones reviews. If the five-year program estimates are optimistic in the out-years, this "program executability" criterion biases acquisition decision making by making it look as though production rates on new systems will be higher than realistically can be expected. Decisions based on over-optimistic projections of production rates reduce projected costs and bias decisions toward starting new programs rather than upgrading existing systems.

Another deficiency in the program executability criterion is that it does not look beyond the five-year planning horizon to determine the long-term affordability of programs, whereas the major resource implications of these decisions may be well beyond this horizon. It is argued that for this reason many more programs are being carried on the books than can be funded at proposed rates of production. This is not necessarily bad in itself if a process were developed to weed out programs at some point before major resource commitments are made; however the current process does not do this, so programs typically are forced to fit in the budget by cutting down production rates.

The Defense Resources Board is not presently ideally suited for the job either, because it generally focuses on the five-year program and the next budget. In sum, the lack of a long-term affordability perspective constitutes a significant disconnect between the resource-allocation process and the acquisition decision-making process. The breakdown is one of time frames--the *long-term* resource implications of program decisions made today need to be linked to the resources likely to be available when the programs will be ready for production and fielding.

The recent milestone review of the Army's new light helicopter provides an important counter-example, in which affordability factors led the Under Secretary to require the restructuring of the program. The program was found to be far too expensive to be affordable within reasonable budget expectations--the budget for Army aviation would have had to have grown by a multiple of approximately two in order to fund it. The LHX seems

to provide a good example of the kind of analyses that should be done when programs are being reviewed; however the long-range budget context for such analysis does not exist.

The OSD staff is working to develop a mechanism to fill this gap--the Long Range Planning Estimate.[14] This document would project the costs of current DoD programs twelve years into the future. The categories of spending will include manpower, operations and maintenance, and procurement, thus giving an overall view of the resource commitments implied by current programs. Comparing this projection with alternative projections of available funding will provide judgments of whether the current program is executable. This will give DoD policy makers a more concrete view of the prospects for defense programs, Congress a better view of the needs of the defense department, and the DoD acquisition decision makers a more realistic context for making program decisions.

5. Baselining

The Packard Commission recommended that DoD adopt baselining as a tool for oversight and control of individual projects. The Commission envisioned the baseline as a contract between the program manager and senior acquisition managers. As a contract, baselining would promote program stability by guaranteeing a program manager his funding as long as he stayed within the schedule and performance goals.

In practice baselines have served as a set of guidelines to measure progress. The Program Baseline document is introduced at Milestone I. It is prepared by the program manager and is supposed to constitute a formal agreement between the Defense Acquisition Executive, Service Acquisition Executive, and Program Executive Officer on the one hand, and the program manager on the other. It summarizes functional specifications, cost, schedule, and operational effectiveness and suitability requirements, against which the program will subsequently be evaluated.[15]

At Milestone II the agreement evolves into a Development Baseline document, which identifies measurable performance parameters that are critical to mission success, provides a program milestone schedule leading to an initial operating capability, and states goals for total development and unit production costs. At Milestones III and IV, it becomes a Production Baseline document, which incorporates a full set of *demonstrated* performance parameters (together with acceptable limits of variation of these parameters),

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14 The requirement to develop a Planning Estimate is included in a memorandum from Deputy Secretary Taft to the Defense Resources Board Members entitled "PPB Schedule," July 14, 1988.

15 "Major and Non-Major Defense Acquisition Programs," DoD Directive 5000.1, September 1, 1987, p. 3; and "Baselining of Selected Major Systems," DoD Directive 5000.45, August 26, 1986, p. 3.

validated estimates of the remaining program costs and the average unit production cost, and a production delivery schedule.

The Defense Acquisition Executive Summary monitors baselines. The purpose of the DAES as described in a recent OSD memo is:

> ...to serve as an early warning system for the acquisition management process, and as a means for continuing oversight of programs by OSD. If working properly, the system should identify emerging or potential problems in major acquisition programs before they become serious and threaten achievement of baseline requirements. At all stages, the Program Baseline defines thresholds which, if breached, initiate a review of the program.[16]

Thus far, baselining has not contributed significantly to program stability. Observers have noted that the 1988 PPB cycle will require a large number of baseline changes, because there have been large changes in the overall budget level. During the 1988 PPB cycle (leading to the 1990-1991 budgets and 1990-1995 program) baselines have not been renegotiated, and will not be until submission of the President's budget. At that time, the Services will have to propose large numbers of fact-of-life changes in the baselines.

In conclusion, baselining, whatever other management and reporting purposes it may serve, does not represent an agreement between the program manager and those who fund programs -- in the DoD, the rest of the Executive branch, or the Congress. The baselines are being used as management indicators, but do not serve as effective contracts as envisioned by the Packard Commission.

B. THE RESOURCE-ALLOCATION PROCESS

The DoD Planning, Programming and Budgeting System is conducted under the general oversight of the Defense Resources Board. Resource decisions are recommended by the Board, and decisions are made by the Secretary of Defense or by his Deputy who serves as the Board's chairman. As the Department's resource-allocation forum, the Defense Resources Board has the lead responsibility to implement the Packard Commission's recommendation to provide adequate and stable funding for acquisition programs.

The Commission advocated a number of changes in the PPB system, and in the Congressional budgeting process. Its recommendations relating to the overall federal

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16 "Defense Acquisition Executive Summary (DAES)," Memorandum for Distribution, from Thomas P. Christie, Director, Program Integration, May 2, 1988.

budgeting process for defense, which involved significant changes in developing national level strategies and plans, were partially implemented in the *Goldwater-Nichols Act.* These recommendations had been intended to instill greater overall stability in the defense budget by providing a mechanism for the President and Congress to reach a consensus on budget trends. One major result is that the DoD PPB process now operates on a two-year budget cycle, and submits a two-year budget to the Congress. Congress, however, continues to use an annual budget cycle for defense. Congress also has declined to provide five-year financial guidance as recommended by the Commission. The failure to implement these recommendations means that there have been no improvements made to increase overall budget stability for defense at the national level.

The Commission's recommendations for DoD advocated that decision makers promote stability within the Department, and added some budgeting mechanisms that could contribute to stability for individual programs. The following sections describe the changes in the budget process, and then assess the extent to which these changes have fulfilled the Packard recommendations for stabilizing budgets and individual programs. This discussion is keyed to the principal phases of the process, which are summarized in Table IV-3.

1. The Planning Phase

During the planning phase of the PPB process, development of the Defense Guidance is undertaken by OSD with participation by the Chairman of the JCS, the Services and other components, Commanders-in-Chief of the Unified and Specified Commands, and the Office of Management and Budget. The early stages of this process have changed greatly in response to the Packard Commission and the *Goldwater-Nichols Act.* The major change is that the process adds resource-constrained planning in addition to "needs" planning in order to obtain military judgement from the Chairman of the JCS on

Table IV-3. OSD Role in the Planning Programming and Budgeting Process

PHASE	OSD ROLE	DOCUMENTS	PLANNING HORIZON
Planning and Guidance	Provides Policy and Fiscal Guidance for Services Sets Objectives for Service Five-year Programs	The National Strategy is Published by the President The Chairman of the JCS Publishes a Constrained Force Plan Plus Net Assessments. Secretary's Guidance and Objectives are Documented in the Defense Guidance	5 years for Program Objectives
Program Review	Secretary and Staff Review Service Program Proposals	Proposals are Submitted in Program Objective Memoranda Staff Assessments and Options are Provided in Issue Books Decisions are Documented in Program Decision Memoranda	5 years
Budget Review	Secretary and Staff Review Specific Budgets to Ensure Conformity with Earlier Decisions and Fiscal Guidance	Service Proposals are Submitted in Budget Estimates Options and Decisions are Provided in Program Budget Decisions	2-year Budget

program priorities. In the current process, the Joint Staff estimates force requirements for carrying out national strategy with and without resource constraints. It then prepares a net assessment for these alternative forces. These serve as a basis for the President to set the overall guidance for the department, which in turn is incorporated in the Secretary's Defense Guidance.

The Defense Guidance contains scenarios for force planning, long-range force goals, and fiscal guidance. Specific guidance is provided in the form of mid-term objectives to be accomplished within the five-year planning period, and long-term goals to be accomplished subsequently. Fiscal guidance provides a top-line allocation of resources

for use by the components in the programming phase.[17] The Defense Guidance should constitute the Secretary's comprehensive statement of direction to the Services and other DoD components.

2. The Programming Phase

In the programming phase, the Services and other DoD Components develop Program Objective Memoranda (POMs) based on the Defense Guidance. Service programs detail how they would use the resources stipulated in the Fiscal Guidance to support the policy and strategy of the Defense Guidance. These programs are reviewed by the DRB with participation from the Chairman of the JCS, the Joint Staff, the CINCs, and the Services and other DoD Components. The staff prepares issue books for the Deputy Secretary with proposals to change the programs outlined in the Program Objective Memoranda, together with analyses of the impact and costs of these alternatives.

The rationale for changing the programs is to achieve better alignment with the objectives and goals of the Defense Guidance. However, the Defense Guidance in fact has little direct impact on the Service programs, because it is stated too generally, or because it includes more objectives than can be funded. The program reviews conclude with decision memoranda issued by the Deputy Secretary to the Services, which are used to prepare their budget submissions.

The program review provides one link between the resource-allocation process and the acquisition process. The PPB implementation directive states that the milestone decisions made by the Secretary of Defense for the acquisition process are required for consideration of programs in the PPBS. During the review, OSD staff consider whether the progress of major programs, as indicated in milestone reviews, is consistent with the Service's resource requests. In addition, a relatively recent addition to the process is the joint consideration by the Defense Acquisition Board, Joint Requirements Oversight Council and Defense Resources Board of new program starts (Milestone 0) during the program review. Hence, the Under Secretary and his staff are positioned to ensure that decisions made in the program are consistent with the milestone reviews of major programs in the Defense Acquisition Board.

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17 In recent years the fiscal guidance has been issued separately.

3. The Budget Phase

The Budget Phase commences when the Components submit their Budget Estimates to the Secretary. The formal purpose is to "scrub" the estimates to ensure that programs are well-defined and cost estimates are firm. The budget phase constitutes the Secretary's last word on the programs prior to sending the budget to the President and provides a final opportunity to appeal an earlier decision or to introduce a surprise with little chance for staff review. The approved budget is reviewed by the President, and the revised submissions are incorporated in the President's Budget for transmittal to Congress.

4. Budget and Program Stability

If there was a single theme in the Packard Commission recommendations relating to the planning and budget process, it was the need to increase the stability of funding for defense programs. Our review shows that no significant progress has been made, either at the national level by the President and Congress, or within the DoD decision-making process.

In theory the process instituted by Goldwater-Nichols provides a logical framework for the President to reach a consensus with Congress on long-term strategic issues, and for DoD to translate their directions into specific programs and specific budget requests; in reality the process does not work this well--at any level.

At the macro-level, there has been great instability in the overall defense budget. Throughout the middle of the 1980's defense budget projections have been repeatedly optimistic. For example, in 1987 the DoD's internal five-year projection of funding assumed an annual real increase of 5 percent per year (although there was no official Five Year Defense Program during 1987). Such large out-year funding projections made all but the most ambitious programs affordable--but in reality, the real defense budget has shrunk since then. As a result, these out-year projections provided an unsound basis for assessing the executability of individual programs.

To improve DoD's planning, Secretary Carlucci has enforced a more realistic out-year projection of 2 percent real growth; however, with Gramm-Rudman outlay restrictions in effect, even this reduced level is considered to be optimistic. Zero real growth in the overall defense budget is probably the best that can be expected. Hence, the problem of optimistic projections, documented by the Congressional Budget Office and

other observers, has continued.[18] The result is too many programs, which are stretched out and produced inefficiently.[19]

Within the DoD planning process, decision making is not disciplined to progress logically through the planning, programming, and budgeting phases of the cycle. The problems begin from the outset: the Defense Guidance has not been compelling in shaping Service programs; indeed in some recent years the guidance has been published after the programs. Issues raised in the program reviews are often not settled. The result is that the Secretary and Deputy Secretary may revisit issues three or more times during an annual cycle.

Significant changes can occur in program funding during both the program review and the budget review. There are constant efforts by proponents to overturn unfavorable decisions. Often these involved programs in which a Service was being forced to develop or buy a system which (1) supported another Service, (2) would be a potential substitute for a new system, or (3) was not a Service priority.

5. Milestone Authorization and Multi-Year Procurement

Efforts to stabilize individual programs have also fallen victim to the overall instability of the budget. The Commission recommended milestone authorization as a technique to improve program stability. In return for a commitment to adhere to the baseline agreement, the program would receive a commitment from DoD, the President, and Congress to supply the funds needed to complete the proposed next stage of the project. A small number of these programs were approved in the Fy 1988-89 budget, but no new programs are to be proposed in the FY 1990-91 budget to be submitted in January.[20] The multi-year commitment to these programs extends on to the authorizing Committees of Congress; as yet the funds still have to be appropriated each year. Milestone authorizations were intended to be used in conjunction with "Defense Enterprise Programs."

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18 *The Economic and Budget Outlook: An Update*, Congressional Budget Office, Congress of the United States, August 1988, p. xi. About $320 billion will have to be cut from the projected Federal budget in the fiscal years 1990-93 if there are no tax increases.

19 "One half of the 20 largest programs were stretched out in the 1988 budget, according to Sam Nunn. Unit costs of major weapons, he says, could be cut between 5 percent and 25 percent by more efficient production rates." Quote from, "Budgets and Bullets: Improving our Conventional Forces," Report to the Congressional Military Reform Caucus, October 3, 1988.

20 National Defense Authorization Act, Fiscal Years 1988-89, Conference Report to Accompany HR 1748, November 17, 1987, p. 33-34.

