



REENGINEERING THE ACQUISITION OVERSIGHT AND REVIEW PROCESS

VOLUME ONE

FINAL REPORT
TO THE
SECRETARY OF DEFENSE
BY THE
ACQUISITION REFORM
PROCESS ACTION
TEAM

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9 DECEMBER 1994

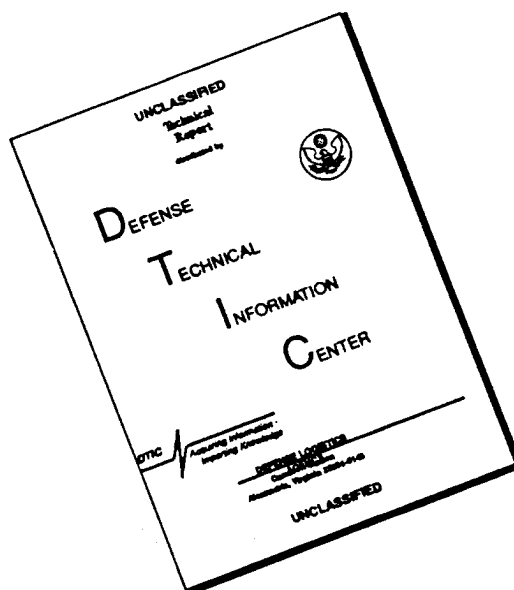
CHARTER

"...**D**evelop
within 90 days
a comprehensive
plan to
reengineer the
oversight and
review process
for systems
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in both
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and OSD
to make it
more effective
and efficient
while maintaining
an appropriate
level of oversight."

--Dr. William J. Perry
Secretary of Defense

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ACQUISITION AND
TECHNOLOGY

OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON
WASHINGTON DC 20301-3000



December 9, 1994

MEMORANDUM FOR THE DEPUTY UNDER SECRETARY OF DEFENSE
(ACQUISITION REFORM)

FROM: Team Leader, Oversight and Review Process Action Team

SUBJECT: Final Report Oversight and Review Process Action Team

The Secretary of Defense chartered this Process Action Team to "...develop within 90 days a comprehensive plan to reengineer the oversight and review process for systems acquisition, in both the Components and OSD, to make it more effective and efficient, while maintaining an appropriate level of oversight." On behalf of the team, I am privileged to present you our final report.

This report offers 30 concrete recommendations for improving the process plus three others to implement the recommendations senior DoD leadership decides to undertake. We have included an implementation plan for each recommendation to allow the reengineering to get off to a fast start.

This was a difficult task for the Process Action Team. Nonetheless, through a lot of sweat, persistence and teamwork, we have crafted a report that reflects a consensus team view. We are proud of that fact--the process worked!

You should also note that the Team, again by consensus, recommended that some of their numbers be core members on a follow-on team to implement the recommendations. I interpret this as reflective of their common commitment to the product they produced--another sign that the process worked!

Thank you for the opportunity to lead this team.

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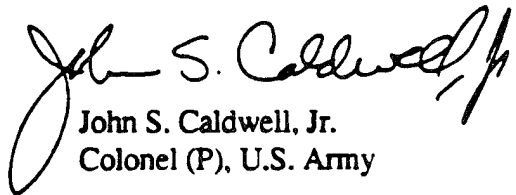

John S. Caldwell, Jr.
Colonel (P), U.S. Army



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EXECUTIVE SUMMARY

THE CHARTER

In *Acquisition Reform: A Mandate for Change*, the Secretary of Defense, William Perry, concluded "...DoD has been able to develop and acquire the best weapons and support systems in the world. DoD and contractor personnel accomplished this feat not because of the [acquisition] system, but in spite of it. And they did so at a price—both in terms of sheer expense to the nation and eroded public confidence in the DoD acquisition system. It is a price the nation can no longer afford to pay...It [DoD] must reduce the cost of the acquisition process by the elimination of activities that, although being performed by many dedicated and hard working personnel, are not necessary or cost effective in today's environment."¹

Therefore, as part of a bold plan to reengineer the entire acquisition process, the Secretary chartered a Process Action Team to "...develop within 90 days, a comprehensive plan to reengineer the oversight and review process for systems acquisition, in both the Components and OSD, to make it more effective and efficient, while maintaining an appropriate level of oversight."²

OBJECTIVES

Our recommendations will—

- Help field what the warfighter needs when he needs it. Oversight and review must contribute to this basic objective. The reengineered process should facilitate getting quality products to the user faster, better and cheaper.
- Demand accountability by matching managerial authority with responsibility. Those in the executing chain should make decisions; those outside the executing chain should not have the authority to either make or delay decisions. Furthermore, the oversight and review process should vest the authority to make decisions at the lowest level possible and hold accountable those who make the decisions.

¹ Perry, William, "Acquisition Reform: A Mandate for Change," *Defense Issues*, Washington, DC: US Department of Defense, Vol. 9, No. 10, pp. 1-5.

² Perry, William, Charter for the Process Action Team on the Oversight and Review of the Systems Acquisition Process, Washington, DC: US Department of Defense, Aug. 29, 1994, p. 3.

- Promote flexibility and encourage innovation based on mutual trust, risk management and program performance. The oversight and review process should be grounded in a basic premise that those closest to the information have integrity and competence and may be trusted to make reasonable decisions. The process should be readily tailorable depending upon such factors as the inherent program risk and complexity, the program manager's experience, the program's history, total dollar value, Congressional interest and similar factors.
- Foster constant teamwork among everyone who is a stakeholder. Teamwork depends on everyone sharing a common goal. That common or unifying goal is optimizing the product to be delivered to the warfighter.
- Actively promote program stability. The oversight and review process should acknowledge the disruptive influence that delayed decisions and decision revisits have on programs. The process should delay or undo decisions only in those circumstances where there is compelling evidence that an immediate decision would be imprudent or that a previous decision was fatally flawed.
- Balance the value of oversight and review with its costs. One of the chief functions of oversight and review is to provide the decision maker with timely, accurate information with which to make decisions—but not at any cost. We want an oversight and review process that has net added value—one where the time, dollar, manpower and opportunity costs of the oversight and review are clearly outweighed by the added value to the decision maker.
- Emulate the best practices of successful commercial companies and successful Government ventures. The *Packard Commission Report* urged that DoD learn from what has worked for industry and for some highly successful DoD programs.³ We believe that the institutionalized oversight and review process needs to use such practices as a benchmark.
- Preserve the public trust. The customers of the oversight and review process include the Secretary, the President, the Congress and the taxpayer as well as those engaged day-to-day in the acquisition process. These customers need to have confidence that the oversight and review process is helping provide appropriate stewardship of the public monies.

³ President's Blue Ribbon Commission on Defense Management. *A Formula for Action: A Report to the President on Defense Acquisition*, Washington, DC: April 1986, pp. 11-13.

OUR VISION

The team collaboratively developed a broad vision for the reengineered process. We saw this as a cornerstone task for our work. We used that vision as the acid test to assure ourselves that every element of the reengineering was moving us toward where we wanted to go.

To have a modernized oversight and review process, hard-linked to the national military strategy, responsive to the priorities of the warfighting Commanders-in-Chief, sensitive to costs, and characterized by mutual trust, flexibility, teamwork and common sense.

Figure 1. OUR VISION

MEASURING SUCCESS: METRICS AND "STRETCH GOALS"

a. **Metrics.** Our research led us to conclude that an essential element of any reengineering is to begin with some ambitious, quantifiable goals; we describe these as "stretch" goals.⁴ Their purpose is first to translate the Secretary's mandate into something measurable. More importantly, we believe that metrics can focus managerial attention on what is really important and form the basis for the reengineering process. We found no systematic metrics, at either the macro- or individual program-level, to periodically measure the cost or the value of oversight and review. We believe that having a small set of key metrics at a macro level is critical for measuring progress toward the more efficient and cost-effective system the Secretary has asked for. These goals are a basis for the metrics. Measuring progress toward our goals will tell us how well we are proceeding. The goals themselves have no analytical basis. We empirically derived them, believing that they represent a significant challenge or "stretch," while seeing them as realistic in the sense that they could be achievable within 5 years or less.

b. **"Stretch" Goals.** We believe that each recommendation in this report, once implemented, will contribute to aggregate progress toward one or more of the following four goals:

- **Reduce the percentage of programs with Acquisition Program Baseline breaches to no more than 5 percent.** The fraction of programs breaching their acquisition program baseline is a clear measure at a macro-level of how effective the oversight and review process is. If the process is in control, that fraction should be very small—a breach should be a rarity.

⁴ Hammer, Michael and Champy, James, *Reengineering the Corporation: A Manifest for Business Revolution*, New York: Harper Business, 1993, pp. 31-36.

- **Reduce cycle time by 50 percent.** This goal directly relates to getting materiel to the warfighter faster. Progress toward it connotes a better balancing of requirements and the time it takes to achieve them, reducing program content to what is truly essential, better managing of risks and more stabilizing of program budgets.
- **Reduce the number of people in the acquisition oversight and review process by 50 percent.** Moving toward this goal directly increases efficiency and reduces direct and opportunity costs. Reaching a goal of this magnitude will discourage "scaling" behaviors in which all present activities remain, but at reduced scale. Having a 50 percent reduction in people means those activities which add less value must disappear.
- **Reduce the average cost of a milestone review by 50 percent.** The direct costs of milestone reviews are not huge in relative terms. However, the indirect costs—particularly opportunity costs—can be very substantial. For instance, preparing milestone documentation within a program office normally occurs concurrently with other substantive activities (e.g., the writing of a Request for Proposal, the evaluating of development test results, the selecting of sources or the reviewing of a contractor's hardware design for testing). Because program offices do not hire people temporarily to prepare milestone documentation, the preparing of that documentation either causes the program office to staff to higher-than-necessary levels or to dilute the work on the other, concurrent activities. A substantial decrease in aggregate milestone costs will indicate a big step toward increased efficiency and effective use of the work force.

Figure 2 illustrates (for ACAT I only) the Process Action Team's recommendation for a reengineered oversight and review process.



The illustrated reengineered oversight and review process—

- **Forges a Three-Milestone Process.** To make the process more efficient, our reengineered process has three major milestone decisions while maintaining other critical decisions. Who the decision makers are depends on what the decision is, as well as the size of the program and how well the program is doing relative to its baseline.
- **Trims Milestone Decision Documents and Activities.** There needs to be a dramatic decrease in the number of documents and activities required for a Milestone decision. Many of the current documents are unnecessary in today's environment. In addition to the statutory documents (e.g., the Acquisition Program Baseline) and the statutory activities (e.g., Independent Cost Estimate), we recommend a single, summary-level decision document for the Milestone. This document would address only the program-specific, critical questions pertinent to the decision. The decision maker should be able to tailor-in other documents or tasks on an exception basis.

- **Collapses the Number of Formal Pre-Milestone Meetings to One.** We conclude that numerous sequential Component- and OSD-level meetings and reviews before a Milestone decision meeting are unnecessary activities. There should be no more than one pre-Milestone meeting with all stakeholders present. In our model the program's Component Acquisition Executive would chair the single meeting for ACAT I programs. The purpose of the meeting is to definitively address issues by either resolving them on-the-spot or deciding to elevate them to the decision maker; having another meeting would not be an option.
- **Institutionalizes Integrated Product Teams to Do Oversight and Review.** The model abolishes the notion that advice to the decision maker should be functionally focused. Rather, we believe that the process will be more effective if oversight staffs use the Integrated Product Team approach that Component program offices are currently adopting. Central to this approach is that advising staff would be organized into integrated product oversight teams led by program integrators. These integrators would have Program Executive Officer qualifications and be accountable to the decision maker for providing integrated advice. Nominally, this integrator would be the sole staff member present at decision meetings.
- **Aligns Program Accountability and Reporting.** Today there is a short, unambiguous chain of reporting and accountability for most major defense acquisition programs: program manager to Program Executive Officer to Component Acquisition Executive. There is not a similar, clear line to the Component Acquisition Executive for many less-than-major programs. We believe that adopting a short and clear reporting chain for all defense programs would be a major step toward making the oversight process more efficient and effective. In particular, all acquisition program managers should have a senior, Program Executive Officer-type overseer who can provide guidance, help, mentorship and other functions that the Program Executive Officer provides for larger programs. That Program Executive Officer-type person would report exclusively to the Component Acquisition Executive and have Program Executive Officer qualifications in accordance with the Defense Acquisition Workforce Improvement Act; his or her full-time job would be overseeing acquisition programs. To further harmonize accountability and reporting we also recommend that there be no reporting or review requirements levied on program offices from outside the accountability chain.
- **Centralizes the Affordability Decision by Placing It Into the Warfighters' Hands.** The program affordability decision today is actually many decisions involving multiple processes and groups of decision makers within the Components and OSD. We conclude that making the process more efficient demands that deciding whether or not a program is affordable should be within

the warfighters' domain. Using program cost estimates and funding alternatives from the acquisition community combined with a top line from the Comptroller, the warfighter should decide if a program is affordable within the context of the national military strategy and warfighter priorities. We envision that the warfighter will assume a major role in budget decisions by choosing from among warfighter priority-driven alternative program decision packages the acquisition community provides.

- **Consolidates the Oversight and Review Process for Joint Programs and Those Programs Requiring Substantial Inter-Service Harmonizing.** To be more efficient the reengineered process must abolish the convoluted hodge-podge of mechanisms and activities structured over time to try to harmonize joint program execution, budgets and oversight. We believe that removing from the Services the responsibility for overseeing and budgeting for these programs is an overdue and necessary step for doing this. We think creating a Joint Acquisition Executive review and oversight structure would be a uniform and more effective way of overseeing these programs. In concept, this new Executive would have both the budgeting and executing authority for all joint programs as well as those needing substantial integration among the Components. The Joint Acquisition Executive would report to the Defense Acquisition Executive and, in turn, would have product-oriented Joint Program Executive Officers responsible to him or her for execution. Program management would remain within existing Component organizations. We recommend that the Defense Acquisition Executive try this approach as a reengineering experiment using a few of the most problem-plagued joint or collaborative programs to test the concept.

Some other recommendations are to—

- **Establish More Stringent Experience Criteria for ACAT I Program Managers and Deputy Program Managers** to significantly improve the quality of major defense acquisition program execution, facilitate enhanced trust between the Program Manager and the Milestone Decision Authority, and minimize the requirement for independent program assessments by Milestone Decision Authority oversight and review staff.
- **Stabilize Major Defense Acquisition Program Manager Tenure from Program Initiation until Start of Production** to provide more consistent, long-term management of major programs.
- **Establish a Career Civilian Deputy for the Defense Acquisition Executive and each Component Acquisition Executive** to provide much-needed continuity at these senior levels of the acquisition process.

- **Revitalize the Acquisition Program Baseline** as the major program control tool and eliminate the need for other documents and "contracts" (e.g., exit criteria) among the program manager, the user and the Milestone Decision Authority. The Acquisition Program Baseline is the single appropriate document to use when assessing a program's status, readiness to proceed, and required level of oversight and review. Adherence to the Acquisition Program Baseline lessens the need for costly, exhaustive reviews and intrusive oversight.
- **Institutionalize a Summit Process for ACAT I Programs** to highlight opportunities for cost, schedule and performance trade-offs to: relax no-longer-necessary performance requirements and reduce cost, risk, and schedule; or, take advantage of recent technology advancements to increase system performance at reasonable cost and schedule.
- **Apply Reengineering Principles to Contractor Oversight.** In view of continuing acquisition workforce reductions, the report provides specific recommendations on selecting high-performance contractors and adopting commercial oversight practices.