Multi-year procurement was first introduced following the Carlucci initiatives earlier in this decade. Hence it was being done before the Packard Commission re-emphasized its importance. The most recent authorization bill included twelve multi-year procurement programs. Like milestone authorization, multi-year procurement provides a good mechanism for stabilizing program funding, and for reducing contractors costs. Secretary Carlucci's FY1990 budget proposals includes multi-year funding for more than 30 weapon systems.

C. THE LINKAGE OF RESOURCE AND ACQUISITION DECISIONS

There were two basic views expressed about the relationship of acquisition and PPB. Almost everyone in OSD and the Services felt that the primary decisions of the DoD were the overall resource decisions, and that acquisition decisions should follow from rather than dictate those decisions. These people generally viewed the acquisition process as a kind of authorization process that approved the requirement and the management plan but in which the funding was a completely separate decision. Many felt that Under Secretary Godwin had been unrealistic in his expectations about how far his authority could extend.

Some individuals felt that the PPB process was reasonably straightforward and worked about as well as should be expected, given the budget uncertainties and the nature of politics and government. There was little support for any notion of fencing the acquisition portion of the program and budget or of giving the Under Secretary direct resource control. Rather, the Under Secretary's staff felt it was important for the Under Secretary to be a major player, not only in the large Defense Resources Board, but more important in the smaller meetings involving the Deputy Secretary, the Comptroller, the Assistant Secretary of Defense for Program Analysis and Evaluation, and the Service Secretaries. In sum, the recommended solution to linking resource decisions with acquisition systems is for the Secretary to give ample weight to the Under Secretary's arguments for stabilizing acquisition programs.

There was wide sentiment for disciplining the PPB process, so that acquisition decisions made earlier in the annual cycle would not be so easily overturned.

Interviewees reported that the Under Secretary has played a central role in recent PPB deliberations. For example, he participated in last December's budget review, which resulted in a $33 billion budget cut to meet Gramm-Rudman spending limits. He also was a key player in this summer's FY 1990-94 program review. The Under Secretary prepared

for these reviews with his staff, and developed integrated program issues that would balance proposed program increases and cuts.

In conclusion, some observers have said that the single most pressing need for the Department is to develop an overall program consistent with likely funding. Overall instability of the budget has undermined attempts to stabilize acquisition programs, and this instability is costly. While the Secretary must take the lead on this issue for the Department, in fact the solution lies with the President and Congress. If they can set the overall defense program on track, then the remaining issues raised in this chapter can be resolved by the Secretary.

Exhibit IV-1. Acquisition Program Documentation

Milestone 0
Mission Need Statement: a short document submitted to the Defense Acquisition Executive with or before the Component's Program Objective Memorandum in which funds are requested for a new major defense acquisition program; summarizes information about the mission, threat, alternative concepts, technology, funding and acquisition strategy Cooperative Opportunities Document: examines the possibilities for cooperation with Allied nations; assesses advantages, disadvantages of a cooperative approach Independent Cost Estimate: life-cycle cost estimate, prepared by Component
Milestone I
System Concept Paper: summarizes results of the concept exploration and definition phase; describes acquisition strategy, including identification of concepts to be carried into the concept demonstration and validation phase (and reasons for elimination of alternative concepts); establishes goals and thresholds for program costs, schedule, operational effectiveness and suitability for use at Milestone II (see Ref. 4, Enclosure 4 for format; not to exceed 12 pages, excluding five annexes) Competitive Prototyping Strategy: *no documentation is required if such a strategy is planned; the Secretary of Defense must provide written notification and a report to Congress otherwise* Test and Evaluation Master Plan defines test objectives and critical issues, specifies developmental and operational test events, identifies test resource requirements and analyzes implications of resource shortfalls, and provides a listing of currently approved evaluation criteria and critical parameters Cooperative Opportunities Document -- see Milestone 0 Independent Cost Estimate -- prepared by Component and independently by the OSD Cost Analysis Improvement Group Cost and Operational Effectiveness Analysis Report: assessment of the operational effectiveness and suitability of proposed concepts in the context of specific tasks addressed in the DoD component's mission area analysis Common-Use Alternatives Statement: provided by Service Acquisition Executive, deals with feasibility of common-use alternative systems; independent assessment is provided by JCS Program Baseline: see text
Milestone II
Cooperative Opportunities Statement -- see Milestone 0 Independent Cost Estimate -- prepared by Component and independently by the OSD Cost Analysis Improvement Group Cost and Operational Effectiveness Analysis Report -- see Milestone I Common-Use Alternatives Statement -- see Milestone I Program Baseline -- development baseline; see text Decision Coordinating Paper: summarizes results of the concept demonstration and validation phase, identifies program alternatives, and establishes explicit goals and thresholds for program cost, schedule, and operational effectiveness and suitability (see Ref. 4, Enclosure 4 for format; not to exceed 18 pages, excluding five annexes) Updated Test and Evaluation Master Plan -- see Milestone I Manpower Estimate Report: documents total number of personnel (military, civilian, contractor) required to operate, maintain, support and train for the program upon achieving full operational deployment Acquisition Strategy Report: describes plans to assure availability of competitive alternative sources from beginning of full-scale development through the end of production
Milestone III
Cooperative Opportunities Statement -- see Milestone 0 Independent Cost Estimate -- prepared by Component and independently by the OSD Cost Analysis Improvement Group Program Baseline -- production baseline, see text Manpower Estimate Report -- see Milestone II Acquisition Strategy Report -- see Milestone II Updated Decision Coordinating Paper -- see Milestone II Updated Test and Evaluation Master Plan -- see Milestone I Beyond-Low-Rate-Initial-Production Report: Director, Operational Test and Evaluation provides an assessment of adequacy of operational test and evaluation and operational effectiveness and suitability of the system; required before any approval to proceed beyond the low-rate initial production phase.

Continued

Exhibit IV-1. (Concluded)

Milestone IV
Cooperative Opportunities Document -- see Milestone 0 Independent Cost Estimate -- prepared by Component and independently by the OSD Cost Analysis Improvement Group Updated Decision Coordinating Paper -- see Milestone II Updated Test and Evaluation Master Plan -- see Milestone I Updated Production Baseline: describes program status, changes and issues
Milestone V
Cooperative Opportunities Document -- see Milestone 0 Independent Cost Estimate -- prepared by Component and independently by the OSD Cost Analysis Improvement Group Updated Decision Coordinating Paper -- see Milestone II Updated Test and Evaluation Master Plan -- see Milestone I Updated Production Baseline -- see Milestone IV

Source: "DoD Acquisition Program, Procedures," DoD Instruction 5000.2, September 5, 1987. Reference 5, pp. 12-13 contains additional details as to the content and purpose of the Test and Evaluation Master Plan.

V. REGULATORY ISSUES IN SETTING ACQUISITION POLICY

A. INTRODUCTION

The Packard Commission made a number of specific recommendations in the course of its general directions that DoD should reform regulation, expand the use of commercial products, increase the use of commercial-style competition, and revise its policies concerning technical data rights. This section reviews those specific recommendations and describes what interviewees told us about implementation to date. Then it provides recommendations for the next Under Secretary.

Two statements from David Packard's Foreword to the Commission report are especially apt here:

> Excellence in defense management will not and cannot emerge by legislation or directive....increased defense capability...comes by freeing talented people from over-regulation....
>
> DoD must displace systems and structures that measure quality by regulatory compliance and solve problems by executive fiat.[1]

Each of the above statements expresses the view that DoD will achieve the best results if it lets good people use their heads. For the most part, the detailed recommendations that follow reflect this principle. However, some of our interviewees believe that DoD practice is certain to fall short of what the Packard Commission envisioned and argue for a different means of implementation as a result. They argue that acquisition personnel are not as imaginative and knowledgeable as the Commission would like them to be and, therefore, that it is necessary to push them towards ends the Commission endorses through means it dislikes.

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1 *A Quest for Excellence*, pp. xii and xiii.

B. RECOMMENDATIONS AND ACTIONS TO DATE

1. Regulatory Reform

a. Legal and Regulatory Changes to Permit Full Establishment of Commercial Practices

The Packard Commission recommended the elimination of "those legal and regulatory provisions that are at variance with full establishment of commercial competitive practices."[2]

DoD can adopt commercial practices only to a limited degree.[3] Congress wants all federal procurement to reflect the following principles, which are not characteristic of commercial practices:

- all potential offerors must be given an equal opportunity to bid;
- procurement decisions must be objectively justifiable to the public and to others outside the agency;
- unsuccessful offerors must be given the opportunity to protest; and
- procurement decisions must on occasion support certain social goals (e.g., support of small business and "buy American").

Interviewees told us that commercial practices differ from the ones just described in several respects. First, commercial firms tend to deal with a small number of suppliers that have proven their ability to deliver what they have promised. Once such a set of suppliers is identified, a firm will not normally afford others the opportunity to bid. Second, buyers in commercial firms do not feel constrained to make decisions that would appear objective in the eyes of individuals outside the firm; they have greater latitude to exercise subjective judgment. Third, unsuccessful bidders have no right to question the rejection of their offer. Finally, legislation promoting social goals can affect the behavior of private firms, but not to the extent that such law constrains DoD.

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2 Ibid. p. 64.

3 This point was in fact acknowledged in an Appendix to the Packard Commission report. See Wendy Kirby, "Expanding the Use of Commercial Products and 'Commercial-Style' Acquisition Techniques in Defense Procurement: A Proposed Legal Framework," Appendix H to *A Quest for Excellence*. The bullets in this paragraph either quote or paraphrase Ms. Kirby.

b. Freedom From Over-regulation

In his Foreword to the Commission Report, David Packard advocated "freeing talented people from over-regulation".[4] One initiative that falls in this category involves the Defense Enterprise Programs (DEPs).

Congress has given the Service Secretaries the authority to designate certain programs as DEPs. Programs so designated are candidates for funding stability via milestone authorization. More importantly for present purposes, DEPs

> "shall not be subject to any regulation, policy, directive, or administrative rule or guideline relating to the acquisition activities of the Department of Defense other than the Federal Acquisition Regulation (FAR) and Department of Defense Supplement to the Federal Acquisition Regulation (DFARS)"

except as specified by the Service Acquisition Executive with approval of the Under Secretary for Acquisition. In addition, one clause in the law states that

> "The manager of a defense enterprise program shall be authorized staff positions for a technical staff, including experts in business management, contracting, auditing, engineering, testing, and logistics."[5]

Each of the Services has established DEPs. In addition, the Navy and Air Force have undertaken study efforts to determine which regulations should be waived at the Service level and which waivers should be requested from the Under Secretary and Congress. Our remarks below focus on results of interviews with Air Force and Army personnel.

The Air Force study effort was undertaken in response to an April 23, 1987, memo from the Under Secretary, and has gone through several stages to date. First, the four Air Force DEP offices identified some 659 regulations that exert the greatest influence on acquisition and requested waiver of 177 of these. Next, the Air Force DEP staff built a data base to determine which of these regulations could not be waived because they were necessary to implement law, the FAR, and the DFARS. (Doing so revealed that the existing regulatory system was a morass: for example, many regulations had not been rescinded even though the laws which they were written to implement had been amended and/or repealed.) Once the study team identified the regulations which could be waived by the Air Force, they asked cognizant members of Air Force staffs to comment on the

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4 *A Quest For Excellence*, p. xii.

5 Cited from the *National Defense Authorization Act for Fiscal Year 1987*, Conference Report, House of Representatives, 99th Congress, 2nd Session, Report 99-1001, p. 103.

advisability of such waivers. Staffers advised against waiving regulations that fell into their area of responsibility. Since accepting such staff recommendations would make it impossible to use DEPs as a way of testing the effects of regulatory reform, the Air Force Acquisition Executive granted either waivers or modifications for roughly two thirds of those requested. He also asked for waiver of the regulations that only the DAE had the authority to waive. Interviewees believe that Mr. Costello wants to grant the waiver request; they also say that (analogously to the Air Force staffers) every waiver is opposed by at least one member of the OSD staff. In addition, OSD interviewees point out that the Air Force needed more than a year to respond to Under Secretary's April 1987 memo and note that these issues take time to evaluate at the OSD level, as well.

The Army has apparently not undertaken any regulatory study effort analogous to that of the Air Force. Moreover, the managers of at least two Army DEPs have not found that DEP status makes their jobs any easier to perform. (These same managers hope that DEP status will [because of the clause quoted above concerning "authorized staff positions"] permit them to write the fitness reports of people that work in their program offices; if DEP status does not confer that right, all but a few of the personnel in each program office will be evaluated by his or her superior in the "functional" chain of a matrix organization.)

Several points are striking about the DEP experiment so far. First, it is difficult for a program manager to tell if a given regulation or directive does or does not ultimately derive from the law, FAR, or DFARS. Thus, research like that undertaken by the Air Force is necessary to figure out what DEP status would allow, provided the SAE and DAE did not direct otherwise. Second, even though the Congress directed the Services to begin the DEP experiment two years ago, little has happened to change the way that regulation affects the managers of those programs. Third, regulations that constrain program managers tend to have advocates on both Service staffs and the OSD staff. Fourth, the DEP experience seems to show that even *Congressionally-directed* and *distinctly limited* experiments in deregulation have to be relentlessly pushed by top management if they are to happen at all.

c. Strong Centralized Policies

In his Foreword, David Packard called for establishing "strong centralized policies implemented through decentralized management structures..."; the Commission Report

states that the Under Secretary should "establish overall acquisition policy... [and] promulgate and issue appropriate regulations...."[6]

In the regulatory area, the recommendations just described can be interpreted as a call for the Under Secretary to promote regulations that deal with identical issues in an identical way, across each of the three Services.

Industry interviewees complained that DoD had not done as much as it should in this area. However, some efforts are underway. For example, an industry group has been invited to prepare a case for the Defense Acquisition Regulation Council that will propose a standard form government contract for commercial products.

A related initiative is the Pilot Contracting Activities Program. Under this program, each of 45 DoD "activities" (which can be as small as the base contracting office at a particular installation and as large as Nav Air) are authorized to request deviations from provisions of the Federal Acquisition Regulation, Defense Federal Acquisition Regulation, and supplementary Service regulations for a one-year period. If a particular deviation is shown to save time or money, DoD officials try to get a Service consensus to support efforts to waive the associated regulation. When such a consensus can be achieved, the result is more uniform regulation across the three Services. However, most of the regulatory changes proposed under the Pilot Contracting Activities Program tend to be ones designed to make regulation less burdensome for government officials; it is not likely that they will change the process from industry's viewpoint, except in shortening turnaround times.

2. Expanded Reliance on Commercial Products

We summarize below our interviewees' comments about implementation issues associated with expanded use of commercial products.

a. Commercial Products Waiver

At one point in its report, the Commission recommended requiring such a waiver.[7] Congress has not established a requirement that prospective purchasers of non-commercial items apply for permission to do so. None of our interviewees thought doing so would be a good idea. One interviewee explained his objection to such a requirement as follows: the system would implement a waiver requirement by setting up a commercial products

6 *A Quest for Excellence*, pp. xi, 53 and 54.
7 Ibid., p. 61.

advocate just as we now have advocates for competition. This advocate would represent one more party that each program manager would have to placate to move a program forward. Thus, the commercial products advocate would constrain program managers' freedom of action, which is the kind of outcome that the Packard Commission sought to avoid.

b. Increased Use of Off-the-Shelf Items

The Packard Commission recommended that DoD make greater use of items available "off-the-shelf," develop items only when those available commercially are clearly inadequate, and establish a presumption in favor of buying whenever faced with make-or-buy decisions.

DoD has made some steps to implement Packard recommendations. Many of these were summarized in a Congressionally mandated progress report in December 1987.[8]

Legislative, regulatory, and directive changes have been made or proposed to help achieve the objectives just stated. A "preference for the acquisition of non-developmental items" is now written in law.[9] In addition, DoD recommends passage of a "Commercial Products Acquisition Act" which would free government buyers of commercial products from all restrictions that do not apply to commercial purchasers of such products.

The DoD Federal Acquisition Regulation Supplement was changed to require written reports on market research to identify non-developmental items and to favor acquisition of non-developmental items to the maximum practicable extent.

DoD has made changes in its general acquisition Directives and Instructions to require that Non-developmental Item (NDI) alternatives are considered, that any known alternatives are described, and that official decision papers explain why a non-developmental item is not selected. It is also revising another DoD Directive (5000.37, Acquisition and Distribution of Commercial Products).

DoD has also taken some steps to train people in commercial acquisition. DoD commissioned a study that identified data bases that provide information on commercial products; the Defense Systems Management College offers modules on NDI acquisition in each of its courses; DoD has produced a manual on NDI acquisition.

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8 DoD, *Report to the Armed Services Committees of the Senate and the House of Representatives On Non-developmental Item Acquisition, Progress and Impediments*, December 1987.

9 *National Defense Authorization Act for Fiscal Year 1987*, p. 105.

Outsiders make several criticisms of the initiatives just described.[10] They characterize the DoD progress report as "wholly inadequate" since it fails to mention that several of the actions described above were delayed by DoD. The DFARS changes (which they describe as "extremely modest") were not published until September 15, 1987, and were "issued in final form without opportunity for public comment"; both DoD Directive 5000.37 and the NDI manual have been in draft since April 1987. They also argue that DSMC courses are limited to program managers and thus do not train contracting officers who are often the obstacles to NDI acquisition.

c. Decreased Reliance on Military Specifications

In a closely related recommendation, the Packard Commission advised that DoD state its system performance requirements in general terms and reduce the extent to which it relied on "detailed military specifications". The initiatives just discussed appear to move in this direction. However, the extent of DoD's progress is difficult to measure; one specification frequently invokes several others which in turn invoke several others, and no one could provide hard information on the extent to which these specifications had been trimmed away.

Interviewees have suggested several reasons why laws and regulations that encourage greater use of NDI may not decrease reliance on military specifications. First, despite the laws, regulations, and directives reviewed above, the Federal Acquisition Regulation mandates use of military specifications.[11] Although the FAR provides a number of exceptions, the fact that an item is a commercial product is not one of those exceptions. Second, procurement officers are hostage to requirements writers' judgments and knowledge about what acceptable substitutes are available in the commercial marketplace. Those writers are sometimes ignorant of what is available because they have lived under the procurement-by-specification system for a long time and ergo have been neither required to nor rewarded for keeping up with developments in the commercial marketplace. Third, requirements writers can push program managers to procurement via military specifications by stating general performance characteristics that non-developmental items cannot achieve. Fourth, even if a program manager does not impose

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10 Commercial Products Acquisition Team (COMPACT), *Summary and COMPACT Analysis of the DoD Report on Non-developmental Item Acquisition Progress and Impediments*, Report submitted to the HASC and SASC, December 18, 1987.

11 FAR 10.006 (a) (2) provides that "Military specifications and standards are mandatory for use by the Department of Defense (DoD)...".

military specifications on the prime contractor, individuals working for the primes may choose to mandate such specifications in the orders they place with subcontractors, especially if the prime is working under a cost-reimbursable contract. Fifth, acquisition personnel frequently believe that reliance on specifications is "safe." Finally, specifications sometimes make sense. For example, specifications sometimes save time and money by obviating the need for potentially duplicative examinations of samples every time DoD procures a commercially available item.[12]

d. Increased Substitution of Commercial Standards for Military Specifications

The Packard Commission recommended that DoD should base military standards on industry standards.

DoD has increased the number of non-government standards (e.g., industry association standards) and Commercial Item Descriptions (i.e., simplified descriptions of products) that can be used in lieu of military specifications. However, official adoption of such standards does not guarantee that they will be used instead of military specifications, and DoD does not have any data on the extent to which such standards have been so used.

Cognizant DoD officials point out that DoD has established military specifications for some 50,000 items, which far exceeds the 8,000 or so "product documents" already written up by commercial sources. These officials conclude, therefore, that DoD cannot implement Packard's recommendation simply by adopting commercial standards. Instead, they have been trying to get existing associations of commercial firms to write up industry standards for their products.

3. Increased Use of Competition

The Packard Commission made several recommendations concerning increased use of commercial-style competition.

a. Value Pricing

The Commission recommended that DoD not emphasize price at the expense of other equally important factors such as quality. For convenience, we refer to this practice as "value pricing."

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12 After this study was completed, DoD released *Enhancing Defense Standardization*, a November 1988 paper that recommended several changes to make DoD specifications standards "more responsive to current and future acquisition needs...".

Most interviewees said that if acquisition personnel want to invest the required time and are sufficiently knowledgeable, they can practice "value pricing" under current regulations. However, interviewees in and out of government agree that many acquisition personnel do not always do so: engineers and other acquisition personnel frequently lack appropriate training and thus do not know how it is permissible under existing regulations; in addition, these personnel are often reluctant to take actions that might increase the risk of protests.

b. Established Performance

The Packard Commission recommended that DoD both permit and encourage procurement officers to:

- limit bids to qualified suppliers,
- give preference to suppliers that have demonstrated quality/reliability in their products, and
- not require exhaustive inspection of suppliers that historically have maintained high standards.

Interviewees stated that, strictly speaking, DoD cannot limit bids to firms that have proved themselves in the past. The reason DoD cannot do so involves Congress' stipulation that everyone have a chance to bid. However, DoD can establish qualified bidders' lists that have essentially the same effect.

For similar reasons, DoD cannot establish an exclusive preference in favor of suppliers that have done good work in the past. However, procurement officials in the Air Force have come up with a way of achieving similar results within existing regulations. (This effort--the Competition for Performance or "Blue-Ribbon Contracting" program--permits all firms to apply for blue-ribbon status based on product samples or past performance. Those selected can win contracts even if their bids are 10 percent above those of firms that have not won blue-ribbon status.) In addition, one interviewee pointed out that DoD already takes a firm's past cost-accounting performance into account in deciding the severity of the audits it conducts.

In a related initiative, the Air Force Systems Command has established a contractor Performance Assessment Program. In it, program managers fill out a simple two-page "report card" on the contractors that work on their project, once a year. That document will be made available to Air Force personnel to aid in making judgments about contractors' ability to perform.

c. Commercial Acceptance as Benchmark of Value

In a related recommendation, the Packard Commission recommended that DoD should allow and encourage procurement officers to recognize value (quality and price) based on products' acceptance in the marketplace.

DoD has not made much progress here. Apparently, Congress has told DoD that it cannot use commercial market acceptability as a measure of product quality on grounds that doing so might hurt small firms that have not established wide markets for their products.

d. Eliminating Burdensome Reporting Requirements

The Packard Commission recommended that DoD not burden suppliers of off-the-shelf items to submit detailed pricing certifications.

OSD has sent out a memo to contracting officers asking them not to require cost and pricing data from suppliers of commercial items. However, some interviewees say that the practice persists, because contracting officers feel that Defense Contract Audit Agency auditors will ask them for such data and do not want to be without it.

Representatives of commercial firms that would like the government to simplify its rules for commercial purchases also indicate that requirements for cost and pricing data are a principal factor in discouraging such firms from dealing with the government.

e. Streamlined Procurement Statute

The Packard Commission recommended that federal procurement statutes be recodified into a single, consistent, and greatly simplified procurement statute.

Currently the Office of Federal Procurement Policy is trying to reach a consensus within the government on what that simplified law should say and is not able to reach inter-Departmental agreement on the issue. More importantly, several interviewees indicate that the law stands little chance of passage once it reaches the Hill, owing to jurisdictional concerns of members of the House and Senate Armed Services and Governmental Operations/Affairs Committees.

4. A Revised Policy Concerning Technical Data Rights

The Packard Commission made three recommendations on this issue: 1) do not demand unlimited data rights if development was privately funded; 2) if development is to be jointly funded, the government's rights should be defined during contract negotiations;

and 3) if the government funds development, it has rights to all data but may make them available to the private sector.

Interviewees report that the requisite regulatory changes have been made; some industry observers do not conclude that the problem is solved, only that we have to wait and see whether behavior changes in accordance with the new regulations.

C. A CULTURAL CHANGE IS NEEDED

Recommendations that follow from the above discussion are presented in Chapter VIII. This section discusses some observations that are relevant to improving the regulatory environment.

That there is little hard data with which to estimate progress in deregulation does not mean the Under Secretary should establish reporting requirements to assemble such data. For one thing, doing so would impose demands on acquisition personnel that would not help them do their jobs. More importantly, such requirements would not simply result in more information for upper management, but might also confront working-level officials with perverse incentives. Consider the effect of requirements to report the dollar value and number of competitive procurements. These not only gathered information and signaled the importance that Congress placed on increased competition; they almost certainly created pressures to use competition even if circumstances at the working level suggested that a different approach would have made more sense. To that extent, this reporting requirement constrained the freedom of action of people at the working level. Such constraints are at odds with the kind of working environment the Commission advocated.

For the most part, our recommendations do not call for new laws or regulations. This reflects interviewees' suggestions that the new Under Secretary should try hard to convince Congress that it should allow the system time to absorb the laws that are already on the books. The recommendations we do make reflect others' suggestion that the best way to convince Congress that new laws are not needed is for DoD to take the initiative in areas already within its authority.

VI. MANAGEMENT OF PERSONNEL, TECHNOLOGY, AND THE INDUSTRIAL BASE

The Under Secretary's management responsibilities encompass the infrastructure supporting the acquisition process, including internal OSD personnel and information systems, DoD science and technology programs, and defense technology and manufacturing base policies and programs. These management responsibilities are among the Under Secretary's most important responsibilities because these programs and policies shape the acquisition decision-making environment, the knowledge base, and the capabilities and productivity of industry. They pose a difficult challenge, because these basics have few proponents, and there is a strong temptation to overlook them because their payoffs are indirect and long-term.

The Packard Commission and other recent studies have found significant problems and long-term neglect in managing the infrastructure. In the area of personnel management, there now are calls for radical change in DoD organization that are intended to improve the skills, experience, independence, and accountability of individuals in the acquisition work force. In the area of science and technology there is national level concern that the U.S. leadership in key military technologies is declining. In the industrial and technology base, there is concern that domestic defense manufacturers often lag in productivity growth and that not enough is being invested in reserve emergency capabilities.

This chapter reviews and assesses changes in the management areas in recent years.

A. ACQUISITION PERSONNEL

The quality, experience, and training of acquisition personnel has been a longstanding acquisition reform issue. There are three broad classes of personnel that are of concern, and each raises a unique set of issues.

1. Presidential Appointees

The senior officials running the department are clearly important to how well the system operates. It is essential for effective management that the Secretary have a strong

say in creating the senior management team. In relation to this, it will be very important for the new acquisition officials to work together as a management team in order to complete an extensive set of changes in the process in the early days of the next administration. Developing such a team should be one of the Secretary's top priorities. Under Secretary Costello has made progress in developing a team approach to acquisition matters, in that he has instituted weekly meetings with the Service Acquisition Executives. In addition, this summer he met with the Program Executive Officers to discuss acquisition issues and problems.

A second important issue with respect to presidential appointees is the effect of revolving door legislation on recruiting experienced senior executives. In particular, the Packard Commission emphasized that the Under Secretary for Acquisition should have extensive business experience, but it will be difficult to find candidates with these credentials when they would be effectively barred from returning to the defense sector for at least two years after their tenure at the Pentagon is completed. This problem extends to the lower levels of the Department as well. Unfortunately, there were no developments in the last two years suggesting this problem has been addressed, and with the current scandals it is likely that the revolving door restrictions will make matters worse.