CONCLUSIONS

This report represents a consensus view of the Process Action Team members, after extensive consultation with process stakeholders.

The recommendations are modular and, with few exceptions, independent from one another. This approach gives the Secretary the flexibility to implement all of the recommendations or only those he selects without the penalty of undoing the entire reengineering effort.

We recommend that the USD(A&T) appoint a small, Joint Service/OSD group, reporting directly to the USD(A&T), including members from the Process Action Team, to guide the implementation of the Secretary of Defense-approved recommendations to reengineer the acquisition oversight and review process.

REENGINEERING THE ACQUISITION OVERSIGHT AND REVIEW PROCESS

A FINAL REPORT

VOLUME I

I. INTRODUCTION AND OVERVIEW

1.1. The Charter

a. Secretary Perry's Charter. In *Acquisition Reform: A Mandate for Change*, the Secretary of Defense, William Perry, concluded "...DoD has been able to develop and acquire the best weapons and support systems in the world. DoD and contractor personnel accomplished this feat not because of the [acquisition] system, but in spite of it. And they did so at a price—both in terms of sheer expense to the nation and eroded public confidence in the DoD acquisition system. It is a price the nation can no longer afford to pay...It [DoD] must reduce the cost of the acquisition process by the elimination of activities that, although being performed by many dedicated and hard working personnel, are not necessary or cost effective in today's environment."¹

Therefore, as part of a bold plan to reengineer the entire acquisition process, the Secretary chartered a Process Action Team (PAT) to "...develop within 90 days, a comprehensive plan to reengineer the oversight and review process for systems acquisition, in both the Components and OSD, to make it more effective and efficient, while maintaining an appropriate level of oversight."²

b. Broad Goals. The Secretary gave us three broad goals to guide our work:³

- Determine the level of oversight and review necessary to ensure efficient and effective acquisition programs and to encourage trade-offs among cost, schedule, performance and the industrial base. The level of oversight and review must weigh the costs of oversight against the risk of making uninformed program decisions.
- Ensure that program oversight and review add value to the particular acquisition program. All DoD organizations that contribute to the acquisition process should function as an integrated team.
- Ensure that the requirements necessary to conduct efficient and effective program oversight use, to the maximum extent possible, data that program offices already

¹ Perry, William, "Acquisition Reform: A Mandate for Change," *Defense Issues*, Washington, DC: US Department of Defense, Vol. 9, No. 10, pp. 1-5.

² Perry, William, Charter for the Process Action Team on the Oversight and Review of the Systems Acquisition Process, Washington, DC: US Department of Defense, Aug. 29, 94, p. 3.

³ Ibid., pp. 3-4

collect. Other data should place the lowest administrative burdens on the program office.

1.2. Developing a Vision

a. Why a Vision? We felt that our first task was to collaboratively develop a broad vision for the reengineered processes. We saw this as a cornerstone task for our work—we wanted a vision to use as the acid test to assure ourselves that every element of the reengineering was moving us toward where we wanted to go.

b. The Benchmarks. We began by deciding what characteristics the reengineered oversight and review process should have. There are two elements implicit in these characteristics. First, we concluded that the current process, as practiced, is not ideal; the “new” characteristics frame the ideal and further delineate the vision. Second, we derived ideal characteristics so that we could use them as benchmarks—benchmarks to gauge whether or not the reengineered model we offered would really make the process better.

- **Help field what the warfighter needs when he needs it.** Oversight and review must contribute to this basic objective. The reengineered process should facilitate getting quality products to the user faster, better and cheaper.
- **Demand accountability by matching managerial authority with responsibility.** Those in the executing chain should make decisions; those outside the executing chain should not have the authority to either make or delay decisions. Furthermore, the oversight and review process should vest the authority to make decisions at the lowest level possible and hold accountable those who make the decisions.
- **Promote flexibility and encourage innovation based on mutual trust, risk management and program performance.** The oversight and review process should be grounded in a basic premise that those closest to the information have integrity and competence and may be trusted to make reasonable decisions. The process should be readily tailorable depending upon such factors as the inherent program risk and complexity, the program manager's experience, the program's history, total dollar value, Congressional interest and similar factors.
- **Foster constant teamwork among everyone who is a stakeholder.** Teamwork depends on everyone sharing a common goal. In our view, that common or unifying goal must be optimizing the product to be delivered to the warfighter.
- **Actively promote program stability.** The oversight and review process should acknowledge the disruptive influence that delayed decisions and decision revisits have on programs. The process should delay or undo decisions only in those circumstances where there is compelling evidence that an immediate decision would be imprudent or that a previous decision was fatally flawed.
- **Balance the value of oversight and review with its costs.** One of the chief functions of oversight and review is to provide the decision maker with timely, accurate information with which to make decisions—but not at any cost. We want an

oversight and review process that has net added value—one where the time, dollar, manpower and opportunity costs of the oversight and review are clearly outweighed by the added value to the decision maker.

- **Emulate the best practices of successful commercial companies and successful Government ventures.** The *Packard Commission Report* urged that DoD learn from what has worked for industry and for some highly successful DoD programs.⁴ We believe that the institutionalized oversight and review process needs to use such practices as a benchmark.
- **Preserve the public trust.** The customers of the oversight and review process include the Secretary, the President, the Congress and the taxpayer as well as those engaged day-to-day in the acquisition process. These customers need to have confidence that the oversight and review process is helping provide appropriate stewardship of the public monies.

c. **Our Vision.** We distilled these characteristics into a single crisp statement that we believe captures the crucial elements that we want the reengineered process to have. It is a future-oriented vision because we are under no illusion that we can get to the ideal process overnight. That vision statement is in **Figure 1**.

To have a modernized oversight and review process, hard-linked to the national military strategy, responsive to the priorities of the warfighting Commanders-in-Chief, sensitive to costs, and characterized by mutual trust, flexibility, teamwork and common sense.

Figure 1. OUR VISION

- “modernized” means a system that is in step with today’s realities of diminishing resources—both people and dollars—yet takes advantage of the opportunities from technology advancements and new ways of doing business in the commercial sector.
- “hard-linked to the national military strategy” connotes that the oversight and review process must be securely, explicitly and permanently bonded to military strategy at the national level (as contrasted to lower level strategies that may exist at the Service level or below).
- “responsive to the priorities of the warfighting Commanders-in-Chief” declares that the process should yield results that are in accord with warfighter priorities. These priorities may subordinate those of the Services or acquisition agencies.

⁴ President’s Blue Ribbon Commission on Defense Management. *A Formula for Action: A Report to the President on Defense Acquisition*, Washington, DC: April 1986, pp. 11-13.

- **“sensitive to costs”** says that the process must especially focus on the costs of what we buy and provide for a means of continually exploring opportunities for reducing cost by trading performance and schedule. It also means that the process must be sensitive to both direct and opportunity costs of added oversight and review—adopting only those measures where the added value exceeds the costs.
- **“characterized by mutual trust”** leads to a process that presumes people at all levels can be trusted to behave rationally, reasonably and honestly. The process need not, therefore, expend large resources in checking, inspecting, monitoring and “second-guessing.”
- **(characterized by) “flexibility”** decrees that the process should be easily adaptable (in both theory and practice) to the specifics of the program and the decision makers’ needs. Its framework should not consist of a set of universal templates, decision rules or processes that limit the flexibility of those in the accountability chain to tailor the process.
- **(characterized by) “teamwork”** abolishes the notion that oversight and review must be an adversarial process—those being overseen pitting themselves against the overseers. It envisions that oversight and review is a collaborative effort of people with diverse interests but unified by the common goal of working together to meet the warfighters’ needs.
- **(characterized by) “common sense”** pleads that the reengineered process should pass the “man-in-the-street” logic test. It should be simple, consistent, practical, prudent and easily implementable.

1.3. An Overview of Our Results. The result of our work is a comprehensive, reengineered process model consisting of recommendations and implementation plans. This model represents a consensus view of the PAT’s members and treats virtually every important aspect of the acquisition oversight and review process. Our model’s key features are consistent with the *Packard Commission Report* and the *1993 Report of the Defense Science Board Task Force on Acquisition Reform*. In scope, they cover the processes within OSD and the Components, including contractor oversight, program decision processes and the processes for starting programs. The model we recommend has many salient features. Chief among these are that it—

- **Forges a Three-Milestone Process.** To make the process more efficient, our reengineered process has three major milestone decisions while maintaining other critical decisions. Who the decision makers are depends on what the decision is, as well as the size of the program and how well the program is doing relative to its baseline.
- **Trims Milestone Decision Documents and Activities.** There needs to be a dramatic decrease in the number of documents and activities required for a Milestone decision. Many of the current documents are unnecessary in today’s environment. In addition to the statutory documents (e.g., the Acquisition Program Baseline) and the statutory

activities (e.g., Independent Cost Estimate), we recommend a single, summary-level decision document for the Milestone review. This document would address only the program-specific, critical questions pertinent to the decision. The decision maker should be able to tailor-in other documents or tasks on an exception basis.

- **Collapses the Number of Formal Pre-Milestone Meetings to One.** We conclude that numerous sequential Component- and OSD-level meetings and reviews before a Milestone decision meeting are unnecessary activities. There should be no more than one pre-Milestone meeting with all stakeholders present. In our model the program's Component Acquisition Executive (CAE) would chair the single meeting for Acquisition Category I (ACAT I) programs. The purpose of the meeting is to definitively address issues by either resolving them on-the-spot or deciding to elevate them to the decision maker; having another meeting would not be an option.
- **Institutionalizes Integrated Product Teams to Do Oversight and Review.** Our model abolishes the notion that advice to the decision maker should be functionally focused. Rather, we believe that the process will be more effective if oversight staffs use the Integrated Product Team (IPT) approach that Component program offices are currently adopting. Central to this approach is that advising staff would be organized into integrated product oversight teams led by program integrators. These integrators would have Program Executive Officer (PEO) qualifications and be accountable to the decision maker for providing integrated advice. Nominally, this integrator would be the sole staff member present at decision meetings.
- **Aligns Program Accountability and Reporting.** Today there is a short unambiguous chain of reporting and accountability for most major defense acquisition programs: program manager to PEO to CAE. There is not a similar, clear line to the CAE for many less-than-major programs. We believe that adopting a short and clear reporting chain for all defense programs would be a major step toward making the oversight process more efficient and effective. In particular, all acquisition program managers should have a senior, PEO-type overseer who can provide guidance, help, mentorship and other functions that the PEO provides for larger programs. That PEO-type person would report exclusively to the CAE and have PEO qualifications in accordance with the Defense Acquisition Workforce Improvement Act (DAWIA); his or her full-time job would be overseeing acquisition programs. To further harmonize accountability and reporting we also recommend that there be no reporting or review requirements levied on program offices from outside the accountability chain.
- **Centralizes the Affordability Decision by Placing It Into the Warfighters' Hands.** The program affordability decision today is actually many decisions involving multiple processes and groups of decision makers within the Components and OSD. We conclude that making the process more efficient demands that deciding whether or not a program is affordable should be within the warfighters' domain. Using program cost estimates and funding alternatives from the acquisition community combined with a top line from the Comptroller, the warfighter should decide if a program is affordable within the context of

the national military strategy and warfighter priorities. We envision that the warfighter will assume a major role in budget decisions by choosing from among warfighter priority-driven alternative program decision packages provided by the acquisition community.

- **Consolidates the Oversight and Review Process for Joint Programs and Those Programs Requiring Substantial Inter-Service Harmonizing.** To be more efficient, the reengineered process must abolish the convoluted hodgepodge of mechanisms and activities structured over time to try to harmonize joint program execution, budgets and oversight. We believe that removing from the Services the responsibility for overseeing and budgeting for these programs is an overdue and necessary step. We think creating a Joint Acquisition Executive and oversight structure, would be a uniform and more effective way of overseeing these programs. In concept, this new Executive would have both the budgeting and executing authority for all joint programs as well as those needing substantial integration among the Components. The Joint Acquisition Executive would report to the Defense Acquisition Executive (DAE) and, in turn, would have product-oriented Joint Program Executive Officers responsible to him or her for execution. Program management would remain within existing Component organizations. We recommend that the DAE try this approach as a reengineering experiment using a few of the most problem-plagued joint or collaborative programs to test the concept.
- **Revitalizes the Acquisition Program Baseline (APB).** We believe that the usefulness of the APB as a control tool has diminished over time. We also believe that re-energizing the APB is an essential element of the reengineering. The APB needs to regain its rightful place as the "contract" among the program office, the user and the ultimate decision maker. In this role, the APB and progress toward the APB parameters should supplant exit criteria. Furthermore, the program's progress toward the agreed APB ought to be the primary metric for deciding the appropriate degree of oversight and review a program needs. If a program is proceeding according to the APB contract, a reduced level of oversight and review would be required.
- **Strengthens Program Manager Experience, Tenure and Selection Requirements.** We surmised that a key, but implicit, factor underlying today's oversight process is a perception that program managers often lack the experience and incentives to be forthcoming and candid in their reporting to decision makers. We agree that there is a basis for the perception. Therefore, one of the important features of the reengineered model is a substantial strengthening of program manager experience requirements (relative to the minimal DAWIA requirements), and imposing a highly disciplined process for selecting program managers and matching them to specific programs. We also recommend longer tenures for program managers than what the Components now practice.

II. WHERE DO WE HAVE TO GO?

2.1. State of the Practice

a. The Process Now. A retrospective look at the acquisition oversight and review process could suggest that it is pretty good. We concluded, in fact, that the basic oversight and review philosophy that DoDD 5000.1 and DoDI 5000.2 espouse was mostly sound and offered a good deal of flexibility. Many of those commenting on our draft reports argued that the current processes simply needed some "fine-tuning," streamlining and reinvigoration. The Secretary noted our processes led to our "being able to acquire the best weapons and support systems in the world."⁵ But the Secretary also went on to charter this PAT to reengineer the process using the rationale that we can no longer afford to do business in the way we have in the past. Clearly, not everyone in the current system accepts the Secretary's premise and mandate to change; some people continue to ask—**does the process really need reengineering?** Let's see if we can find some answers.

b. Programs in Breach Status. We obtained recent data on the percentage of major acquisition programs that are in a breach status relative to their APBs. Figure 2 depicts that a significant number of major defense acquisition programs are in a breach status. The differences between the ACAT ID and ACAT IC programs are due mostly to the fact that the ACAT IC programs are more stable than the ACAT ID; the ACAT ICs are largely in the latter stages of development or in production. The reasons for the breaches are varied: unrealistic up-front cost, schedule and performance baselines; technical problems; cost growth; management problems; etc. Whatever the reason, we believe that the acquisition oversight and review process should be a vital control mechanism to minimize program breaches. Clearly, from the frequency of these failures, a minor "fine-tuning" of the acquisition oversight and review process is not enough.

c. Cycle Time. The current cycle time (from requirement identification to hardware in the users' hands) is 8 to 12 years for DoD systems. For complex products in the commercial world, cycle times are 4 to 5 years **and decreasing**. The results of this increasing divergence are that the DoD may no longer have access to state-of-the-art technology and that systems may become near-obsolete by the time they are fielded.⁶ Our investigations showed that a significant causal factor in long cycle times is the oversight and review process. For instance, we believe that the oversight and review process rarely highlights to the user "less-than-perfect" program alternatives that inherently have short cycle times. Thus, the user is drawn to choose long cycle time alternatives because there are no others from which to choose. Too, the process itself adds to cycle time. We found that the average delay directly attributable to the Defense Acquisition Board decision process was, in the last 2 years, 15 weeks beyond the scheduled 180-day Defense Acquisition Board process. These delays are not always due to the process breaking down; sometimes there are delays due to significant program problems and high-level interest. Whatever the reasons, Defense Acquisition Board delays could add almost a year to cycle time over the life of the program. Less measurable, but probably more significant, are the schedule increases from

⁵ Perry, "Acquisition Reform: A Mandate for Change," p. 5.