In fact, Representative Bennett proposed a bill this year that would further strengthen conflict of interest restrictions. His bill would impose criminal penalties on officials who, within two years of leaving DoD, work for a contractor affected by their actions during their last two years of government service.

2. Civil Service

The career civil servants in the acquisition process perform a wide range of scientific, technical, administrative, and functional roles. The Commission's specific recommendations on personnel were aimed primarily at this group of workers. The first is that contracting officers should be upgraded to professional status. This would improve their pay and educational and experience requirements.

A number of interviewees have focused on the role of the contracting officer. These individuals in fact wield substantial power in the field, because they have responsibility for interpreting the Service directives and regulations. Hence, any attempts

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1 Proposed Bill HR 4956. See, "Tinkering with Defense," *National Journal*, September 3, 1988, p. 2178.

to delegate greater authority to the field, or to expand the discretion of working level people must address the role of the contracting officer. DoD has proposed to change job classifications to upgrade contracting officers, but it was not accepted by the Office of Personnel Management, because it was viewed as inconsistent with its overall policies.

The second Packard recommendation is that educational opportunities for the acquisition work force should be improved. The third is that flexible personnel management systems should be adopted. Thus far there has been no progress on the recommendation to expand the experimental management program from one naval facility, China Lake, to an additional ten government facilities. The experiment created wider pay bands and based pay within the band on performance, and is widely regarded as successful in improving productivity.

In sum, the civilian personnel management and training system is essentially unchanged over the past two years.

3. Military Program Managers

The Packard Commission acknowledged the progress that has been made in increasing the experience of program managers within the military services. The Commission made no specific recommendations for program managers; however, it did support legislation establishing higher experience requirements than those that had been set prior to the Commission's report.

Overall, practices today appear to be much like those described in a 1986 General Accounting Office (GAO) study and the more recently published *Defense Management Challenge*.[2] This conclusion is based on data on program manager tenure, interviews with service program management personnel experts, and interviews with some program managers. The results for each of the three Services is as follows.

a. Army

The Army is presently considering some changes in personnel policy for acquisition managers. One proposal involves reducing the skill groupings that can be considered for acquisition management from thirteen to only two which are most relevant for program

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2 U.S. General Accounting Office, "DoD Acquisition: Strengthening Capabilities of Key Personnel in Systems Acquisition," GAO/NSIAD-86-45, May 1986; and J. Ronald Fox, *The Defense Management Challenge;* Cambridge, Harvard Business School Press, 1988. J. Ronald Fox, *Obstacles To Improving the Acquisition Process*, IDA Acquisition Study Working Paper, October 24, 1988.

managers. (These are research and development and contracting and industrial management.) If adopted, this proposal would effectively narrow the range of jobs that could be considered acquisition-related. In addition, the Army plans to reserve some general officer slots for acquisition officers.

The Army reports that the average tenure of departing program managers was 37.8 months through 1987. It also reports that all managers currently assigned to major programs have finished the Defense Systems Management College (DSMC) five-month course. About 75 percent of the managers for remaining programs have finished the course.

This situation represents some improvement: experience in 1986 showed that program managers were often ill-prepared for their jobs. "In 1986, the Army selected seventeen officers for assignment as program managers. Although three quarters of these officers had commanded a battalion and 100 percent had acquired masters degrees, only slightly more than half (55 percent) had previously been assigned to a program office. Further, only one-half had taken the DSMC twenty-week program manager course." [3]

b. Navy

The Navy has not changed personnel management practices since the GAO study. The Navy reports that the average tenure for program managers was about 25 months at the end of 1985. Tenure at departure is not reported. However, Navy sources say that most program managers stay for almost a full four years.

As of September 1985, about 44 percent of program managers were unrestricted line officers and 41 percent were restricted line officers, typically engineering duty officers. The career paths of these two groups are distinctly different. Generally, unrestricted line officers will have four to seven years of acquisition experience prior to promotion to Captain, at which point they could be selected to be program managers. In contrast, restricted line officers, who are generally engineering duty officers, will have several years more program office experience and much more acquisition experience.

In 1985, Secretary Lehman created the designation of Materiel Professional to identify promising individuals with acquisition experience, and to open opportunities for unrestricted line officers who become program managers to be promoted to flag rank; prior

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3 J. Ronald Fox, *Improving the Acquisition Process*, p 59.

to this, program management was not career-enhancing for unrestricted line officers. In 1986, four unrestricted line program managers were promoted to flag rank as a result of this new program. The Navy developed the program to attract and develop excellent acquisition officers; however, the program does not significantly alter the career path below Captain from that which existed before 1985.

c. Air Force

The Air Force has toughened program management qualification requirements since the GAO study. The Air Force is credited with having the best record of the three services for acquisition training and career development. Like the Navy, the Air Force has a two-track system. "Rated" officers (pilots and navigators) require less program-office experience to become program managers. They constitute about one-quarter of all acquisition managers, but manage about one-half of the major programs.

Rated officers often receive one three-year acquisition assignment (broadly defined) in their first 15 years of service, and repeated acquisition assignments thereafter. They are likely to have about seven years of acquisition experience before being considered for managing major acquisition programs. Nonrated officers can enter the acquisition field directly or transfer into it after an initial assignment in an operational command. They receive repeated assignments in acquisition management, often including positions in a program office.

In sum, each of the Services has career paths and programs in place for developing highly trained and experienced program managers. However, only a fraction of program managers actually follow these career paths. In the Army, the broad definition of acquisition experience qualifies a large number of officers without actual program office experience. In the Navy and Air Force, the two-track systems generate a large number of highly skilled specialists, but they also permit less experienced officers from operational commands to head program offices. In both of these Services, however, these operational officers could have up to seven years of experience in some acquisition-related function.

One criticism leveled at the Services, and more generally at the use of military officers to manage programs is that even their most favorable career paths provide careers in acquisition that are shorter than ideal. One student of the process concludes,

> There are also very few incentives for talented officers to remain in the military service beyond twenty to twenty-five years. Indeed military personnel who begin to develop experience in the acquisition process are effectively forced out of the service when most still have heavy financial

> commitments, including mortgages and children in school. Understandably, they seek positions in private industry, where their knowledge and skills can be usefully employed. The defense industry provides compelling incentives: rewarding salaries and career status.[4]

As the result, many officers in acquisition leave the Services in their forties and fifties, at the prime of their productivity for management jobs.

4. Proposed Reforms

Acquisition personnel reform is currently a topic of heated debate. As noted in Chapter II, Congress presently is considering legislation to address this problem by creating an independent acquisition corps. This is an area where pressures for change are likely to build in 1989. Congress sees significant problems in the handling of acquisition personnel and too little action within the Department to resolve them.

B. MANAGEMENT INFORMATION

An issue that was raised by this review is the need for better information systems in the DoD decision-making processes. For example, it was pointed out that the data elements in the major DoD planning documents are not fully consistent. It is often difficult to even understand what the programmatic implications of some budget decisions are, because there is no clear relationship. Similarly, there is no correspondence between the objectives specified in the Defense Guidance and programs or budget elements. Hence, at each stage in the process different bookkeeping systems are used, and there is no clear crosswalk between them.

C. SCIENCE AND TECHNOLOGY PROGRAMS

The science and technology programs support basic research on new technologies, and are a main source of the nation's leadership in most areas of military technology. While the total investment in military research and development has been increasing over the last several years, the science and technology portion has been steadily decreasing.[5]

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4 J. Ronald Fox, *Improving the Acquisition Process*, p. 27.

5 Budget categories 6.1 (Research), 6.2 (Exploratory Development, and 6.3A (Advanced Technology Development (less SDI expenditures)

Of major concern is the erosion of investment in the research and exploratory development program areas, which are the primary source of technological innovations for military use.[6]

The second concern, related to the first, is that the impact of tighter budget constraints in the years ahead puts the science and technology program in severe competition with more immediate investment demands. This places the Department of Defense under increased pressure to more effectively coordinate research and development activities.

Two developments in this area may help such coordination. One is the competitive strategies concept for strategic planning. Another is a recent OSD task force that recommended ways to improve the process for coordination of science and technology programs within government labs and research facilities.

1. Competitive Strategies

The Department's Competitive Strategies Initiative is intended to integrate defense policies and program plans by evaluating national strategies in terms of our long-term relations with the Soviet Union. An organizational structure has been developed to institutionalize this process. It includes a Competitive Strategies Council, chaired by the Secretary. The Council oversees a steering group and ad hoc task forces for addressing specific issue areas. A Senior Intelligence Committee was also formed to support these efforts.

The Under Secretary for Acquisition has formed a Competitive Strategies Panel, which will examine technologies and systems to perform missions implied by competitive strategies. The first task force examined mid- to high-intensity conflict in Europe, and suggested a number of new directions and priorities for U.S. defense. These strategies suggested the need for priority development of technologies and systems relating to: unmanned systems, area munitions, extended-range tube-launched projectiles, precision-penetrator warheads, and smart submunitions.

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6 For example, the Commission on Integrated Long-Term Strategy notes that "in the period 1965 - 1980, U.S. spending on military research and development declined about 20 percent....In the 1980s a turnaround for the United States began, but more recently our spending on the technology base was cut again." See Discriminate Deterrence, January 1988, p. 46. The Commission also noted that the nature of spending had also shifted to emphasis lower risk projects. It emphasized the need for greater emphasis on new technologies including employment of low observables, smart weapons, ballistic missile defense, and space capabilities.

DoD plans to form additional task groups to address other issue areas. This process should provide useful inputs for assessing DoD's investments.

2. Task Force on Science and Technology Programs

A recent task force proposed a process for creating a more coherent set of science and technology programs. In 1988, the Director of Defense Research and Engineering convened representatives from the DoD science and technology community to devise a strategy for coordination of resources and responsibilities among the DoD laboratories. The purpose was to address some apparent problems created by lack of coordination. Examples include a sub-critical mass of resources for some programs, unwarranted duplication of effort, slow technology transition from labs to fielded systems, and inefficiencies in specific R&D programs.[7] Another problem is that the weakness of the science and technology investment strategy also results in ineffective advocacy to higher management levels both in the Services and OSD.

The Task Force was composed both of experts in the DoD science and technology program and a cross-section of the people in the system who would be affected by the Task Force's recommendations.

The Task Force found that the planning of science and technology programs within the Services is extensive, but that there is an insufficient level of DoD-wide planning which encompasses both near- and long-term (15-20 years) operational requirements. It argued for a DoD-wide investment strategy that better defines the relationship between science and technology programs and long-range military needs. The Task Force therefore recommended the development of a DoD-wide science and technology investment strategy *process*.

Task Force recommendations are based on the premise that management of the science and technology program requires a participative process. This process would involve the following four steps:

- The Under Secretary would develop annual DoD science and technology guidance. This guidance would reflect the participation of representatives from OSD, the Services, agencies, and others actively involved in new technology.

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7 The task force proceedings are in *Report of the Task Force for Improved Coordination of DoD Science and Technology Programs*, IDA Report R-345, August 1988.

- The Services and agencies would create investment strategies, used to provide guidance to Service and agency science and technology program planners.
- The Under Secretary would review the Service and agency investment strategies to ensure that they: respond to the DoD science and technology guidance; resolve conflicts and assign leadership across Services and agencies; identify missing elements required to meet operational objectives; and allocate resources with respect to technology goals.
- The Under Secretary would oversee publication of the DoD science and technology guidance, the Service and agency investment strategies, and a summary chapter of the consolidated DoD investment strategy, signed by the Under Secretary, referred to as the DoD science and technology investment strategy.

This science and technology strategy would provide a framework for systematic thinking about the science and technology programs. Inputs to the process could include the results of the Competitive Strategies task forces, or other long-range strategic planning activities. The science and technology strategy could then inform and complement mission area analyses which examine options for long-range acquisition programs.

D. TECHNOLOGY AND INDUSTRIAL BASE

The technology and industrial base issues deal with the capabilities of the defense contractors, who perform a large share of defense research and development, and who produce virtually all of the nation's military hardware. There is considerable concern over the defense industrial base in four general areas, which raise distinctly different issues and have very different solutions:

- Leadership in military technologies: The U.S. lead is declining relative to the Eastern bloc and relative to our allies.
- The productivity and costs of defense producers: the productivity growth of defense contractors and their adoption of new production methods is not keeping pace with civilian and foreign producers.
- Foreign sourcing: U.S. weapons are relying on sources that could be cut off in a crisis.
- Emergency production capabilities: The U.S. is maintaining little reserve capacity for increasing production in emergencies.

Because of this diversity of problems, the technology and industrial base debates sometimes lack focus--some focus on issues of peacetime productivity and others focus on

capabilities for meeting possible emergencies. A second dimension of the debate is whether DoD should concern itself with industrial issues relating specifically to the vendors it deals with directly, or with broader trends in the economy. Programs relating to industrial base issues have not been highly successful in competing for the budget, partly because of the lack of consensus on priorities on these issues.

DoD powerfully affects the industrial base through research and development and procurement programs. The Under Secretary's principal lever is therefore to influence the allocation of these resources. The Under Secretary is positioned to do so both in the Defense Acquisition Board milestone reviews and in the Defense Resources Board.

Under Secretary Costello has devoted substantial attention to technology- and industrial-base issues. Reportedly, he raises manufacturing productivity issues in Defense Acquisition Board reviews. He has also begun initiatives designed to increase productivity, innovation, and investment in the manufacturing sector. In addition, he supports programs designed to improve technology for manufacturing processes. Some increases in spending for the development of such technology have resulted. Finally, he has sponsored a number of policy initiatives to improve emergency production capabilities; however, there has been no corresponding increase in investments in such capabilities. Some of his initiatives and other ongoing activities in these areas are described in this section.