⁶ Perry, "Acquisition Reform: A Mandate for Change," p. 2.

budget cuts, adding unnecessary content to the contractor's work, needlessly elevating decisions, coordinating among various peripheral organizations and forcing contractors to comply with detailed design and how-to specifications.

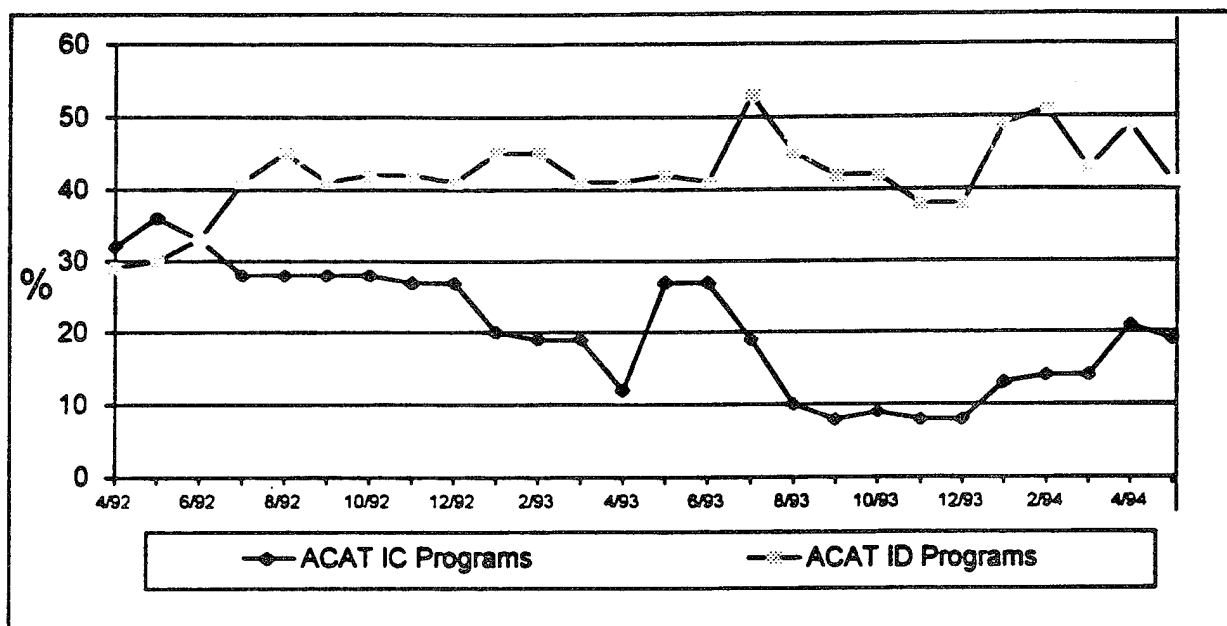


Figure 2. PERCENTAGE OF ACAT IC & ID PROGRAMS WITH APB BREACHES⁷

d. Size of the Workforce. By almost any definition of "oversight and review," the numbers of people in DoD who are overseeing and reviewing are so enormous as to be mind-boggling! We tried, but could not even grossly estimate the number. The aggregate number includes people who are involved in acquisition oversight and review at the OSD staff, the Component staffs, PEOs and program office staffs, acquisition support commands, Ballistic Missile Defense Organization, Defense Contract Management Command, Defense Logistics Agency, Department and Component Inspectors General and audit agencies, and many other organizations. The numbers, to be accurate, must further account for support contractors, field agency and matrix support, and consultants. The large numbers of people in the process pose a major problem. There have already been major reductions in the acquisition workforce, but more are projected. Current estimates are that the acquisition workforce will decline by an additional 25 percent between 1995 and 2000.⁸ The obvious inference is that DoD cannot absorb these cuts merely by scaling back or "streamlining" the business-as-usual processes. There must be major changes in how DoD does oversight and review, in the Secretary's words, by ensuring that "policies and processes are structured so that the fewest number of people are involved in a given process, and the need for reconciliation or coordination is minimized."⁹

⁷ Gallagher, David, "Cost of Acquisition Oversight and Review," Special presentation to the PAT, November, 1994.

⁸ USD(P&R) memorandum, August 23, 1994.

⁹ Perry, "Acquisition Reform: A Mandate for Change," p.7.

e. Cost of Reviews. Finally, there is the dollar cost of oversight and review. We tried, with modest success, to determine the cost for Defense Acquisition Board Milestone reviews. We gathered detailed data on the cost of a single Joint Service Defense Acquisition Board Milestone Review.¹⁰ We also developed rough estimates on two additional Joint Service Defense Acquisition Boards. While the data came from only three programs, it was remarkably consistent. Our estimates suggested that the costs were on the order of \$10-12M, including the costs of a Cost and Operational Effectiveness Analysis. While some might view this cost as trivial compared to the total cost of a program, it could add approximately \$40-50M to a program over its life.

f. Reengineering Versus Altering the Current System. As we noted earlier, the oversight and review process has much built-in flexibility. One might argue that only peoples' behaviors and culture need to change to make the process work as it should. That is easier said than done. However, even if there were some way to legislate cultural and behavioral changes that would only get us part way to where we need to be. Complying with the Secretary's mandate requires much more than policy pronouncements, minor tinkering and revised wiring diagrams. We agree with Secretary Perry's vision of a reengineered acquisition system. "This vision cannot be achieved through process improvement only. Because the world in which DoD now must operate has changed beyond the limits of the existing acquisition system's ability to adjust or evolve, the system must be totally reengineered."¹¹

2.2. Metrics and "Stretch" Goals

a. Metrics. Our research led us to conclude that an essential element of any reengineering is to begin with some ambitious, quantifiable goals; we describe these as "stretch" goals.¹² Their purpose is first to translate the Secretary's mandate into something measurable. Second, and more importantly, we believe that metrics can focus managerial attention on what is really important and form the basis for the reengineering. We found no systematic metrics—at either the macro or individual program level—to periodically measure the cost or the value of oversight and review. We believe having a small set of key metrics at a macro level is critical for measuring progress toward the more efficient and cost-effective system the Secretary has asked for. These goals are a basis for the metrics. Measuring progress toward our goals over time will tell us how well we are proceeding. The goals themselves have no analytical basis. We empirically derived them, believing that they represent a significant challenge or "stretch," while seeing them as realistic in the sense that they could be achievable within 5 years or less.

b. "Stretch" Goals. The PAT believes that each recommendation in this report, once implemented, will contribute to aggregate progress toward one or more of the four goals. The goals are as follow—

¹⁰ Gallagher, David. "Cost of Acquisition Oversight and Review," November 1994.

¹¹ Perry, "Acquisition Reform: A Mandate for Change," p. 6.

¹² Hammer, Michael and Champy, James. Reengineering the Corporation: A Manifest for Business Revolution. New York: Harper Business, 1993, pp. 31-36.

- **Reduce the percentage of programs with APB breaches to no more than 5 percent.** The fraction of programs breaching their APB is a clear measure at a macro-level of how effective the oversight and review process is. If the process is in control, that fraction should be very small—a breach should be a rarity.
- **Reduce cycle time by 50 percent.** This goal directly relates to getting materiel to the warfighter faster. Progress toward it connotes a better balancing of requirements and the time it takes to achieve them, reducing program content to what is truly essential, better managing of risks and more stabilizing of program budgets.
- **Reduce the number of people in the acquisition oversight and review process by 50 percent.** Moving toward this goal directly increases efficiency and reduces direct and opportunity costs. Reaching a goal of this magnitude will discourage “scaling” behaviors in which all present activities remain, but at reduced scale. Having a 50 percent reduction in people means those activities which add less value must disappear.
- **Reduce the average cost of a milestone review by 50 percent.** The direct costs of milestone reviews are not huge in relative terms. However, the indirect costs—particularly opportunity costs—can be very substantial. For instance, preparing milestone documentation within a program office normally happens concurrently with other substantive activities (e.g., the writing of a Request for Proposal, the evaluating of developmental test results, the selecting of sources or the reviewing of a contractor’s hardware design for testing). Because program offices do not hire people temporarily to prepare milestone documentation, the sporadic requirements to prepare it either cause the program office to staff to higher-than-necessary levels or to dilute the work on the other, concurrent activities. A substantial decrease in aggregate milestone costs will indicate a big step toward increased efficiency and effective use of the workforce.

III. GETTING TOWARD A REENGINEERED PROCESS--A CONCEPTUAL FRAMEWORK

3.1. Some Key Definitions. The Secretary chartered the PAT to address "oversight" and "review." Common definitions could have "review" as a form of, a subset of, or even a synonym for "oversight." For the purposes of this report, we adopted the following definitions--

- **Oversight:** The continuous process of evaluating program execution between decision points. Oversight examples include program status reporting, compliance auditing and inspecting, ad hoc problem solving meetings, analysis of cost performance and other trend variant data as well as program office/Defense Contract Management Command oversight of contractor activities.
- **Review:** The discrete process of gathering and evaluating information to make a decision about a program. Examples are milestone reviews and other program decision reviews.

Figure 3 is a simple schematic distinguishing among oversight, review and program execution.

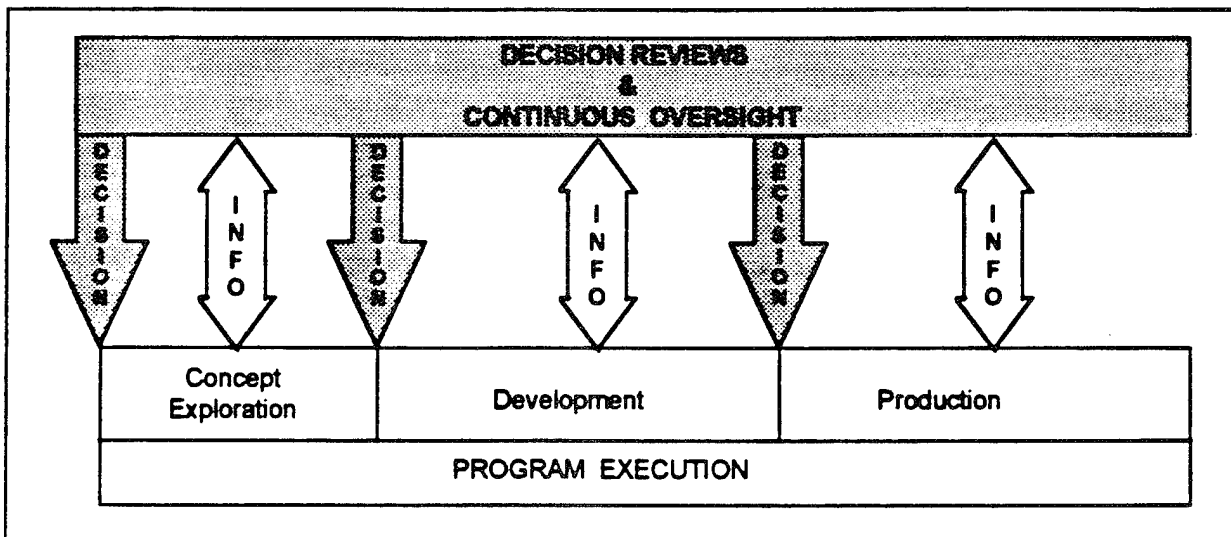


Figure 3. DECISION REVIEWS & CONTINUOUS OVERSIGHT

Another term the acquisition community frequently uses imprecisely is the term "user." The Components and Defense Agencies today have "users" who operate weapons and information systems. There are also Component "user" representatives who develop operational requirements documents and provide inputs during the system design process. On another dimension, the warfighting Commanders-in-Chief have the responsibility for conducting combat operations; they are "users." We believe it is critical to unambiguously distinguish among these "users." Accordingly, we adopted the following definitions:

- **Users:** The warfighting Commanders-in-Chief or their designated representative—currently the Chairman of the Joint Chiefs of Staff, sometimes represented in acquisition matters by the Vice Chairman.
- **Operators:** Those operating the equipment or their representative. For any single piece of equipment, the “operators” are typically from a single Component and reside in a Component or major command headquarters or in the field.

Finally, there are differences among the three Services in the nomenclature of those persons responsible to the CAEs for overseeing the non-PEO programs. To avoid confusion, we defined a Component-independent term to talk about all of these persons collectively.

- **Acquisition Support Commanders:** The Army Materiel Command’s Major Subordinate Commanders, the Air Force’s Designated Acquisition Commanders and the Navy’s Systems Command Commanders.

3.2. The Basics of Oversight and Review

a. Linkage Between Oversight and Review. Oversight and review should be intimately linked one to the other. We see the oversight process as ideally consisting of a near-continuous flow of information up and down on the “information net.” The net is in the form of broad accessible electronic data, paper reporting, face-to-face informal communication and formal presentations. Decision makers passively monitor the flow on a continuous basis using control mechanisms to decide whether to increase or decrease the information flow and/or to intervene. Review, on the other hand, is an event-based discrete decision making activity. If the oversight process has been working properly, there should be very little review-unique information requirements. Of the two, we think that oversight activities should have the dominant role once a program begins.

b. Fundamental Questions. To devise a reengineered process for oversight and review, there are some fundamental questions that one must first answer. These questions are decision-centered and go to the heart of how we constructed the overall process.

- What are the critical decisions that need to be made during the oversight process? During the review process?
- Who should make these decisions?
- Why is this person or entity the right one to make the decisions?
- What information does the decision maker need to make these decisions?
- Where does the information come from to make the decisions?
- Why is it appropriate for the decision maker to get information from that source?

c. Answering the Questions. Assuming we can derive what the critical decisions are, the crux of the reengineered process lies in deciding who should make the decisions and who should give the decision maker the information he or she needs to make the decisions. We can easily identify these decision makers and information providers—at least in a general way. Ideally, the person or entity to make each decision and provide information to the decision maker should be the one who “best” combines the following characteristics—

- proximity to and an understanding of all the relevant information;
- breadth of knowledge (corporate view point);
- experience (depth of knowledge);
- objectivity; and
- accountability and authority.

Deciding who is this “best” person or entity is not easy, but it is perhaps the single most critical element in devising the reengineered process.

3.3. Developing the Models and Evaluating Them

a. Building a Framework. After we formed our vision, we began work with a clean sheet of paper and some broad constraints the Charter gave us. Our key resource was a diverse team who, collectively, had extensive experience in virtually every facet of the current oversight and review process. We developed a foundation for our alternative model development process by concurrently—

- creating an evaluation framework and methodology for assessing candidate models;
- doing extensive research to understand current processes as well as past and in-process efforts to overhaul them;
- talking with key acquisition leaders; and
- reviewing and visiting successful industry reengineering efforts.

b. Creating and Evaluating Alternative Features for the Reengineered Models. We brainstormed and debated literally hundreds of potential features to reach the goals the Secretary outlined for us. Our initial focus centered on creating as many plausible alternatives as possible so that we could take full advantage of the wealth and diversity of experience within the PAT. The Charter helped our thought processes by giving us specific tasks to do. These included such things as identifying what the critical decisions were, deciding who should make those decisions, determining what information was critical to make the decision and pinpointing who should

provide the information. To help us gain added insight, we also sent two interim reports to the OSD and the Components so that we could get comment and additional alternatives that we had not considered. In addition we devised an analytical approach to illuminate the advantages and disadvantages of the various alternatives; Appendix A describes that approach. Finally, we converged on a set of reengineered features that describe the model we recommend.

c. Tailoring-In as a Device to Make the Process More Flexible. One will note in reading through the report that many of our recommendations establish a different nominal standard than what there is today. For instance, we recommend that there be a very small set of required documentation and activities for milestone reviews, but with the provision that the decision maker may tailor-in additional documentation and activities as required. This approach is fundamentally different than the "tailor-out" philosophy that we use now. While the two approaches would theoretically produce the same result, we believe that, in practice, the tailor-in approach will yield a much more streamlined and flexible process. Tailoring-in places the burden of proof on those wanting to add, while tailoring-out makes those wanting to subtract prove their case. We believe that this simple device will prove a major step toward changing paradigms and overcoming cultural barriers.