1. Industrial Base Initiatives

In the spring of 1987, Under Secretary Costello began a review of industrial base issues and DoD's industrial programs. After more than a year of study and consultations with several hundred experts, his office issued a report in July 1988. *Bolstering Defense Industrial Competitiveness* provides a statement of current issues, and offered a 15 point plan for improvement.[8] The recommendations include establishing new organizations to provide a focal point for manufacturing issues, a clearing house for data on manufacturing and technology, improved incentives for investment, better information on the use of foreign source components in weapons, and improved acquisition program stability. The recommendations also call for changes in the nation's economic policies to increase competitiveness, and improved policies for technical training.

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[8] Robert Costello, *Bolstering Defense Industrial Competitiveness*, Report to the Secretary of Defense, July 1988.

As a result of these initiatives, several organizational changes have already been instituted: a Defense Manufacturing Board has been created, a Manufacturing Advisory Council has been formed within the National Academy of Sciences, and a new position -- the Deputy Under Secretary for Production Base and International Technology -- has been created to provide greater focus on industrial base issues. These changes should contribute to better communication and an increased focus on industrial base initiatives. In the other areas, it is probably too soon to tell whether changes will be made by the end of the current administration.

2. Defense Science Board Report

A Defense Science Board (DSB) task force was convened to identify needed "DoD policies and procedures aimed at promoting a modern, competitive, and responsive industrial base." In particular the task force was asked to examine the recommendations of *Bolstering Defense Industrial Competitiveness.*[9]

The task force generally supported the recommendations of Under Secretary Costello's report. It found that several factors had deteriorated since the DSB last studied industrial issues in 1980. Increased globalization has increased U.S. dependence on foreign sources, a weakened public consensus on defense spending and defense policies are undermining contractors' incentives for innovation and investment, and the low earnings of defense contractors are limiting their access to capital markets. As a result, the task force concludes that there have been reductions in long-term investment, problems in maintaining scientific and engineering personnel of a sufficiently high quality, and continued deterioration of the maritime industry.

In addition to endorsing Under Secretary Costello's recommendations, the task force added several of its own. These call for a national-level process for dealing with these issues, and a more systematic approach in addressing them. In addition, they restate many recommendations stemming from the Packard Commission and other reform efforts, and add steps to address the recent ethics scandals. In summary, the Defense Science Board recommended the following:

- The President should establish a permanent governmental process to identify and resolve shortfalls in the industrial and technology base;

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9 Defense Science Board, *Defense Industrial & Technology Base*, Final Briefing, Summer 1989.

- The President should give DoD an active role in the formation of national economic policies where security issues are concerned;
- The Secretary of Defense should develop production surge programs based on priorities established by the JCS's Joint Industrial Mobilization Planning Process;
- DoD should improve compensation for in-house science and technology professionals, and consider private sector management of labs and R&D centers;
- The Under Secretary for Acquisition should centralize control of acquisition policy and manufacturing programs;
- The Under Secretary should support contracting incentives that encourage long-term investment;
- The Secretary should use the funding for contractors' independent research and development to develop the technology infrastructure;
- The Under Secretary should set policies for implementing the Competition in Contracting Act that promotes quality and commercial-style competition;
- The Secretary should ensure adequate capability in maritime production;
- The Secretary should convene a high-level group to consider further improvements in policies for "best and final offers" in contract competitions; and
- The Secretary should support investigations of fraud, ensure adoption of codes of ethics, and ensure adequate visibility in the use of consultants.

A national level coordinating group for industrial mobilization issues already exists in the form of a Senior Interagency Group on National Security and Emergency Preparedness, that serves to coordinate activities among the federal agencies. The DSB proposal would broaden national level activities to include peacetime industrial issues.

3. New Manufacturing Approaches

a. Total Quality Management

W. Edwards Deming, Joseph Juran, and other manufacturing experts have long espoused the principle of total quality management (TQM) in manufacturing. The premise of this approach to quality management is that through proper design of products and manufacturing processes, and through manufacturing management that focuses on careful control of quality at each stage of the process, manufacturers can both increase product

quality and reduce production costs. Proponents of this approach point out that many manufacturers incur a large share of their costs in inspecting and reworking defective items. Total quality management is aimed at reducing these costs to nearly zero.

Experts in this area have come to the conclusion that the "Japanese miracle" is largely due to manufacturing management techniques such as total quality management. Automation has not proven to be the driving element of success. For example, an editor of *Automotive Industries* magazine has said that Toyota's No. 9 Kamigo engine factory is perhaps the most efficient engine manufacturing plant in the world, but this factory uses 20-year-old machine tools made in the USA.[10] Similarly, the Toyota-GM joint venture plant in Fremont, California, is said to have reached the productivity goals set for the ultramodern Saturn plant. This has so surprised GM officials that they had to rethink their plans for the Saturn plant. Nor is the success due to Japanese culture. The success of the Fremont plant shows this, as does the successful Honda Motors operation in Ohio. Indeed, many U.S. manufacturers are succeeding in substantially increasing productivity and thereby increasing competitiveness in international markets.

Naturally, the Department of Defense wants its manufacturers to adopt these approaches if doing so will yield similar productivity and quality improvements for defense hardware. The TQM initiative is aimed at bringing this about. The following extract from a recent article published by Under Secretary Costello summarizes the TQM initiative:[11] "Our objectives include: making our procurement system more flexible to allow streamlining of contractual requirements; improving interaction among designers, manufacturers, logisticians and users; making quality a factor in source selection; giving extra consideration to companies whose products and services embody the new concept of continuous product improvement." At the OSD level, Under Secretary Costello has pushed the idea of total quality management by sponsoring a number of meetings and seminars on the topic. Presently, the Department is developing plans for implementing a program to encourage the adoption of total quality management by its suppliers.

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10 From citation in Richard J. Schonberger, *World Class Manufacturing: The Lessons of Simplicity Applied.*, The Free Press, New York, 1986.

11 Robert B. Costello, "Ten Agenda Items for Improving Defense Acquisition," *Program Manager*, Defense Systems Management College, May-June, 1988, p. 13.

b. Unified Life-Cycle Engineering

Another advance in manufacturing is the integration and management of a wider range of issues in the engineering and design process. For example, designers can concurrently consider manufacturing problems in designing a product, or take into account long-term support, maintenance, and reliability factors. Hence, engineers are able to take a broader perspective in designing products to optimize them over their expected lives.

The potential life-cycle savings of such a design approach can be substantial. They include reduced production costs as well as reductions in the support costs of the fielded weapons. This approach requires somewhat greater up-front spending in designing weapon systems with the payoff over the life of the product. Hence introduction of this approach requires the development of an incentive structure that will reward long-term cost savings--which is strongly counter to the incentives in most defense programs, because program managers typically are forced to squeeze pennies during program design.

DoD has a number of promising programs underway in this area to develop the tools to aid this design process, and to try to educate the manufacturing community on the benefits of this approach.

4. DoD Funding for Technology and Industrial Base Programs

The increased emphasis on these issues has resulted in some increases in funding. Several programs have been established to address specific technology areas. These include funding for projects or research centers for the semiconductor manufacturing technology, millimeter wave integrated circuits, very high speed integrated circuits, focal plane arrays manufacturing, and manufacturing technology centers. In addition, the charter of the Defense Advanced Research Projects Agency has been revised to increase emphasis on manufacturing process technology issues.

Funding for industrial surge and mobilization projects has not fared as well. No explicit funding for investments or planning was approved in the FY 1990 program review. One observer has said it will be at least 1992 before such programs can be expected to be supported. Yet, the Services invest some money for surge and mobilization capabilities each year as part of their ongoing acquisition programs and thus this conclusion does not mean that there is no activity.

One effort underway to increase funding support for surge programs is the development of policies for more systematic steps to incorporate surge spending in the

front-end process of defining acquisition programs. In the past, surge and mobilization issues have not been carefully considered in reviewing acquisition programs; indeed, one observer noted that he had never heard these issues raised in a milestone review for a major program.

5. Related Activities

A broad range of additional activities relating to the technology and industrial base should be noted.

- Stockpile of Strategic and Critical Materials: Responsibility for managing the stockpile was recently transferred to the DoD. The office of the Under Secretary is responsible for reporting to Congress in January on its plans for managing the stockpile. The Under Secretary's staff and the Joint Chiefs of Staff are presently conducting an analysis of the adequacy of the stockpile.

- Defense planning: Several actions have been taken to improve defense planning for industrial mobilization and surge. The recent Defense Guidance includes several planning scenarios and targets for surge planning. These provide a basis for assessing industrial requirements associated with a range of plausible military contingencies. The Defense Guidance also incorporates the concept of Graduated Mobilization Response, which postulates a strategy of incremental steps in mobilizing the economy, rather than an all-or-nothing approach. Finally, guidance is being developed for the Services to develop a supplement to their POMs that would specify the steps they would take in response to the Defence Guidance planning cases. This will focus Service planners and budgeters on the actions that would be required to respond to such contingencies.

- Data and analyses available for examining industrial issues: These include the Defense Industrial Network and Socrates data bases developed within the Under Secretary's office. They also include the JCS effort to develop the analytical capability for assessing the supply feasibility of the operational plans. This Joint Industrial Mobilization Planning Process provides estimates of the hardware required to execute operations and assesses the supply side adequacy of inventories in place plus projected new production. Related to this the Services have improved their production base analyses in recent years. The Under Secretary's office presently chairs a task group working to develop a more integrated joint approach to conducting the analyses.

E. CONCLUDING REMARKS

Infrastructure management issues are receiving more attention in the past few years than at any time in recent history. Many of the initiatives underway could be useful, but only with sustained emphasis by senior managers backed by adequate funding. One of the problems in competing for funds in any of these areas has been the lack of an investment strategy for infrastructure programs of all kinds. Such strategies are needed to identify and prioritize cost-effective investments in people, technology, and productive capabilities. The model process for science and technology programs could usefully be applied in any of the other infrastructure areas as well.

Presently, the difficulty of managing the infrastructure is compounded by the expected slow growth in defense spending: if the infrastructure was not adequately nurtured during the years of high budget growth, it will be even tougher to do during the lean budget years ahead. The Under Secretary is in many cases the lone advocate for such programs, and his dedicated support to maintaining and bolstering the infrastructure of people, knowledge, and productive capabilities would constitute an important and lasting contribution to national security.

VII. SOME LESSONS FROM THE LAST TWO YEARS

The preceding chapters described the changes in the acquisition system since the Packard Commission, and assessed the degree to which these changes have fulfilled the Commission's goals. This chapter takes stock of the lessons learned from the experience of the past two years. It asks why the Commission's goals have not been fully implemented and considers the implications of this experience for further reform efforts.

A. WHY WAS MORE NOT ACCOMPLISHED?

The experiences of DoD officials over the last two years provide a useful perspective for understanding the actions that have been tried and for judging where progress could be expected. Many of the interviewees have had many years of experience with defense acquisition issues and therefore offered numerous general observations on acquisition problems, the work of the commission, areas of disagreement with the Commission, and implementation issues. They highlight a number of reasons why certain goals have been met, while in other areas little or no progress has been made: (1) not everyone supports the Commission's goals; (2) the Commission did not provide an explicit agenda for implementing its goals; (3) the Commission came too late in the current administration; and (4) while not a major factor overall there are some legal impediments to the recommended changes.

We review these comments here, in part because they highlight the diversity of opinion within the Pentagon on the value and relevance of the Packard Commission and acquisition reform. But most importantly, it is important for the next management team to understand the points of view expressed in these opinions. It will have to come to grips with them if it seriously attempts to implement the Packard Commission's management principles. And they provide some important lessons about what next steps should be taken.

1. Disagreement With Commission Goals

There is clearly a difference in philosophy and approach between the Commission report and the way DoD operates, and this fundamental difference in outlook is probably

the major impediment to implementation. Several important areas were outlined at the conclusion of Chapter II. These disagreements were expressed in terms of the premises of the Commission and also in its specific recommendations.

Within the Pentagon, we found no strong consensus on what the most important acquisition problems are, or on their sources. While almost everyone outside the Pentagon tended to agree that there are major problems in the DoD acquisition process, within DoD the verdict is mixed.

The single most pervasive issue is to question whether the Commission's model of streamlined program management really suits DoD's acquisition tasks. Critics tended to believe that the streamlined program management approach assumes that program decisions can be compartmentalized, whereas in reality program managers must deal with many Service communities, because they often do not have the full perspective on all the decisions regarding a weapon. As noted in Chapter III, there was some ambiguity on this point in the Commission report, and there is a need to clarify the role of the program manager relative to these existing organizations that provides for adequate communication without the problems this currently causes.

Another issue raised was in the oversight roles of OSD and Service headquarters in the proposed streamlined acquisition chain. There was general agreement that these staffs get too involved in narrow management issues, but there were disagreements about the reason. Some believe it is simply excessive interference; others believe the system requires close oversight. Indeed, one common argument is that detailed oversight by the OSD staff is inevitable, because the Secretary is responsible for acquisition programs, and he cannot get reliable information unless he relies on his own staff. Hence there is a need to clearly define the oversight role so that it properly serves the Secretary's needs without encumbering program managers.

Consequently, there were disagreements about the direction that DoD should now pursue. Although everyone agrees that centralized policy direction and decentralized execution is correct in principle, there is little agreement about what that means in practice.

It was also observed that it is not clear that the creation of the Under Secretary for Acquisition helped to bring about the basic changes the Commission outlined, because many of the changes required to implement the Packard Commission principles need to be made by the Secretary, or actively supported by the Secretary. Adding a "czar" was unlikely to solve anything--indeed if Secretary Weinberger had wanted an acquisition czar

he would have created one himself. In short, the Under Secretary can be part of the solution, but the key player has to be the Secretary.