3.4. Report Format. The remainder of this report consists of discussion of key process improvements with specific recommendations immediately following the relevant discussion. The implementing plan for each recommendation is in Volume II of this report. It is important to note that the recommendations are modular. With few exceptions, they are independent from one another. This approach gives the Secretary the flexibility to implement all of the recommendations or only those he selects without the penalty of undoing the entire reengineering effort.

IV. THE OVERSIGHT PROCESS

4.1. The Oversight Process—Critical Decisions

After a program begins, oversight verifies, on a continuing basis, that the program is proceeding according to expectations. Decision makers (from program managers through the DAE) have an implicit opportunity during the oversight process to make decisions based on the information they are getting. That opportunity can manifest itself in three ways. At any point in the oversight process, the decision maker may decide—

- to do nothing because he or she is satisfied with what is happening;
- to intervene (e.g., directing a change to a plan, overturning a decision made at a lower decision level or elevating the decision responsibility); or
- to directly ask for additional information (e.g., soliciting an independent input).

4.2. The Oversight Process—Critical Questions. To help the decision maker decide what to do, the oversight process must yield answers to a unique set of critical questions:

- **Is the program on track?** The answer to this question verifies that the program is proceeding within the baseline's cost, schedule and performance parameters. This answer is vital feedback to those in the accountability chain because, depending on what it is, the decision maker can either focus elsewhere or expect to devote management attention to correcting the problem.
- **If not, is appropriate corrective action in place?** If the program is diverging from its baseline, a positive answer to this question affirms two things. The first is that those executing the program have acknowledged a problem by instituting some corrective action. The second is that the corrective action is appropriate.
- **Is the program exploiting opportunities for further cost/performance trades or schedule/performance trades?** In an era of declining resources, cost—particularly production and support cost—needs to become an independent variable in the acquisition equation. Cycle time too should become more than just the invariable consequence of a set of rigid performance requirements. We believe that the oversight process should, on a continuing basis, reexamine performance requirements as programs unfold through time. This reexamination should occur periodically in a disciplined manner with the user playing the deciding role. Because this is so counter-cultural, we believe the oversight process needs to force this reverification.
- **Is the program compliant?** We express program objectives in terms of cost, schedule and performance parameters. But, decisions and actions within the program must also conform to the contract, law, policy and regulation. While the program office has the primary job of assuring compliance, the oversight process needs to provide decision makers with continuing reassurance that the program is compliant.

4.3. Program Manager Incentives

a. The Role of Program Manager Incentives in Oversight. It is clear from our collective experiences as well as discussions with key acquisition leaders, that many program managers have conflicting incentives that affect how they communicate information about their programs. Often the need for objectively assessing program status conflicts with the need for "selling" the program to protect program funding and to shield the program from possible cancellation. These conflicting incentives cause many decision makers to seek a second opinion to verify that the program manager's assessments are realistic and unbiased. If program managers did not have a penchant for over-optimism, then the need for independent assessing could be diminished. What is the incentive for the program manager to be overly optimistic? If we can affect the reasons for over-optimism, we should be able to instill the decision maker with confidence in the program manager, which, in turn, would return dividends in the form of a streamlining of the oversight process.

b. Contributors to the Program Manager Incentive Problem. We believe that the following are factors which contribute to the problem:

- **Component Loyalty:** Competition among the Components for program funding often prompts program managers to be less than totally open about problems, to underestimate costs, and to be salespersons for their programs. This is particularly prevalent at program start-up, at milestone decisions, and when communicating outside the Component. Much of this incentive stems from having each Component's acquisition organizations, instead of the purple-suit warfighter, be the proponent for its programs and their funding.
- **Success-Oriented:** Many program managers see their promotion opportunities tied to the degree that those above them perceive the program as successful. A recent survey revealed that almost 60 percent of Government program managers perceive that reporting bad news up the chain of command poses significant career risks.¹³ Such perceptions tend to motivate program managers to be success-oriented and underestimate program risks rather than being realistic and forthright. It can also lead managers to minimize or camouflage major issues. The success oriented behavior and the reasons for it must be changed. The rewards system should judge program managers on how perceptive they are in identifying problems/issues and taking appropriate corrective action to solve problems and address issues.
- **Inexperience:** Some of what outsiders see as program manager over-optimism stems from inexperience. A recent study found that experienced government and industry managers believe the standards for program management skills and experience remain far below what is needed.¹⁴ Today's DAWIA requirements do not require prior program manager experience for ACAT I program managers. Neither is there a

¹³ Defense Systems Management College Executive Institute. The Defense Acquisition Culture: Government and Industry Views from the Trenches, December, 1994, p. 27.

¹⁴ Ibid, pp. 49-70.

disciplined, DoD-wide selection process that would assure only the most highly qualified people are put into these key positions.

- **Limited Time Horizon:** The DAWIA requires program managers to remain on a program after the major milestone occurring closest in time to a 4-year tour. In practice, tour lengths of considerably less than 4 years are normal. Moreover, the recent survey reported that 60 percent of Government managers and more than 70 percent of industry managers believed that military program managers—who manage approximately 90 percent of today's ACAT I programs—remained on the jobs for too short a time.¹⁵ We believe that current program manager tenures are not long enough for a program manager to be truly accountable for the program's outcome. In our judgment, the expectation of a short tenure reinforces the tendency for program managers to be overly optimistic about future program outcomes.
- **Fear of Unsolicited Help:** Many program managers report that the immediate response to their reporting problems is unsolicited and unwanted "help" from overseers. They see this help invariably coming regardless of whether or not they are adequately dealing with the problems. This expectation from the oversight process naturally motivates program managers to try working the problems alone and delay any reporting up the chain.

c. Program Manager Experience. The DAWIA requires an ACAT I program manager or deputy program manager to have 8 years' acquisition experience with at least 2 years in a program office or similar organization. We believe that this is insufficient. We recommend 8 years' acquisition experience, with at least 4 years in a program office including experience as a program manager or deputy program manager of a major or non-major acquisition program. At least 1 year experience on a Component or OSD oversight and review staff is a desirable goal. We further believe that ACAT I program manager mandatory experience requirements should be waivable only by the DAE.

RECOMMENDATION 1. We recommend that experience requirements for ACAT I program managers and deputy program managers be more stringent than those the DAWIA mandates.

d. Program Manager Tenures. The ideal case for ACAT I program manager tenure should be from a program's initiation until start of production. With exceptionally long programs, such as ship construction programs, this may not be practical. However, when an ACAT I program manager moves, it should be with the DAE's prior approval. The military and civilian personnel systems should provide a flexible grade structure to allow for promotion-in-place with a requisite billet upgrade rather than requiring moves because an individual is promoted.

RECOMMENDATION 2. We recommend that the DAE enforce longer tenures for ACAT I program managers than the Components practice.

¹⁵ Ibid., p. 68.

e. Program Manager Selection Process. Each of the Components has a process for selecting ACAT I program managers. While we understand how the separate Component processes work, we believe they do not always select persons who are well prepared for their jobs. There is evidence that many Government managers believe they are ill-prepared for their jobs.¹⁶ We recommend that a selection board process, very much like a general/flag office or command selection board, be used to select ACAT I program managers. The Board's members should all be senior acquisition leaders who previously served as program managers. There should be strict rules to ensure objectivity of the Board. The Board should consider both military and civilian candidates and select the best qualified candidate, based upon pre-established selection criteria and the mating of the candidates' strengths and the unique needs of each program. The Board should provide its recommendation to the DAE for confirmation.

RECOMMENDATION 3. We recommend that the DAE require the Components to institutionalize a centralized ACAT I program manager selection board process that is chartered by the CAE. The board process should be objective, disciplined and focused on matching managerial experience, skills and abilities to specific programs and the needs of those programs.

4.4. Functional Oversight Staff Incentives

a. The Role of Staff Incentives in Oversight. Functional oversight and review staffs, like program managers, have incentives that influence their behaviors. These incentives determine how they practice oversight.

b. Contributors to the Oversight Staff Incentive Problem. Among the contributors are the following:

- **Functional Sub-optimization:** Functional staffs have expertise in a specific functional area. The Component systems commands, Component headquarters and OSD staff are generally organized along functional lines—e.g., contracts, test, engineering, logistics, software, production, etc. As a result, each staff elements' oversight and review is often oriented toward achieving the best functional solution instead of the best overall program solution. In the present process, the accountable decision makers, at all levels, are left with the responsibility for integrating the information from these functional areas and making optimized, balanced decisions.
- **Issue-Oriented:** Some staff overseers and reviewers may perceive that their added value to the process comes from what issues or problems they can uncover. This behavior may stem from the staff's perception of the program managers incentives (e.g., the tendency to make the program look good in the short term). Staffs have not always offered recommendations to the program manager before surfacing issues or problems to the decision maker.

¹⁶ Ibid, pp. 55-62.

- **Career Staffers:** Functional staffs at the senior levels within OSD and the Components have diverse backgrounds. Some have advanced in a progression of line and staff functions throughout their careers and have gained a range of relevant experience. Others have quite narrow experience with little or none in the field. Additionally, in some instances, Component and OSD oversight and review staff have been away from program execution for some time.
- **Late Involvement:** Frequently, functional staffs have not been deeply involved in programs until after the program manager has completed planning and developing the program strategy. When there is a delay in staff involvement—whether from staff reluctance to engage or from the program manager’s reluctance to solicit inputs—those who were part of the planning often view late staff inputs as second guessing and contributing to an “us” versus “them” mentality.

c. **Change in Focus and Early Involvement.** A multidisciplinary, integrated staff will facilitate a focus on the product, rather than functional issues. The team would act collaboratively with the program office during the program planning and executing phases. When issues arise, the oversight team would decide which to raise to the decision makers. The IPT leaders for oversight at the OSD and Component levels should meet the DAWIA qualifications for PEOs.

RECOMMENDATION 4. We recommend that the DAE and CAEs institutionalize the use of IPTs led by PEO-qualified leaders to provide advice to them and to help the program manager.

d. **Rotational Opportunities.** Relevant line and staff experience is desirable for those who hold senior-level acquisition positions. This experience gives senior managers an appreciation for the work of all those in the process and facilitates team thinking.

RECOMMENDATION 5. We recommend that 10 percent of Component and OSD oversight and review staffs should have annual opportunities for flexible rotational assignments in program manager/PEO organizations. An equivalent number of program office/PEO personnel should also have rotational opportunities to staff positions. Recent, relevant field experience should become a significant factor in the selection criteria for future senior staff positions.

4.5. Oversight Reporting

a. **Oversight Reporting Today.** Our research disclosed that most of the formal oversight reporting that DoDI 5000.2 describes is statutory. The one notable exception is the Defense Acquisition Executive Summary. In addition to what DoDI 5000.2 describes, there is additional reporting that the Components and Acquisition Support Commanders prescribe along with audit and inspection reporting. Virtually all of the reporting, including the statutory reporting, have three elements in common:

- They are formal written reports with rigid formats.

- They contain information generally available from other media.
- They have substantial lag time.

b. The Information Net. The state of today's information technology is such that the generating and analyzing of lengthy, fixed format, "one-size-fits-all" status reports are unnecessary activities. We believe that there could be a system where decision makers and staff have near-instant access to all of the day-to-day information the program manager uses to manage the programs. Even today, there is an E-Mail net that allows program managers to instantly communicate electronically with decision makers and interested staff. We believe that the DoD should move quickly toward relying on this information net for oversight rather than continuing to rely on formal briefings and written format reporting.

c. Face-to-Face Information Transfer. Opportunities for major acquisition program managers to talk directly with CAEs and the DAE are fairly rare. The usual case is that the program manager sees the CAE or DAE only when the program has a major issue, and only after there has been substantial coordination of a formal briefing. We believe that there is immense value in periodic, face-to-face, informal communication between the program manager and the acquisition executives; we label this communication as an "Acquisition Executive Chat." In our view, the acquisition executive should periodically initiate this communication with ACAT I program managers. This should be on a short-notice basis to preclude extensive preparation and coordination. In character, the communication should be a candid conversation or discussion rather than a formal briefing with a fixed format. The focus should be a "how-goes-it" with the program manager, particularly addressing the four critical oversight questions. This is also an opportunity for the manager to raise issues where he or she needs acquisition executive help or guidance, and for the Acquisition Executive to raise broad, non-program-specific areas of concern. We see the frequency of these chats for major defense programs as approximately once or twice annually. They should be either in person or by video conferencing.

d. Monthly Status Reports. We conclude that the work spent in preparing, coordinating and analyzing the Defense Acquisition Executive Summary represents activities that are no longer necessary. In place of the Defense Acquisition Executive Summary, we would substitute a concise, written, monthly program status report called the "Monthly Status Report." It would go to the DAE for ACAT I programs and to the Milestone Decision Authority (if he or she wants it) for all other programs. It should replace all other fixed format, periodic reporting. The program manager would personally write and sign the report. The Monthly Status Report would become the primary vehicle for the program manager to give the Milestone Decision Authority answers to the critical oversight questions. It should give the Milestone Decision Authority essential information on program status—including the status of any corrective action the manager is taking to resolve problems—as well as the program's status relative to the Acquisition Program Baseline. The Components and the DAE can negotiate a uniform format for the report to make it most readable, but the basic format should be narrative without pre-determined topic areas. In concept, those in the accountability chain can endorse the report, but it

should be available to the appropriate decision maker within 5 days after the program manager submits it.

e. Oversight Reporting Summary. Figure 4 lists the reports and activities that answer the critical oversight questions.

Question	Document/Activity	Prepared By
1. Is the program on track?	- Monthly Status Reports	PM
	- Test Reports*	PM/Test Agencies
	- Program Deviation Report *	PM
	- Unit Cost Report Exception Report*	PM
	- Selected Acquisition Report Exception Report*	PM
	- OT Plan Approval (designated programs)*	DOT&E
2. If not, is corrective action being taken?	- Monthly Status Reports	PM
	- Report of Results of PDR (ACAT I only)*	CAE
3. Is program exploiting opportunities for further cost/schedule/ performance trade-offs?	- Monthly Status Reports	PM
	- Summits with Service Chief/ agency head	PM/PEO/USER
4. Is the program compliant?	- Audits/inspections	Audit/Inspection Agencies
	- MDA staff assessments	MDA's staff
	- Justification & Approval for other than full and open competition*	Contracting Officer/ PM
	- Live Fire T&E certification for designated systems) prior to EMD*	SECDEF
	- Multiyear procurement certification*	PM
	- SAR to Congress (ACAT I only)*	PM
	- UCR to Congress (ACAT I only)*	PM
	- Beyond LRIP Report to Congress*	DOT&E
	- TEMP Approval (designated programs)*	PM/Test Agencies

*indicates statutory documents/reports

Figure 4. OVERSIGHT DOCUMENTS AND ACTIVITIES

RECOMMENDATION 6. We recommend that the DAE adopt a new, more continuous oversight process that relies on an electronic information net, face-to-face communication with the program manager and the decision makers, a Monthly Status Report and statutory documentation as primary sources for oversight information. For programs requiring more information, the decision makers may tailor-in additional requirements, as appropriate.