A related theme was the question of whether organizational changes recommended by the Commission were needed or desirable. This view holds that acquisition problems are due to the management style and personalities of the current administration. No one dissented from the viewpoint that personalities, skills and experience, and working relationships among senior officials matter enormously in how well the system works--regardless of the organizational chart.

Finally, some interviewees inside the Pentagon remain skeptical that acquisition problems are as serious as they are often described to be. They argue that most reform efforts are misguided, because the degree of perfection reformers expect from the system is simply unattainable. There are, of course, a lot of mistakes, but these are inevitable in a system of this complexity. The Department of Defense buys thousands of items to meet highly uncertain contingencies. There simply is no single criterion for optimality that can or should be imposed. Moreover, systematic data is simply not kept, so virtually all conclusions are drawn from anecdotes and casual empiricism.

The conclusion to be drawn from these comments is that there is no universal acceptance of the nature, sources, or seriousness of acquisition problems. And there is some understandable confusion, and skepticism about how the Packard management principles would apply in practice. Hence, although the Packard Commission concluded, "All of our analysis leads to the conclusion that the defense acquisition system has basic problems that must be corrected," sustained pressure and more selling within the Pentagon will be required, particularly from the Secretary himself.[1]

2. No Implementation Agenda Was Provided

Several officials have emphasized that DoD's mandate extends to only a subset of the Packard Commission recommendations: Not all of the Packard Commission recommendations were included in NSDD-219 or legislation, and in at least two cases--audit policy and operational testing--Congress has acted in direct opposition to the report's recommendations. The differences between the Commission's recommendations and these explicit instructions has led OSD officials to differ on how to respond. Many take a

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1 *Quest for Excellence*, p. 44.

"literalist" approach of following only the explicit instructions from the President and Congress. From their perspective, the benchmark for assessing the current system should be the language of these formal mandates, rather than the policy prescriptions of the Commission. Others look to the spirit or philosophy of the Commission of seeking fundamental changes.

It was also pointed out that the Packard Commission, like most reform efforts, did not place priorities on its recommendations.

3. The Commission Came Too Late In The Current Administration

Some observers believe that the Commission's recommendations came too late in an established administration: roles, working relationships, and procedures were too firmly established to change with only a limited time remaining for many of the officials within the Department. Defining roles within a large bureaucratic structure is always an extremely difficult and sensitive issue. This job was made even more difficult for the first Under Secretary for Acquisition in that he came into an administration that had had several of its high-level Defense Department officials on the job for six years.

4. Laws Impede Implementation

Although not a major factor in the overall scene, there are some legislative impediments to the implementation of the Packard recommendations. These range from specific organizational and reporting provisions in law, to the broader problem of maintaining compliance with a complex set of laws in trying to change policies and regulations.

a. Reporting Requirements

The Commission's suggestions that more flexibility be given at the early stages of programs in some cases runs contrary to Congressional reporting requirements. As noted in Chapter IV, many of the reports required at milestone reviews are required by Congress. Hence, streamlining the DAB review process will require Congressional action.

b. Audit Policy

It has already been noted that the Commission was very concerned about the duplication and lack of uniformity of audits. Its recommendation to resolve this problem was to put all of the audit functions under the Under Secretary so that he could rationalize

the process. Congress however has retained a separate audit function, which therefore limits the Under Secretary's ability to coordinate audit policy among DoD components.

c. Operational Testing

The Packard Commission recommended that the Under Secretary be given authority for testing. However, the Congress has established a separate Office of Operational Test and Evaluation which reports directly to the Secretary.

d. Legal Uncertainty And Complexity Breeds Overly Cautious Mentality

In discussing the Enterprise Programs in Chapter V it was noted that there was uncertainty at the working level about which reports and actions are required by law. Indeed the Air Force had to conduct an extensive review of their regulations to eliminate this uncertainty. The complexity of regulations, the uncertainty of legal requirements, and the statutory requirement for reports instill an over cautious--do it by the book--mentality in the acquisition work force.

Another instance of this is in the application of the Competition in Contracting Act. DoD is reportedly applying this law in a much more rigid fashion than Congress intended. But again, the problem is that the working level person is not an expert on legislation, and therefore takes a very cautious approach. Implementing Packard Commission goals will require substantial change at the grass roots level, and such change will require extensive education and support from senior leadership. Perhaps equally important, it will require a change in attitudes at higher levels, in order to move from a command-and-control by-the-book system, to a management process relying on delegation of authority.

B. SOME LESSONS FOR SETTING THE AGENDA

The experience of the last two years suggests several broad guidelines for setting the agenda for the next administration.

The first, learned from the experience of the first two Under Secretaries, is that the Secretary of Defense remains the final authority in acquisition and resource-allocation matters. Much of what should be done in the acquisition area requires the full support of the Secretary. A common theme of our interviews is that the key to the successful operation of DoD under the next administration will lie in the people appointed to senior positions, and the working relationships the Secretary defines among them.

The second is that quick action will be beneficial. Any change in administration provides a "window of opportunity" because working relationships among senior officials are still in flux. In addition, the Congress expects action demonstrating commitment to sound acquisition management. Earlier chapters describe some of the proposed legislation under delib ation; Congressional action will hinge on the actions taken by the next Secretary and his senior staff.

Third, several experts have cautioned that the best that can be hoped for is to establish processes and oversight mechanisms that can reasonably be expected to permit consistent and informed decisions. One reason is that it is impossible to rigorously optimize acquisitions decisions because of the array of military forces fielded and the wide range of potential contingencies. A second reason is that capable people are the key to good decision making. In short, reform should focus on eliminating processes and procedures that *prevent* them from doing their job, rather than trying to create processes that guarantee rational decisions.

Finally, the fourth guideline is that implementation must be balanced, because the Commission's recommendations are of a piece. Partial implementation of some of the recommendations without others could be harmful. For example, the delegation of authority to program managers could be a problem if they were not adequately trained and experienced. Similarly, the ideal of decentralized management depends upon creating a stable overall program, because otherwise the decisions and incentive structures across DoD component organizations could not be coordinated successfully. In particular, over the last two years, it would have been very difficult to adhere to program baseline agreements when the Secretary of Defense was being asked by the President to eliminate $500 billion from his five-year program.

In view of these guidelines, the recommendations provided in the next chapter are intended to provide some specific near-term actions and initiatives for improving the acquisition process within the broad organizations presently in place. The recommendations address organization, decision making, policy and regulations, and management.

C. CONCLUDING REMARKS

In some respects the acquisition process has undergone remarkable change in the last two years. In other respects it has proved remarkably resilient to change. In part, this resilience stems from the fact that working relationships had been established after six years

of the Reagan administration and it was simply too late to expect radical change. Also the lack of change stems from disagreement about whether DoD should comply with the literal mandate or the original intent of the Commission. Finally, there is disagreement about whether reforms are needed or desirable.

The quick initial actions of the President and Congress in response to the Commission's recommendations, showed high-level commitment to changing the process, and suggested that dramatic changes in the process might be forthcoming. However, upon closer inspection, the specific changes ordered are narrowly limited to organizations, placing the burden of acquisition reform on the shoulders of the DoD leadership--with the Under Secretary for Acquisition at the point. Given that the new Under Secretary came into an administration in which many of the top officials had been on the job for up to six years, one should not have expected his job to be easy. Indeed, in looking back on the two years of experience since the Packard commission, perhaps the most reasonable question is not why hasn't the Packard mandate been fulfilled, but why should one have expected the system to change much at all?

VIII. A PROPOSED AGENDA

This review suggests some clear themes for the priorities of the next administration. In some areas, experience suggests that progress is being made and will continue if senior officials continue to push in that direction. Those who agree with the Packard Commission's recommendations therefore believe the next Under Secretary should dedicate himself to a persistent struggle to change the system. The agenda presented here is tempered by the experience of the last two years, which suggests the need for the Secretary of Defense to take a lead role, and for the Department to focus on actions within the broad organizations already in place.

Each of the following sections provides a summary of progress made and problems remaining, and makes recommendations relating to organization, decision making, policy, and management. The recommendations are aimed at resolving ambiguities in functions and authorities, and building a senior management team for acquisition; standardizing and simplifying acquisition policy and oversight within each Service; resolving near-term problems with budget instability, and in the longer term, improving the Under Secretary's ability to advise the Secretary on long-term acquisition issues; providing a more disciplined decision-making environment, and ensuring high-level emphasis on regulation and management. Some of the recommendations relate to the ongoing duties of the Secretary and Under Secretary; some require undertaking new initiatives.

A. ORGANIZATION

The basic principles of streamlining and centralized control of acquisition policy have not been fully realized. In part this is because detailed definitions of proposed new functions and authorities were not provided by the Packard Commission. Therefore, we recommend action to clarify and enhance the roles of three central actors in the acquisition process: the Under Secretary for Acquisition, the Service Acquisition Executives, and program managers. The Under Secretary's staff appears to be well organized to carry out its functions; however, we recommend some changes in staff responsibilities to limit the participation of the OSD staff in program management issues.

Progress:

- The Under Secretary's authority has been defined by law. He has shaped his staff to provide integrated decision-making and policy-making support.
- The Defense Acquisition Board has been formed with the Under Secretary and Chairman and the Vice Chief of Staff of the JCS as the Vice-chairman.
- A Vice-chairman of the JCS has been created; this office provides a focal point for participation by military operational commanders in the DAB and JROC. The Chairman of the JCS represents them in the DRB.
- The Services have reorganized their acquisition organizations.

Problems:

- In practice, the Under Secretary's authority in "matters of acquisition" is weakened by successful appeals to the Secretary or the Deputy Secretary.
- The Commission's recommended shift of OSD staff functions from involvement in program management to broader planning and policy issues has been slow to occur.
- The Services' reorganizations have generally not increased program managers' authority. Program managers consequently see little difference in their jobs.
- None of the Services has created a central full-time authority for acquisition policymaking.
- No progress has been made in limiting the involvement of Congressional Staff in detailed defense decisions and policies.

Agenda:

- **The Secretary should delegate acquisition policy authority to the Under Secretary for Acquisition. To signal the Under Secretary's preeminent role, he should also revise directives (including 5000.1, and 5134.1) to strengthen the Under Secretary's functions within current organizations; and establish clear working relationships among senior acquisition officials, to include coordination among Secretary of Defense, Deputy Secretary Defense and Under Secretary Defense for Acquisition before the Under Secretary Defense for Acquisition issues major decisions.**

The Taft memorandum quoted in Chapter III and the experience of the past two years have defined the responsibilities of the Under Secretary. Below we suggest some authorities that should be granted to the Under Secretary in addition to those stipulated in the Taft memorandum. These would significantly enhance the ability of the Under

Secretary to perform his job. These are consistent with both the Packard Commission's principles and relevant provisions of law.

(1) Revise DoDD 5000.1 and 5134.1 to include the duties and authority of the Under Secretary of Defense for Acquisition specified in the *Defense Acquisition Improvement Act of 1986.*[1] In particular, in *matters of acquisition,* the Under Secretary should clearly outrank the Service Secretaries[2] and his acquisition decisions should have full effect unless overturned by the Secretary of Defense. An explicit process for appeals should be established.

(2) The Secretary should delegate authority to the Under Secretary to make milestone decisions conforming to Defense Resource Board guidance. This will establish the Under Secretary as the Secretary's primary agent for oversight of major acquisition programs.

In addition to these specific changes, the Secretary should clearly define the working relationships among the senior acquisition executives, particularly between the Under Secretary, the Deputy Secretary, and the Service Secretaries. This can be done informally. It will also be done in practice through the Secretary's decisions and his support of the Under Secretary in the appeals process.

To improve management oversight, the Under Secretary and Service Acquisition Executives should be established as a management team. One way to do this is to permit the Under Secretary to participate in the selection of these officials, which was recommended by the Commission. A close working relationship between the Under Secretary and these Service officials will provide the direct communications channel he needs to oversee programs. If this approach is successful, then a smaller OSD staff will be required to oversee individual programs.

It is also important for the Under Secretary and the Vice Chairman of the JCS to work together on acquisition issues. The Under Secretary, the Vice Chairman, and the Service Acquisition Executives could provide a core management team that bridges the major decision-making organizations within DoD and represents the major decision-making interests in acquisition. This team should be tasked to work together on a number of agenda items as outlined in some of the specific recommendations that follow.

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1 U.S. Congress, House Committee on Armed Services, *Report on the Duties and Authority of the Under Secretary of Defense*, November 16, 1987, p. 47.

2 Ibid, par. (e)(1).

- **The Secretary should act to standardize and simplify acquisition oversight and policy responsibilities within the Services.**

The Packard Commission recommendation of centralized authority for acquisition policy and oversight has not been realized within the Services. The program manager still deals with several chains of command on different issues, and from his perspective the operation of the system has not changed. Therefore, after consulting with the newly appointed Service Acquisition Executives and the Program Executive Officers and meeting with program managers on major programs, the Under Secretary should propose to the Secretary a DoD acquisition directive that would standardize and clarify relationships between these acquisition officials and other officials in the Services and OSD.

To create a centralized and more unified approach to acquisition issues, each Service Secretary should appoint an Under Secretary whose functions would parallel those of the Under Secretary for Acquisition at the OSD level. The Service Under Secretary would be the Service Acquisition Executive, would have authority for policy and oversight, and would advise the Secretary on resource allocation issues. The systems commands and functional components of the Services would report to the Under Secretary on matters of acquisition policy and oversight.