4.6. Joint Program Oversight--A Special Case

a. Systemic Issues With Joint Programs--A Look Backward. Reengineering gives an opportunity to stand back and take an objective, common-sense look at some of the processes that have become part of the fabric of how we do acquisition. One of those processes has to do with the way we oversee joint programs and other programs where oversight is a vehicle for integrating related activities among the Components; we define this latter category as "collaborative" programs. Both a 1983 Defense Science Board Study and 1993 Defense Science Board Task Force recognized that there were systemic problems with Joint Service Programs and particularly with major development programs. Among others, the Boards offered three primary conclusions having to do with joint programs¹⁷:

- Problems in joint programs are often traced to failure to agree on requirements, forced or dictated marriages from OSD or Congress, an ad hoc environment (to select lead Component, organize a management and review structure, etc.) and differing and/or shifting priorities among the Components.
- There should be a formal, institutionalized process established to evaluate requirements, programs, issues and technology to select joint program candidates and resolve issues.
- All joint Service Full Scale Development programs (now Engineering and Manufacturing Development programs) should be single-Service funded. The Defense Science Boards based their findings on the notion that the executive service would be the one with the greatest need and the greatest priority.

b. Systemic Problems With Joint Programs Today. In the 10 years since the 1983 Board's report, not much has changed. There has been the creation of the Joint Requirements Oversight Council (JROC) to validate joint requirements. The JROC has lessened Component squabbling over requirements but has done nothing to eliminate forced marriages (or impromptu divorces). Neither has it reduced the ad hocery nor the shifting priorities among the Components. The 1993 Defense Science Board affirms this.

¹⁷ Memorandum. Admiral Kidd, Chairman Defense Science Board 1983 Summer Study on Joint Service Acquisition, March 20, 1984 and Robert J. Hermann, Chairman, Defense Science Board, "Report of the Defense Science Board (DSB) Task Force on Defense Acquisition Reform," June 30, 1993, pp. ii, iii, 10 and 11.

c. Time for a Change There are literally dozens of current examples where cooperation among the Services on joint and collaborative programs has been disappointing. We believe that the current processes for managing such programs are beyond repair. Moreover, we deem that a reengineering of the oversight and review process must include a different way of overseeing, reviewing and budgeting for joint programs—a way that mitigates against Service parochialism and priority shifting—a way that places the integrating functions of oversight with program execution accountability.

d. A Reengineering Experiment We agreed with the need for change, but were unable to reach consensus on what the change needs to be. We were, however, able to agree on a general direction. We believe it would be a useful step for the DAE to conduct a reengineering experiment. The experiment's purpose would be to ascertain whether a unified, Service-independent way of managing joint and collaborative programs would produce better results than today's hodge-podge of processes. Our recommendation is to prototype the new process on a few of the most troubled joint or collaborative programs and then, depending on the results, either expand it to all such programs or return to the current processes.

RECOMMENDATION 7. We recommend that the DAE designate the Principal Deputy Undersecretary of Defense (Acquisition and Technology) as a Joint Acquisition Executive to facilitate a reengineering experiment. The DAE would delegate to the Joint Acquisition Executive oversight, review and budgeting/programming responsibility for a small set of DoD programs selected from among all DoD programs (ACATs I through IV) for which either a joint requirement exists or there is a need for substantial integration among the Components (e.g., Theater Missile Defense, airborne reconnaissance, anti-armor submunitions and some C³I systems). Reporting to the Joint Acquisition Executive would be product-oriented Joint Program Executive Officers (Joint PEOs) who would assume the primary role for integrating among programs and among the Components. Program managers would report to the respective Joint PEOs. Current organizations (e.g., the Components or special oversight organizations like the Ballistic Missile Defense Organization) that have an oversight or integration function would be relieved from responsibility for this set of programs.

V. THE REENGINEERED REVIEW PROCESS

5.1. The Current Milestones

a. Today's Milestones. DoDI 5000.2 describes the current acquisition milestone review process as a flexible one, allowing for five basic milestones. The milestones in the current process are below:

- **Milestone 0: Concept Studies Approval**
- **Milestone I: Concept Demonstration Approval**
- **Milestone II: Engineering and Manufacturing Development Approval; Low Rate Initial Production Approval may require a separate review.**
- **Milestone III: Full Rate Production Approval**
- **Milestone IV: Major Modification Approval (as required)**

b. Milestone Decisions in Practice. In today's review system, the DAE may delegate the milestone decision authority for major defense acquisition programs to the CAE. If there is not a delegation, we refer to the program as an ACAT ID; if there is a delegation to the Component, then the program is an ACAT IC. The general practice has been for the DAE to retain milestone decision authority for development programs, delegating it after the program has reached a stable point in production.

5.2. A New Look at the Milestones

a. Watershed Decisions. We examined the current milestone process in relation to the Secretary's mandates and decided that some of the activities associated with today's process are no longer cost effective or necessary for every program. We surmised that the process would be much more efficient and effective if the review process were to highlight those decision points that truly are watersheds in the life of a program and flexibly deal with the rest. We believe that there are three of these watersheds. For the remainder of the report, we will refer to these three as **Milestones A, B and C** to clearly distinguish them from the current milestones. The description of the three milestones and rationale for the PAT's viewing them as predominant follow.

b. Milestone A--Need Validation. This milestone is the decision to validate the mission need and to undertake efforts to identify and evaluate alternative solutions. It is a critical decision point because it is the first substantial step toward a hardware acquisition program and because it should be essential for any system-level advanced technology concept demonstration. A positive Milestone A presumes that there must be some sort of materiel solution to satisfy the need. We will use the term "concept exploration" to broadly describe the tasks and activities following Milestone A.

c. Milestone B—Program Initiation. This decision is one to begin an acquisition program irrespective of whether the initial part of the program is a Demonstration/Validation (Dem/Val), an Engineering and Manufacturing Development (EMD) or a system modification. We will use the term “development” as a generic descriptor for the work following Milestone B.

d. Milestone C—Production. For each acquisition program, there is a point in the process where the DoD's commitment to it is, for all practical purposes, irrevocable. Where that point is can be a function of many factors, but usually it is linked to a commitment of production monies. For programs where the unit acquisition cost is high and there is a large non-recurring production cost, this “point-of-no-return” is probably the first large production dollar commitment (i.e., low-rate initial production). A similar point for programs where the unit and non-recurring production costs are low might be the full-rate production decision. Whichever decision is the salient one, our reengineered process labels it as Milestone C and designates the follow-on activities as “production.”

e. Summary. Figure 5 schematically depicts the three-milestone process. Noteworthy is that **this process does not eliminate any of the current decision points in a program.** The following sections describe each of the milestones and give a summary of the activities following them.

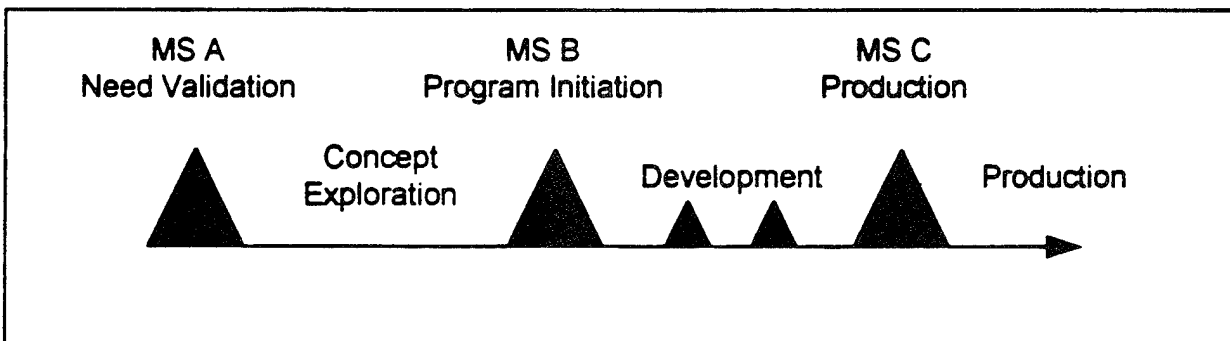


Figure 5. SUMMARY OF THE THREE-MILESTONE PROCESS

5.3. Milestone A—Description

a. The Nature of the Decision. Milestone A—analogue to Milestone 0 in the current process—is **not** an acquisition decision; we believe it is a **requirements** decision. It follows logically that the Milestone A decision maker should be the user since the requirement or operational need is in his or her province. Certainly the user must consult with the acquisition community, but the decision ultimately is one the user should rightly make. This finding is consistent with the findings and recommendations of the *1993 Report of the Defense Science Board Task Force on Defense Acquisition Reform*. In today's process, the DAE is the Milestone Decision Authority for the equivalent milestone. Our proposal is that the Vice Chairman of the Joint Chiefs of Staff (VCJCS) be the Milestone Decision Authority where there is a potential for a major defense acquisition program. **This proposal and the proposal for activities following**

this decision represent major changes in how we start programs in the current process. As a result, it calls for major cultural changes.

b. **Critical Questions for the Milestone A Decision.** Milestone A should consist of the answers to two specific questions. As we depict in Figure 6, these questions are as follow:

- **Is the need valid?** The request to validate a need can come from one or more of the warfighting Commanders-in-Chief, from the Joint Chiefs, from a Component, from a separate operating agency or from the OSD technology community. Another PAT will address the need-generation process. However, once a need is identified, validating it should be in the context of the national military strategy. Regardless of the need's genesis, the user should validate it after consulting with the DAE. In our process, the "user" (and Milestone Decision Authority) is the VCJCS when the need could result in a major defense acquisition program. The Service Chief or Head of Agency would be the decision authority for an ACAT II program and the Component requirements official for ACAT III/IV programs.
- **What is the need's priority?** Again, it must be the user who designates the priority of the need he validates. The priority should ideally be a numerical ranking of the need relative to all other validated needs within the DoD (for ACAT I programs) and within the Component (for-less-than-ACAT I programs). If the need's priority is so low that the DoD is unlikely to have the resources available to meet the need, then the user would normally validate the need, but not approve the start of concept exploration work nor approve any related technology demonstration.

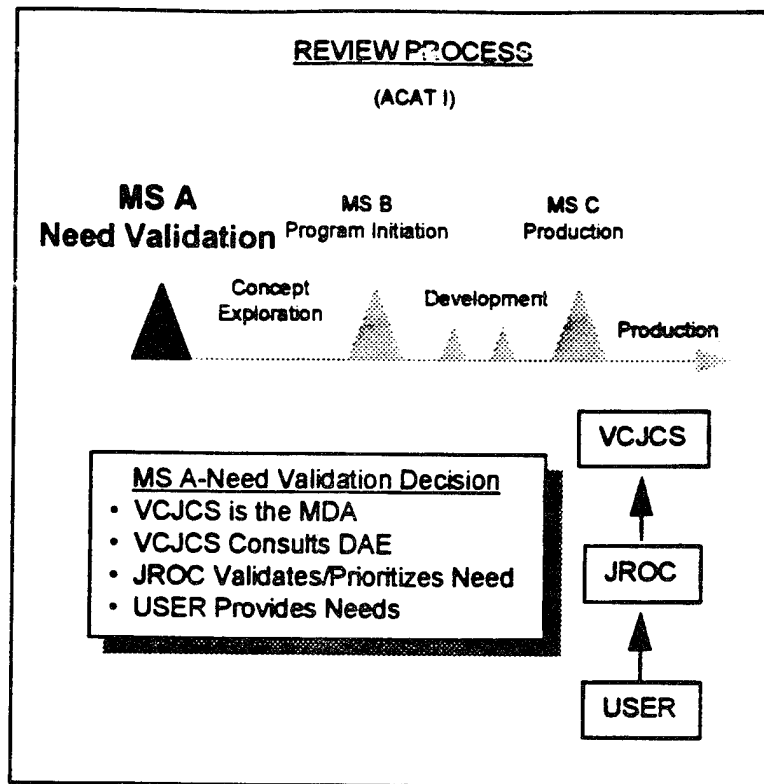


Figure 6. MILESTONE A-NEED VALIDATION DECISION

c. Other Key Outputs From the Milestone A Decision. In addition to giving the answers to the two questions above, there are other decisions that the Milestone Decision Authority needs to make at Milestone A. These, too, represent major departures from the current process.

- **Advanced Technology/Advanced Concept Technology Demonstrations.** There may need to be technology demonstrations to evaluate an alternate solution to a need and/or to decide if a particular operational requirement is achievable. These demonstrations can validate major system or subsystem performance, demonstrate manufacturing process/supportability and/or prove system integration. They can also result in systems going directly into engineering development or production without any other intermediate activity. Since they typically involve substantial resources, we believe it is imperative to explicitly tie them to a mission need and, by inference, to the national military strategy. The Milestone A decision authority should, we feel, approve these technology demonstrations based upon the degree to which they support evaluating an alternate solution to the validated mission need. Advice to make the decision should come from the technology and acquisition communities. Absent direct, prior linkage to a validated need, the DoD should not invest in large-scale technology demonstration programs, in our judgment.

- **A Manager for the Concept Activities.** Under our concept, a single senior-level person would be accountable for orchestrating, directing and harmonizing all activities between Milestone A and the next milestone. That person, who we will call the Concept Exploration Task Force Manager (CETFM), would report directly to the VCJCS. For ACAT I programs the CETFM would be organizationally independent from any Component having a vested stake in the initial phase's outcome. Smaller programs would have the CETFM as totally independent from any Component acquisition agency. The CETFM would lead and operationally control a task force consisting of persons from Component and OSD acquisition organizations, operator representatives, analysis agencies and contractors. In the late stages of this phase, the prospective program manager would normally also become a member of this team. The CETFM and the task force would be under the operational control of and accountable to the VCJCS for the entire concept exploration phase.
- **Resources and Resource Guidance.** A key output from Milestone A is identifying the sources of funding for the concept studies, alternatives to consider for cost and operational effectiveness analyses and any related technology demonstrations. The CETFM would control funding for and have authority to allocate it among the various tasks, subject to the approval of the VCJCS. The VCJCS can, with the advice of the DoD Comptroller, also provide broad resource guidance to help the CETFM form a feasible range of alternative programs to satisfy the need. This guidance would be in the form of a maximum level of resources that could potentially be available for an acquisition program. The purpose of this guidance would be to realistically limit the range of potential solutions the manager would need to consider.

5.4. Concept Exploration—A Description

a. The Concept Exploration Task Force—Role and Resources. Developing a comprehensive master plan for concept exploration would exclusively be the manager's responsibility as a task force leader. The task force, an IPT, would devise the plan collaboratively with the interested Component(s) and OSD acquisition functionals, technical specialists and others. That task force would tailor the plan to the nature of the need, the range of possible alternative solutions, the urgency of the need and resources available. There would be no prescribed tasks except satisfying the statutory requirements for starting a program. During the plan's implementing phase, the Component and OSD acquisition and operator communities would supply people to do the work. For example, the task force might decide to do a cost and operational effectiveness analysis to support the program start-up decision. Component acquisition personnel would assist by providing manpower, offering alternative concepts and constructing tentative program plans to provide a basis for costing. Component operators might also suggest alternate concepts, devise tentative operational concepts and construct employment scenarios. However, the selecting of appropriate alternatives, the actual costing, the adjusting of schedules for risk, the estimating of technical risk, the calculating of effectiveness, and the assessing of a concept's contribution to the warfighters' strategy would be a task for the Component-independent (or acquisition agency-independent for smaller programs) task force.

b. Cost/Performance and Cycle Time/Performance Trades. One of the major tasks for the task force is to develop a range of solutions for the user—alternatives that would yield cost and cycle time differences as well as performance differences. In particular, the task force must assure that the user understands the cost and cycle time implications of each individual element of the emerging operational requirement. We believe that a useful approach for accomplishing this is to present the user with performance alternatives where cost is an independent variable and alternatives where cycle time or schedule is an independent variable. Using this device will, we believe, discourage the premature setting of operational requirements and contribute to establishing programs that are realistic and executable.

c. Why Independence? We decided that the concept exploration must be independent from the Components and acquisition agencies for several reasons:

- **To eliminate institutional sources of bias.** It is natural that developers want to develop systems, engineers want to engineer elegant solutions, managers want tough problems to manage, contractors want big programs and operators want the best there is. Taken together, these elements of the acquisition culture produce an institutional bias towards satisfying needs with new systems having ambitious performance requirements and only modest regard for cost and schedule. This cultural bias is, we believe, an inherent one. Its effects are to mitigate against any objective comparing of alternatives and particularly against objectively treating alternatives driven by cost or schedule rather than by performance.
- **To facilitate the comparing of cross-Service alternative solutions.** For many needs, there are alternative solutions that cross Service boundaries. In today's process, where one Service does the concept exploration work, the opportunity to illuminate these other Service solutions and fairly evaluate them is mostly foregone. We believe that delaying a hand-off to an executing Service until after the user chooses a preferred alternative solution is an appropriate measure for facilitating the objective comparison of the full range of plausible solutions.
- **To mitigate the Component and acquisition agency penchants for solution advocacy.** The Services compete with one another for investment dollars. Each wants to make sure that it gets its "fair share" from the pot of limited resources. This competition often manifests itself in the early "selling" of programs—optimistic schedules, exaggerated performance claims and underestimated costs—all leading to later, predictable disappointments.
- **To assure a hard link to the national military strategy and the warfighters' priorities.** There is a core issue here—program affordability. Services judge that a program is affordable by whether or not it fits within the top line, which, in turn, is a function of Service priorities. In fact, the decision about affordability should be within the context of the joint warfighters' priorities, which may not be congruent with Service priorities nor with individual Service top lines.

5.5. Milestone B-Description

a. The Nature of the Decision. We think that the decision to initiate an acquisition program, Milestone B, is the most critical of any in the acquisition process. Based on past history, it represents a near-irrevocable commitment to the program. Central to the decision for a new major acquisition program is the notion that the decision should reflect the entire DoD's commitment—not just the commitment of a Component, the acquisition community or the user. Furthermore, the commitment must recognize and realistically accommodate the long-term cost implications of choosing to start an acquisition program. The historic paradigm has been that the “real” commitment to a program should not come until the EMD decision. However—

- The distinction between Dem/Val and EMD has become mostly artificial over the last few years. In virtually every recent Dem/Val, much of the actual content has been manufacturing and design development—e.g., manufacturing risk reduction, manufacturing process development, etc. This should not be surprising given the emphasis on concurrent engineering and the desire to enter EMD with programs that are low risk in every respect. For instance, the Joint Direct Attack Munition, currently in Dem/Val, actually has a System Critical Design Review and an initial Production Readiness Review before the EMD Milestone decision. It is worthwhile to note that this evolution to a merged development process parallels current industry practices where truly high-risk technical issues are dealt with before there is any commitment to an acquisition program.
- Irrespective of the theory, the practice has been that the first commitment to a major system acquisition program (regardless of how we label it) is almost impossible to undo unless the program experiences some catastrophe. Once begun, programs develop constituencies in the Components, in OSD, in industry, in the user community and in Congress. These constituencies and the momentum they provide severely curtail realistic options to terminate. This is a cultural problem, but we see no reasonable means to affect this culture. So, we acknowledge the reality by highlighting the initial commitment.
- At the decision to initiate an acquisition program, we believe that there must be a concurrent corporate financial commitment considering budget realities and the priorities of the warfighters. Prior decisions to enter Dem/Val without this level of commitment have invariably resulted in major instabilities when the program had forged ahead presuming a financial commitment that was not forthcoming.
- Finally, under the new DoD processes, much of the technology risk reduction that we have historically done in Dem/Val will become part of the technology maturation process. That is, this early work will become separate from the acquisition process. We believe this is healthy for no other reason than it discourages an early locking-in of operational requirements. Too, there should be a paucity of new starts over the next several years. Taken together, one can anticipate that the majority of the decisions to initiate programs will, in fact, be followed by engineering developments rather than by Dem/Vals as we have known them.

b. One Critical Decision. At Milestone B and at subsequent reviews once a program is underway, there is one fundamental decision for the decision maker. This decision is a choice from among three alternatives:

- **Begin the program (or continue the program if it is already underway)—with or without modifying the plan.**
- **Do not start the program (or stop it if it is underway).**
- **Do more work or get more information and decide what to do later.**

c. Critical Questions for Milestone B. To decide what to do, the decision maker needs information. In particular, he must have answers to five critical questions:

- **Is the need still valid?** This affirms the needed capability is a valid one in the context of the current or projected national military strategy. The criticality of this question stems from the fact that we, as a DoD in a resource-constrained environment, can only afford to address needs that are hard-linked to the national military strategy.
- **Is the solution appropriate?** This question asks if the system or problem solution is appropriate given all the plausible alternatives that might satisfy the validated need. The answer to this question is important because the decision-maker needs to know the full range of available alternatives and to understand distinctions among the possible alternatives insofar as how they satisfy the need (cost/effectiveness, inherent risk, etc.).
- **Can we afford the solution?** This question is fundamentally about program priority in the context of the current and projected DoD budget. The answer to this question confirms that resources are and will be available in accordance with where the program ranks in the user's overall priorities. Answering the affordability question is not simply a matter of assessing whether or not there is an appropriate funding wedge in the Future Years Defense Program. It is an answer to whether the DoD is willing to make a long-term financial commitment to the program based upon its projected contribution to the national military strategy.
- **Is the program ready to proceed?** This question is about program executability—risk, schedule, system maturity, projected performance, future plans, available monies—all these and more go into answering whether or not a program is executable. The question is important because proceeding with an unexecutable program wastes resources and guarantees decision revisits.
- **Is the user satisfied?** This question asks whether or not the program is meeting the users' expectations in terms of costs, schedules and performance. This is a central question because, when user support for a program erodes, then so will the budget for executing the program.

d. The Critical Questions—Who Answers? To understand who should answer the critical questions, we need to look at each question in turn:

- **Is the need still valid?** This is a reaffirmation of the Milestone A decision. In order to proceed with a major defense acquisition, the need must still be a valid one in the context of the national military strategy. The VCJCS, with the JROC's advice, is properly the validating authority for ACAT I programs. For smaller programs, the Service Chief or Head of Agency would answer the question.
- **Is the solution appropriate?** At this point in the process, the VCJCS, as the user representative, should answer this question about the technical solution if it results in a major defense acquisition program. The information to answer the question comes from the Component-independent CETFM, who has led the concept exploration activities. The answer for smaller programs would come from the Service Chief or Head of Agency.
- **Can we afford the solution?** For major defense acquisitions, the answer to this question must also come from the VCJCS, as we describe in Section VI of this report. For smaller programs, it would come from the chairman of the Component equivalent to the Defense Resources Board.
- **Is the program ready to proceed?** This is an executability question that the DAE should answer for major programs. The DAE may get varied and divergent inputs from staff, from the affected Component(s) and from the technology community. For smaller programs either the CAE, PEO or program manager would answer, depending on the Milestone Decision Authority level.
- **Is the user satisfied?** The answer to this question comes from the users' assessment of the program baseline—schedule, performance requirements, etc. For smaller programs the answer comes from the Service Chief or Head of Agency.

e. The Decision—Who Makes It? The decision to start a new major program is at the confluence of the requirements, the acquisition and the Planning, Programming, Budgeting System processes. Given who must answer the critical questions and where the information to answer comes from, we believe that the decision maker is obvious—it should be either the Secretary or the Deputy Secretary of Defense for ACAT I programs. Of the two, we believe that the Deputy Secretary is most appropriate. He has proximity to the information as Chairman of the Defense Resources Board, and he is also the lowest level who has the authority to commit the DoD—including a commitment to terminate programs or reallocate acquisition monies among the Components. Interestingly enough, the Deputy Secretary is the decision maker for program initiation in today's process.¹⁸ So, our recommendation is not a change in policy, but it does, we think, reflect a change in the practice. For smaller programs, the appropriate person to make the

¹⁸ DoD Instruction 5000.2 (Part 4), Section D, paragraph 3e(2).

decision would be the chairman of the Component's equivalent to the Defense Resources Board. Figure 7 is a schematic of our recommended Milestone B decision process.

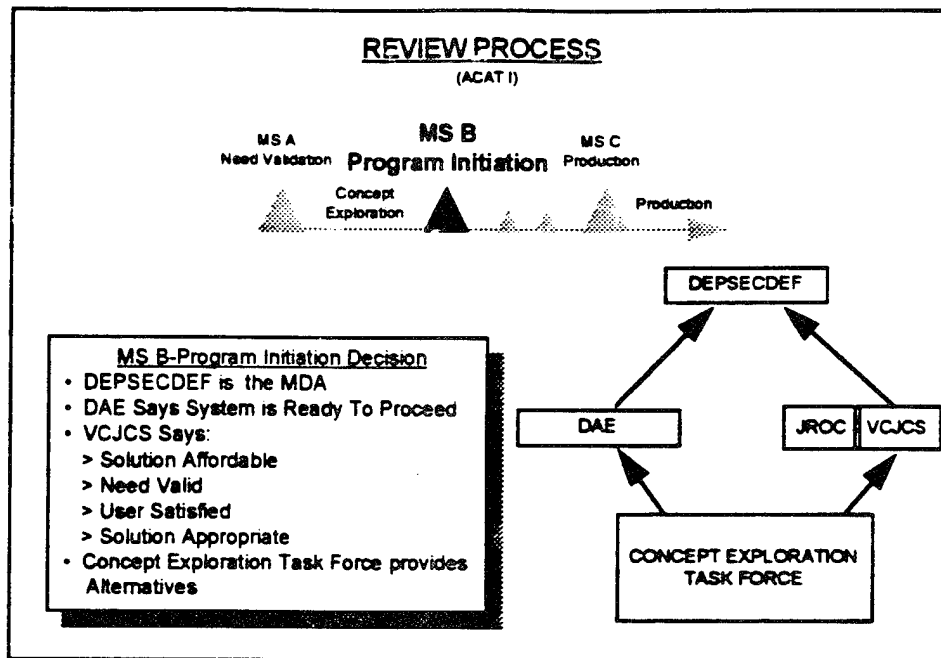


Figure 7. MILESTONE B-PROGRAM INITIATION DECISION

5.6. Development-A Description

a. Other Decisions. Once a program begins development there are other important decision points mostly representing increased resource commitments. These include the following:

- **Transition from Demonstration/Validation to Engineering and Manufacturing Development.**
- **Long lead for production.**
- **Low-rate initial production (when full-rate production is the critical decision).**
- **Decision to enter operational testing.**
- **Contractor selections or down selection.**
- **Product improvement decisions.**

b. Other Decisions-Who Makes Them? At each decision point during development, there is a re-asking and re-answering of the same questions at Milestone B. However, once a program is underway, we believe that the CAE or Joint Acquisition Executive should be the

decision maker except in special situations where there is substantial added value in elevating the decision. We believe those special situations should be rare. The key reason is that the CAE or Joint Acquisition Executive has closer proximity to and a better understanding of the relevant program information than does the DAE. Thus, the CAE or Joint Acquisition Executive is better positioned than the DAE to answer the critical "is the program ready to proceed?" question. Figure 8 illustrates the review process for making these decisions.

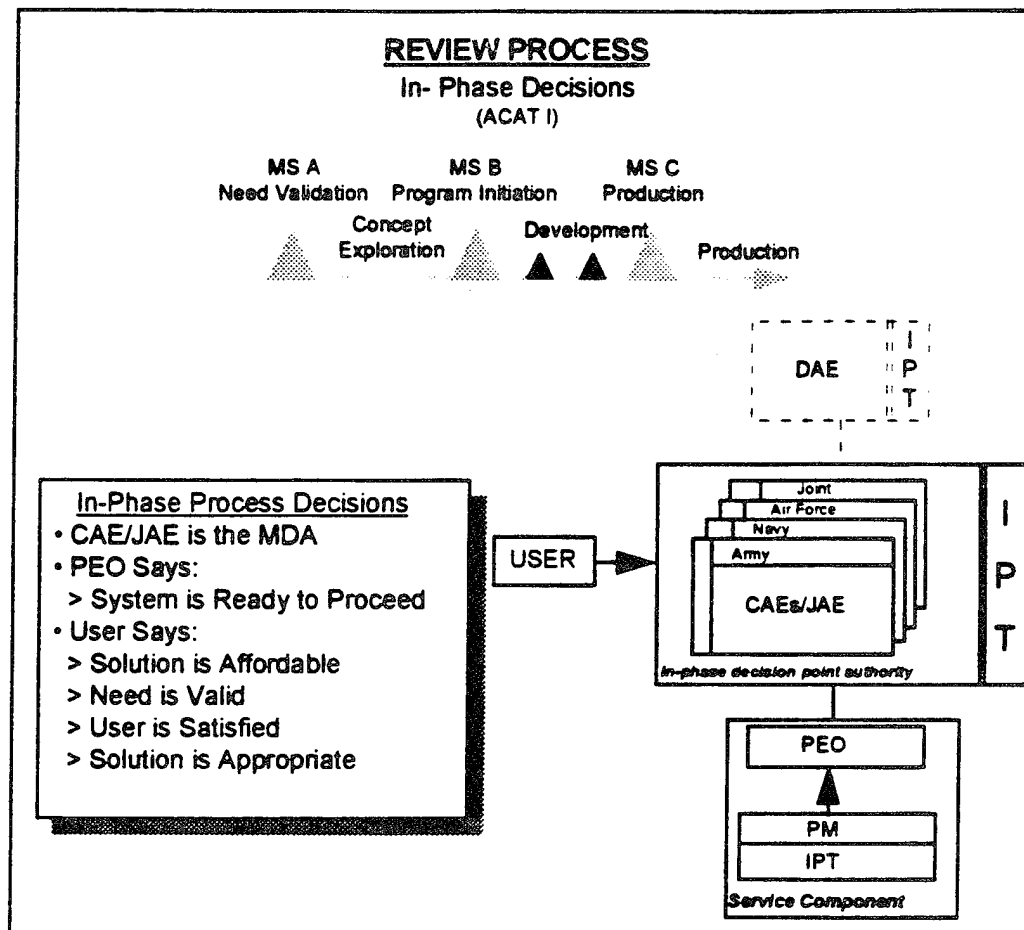


Figure 8. PRE-PRODUCTION REVIEW PROCESS

5.7. Milestone C-A Description

a. The Nature of the Decision. The third critical decision point is the decision to produce (Figure 9). Depending upon the system, this decision point may be low-rate initial production or full-rate production. In general terms, the low-rate initial production decision is usually the key one for systems with large unit and non-recurring production costs (e.g., ships or airplanes). In other instances, the low-rate initial production is more a part of development, with unit and non-recurring production costs being relatively modest. The critical decision for these systems is really the full-rate production decision rather than the low-rate decision. The criteria for deciding which of the two is most critical for any particular program are subjective. However,

the key judgment should be to decide where the DoD's commitment to produce is irrevocable: that point is the "critical" decision where Milestone C should be. We think that the DAE should recommend and the Deputy Secretary should decide the appropriate point for Milestone C at the Milestone B decision (for ACAT I programs).