- **The Secretary should revise directives to clearly establish the program manager's decision authorities, and eliminate management by staffs at all levels.**

The Packard Commission recommended the adoption of commercial-style program management in which responsibility and authority are placed at the working level, as practiced in successful DoD programs such as the Polaris, Minuteman, and Joint Cruise Missiles. This constitutes a change in philosophy from viewing the program manager as a coordinator of program decisions to being a manager and decision maker. The program manager would become the lead official responsible for decisions relating to design and production, including such issues as force integration, logistics, and manpower. He would do this with the advice and support of functional experts within his organization, under the direction of senior Service officials.

The cornerstone for implementing this philosophy was to be a streamlined chain of authority for major acquisition programs, in which the program manager would answer to only one chain of command. However, streamlining as implemented in Service reorganizations has not significantly changed the way the program manager does his job.

Functional experts and staff advocates still direct program managers, rather than acting as advisors. Program managers frequently lack full control over their own staffs. The recommendations here attempt to better define the program manager's roles and decision-making authorities to rectify these problems. The Service Acquisition Executive would be the primary official responsible for enforcing these relationships.

The following actions will better define program managers' roles and authorities consistent with the Commission's recommendations for streamlining:

(1) Prohibit technical specialists and advisors outside a designated line of authority from *directing* program managers, and limit them to *advising* the program manager and senior decision makers. For major programs, this line of authority would be from the Secretary of Defense to the Defense Acquisition Executive to a Service Acquisition Executive to a Program Executive Officer to a program manager.

(2) Establish the program manager as the responsible *authority* for all program decisions. Give him the authority to balance or trade off opposing features and attributes within bounds set by the approved program baseline.

(3) *Make the program manager's decision final*, unless a functional manager or advocate appeals the decision to a Program Executive Officer or Service Acquisition Executive within a specified period of time. Pending resolution of the appeal, the program manager's decisions should hold.

(4) Make the program manager the principal rater for people supporting his program.

(5) Minimize the number of oversight layers interacting with the program. Delegate to lower levels to avoid excessive span of control. Have only one level of detailed oversight; provide higher levels with needed information.

(6) Establish that functional managers are responsible for the competence and the professional development of their people and for the quality of work within their functional areas. They are *not* responsible for program decisions, even decisions in their functional areas.

Several of these principles require executives to delegate authority, and many executives find this hard to do. Failure to truly delegate does not show in an organization chart, and correcting this management problem cannot be accomplished by reorganizing. Correction requires that executives understand what is needed and that they rely more on their line subordinates. To be willing to rely more on subordinates requires, in turn, that the subordinates be worthy of the superior's trust.

• **The Under Secretary should emphasize the strategic planning roles of his staff, and delineate their oversight responsibilities.**

The Under Secretary's staff supports him in a number of capacities: management oversight, advising the Secretary, and strategic investment planning. Under Secretary Costello has already begun the process of redefining roles for his staff to emphasize policy, procedure, oversight and integration functions.[3]. If the roles of the Service Acquisition Executives, Program Executive Officers, and program managers can be defined as outlined in the preceding recommendation, the Under Secretary should take quick action to shift greater responsibility for oversight to the Service acquisition chains.

Oversight roles should be clearly delineated to preclude *management involvement* -- attempts to direct program decisions outside the chain of authority--by OSD staff. Just as the Service staffs need to limit their involvement in program management, the Under Secretary needs to establish firmly that OSD oversight of acquisition programs does not extend to making program management decisions. While the Under Secretary must rely on his staff to be informed on important program matters, OSD staff should perform a strictly advisory role.

Of course, an informed and aggressive staff always has ideas about program management that deserve to be heard. The preceding recommendation proposed an appeals process for this.

• **The Under Secretary should review his staff for possible reductions if he finds the acquisition chain of command can fulfill for him responsibility for program oversight.**

If the Under Secretary finds he can rely on the acquisition chain of command to fulfill his responsibility for program oversight, then the need for an OSD-level staff to perform this function will decline. This will be balanced to some degree by increased staff demands for investment area assessments and other work on long-range planning issues. These demands should be reviewed and recommendations made on staff size and organization.

• **The Secretary should direct the Under Secretary and Service Acquisition Executives to consult with Congress in developing a plan for reducing the**

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3 U.S. Congress, House Committee on Armed Services, *Report on the Duties and Authority of the Under Secretary of Defense*, November 16, 1987, p. 40.

micro-management of programs by Congressional staff, and for consolidating reporting requirements.

If the Congress is assured that the Secretary and his staff are serious about improving the management of the acquisition process, many of their specific concerns could be handled more informally. Establishing such trust and working relationships could provide a basis for gradual elimination and consolidation of routine reporting requirements.

B. DECISION-MAKING PROCESSES

We have found that not much has changed to improve the federal budgeting process for defense. The President and Secretary need to consult with Congress to attempt to reach consensus on defense spending. As a basis for this, a thorough review of the acquisition program should be undertaken at the outset of the next administration, so that the President and Secretary can brief the Congress on defense acquisition options and their long-run implications.

Within the DoD decision-making process, our review indicates that the JCS now has ample authority and opportunity to provide a joint military perspective in acquisition decision-making.

The review also concludes that the Under Secretary for Acquisition has adequate influence over resource-allocation decisions through his participation in the Defense Resources Board and the Defense Acquisition Board. Within these organizations, the Under Secretary can advise the Secretary on the links between acquisition decisions and resource decisions in order to achieve a coherent acquisition program. His current role is consistent with the general view that overall resource decisions must be made by the Secretary, and that acquisition decisions must follow from, not dictate, resource decisions.

The Department can further the Packard Commission goals within the current organizational structure by improvements in long-range planning and by disciplining the decision-making processes to adhere to the Secretary's guidance. To aid in this process, the Under Secretary should eliminate two deficiencies in the current decision-making framework. First, he should develop longer-range acquisition plans, because the five-year defense planning time horizon is too short for "affordability" assessments. Second, he should work with the Services to develop mission area plans, major product area plans, and technology area plans. These analytical tools would serve as a basis for issuing a Defense Guidance that provides a meaningful strategic plan for acquisition programs.

To make this process work, the Defense Guidance must be strengthened; it should lay out the outlines of an acquisition program rooted in strategy and consistent with realistic resource projections. It should serve as a vehicle for translating overall investment strategies into statements of mission needs, which will then be included in Service programs. The ensuing program reviews and budget reviews should be disciplined and keyed to the guidance. Similarly, DAB decision-making should rely on it for financial guidance in making long-range affordability assessments.

It is important for the Secretary of Defense to improve the planning and budgeting process because the lack of a clearly stated and stable overall budget seriously undermines the efficiency of acquisition programs.

Progress:

- The national security planning process has been changed to promote stability by increasing planning realism:

  (a) It incorporates budget constraints in developing force projections for the Defense Guidance, and

  (b) Secretary Carlucci has set more realistic budget projections as a basis for planning.

- The Chairman of the JCS, the Vice Chairman of the JCS, the CINCs, and the Joint Staff are playing a larger role in acquisition and resource allocation, potentially increasing the influence of military operational commanders in decision making.
- The Under Secretary advises the Secretary in the DRB and chairs the DAB, giving him the potential to link resource allocation decisions and acquisition program decisions.
- The Services are better defining "requirements," expressing them initially (Milestone 0) as broad mission needs rather than in terms of specific hardware parameters.
- Prototyping has raised important issues in recent Defense Acquisition Board reviews of the Advanced Tactical Fighter and the Army's Light Helicopter.
- Improvements in Operational Test and Evaluation have been achieved in recent years.
- Live-fire testing has led to survivability improvements in the Bradley fighting vehicle; it promises to improve programs if applied judiciously.

Problems:

- National budgeting instability undermines DoD procedures designed to promote program stability:

  -- Months into the planning cycle, the FY 89 plans and programs were undermined when the projected budget was cut by 10 percent to meet Gramm-Rudman spending limits.

  -- Current planning projections of 2 percent real defense spending growth are probably overly optimistic, providing an unsound basis for current acquisition planning.

  -- Actions to stabilize individual programs are also undermined by the recent big changes in the budget.

- Congress has not issued five-year budget guidelines, nor has it adopted two-year defense budgeting, as recommended by the Commission to stabilize defense budgets.

- There is no systematic framework in place to assess long-range affordability and cost-performance trade-offs. As a general practice, the DAB and JROC examine programs one-at-a-time so they cannot consider broad affordability and trade-off issues, and the primary DRB focus extends only one to five years into the future.

Agenda:

- **The Secretary and the Chairman of the JCS should review the defense program and budget with the President and Congress as soon as possible after taking office in order to achieve an agreement on stable defense funding.**

Stability at all levels requires a national-level consensus on defense. The Secretary and Chairman of the JCS should brief the President and Congress on program alternatives and their long-range implications, and attempt to reach a consensus on overall funding trends.

- **In support of his overall program review, the Secretary should direct the Under Secretary and the DAB to review the ongoing acquisition program and offer alternative acquisition programs that meet conservative fiscal guidance.**

To achieve stable acquisition programs, the Secretary needs to make internal plans consistent with realistic budget projections. We recommend that the Secretary demonstrate

his commitment to stabilizing programs by developing a conservative "core" acquisition plan that he intends to execute, and by disciplining the resource-allocation process to keep these core programs on track. Adopting such an approach would not mean that the Secretary necessarily views the projected plan as adequate to meet security needs. However, this approach would demonstrate commitment to stabilizing high priority programs.

- **To promote program stability in the longer term, the Secretary should enforce a long-range strategic approach in the acquisition decision-making process, and direct the Under Secretary to develop better long-range planning tools.**

In addition to the review outlined above, a primary ongoing responsibility of the Under Secretary for acquisition is to bridge the time between today's acquisition decisions and their resources implications many years into the future. The current process has no systematic mechanisms for doing this. The following specific recommendations provide the analytical tools to support such an approach.

(a) The Secretary of Defense should direct the continued development of long-range planning estimates to provide a framework for assessing long-term affordability, thereby permitting informed cost-performance trade-offs.

Many observers have criticized the decision-making process for being short sighted and overly optimistic about out-year budget projections. These two problems lead to near-term budget decisions that are inconsistent with the resources available when the program matures. The development of a long-range planning estimate, which began in the summer of 1988, addresses this deficiency in the process. Several OSD components are working on this mechanism, which will project the resource requirements of current programs out 12 years. When completed, analysts can use it to check on the long-range "affordability" of acquisition programs.

In order for this mechanism to improve the stability of high priority acquisition programs, the projections should be conservative. Actual defense budgets will undoubtedly differ from the projection, but DoD (and Congress) generally finds it easier to adjust expenditures upward than in cutting relative to a plan. A conservative plan would help avoid the piecemeal cut backs and stretch-outs that plague programs today.

Although the planning estimate is a simple, mechanical projection, some judgment and caution is necessary in using it for these purposes. First, the projections should be limited to programs beyond Milestone I, where long-term resource commitments are intended. Adding up the potential costs of all the ideas being explored within the defense community would not be useful. Second, it should be made clear to the Congress that this is not a strategic plan, or a statement of what the Department believes it needs, but only an internal management tool.

(b) The Under Secretary, in conjunction with the Chairman of the JCS, should develop long-range investment area assessments that should form a basis for developing the Defense Guidance.

These assessments would be intended to develop general options for acquisition in broad mission areas, for example, anti-armor in Europe, or anti-submarine warfare. They should be developed for the Under Secretary under the auspices of the Defense Acquisition Board. The Defense Acquisition Board should be asked to review these assessments, which will focus the attention of the acquisition community on them.

The assessments are similar in some respects to assessments already being done. They would draw upon available studies; for example, they would encompass the technical assessments being prepared within the Under Secretary's mission area offices. They would complement the broad assessments already made for the Secretary by the Office of Program Analysis and Evaluation. They could serve as informational inputs for a range of defense decisions, but they would be particularly suited to provide a basis for developing acquisition program inputs for the Defense Guidance. The major elements of the assessments would include:

- Mission Area Assessments: These would focus on technology and threats, identifying gaps in capabilities and new opportunities.
- Competitive Strategy Assessments: These would consider how new technologies might be employed in support overall defense strategy.
- Current Inventory Assessments: These would focus on technological capabilities of current inventories, average age, physical depreciation, and depreciation of war fighting capabilities.
- Options Assessments: What are the broad opportunities for improving capabilities, including service-life extension, upgrades, new equipment, etc?
- Financial Assessments: What are the long-range budgetary trade-offs across options between structure, modernization, readiness, and sustainability?

In addition to being used by the Under Secretary to advise the Secretary, these assessments can serve as the guidance for Service acquisition investment plans such as the Naval Aviation Plan. These plans would specify which of the options would be selected, and could then examine the resource implications in more detail. The Defense Acquisition Board should be asked to approve these Service strategies if they meet overall defense guidance. This approval should be distinguished from force level assessments and line item reviews, because it would not constitute a resource commitment, but it would provide a consensus on an overall approach to meeting mission area needs.

- **The Secretary should use the Defense Guidance as a strategic planning tool, and discipline the resource-allocation process and acquisition process to comply with it.**

The Secretary should shape the Defense Guidance to provide the needed link between strategic planning activities and program decisions. It should provide the broad context for decision making both within the Defense Resources Board and within the Defense Acquisition Board. The guidance laid out should be reinforced through the subsequent decisions of the Secretary.

With respect to the PPB process, it has already been noted that currently the Defense Guidance is not a compelling factor in shaping Service programs. The Guidance asks the Services to do more than the fiscal guidance will allow, so they can essentially pick and choose among the items they will fulfill. However, the Secretary has adequate authority to ensure that Service programs conform to his guidance. (Moreover, for programs of special OSD concern, he has alternative sponsors for program development such as DARPA or other Defense Agencies.) In short, the Secretary can cause the system to fund the programs he wants, if he chooses to exert his influence.