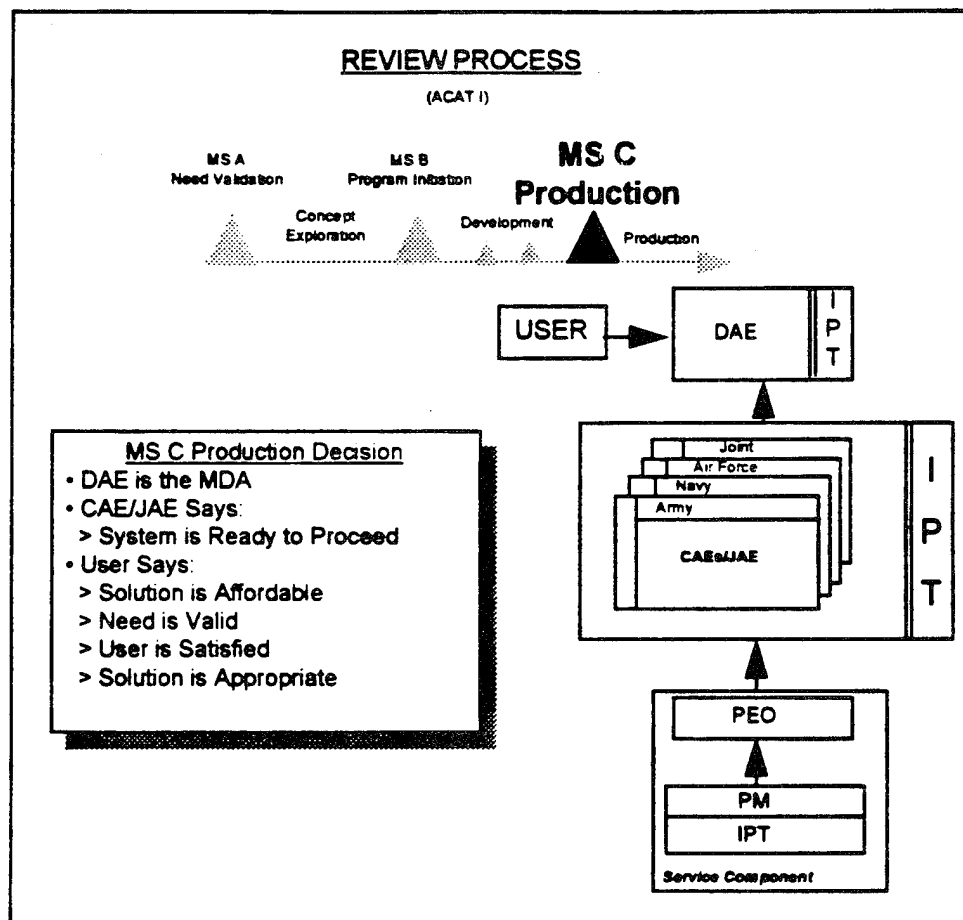


Figure 9. MILESTONE C-PRODUCTION DECISION

b. The Milestone C-Who Makes It? The set of critical questions for Milestone C is the same as that for Milestone B. However, we conclude that the decision maker for Milestone C should be the DAE instead of the CAE or the Deputy Secretary (for ACAT I programs). The reasons follow:

- The DoD's continuing financial commitment (or lack of commitment) to the program is, by Milestone C, fully reflected in the budgeted and programmed monies for the program.
- At the same time there does need to be a reaffirmation that producing the system makes sense for the user in the context of the national military strategy. Thus, the DAE adds value over the CAE because the production decision and the long-term

commitment it implies need to be outside the range of any possible parochial Component interest.

5.8. Schematic Summary. This new process can apply to every program, regardless of its size. Figure 10 summarizes the process, and Figure 11 is a summary of who the decision makers are (as a function of program size).

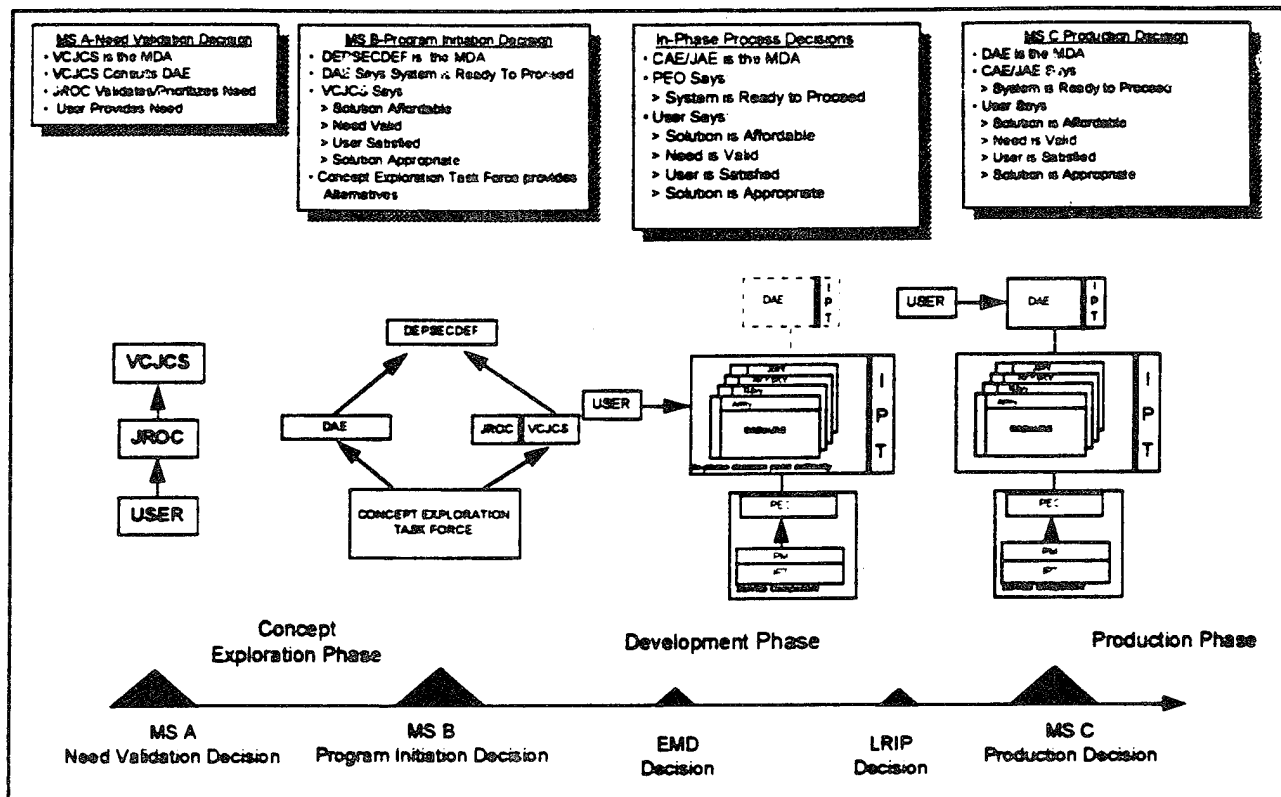


Figure 10. SUMMARY OF THE REENGINEERED MILESTONE REVIEW PROCESS

RECOMMENDATION 8. We recommend an immediate transition to the three-milestone process for all current ACAT I programs with an evolutionary transition over the next year to the less-than ACAT I programs.

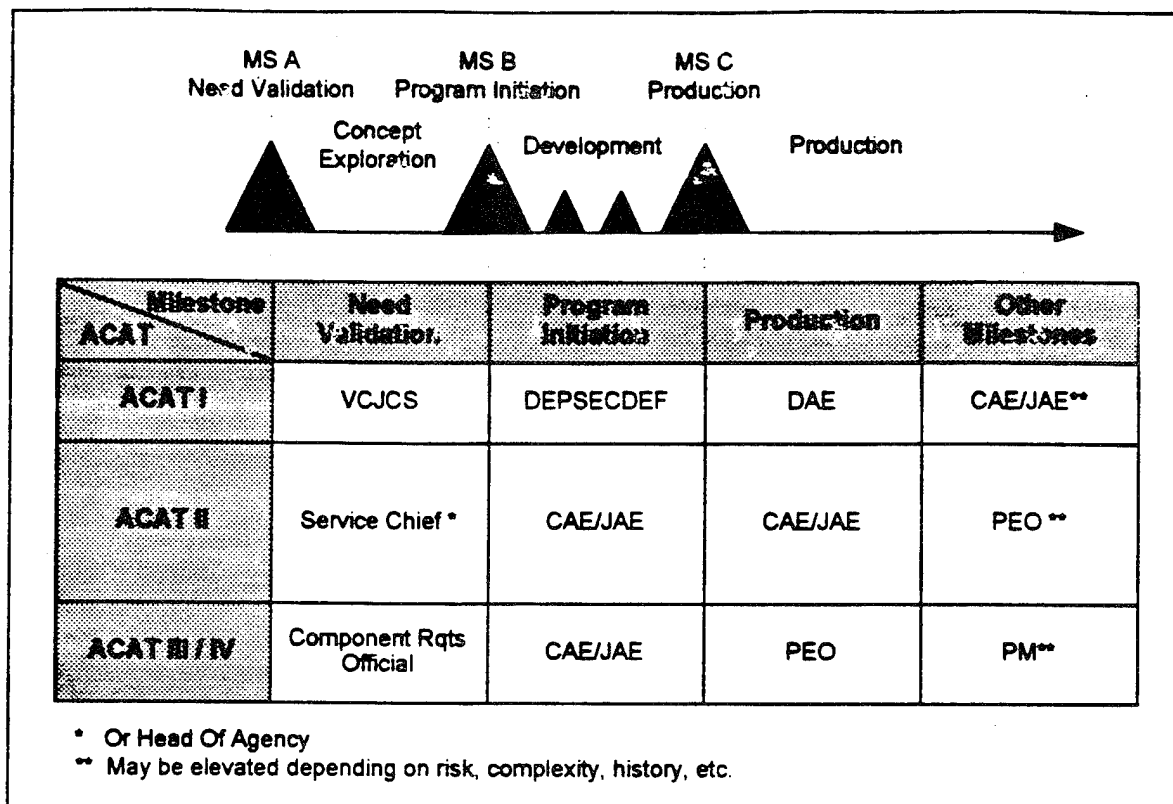


Figure 11. SUMMARY IDENTIFYING THE DECISION MAKERS

5.9. The IPT Concept

a. Sequential Reviews. The current milestone review process is highly sequential and time-consuming. Before the actual milestone decision meeting, there are a series of formal and informal component and OSD "pre-meetings." These pre-meetings include functional reviews as well as broad reviews within the Component. There are two reasons for the sequential meetings. The first is that the Components use internal reviews to establish their "position" vis-à-vis OSD. Second, the functional meetings and reviews facilitate the issuing of the many formal reports that DoDI 5000.2, Part 11, requires. There has been great forethought in putting together this process; but nonetheless, it often produces lengthy delays with attendant program impacts.

b. Using an Integrated Product Team Approach. We believe that there are huge dividends from involving staff and user representatives directly and early in the review process. The practice of sequential, tiered activities needs replacing with a collaborative, concurrent approach where the focus is on the overall program rather than the functional pieces. Making staff and user representatives part of the formulating process via the IPT approach and reducing documentation to eliminate redundancy and information not bearing on the decision should, we believe, allow for a single meeting to resolve most program issues and identify any remaining ones that the decision maker needs to address. We recommend that the CAE chair this single pre-milestone meeting for those ACAT I programs going to the DAE. The leader of the integrated process, who will orchestrate the pre-meeting activities, should be the Oversight IPT leader—the

person with PEO qualifications who we described in Section 4.4 as being responsible to the DAE for integrated program oversight. Having the CAE chair the meeting should obviate the need for any Component pre-meeting. Using the OSD Oversight IPT leader as the review process leader places a knowledgeable, product-focused person in charge of the process and provides a balance between Component and OSD staff influence. The oversight team leader should be the program PEO for programs for which the CAE is the Milestone Decision Authority.

RECOMMENDATION 9. We recommend that there be only one formal review before a milestone decision meeting. The CAE will chair that review. An Integrated Product Team, comprised of users, OSD and Component staffs as well as program office staff, will prepare for the meeting. The team leader should be the product-focused, OSD Oversight IPT leader. The leader's responsibilities are to accomplish all prerequisite activities and to resolve issues within the IPT.

5.10. Milestone Review Documentation. We carefully reviewed the documentation requirements of Title 10, US Code, and the DoDI 5000 series. During our review we were mindful that each document required for a decision represents substantial activities, has real dollar costs and a devoted constituency. We tried to subjectively weigh the value of each document to its associated costs--both real and opportunity. Considering our charter, the critical review questions, and alternate sources of information to answer these questions, we recommend a thoroughly revised set of documents, reports, and plans to support our reengineered review process. Our basic approach was to develop a "standard set" of essential documentation requirements that would meet the needs of most decision makers, for most programs, for most of the time. In all we propose deleting, revising and "re-classifying" a total of 34 documents. This includes deleting 10 milestone decision documents, and 11 other milestone documents that we think should be in the program oversight/execution category. We recommend a revised Integrated Program Summary (IPS) as the single milestone decision document. We placed 12 program plans referenced in DoDI 5000.2 in an "optional for use" category. We firmly believe that the concept of "tailoring-in" only those minimum essential documents is one that program managers and Milestone Decision Authorities should immediately embrace. A detailed table of review and oversight documentation, who prepares and who approves each document, by ACAT, is included in the implementation portion (Volume II) of this report.