With respect to acquisition decision-making, the Secretary should use the Defense Guidance and subsequent reviews to ensure that the proposed acquisition programs are consistent with overall strategies and investment area analyses. This would work as follows: In preparing inputs for the Defense Guidance, the Under Secretary for Acquisition should provide a schedule for Service review of mission areas, major product areas, and key technology areas. The Guidance should then indicate the mission needs identified through the investment area assessments, along with priorities and very broad resource guidance based on the investment area assessments. (This resource guidance is

necessary to define the realistic range of alternative solutions to meeting the mission need that will be explored under the supervision of the Defense Acquisition Board.)

- **The Under Secretary should use the Defense Acquisition Board to discipline the acquisition process; in particular he should ensure options are examined that meet the mission needs and funding goals specified in the Defense Guidance.**

As described in Chapter IV, an important function of the Defense Acquisition Board is to link current program development decisions with long range affordability issues. In the preceding recommendation we suggested that the Defense Guidance should provide the financial guidelines necessary for the DAB to carry out this function. The Board would be responsible for ensuring that relevant options are explored for meeting the operational need within these financial parameters. The key decision points for doing this are the early milestones when the plan for exploring options is developed and implemented.

The Under Secretary should also review the DAB process to simplify it and focus it on the most important issues at each milestone. He should attempt to reduce internal reporting requirements and propose to Congress the reduction of required reports. He should select programs for oversight based on the Secretary's potential concern over their progress. He should delegate oversight responsibility for more smaller and single service programs, but should oversee major joint programs, major multinational programs and special interest programs.

C. REGULATORY POLICY

An entire infrastructure has built up over the years around regulations. Workers within the government and industry are comfortable with this environment, because they have learned to work with it. Any attempts to change this will require a dedicated effort.

Progress:

- DoD has revised its regulations concerning rights in technical data, which will make it easier to purchase some off-the-shelf items.
- DoD has taken some steps to simplify regulations.
- DoD has made some progress toward increased use of commercial-style competition.
- The Air Force has a promising approach for Defense Enterprise Programs.

- DoD has completed a study that recommends ways to improve management of DoD specifications and standards.
- DoD has established a Pilot Contracting Activities Program to identify and test regulatory simplification and taken steps to standardize government specifications.

Problems:

- Regulations have not been made uniform across the Services.
- Improved training and incentives for acquisition personnel are needed to reduce barriers to the use of commercial-style buying practices, and to make other regulatory reforms.

Agenda:

- **The Under Secretary and the Service Acquisition Executives should develop more uniform regulations, and require that they are uniformly interpreted and applied.**

DoD's acquisition executives should encourage their staffs to review current practices and identify options for increasing uniformity across the Services. As noted below, significant changes in practice are likely to require changes in personnel training as well as revisions of directives, instructions, and regulations. Sustained support from senior officials is necessary for progress in this area.

- **The Under Secretary should aggressively support Defense Enterprise Programs as a vehicle for experimental changes in regulations.**

Enterprise programs offer a useful approach for experimenting with alternative regulatory arrangements. They also offers an area where concrete progress might be made. However, even though Congress passed enabling legislation two years ago, not much has happened to permit DEP managers to operate in the way that the Packard Commission recommended. Relentless pressure from the Under Secretary appears to be needed to permit Defense Enterprise Programs to be used as test cases for Packard recommendations.

- **The Under Secretary should strive to eliminate barriers to the use of commercial-style competition and the use of commercial products wherever militarily appropriate; training and better information should be stressed as the means to do this.**

Commercial practices should not be adopted for their own sake, but there is wide concern that too little effort is made to consider commercial alternatives. Implementation of pro-commercial reforms would require changes in habits and expectations for acquisition personnel (especially managers and engineers: they would have to form the habit of thinking first about commercial products and not unique specification items to perform a given function. Personnel with such habits would have greater experience at finding out what the commercial marketplace might have to offer and would be better equipped to help a program manager who wanted to make greater use of commercially-derived components.

We recommend that the Under Secretary give high priority to improved training as a means of increasing reliance on commercial-style competition and on commercial products for two reasons. First, acquisition personnel frequently fail to adapt commercial practices even when doing so is permissible under current regulations, because they do not know how it is permissible. Second, increased stress on training is one way to communicate the fact that the Under Secretary is not content with the lip service that these initiatives have too often received in the past.

We further recommend that the FAR passage mandating use of military specifications be amended to make an explicit exception for purchase of commercial products.

We also recommend that the Under Secretary develop incentive mechanisms that encourage greater initiative and innovation. For example, as a means of encouraging the cultural change that everyone favors, the Under Secretary could reward "problem solvers" in the work force, by asking program managers to identify workers who took risks to seize opportunities.

Finally, the Under Secretary and Service Acquisition Executives should examine whether improved common data bases on available items could be developed, or tapped to make it easier for acquisition personnel to find suitable commercial items.

D. MANAGEMENT OF PERSONNEL, TECHNOLOGY, AND THE INDUSTRIAL BASE

The Secretary's management of personnel, technology programs, and programs and policies relating to the technology base and industrial base are among his most important responsibilities. In many cases he is the principal advocate for these programs, but they are not always supported because their payoffs are indirect and long term. Greater attention is being given to these areas, but in most areas measurable change has not occurred. The Under Secretary should devote continued and sustained efforts to improve these elements of the infrastructure. Several specific actions are recommended.

Progress:

- The Services have made modest progress in training skilled program managers.
- Frameworks for better strategic planning in science and technology programs have been proposed.
- The Under Secretary has launched initiatives that if implemented could improve key process technologies, increase the productivity of defense manufacturers, and improve quality.
- Planning for industrial surge and mobilization is improving.

Problems:

- Program managers and their staffs do not always have the training and experience needed to assume the leadership role proposed by the Packard Commission.
- Progress in civilian personnel management is stymied by the unwillingness of the Office of Personnel Management to upgrade contracting officers to professional status, and by a general lack of commitment to develop highly skilled business managers.
- Proposals for extending the "China Lake Experiment" in flexible personnel management to additional facilities have not been adopted by Congress.
- No solution has been found to the dilemma presented by "revolving door" restrictions--how can managers experienced in defense acquisition be drawn from the private sector when they are restricted from returning to their prior jobs upon completion of their government assignments.
- In the absence of an effective strategy and priorities, it appears that too little is being invested to systematically address deficiencies in the defense industrial base.

Agenda:

- **The Under Secretary should upgrade and standardize the criteria for experience, education, and training for all (military and civilian) acquisition personnel.**

If the Packard Commission concept of placing decision authority at the program manager level is to be achieved, then program managers must be qualified at a uniformly high standard. The Under Secretary should set uniform criteria for program management personnel, especially those with primary field responsibilities: major program managers, and Program Executive Officers. The DoD standards should emphasize career patterns, education, training, and demonstrated capability in program office assignments. The Under Secretary should review current requirements with the Service Acquisition Executives, and the best of these should be combined into one DoD directive. In doing this, the present experience requirements for program managers, which allow a wide range of experience to qualify as "acquisition," should be revised to require more relevant experience. The military departments should continue to be responsible for the military acquisition personnel, within the guidelines established by the Under Secretary. Authority to waive these requirements should be limited to the Under Secretary.

To signal commitment to excellence in program management the Under Secretary should establish a master's level degree curriculum in program management.[4] One institution granting this degree should be the Defense Systems Management College. To bolster the faculty of this institution and develop an institutional memory on program management issues, a permanent faculty at DSMC should be established using procedures similar to those used in the Service Academies. The faculty should include successful program managers.

Improvements in the civilian work force will require a commitment to increasing their training, pay and experience. The Under Secretary could build the capabilities of the work force through the adoption of rigorous training programs. These programs are needed to change from the current command and control management practice, to the decentralized business management approach advocated by the Packard Commission. The programs would also serve as a screening device to determine which employees are eligible for higher level positions.

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4 A discussion of this idea is presented in *Implementation Skills.*

Particular emphasis should be given to the training of contracting officers. They are the key field personnel in dealing with contractors, and therefore are central to changing how business is conducted at the field level. It is suggested that the Under Secretary and the Service Acquisition Executives develop a new personnel management plan for contracting officers that better reflects their importance in the process.

The Under Secretary should continue to push for more flexibility in pay. In the long run, pay incentives, adequate training, and greater individual responsibility are essential for making acquisition jobs more personally rewarding, which is in turn essential for improving the acquisition work force.

- **The Secretary should direct the Under Secretary to establish program management career incentives to retain experienced program managers.**[5]

Rather than have experienced program managers retire in their mid-forties, a new career track should be established to permit them to extend their service. This change could do as much as any other to quickly increase the experience and skills of program managers, simply by retaining the best people who are already in the system. A board of the Under Secretary and the Service Senior Acquisition Executives would select outstanding program managers for this extended professional duty. The positions would provide incentive pay to make them attractive. Such personnel policies are used in other areas, so application to program management would not require radical changes in personnel policies.

- **The Under Secretary should assign a senior staff member to monitor programs and developments in acquisition personnel management.**

Presently, no single official within the Under Secretary's office is responsible for focusing on personnel management issues. Hence there is no tracking of progress in training or experience, and no consistent focus at senior management levels on improving the quality of the work force.

- **The Under Secretary should conduct an annual strategic review with the Defense Acquisition Board of infrastructure programs relating to science and technology programs, and the industrial and technology base.**

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5 A fuller discussion of this issue is presented in J. Ronald Fox, *The Defense Management Challenge*, Cambridge, Harvard Business School Press, 1988. See also, *Obstacles To Improving the Acquisition Process*, IDA Acquisition Study Working Paper, October 24, 1988.

This review should provide a basis for prioritizing needed investments for inclusion in the Defense Guidance.

Several initiatives in these areas have been described in this review. These initiatives are on track in addressing the need for adequate investment in the defense technology and industrial infrastructure. It appears that overall the processes are adequate to develop and sound infrastructure. However, it appears DoD has not committed adequate resources to solve the problem, nor has it developed the proper incentives to induce contractors to do the same.

The Under Secretary is the principal official responsible for husbanding these resources, and therefore it is his responsibility to examine and demonstrate the costs and benefits of infrastructure investments. This proposed strategic assessment of infrastructure issues should parallel the mission area investment area assessments described earlier. A process for such a review, is outlined in the science and technology task force report described in Chapter VI.

These assessments should be reviewed annually by the DAB, and approved by the Under Secretary. They should provide an input to the Defense Guidance, and thereby be factored into the deliberations of the Defense Resources Board and the Defense Acquisition Board. As a part of this process, the ongoing systematic collection of data on industrial base capabilities should be emphasized, because the basic facts on industrial capabilities are often unavailable.

- **The Secretary should work with the Executive Branch and Congress to develop improved "revolving door" legislation that meets the publics concerns with ethics while reducing the financial barriers to government service.**

While there is no obvious solution to the dilemma presented by revolving door restrictions, the problems they cause in terms of restrictions, the problems they cause in terms of discouraging entry into government service merit high level attention. Better ways need to be sought to insure the integrity of the defense acquisition process without imposing potentially severe financial hardship on individuals moving between government and industry.

APPENDIX

ACQUISITION ABBREVIATIONS

AAAM	Advanced Air-to-Air Missile
ATF	Advanced Tactical Fighter
AFSC	Air Force Systems Command
CICA	Competition in Contracting Act
CINC	Commander in Chief (of a Unified or Specified Command)
CNO	Chief of Naval Operations
CPS	Competitive Prototyping Strategy
DAB	Defense Acquisition Board
DAE	Defense Acquisition Executive
DAES	Defense Acquisition Executive Summary
DARPA	Defense Advanced Research Projects Agency
DEP	Defense Enterprise Program
DFARS	Defense Federal Acquisition Regulation Supplement
DoD	Department of Defense
DRB	Defense Resources Board
DSARC	Defense Systems Acquisition Review Council
DSB	Defense Science Board
DSMC	Defense Systems Management College
FAR	Federal Acquisition Regulation
GAO	General Accounting Office

JCS	Joint Chiefs of Staff
JRMB	Joint Requirements and Management Board
JROC	Joint Requirements Oversight Council
LFT&E	Live Fire Test and Evaluation
NDI	Non-developmental Item
NSDD	National Security Decision Directive
OMB	Office of Management and Budget
OSD	Office of the Secretary of Defense
OT&E	Operational Test and Evaluation
PEO	Program Executive Officer
POM	Program Objective Memorandum
PPBS	Planning, Programming and Budgeting System
SAE	Service Acquisition Executive
SARC	Systems Acquisition Review Council
TQM	Total Quality Management
USD(A)	Under Secretary of Defense (Acquisition)

IDA REPORT R-347
DEFENSE ACQUISITION: OBSERVATIONS TWO YEARS AFTER THE PACKARD COMMISSION, VOLUME I: MAIN REPORT

Office of the Under Secretary of Defense
for Acquisition
Room 3D139, The Pentagon
Washington, DC 20301

Under Secretary of Defense for Acquisition	1
Director, Defense Research and Engineering	1
Deputy Director, Defense Research and Engineering (Strategic and Theater Nuclear Forces)	1
Deputy Director, Defense Research and Engineering (Test & Evaluation	1
Deputy Director, Defense Research and Engineering (Research and Advanced Technology)	1
Director, Military Systems Technology	1
Deputy Under Secretary (Tactical Warfare Programs)	
Executive Director (Defense Science Board)	1
Director, Program Integration	1
Chief, Strategic Planning	35
Attn: LtCol William Blackwood	

Office of the Secretary of Defense
OUSD(A) (DoD-IDA Management Office) 1
1801 North Beauregard Street
Alexandria, VA 22311

Office of the Under Secretary of Defense for Policy
Room 4D825, Pentagon
Washington, DC 20301

Attention: Director, Net Assessment	1
Director, Defense Guidance and Planning	1

Office of the Assistant Secretary of Defense (Production
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