5.11. Revisions and Deletions of Milestone Documentation and Activities

a.. **The Component Cost Estimate, the Cost Analysis Requirements Description, and the Manpower Estimate Report** We deleted these because they are inconsistent with our recommendation to use IPTs to do review. In our view, their value-added does not warrant their costs. The OSD Cost Analysis Improvement Group (CAIG) should develop the Independent Cost Estimate for ACAT I programs, but they should do it in concert with the program office rather than from a specially prepared and expensive Cost Analysis Requirements Document. We further recommend that the CAIG include in the independent estimate the operational manpower requirements with input from the user. This eliminates the requirement for a separate Manpower Estimate Report and will satisfy 10 US Code 2434, "Independent Cost Estimate and Operational Manpower Requirements" for ACAT I programs. We believe that the independent CAIG estimate

should be the OSD cost position for all ACAT I programs and the program office estimate should be the official Component position for these programs. We also feel that the program office estimate should be the official cost position for ACAT II, III and IV programs and that the Independent Cost Estimate for ACAT II programs does not warrant its expense and should be eliminated. In all cases we think a separate Component Cost Estimate represents unnecessary activity. The program manager will summarize the program's life cycle cost estimates and give them to the decision maker in the Integrated Program Summary.

b. Cost and Operational Effectiveness Analysis (COEA). A COEA can be an effective tool for helping select the preferred alternative for development. Too often, however, the COEA merely compares different variations of the same concept (e.g., varieties of tanks, aircraft, ships, satellites, etc.). We believe that it is rarely used to compare the warfighting effectiveness of competing concepts. We also think COEAs and COEA "updates" have little or no value once a program is underway. Full COEAs can cost millions of dollars, and take years to develop. So, doing a COEA should be a conscious decision. However, since DoDI 5000.2 requires a COEA for all ACATs and COEAs have a constituency, we perceive that decision makers are reluctant to either eliminate, or tailor the COEA to the needs of the program. We propose eliminating this cultural problem by eliminating the requirement for a COEA. This will facilitate a cost conscious decision to either require a COEA, a less costly and less time consuming cost/benefit analysis, or a decision to simply accept results of the user's mission area assessment. The program manager will summarize the reason for selecting the preferred alternative in the Integrated Program Summary.

c. Intelligence Reports. Various intelligence reports that DoDI 5000.2 requires serve two purposes. At the current Milestone 0 (our Milestone A), the intelligence report confirms the threat basis for the Mission Need Statement. At subsequent milestones, the intelligence report validates the threat to the proposed concept/system under development or production. We believe these reports are not useful and recommend eliminating them. The program manager can provide sufficient threat summary information in the Integrated Program Summary, referencing the appropriate threat assessment when necessary (see "Threat Assessments," below).

d. Live Fire Test and Evaluation Waiver (Designated programs). DoDI 5000.2 lists this waiver as a separate document that the program manager prepares and the Secretary of Defense approves. Its purpose is to certify to Congress when full-up, live fire testing of a covered system would be unreasonably expensive and impractical. We believe that the program manager can describe the rationale for less than "full-up" live fire testing in the Acquisition Strategy Report before the program enters Engineering Manufacturing and Development. The explanation will describe how the program manager proposes to meet the live fire requirements in accordance with 10 US Code 2366. When the DAE approves the Live Fire Test and Evaluation strategy in the Acquisition Strategy Report, the OSD staff can prepare the certification to Congress for the Secretary to sign.

e. Integrated Program Assessment. The Integrated Program Assessment is the Milestone Decision Authority's staff assessment for a milestone decision. It uses the same format

as the Integrated Program Summary that the program manager prepares. We recommend deleting this document and replacing it with a simple memorandum highlighting any key issues for the decision authority to consider. The CAE would sign the memorandum based on the results of the pre-milestone review.

f. Joint Requirements Oversight Council (JROC) Assessment. The JROC's assessment is now required before a Defense Acquisition Board review. In lieu of the JROC assessment, we recommend substituting the VCJCS's signature on the APB. With advice from the JROC, we believe his signature obviates the need for a separate assessment.

5.12. Milestone Documents Moved to Program Oversight/Execution Category

a. Operational Requirements Document. We believe that the Operational Requirements Document is not an essential document for milestone decisions. While necessary, it is properly a program execution document. The Milestone Decision Authority will have the key information from the Operational Requirements Document—e.g., the threat, shortcomings of existing systems, required capabilities, integrated logistics support, force structure implications, interoperability, and the schedule. A summary of these will be in the Integrated Program Summary and the Acquisition Program Baseline.

b. System Threat Assessment Report and System Threat Assessment. The Component Intelligence Agency's assessment is in the System Threat Assessment Report for ACAT I programs. There are other, less formal system threat assessments for lower ACAT programs. The Component Intelligence Agency provides these less formal reports to the Milestone Decision Authority. We conclude that all such intelligence products should go to the user and the program manager rather than to the Milestone Decision Authority. The user can adjust the Operational Requirements when necessary, and the program manager will summarize the threat information in the Integrated Program Summary. When the threat changes enough to warrant a change in a baseline parameter, the program manager and the user will agree on the program impact. If there is a change, the program manager will notify the Milestone Decision Authority through the Monthly Status Report and the baseline change request.

c. Test & Evaluation Master Plan. The Test and Evaluation Master Plan is a planning document representing a "contract" between the program manager, user, operational test agency, Service Headquarters, and OSD. For ACAT I and designated programs, the program office prepares the plan via an Integrated Product Team involving all the stakeholders. We recommend that the Concept Exploration Task Force Manager prepare and forward to OSD a preliminary Test and Evaluation Master Plan before an acquisition program begins (Milestone B). The Plan then becomes a "living document" that the IPT updates and the program manager approves. The program manager will forward the Plan to OSD before milestone reviews, but OSD approval of the Plan should not be a prerequisite for having the milestone decision.

d. Test Reports. DoDI 5000.2 classifies developmental and operational test reports as milestone documents. We believe that the user, the program manager, the PEO and the CAE should get these reports after the tests. For programs on the OSD Test and Evaluation Oversight

List, the Director of Operational Test and Evaluation must get operational test reports. The Milestone Decision Authority will see the testing results at the major issue level in the Integrated Program Summary. This will allow milestones to move ahead after the decision maker knows the major test and evaluation issues, but before the formal completing of test reports—an administrative function. This recommendation recognizes that the Director of Operational Test and Evaluation must provide a report to Congress before selected programs can proceed beyond low rate initial production.

e. Risk Assessment and Environmental Analysis. These are annexes to the current Integrated Program Summary. We recommend that the program manager develop and approve these documents but retain them as program execution information rather than forwarding them as milestone documents. The program manager can summarize the essential information from these two documents and provide it to the Milestone Decision Authority as part of the Integrated Program Summary.

f. Acquisition Strategy Report. The Acquisition Strategy Report is currently a milestone review document that is an annex to the current Integrated Program Summary. We recommend retaining the Acquisition Strategy Report as a stand-alone document for the milestone decision authority's approval and program office use. This facilitates Acquisition Strategy Report approval prior to a milestone review, when appropriate. If the Acquisition Strategy Report is not approved prior to submittal of the Integrated Program Summary, it should be submitted with the Integrated Program Summary.

g. Affordability Assessment. We recommend removing this annex from the Integrated Program Summary and assigning responsibility for assessing affordability to the user. The user should give the Concept Exploration Task Force Manager an assessment of program affordability before the program initiation decision—Milestone B in our construct. He can then summarize affordability for the Milestone Decision Authority using the Integrated Program Summary. The program manager will summarize affordability for the later milestones.

h. Cooperative Opportunities Document. (ACAT I programs only). We believe that the Cooperative Opportunities Document should not be a part of the Integrated Program Summary. The CAE's international staff is where the expertise resides and that staff should prepare the Document. The international staff should get program manager/PEO and CAE approval, and provide a copy of the approved Cooperative Opportunities Document to the program manager before the start of an acquisition program (Milestone B). The program manager will summarize the international cooperation approach (when applicable) in the Integrated Program Summary.

5.13. Program Plans. DoDI 5000.2 and various Military Standards reference many different program plans. We believe that these plans (reflected in column three of Figure 12) should be optional. The program manager may use or not use them depending on program requirements and the manager's judgment about the need for the document to guide program office activities. The program manager may also develop other plans (e.g., risk management plans) for internal use. The review level for any of these plans should be no higher than the PEO.

The following Figure 12 summarizes the changes in documents outlined above:

MS Documents Deleted:	MS Documents Moved to Oversight/Execution Category:	Optional Program Plans:
1. Component Cost Analysis	1. Operational Requirements Document	1. Configuration Management Plan
2. Cost Analysis Requirements Description	2. System Threat Assessment Report	2. Computer Resources Life Cycle Management Plan
3. Manpower Estimate Report	3. System Threat Assessment	3. Foreign Disclosure Plan
4. Independent Cost Estimate for ACAT II programs.	4. Test & Evaluation Master Plan	4. Human Systems Integration Plan
5. Cost & Operational Effectiveness Analysis	5. Operational Test & Evaluation Report	5. Integrated Logistics Support Plan
6. DIA Report	6. Developmental Test & Evaluation Report	6. Manufacturing Plan
7. Intelligence Report	7. Acquisition Strategy Report (Annex C to current IPS)	7. Program Protection Plan
8. Live Fire T&E Waiver	8. Risk Assessment	8. Security Classification Guide
9. Integrated Program Assessment (IPA)	9. Environmental Analysis	9. Systems Engineering Management Plan
10. JROC Assessment	10. Affordability Assessment	10. Software Development Plan
	11. Cooperative Opportunities Document	11. Technology Assessment/Control Plan
		12. Training Development Plan

Figure 12. SUMMARY OF DOCUMENT CHANGES

5.14. Milestone Review Documents

a. **Milestone A Decision Document**. We believe that only a single document is necessary for a Milestone A decision. That document is a Mission Need Statement that the VCJCS has validated and approved.

b. **Decision Documents at Other Decision Milestones**. At Milestones B, C and all others, that single review document should be a modified Integrated Program Summary, in our judgment. The program manager would prepare the Summary and send it to the Milestone Decision Authority. The Summary should contain an executive level synopsis of all information the Milestone Decision Authority needs to make a milestone decision. The modified Integrated Program Summary will have three annexes: a program structure/schedule chart, the proposed Acquisition Program Baseline and the proposed Acquisition Decision Memorandum. After the Milestone Decision Authority approves them, the Acquisition Program Baseline and Acquisition

Decision Memorandum will become stand-alone documents for program execution. The link between documentation and the questions for a milestone review are in **Figure 13**.

Review Question, Milestone A	Information Source to Answer Question(s)
1. Is the need valid?	Validated & Approved Mission Need Statement
2. What is the need's priority?	
Review Questions, Milestones B & C	IPS Section No./Annex
1. Is the need valid?	1-2. Program Description 2-4. Threat highlights/existing system shortfalls.
2. Is the solution appropriate?	2-2. Alternatives assessed and results. (includes most promising alternative and rationale.
3. Can we afford the solution?	2-1. Program execution status (includes cost drivers) 2-3. Affordability Assessment.
4. Is program ready to proceed?	2-1. Program execution status (includes testing). 2-5. Acquisition Strategy 2-6. Risk assessment and plans to reduce risk. 2-7. Program Environmental Analysis 2-9. Recommendations Anx A, Program Structure Chart
5. Is User satisfied?	2-1. Program Execution Status (includes testing) 2-3. Affordability Assessment Annex B, Acquisition Program Baseline (signed by user)

Figure 13. DOCUMENTATION AND THE CRITICAL QUESTIONS

c. Integrated Program Summary Format. We provided formats for the modified Integrated Program Summary and the Acquisition Program Baseline in the implementation portion (Volume II) of this report. We believe that the Acquisition Program Baseline is the key document for reaching consensus among the program manager, PEO/Milestone Decision Authority and the user—consensus on the cost, schedule and performance thresholds and objectives for the program. We recommend requiring the user to sign the baseline to help provide stability to baselined parameters. The proposed Acquisition Decision Memorandum should also be an annex to the Integrated Program Summary. We believe that the program manager should recommend, in the proposed Acquisition Decision Memorandum, what documents he or she deems appropriate for the next review.

5.15. The Acquisition Program Baseline and Exit Criteria. We examined the current procedure of satisfying “exit criteria” as a prerequisite to proceed to the next acquisition phase. We believe that exit criteria often are extra parameters that are not particularly added value to baseline thresholds. In practice, most exit criteria are nothing more than intermediate points

measured along a technical maturity curve for performance thresholds. We judge that the Acquisition Program Baseline already provides an agreement among all the stakeholders on what the critical cost, schedule, and performance thresholds are. It can include intermediate objectives agreed to at milestones. The program manager's estimate of the progress of the program as it proceeds during development and production against established baseline criteria is sufficient exit criteria for activities during a phase, or for obtaining a decision to proceed to the next phase. We recommend elimination of exit criteria, and more robust use of the Acquisition Program Baseline.

RECOMMENDATION 10. We recommend that the documents, reports, and certifications listed in DoDI 5000.2, Part II, be immediately replaced by the minimum set of documents outlined in this report.

RECOMMENDATION 11. We recommend that the program manager select which program plans are appropriate based on individual program requirements and what the program office needs. Approval and staffing level for program plans should be no higher than the PEO.

RECOMMENDATION 12. We recommend that managers of programs 6 months or more from a milestone review send a memorandum to their Milestone Decision Authority proposing the documentation for the next review. If the Milestone Decision Authority does not decide to tailor-in added documentation and inform the program manager within 30 days, approval should be automatic. Managers of programs less than 6 months from the next milestone review will identify (in a proposed Acquisition Decision Memorandum) the documentation he or she proposes to provide to the Milestone Decision Authority for the following milestone.

RECOMMENDATION 13. We recommend that the DAE adopt the format we have constructed for the Integrated Program Summary and its annexes. He should declare as optional both the documents and the formats contained in DoD 5000.2-M, Defense Acquisition Management Documentation and Reports (excepting those with inflexible statutory requirements).

RECOMMENDATION 14. We recommend that the Secretary of Defense direct a comprehensive, programmatic and legal review of all statutory documents, reports and certifications and recommend appropriate changes to Congress. The goal should be to reduce the required documentation overall to only those documents that are necessary for managing programs.

RECOMMENDATION 15. We recommend that the CAEs review the unique documentation imposed on defense acquisition programs by their Component and sub-Components. These Executives should eliminate all Component-unique documents and reports unless they satisfy requirements that none of the required documents satisfy.

VI. OTHER FEATURES

6.1. Introduction. This section describes other features of our overall model that we thought did not fit neatly into either the review or oversight categories. The discussion and recommendations in this Chapter are just as relevant to our reengineered model as what has come before.

6.2. Affordability

a. **The Problem.** Virtually every study on improving acquisition has recommended that there be a better linking between the program decision and budgeting processes. We agree that there is a linkage problem. However, the real issue, insofar as the current milestone review process, is that the affordability assessment is neither binding nor meaningful. As practiced, affordability assessments tend to be made on individual programs in isolation from the joint priorities. Therefore, the resulting affordability assessments are perishable. The lack of durability in these assessments tends to undermine subsequent decisions based on them.

b. **Affordability and the Warfighter.** To address this issue, we have developed two recommendations. The first (as we described in the previous Chapter) was to make the Deputy Secretary of Defense the Milestone Decision Authority for Milestone B (Program Initiation). This recommendation tries to insure that a commitment to a program (or program change) would be accompanied by a concurrent commitment to the financial resources for it. In addition, we recommend placing the warfighter in the role of deciding what is affordable and what is not. This represents a fundamental change in the way we assess affordability and make investment decisions. It also connotes a major change in how the warfighters have participated in acquisition programs, **but it is no change in the statutory responsibilities for the Chairman of the Joint Chiefs.** We can illustrate the proposed process in conjunction with an ACAT I program milestone review to initiate a program.

- The OSD Comptroller would provide the DAE with resource guidance. That guidance would take the form of a "top line"—a realistic estimate of funding across the Future Years Defense Program available for investing in major defense acquisitions.
- The VCJCS, with the advice of the JROC, would provide the DAE with the warfighters' priority for the program being considered. This priority would be in relation to all other major defense acquisition programs in DoD that have approved funding in the Future Years Defense Program.
- Using these inputs, the DAE would develop alternative approaches (including cross-Component alternatives) to make the program "affordable"—fit within the top line. These alternatives would be in the form of executable program decision packages. The DAE would construct these using the warfighter priorities as a basis.
- The DAE would give the alternative decision packages to the VCJCS who, in turn, would select the best alternative.

- Finally, the Comptroller would make the appropriate programming and budgeting adjustments to execute the alternative decision package the VCJCS approved.

RECOMMENDATION 16. We recommend that the Defense Resources Board adopt, for ACAT I programs, the affordability process we describe. This process would apply at program Milestones as well as during budget and bill paying phases.

6.3. Cost-Schedule-Performance Trades

a. Making Trades a Continuing Process. A critical element of the reengineered oversight process is institutionalizing the concept of continuing cost performance trades throughout the program life cycle rather than just at a program's inception or at the milestone decision points. As a program evolves we believe that the user needs the continuing opportunity to see where there can be cost or cycle-time benefits by relaxing performance requirements. In a like manner, the user should get a frequent flow of information that allows him or her to consider increasing performance requirements where there has been a technology breakthrough or a new threat development.

b. Formalizing the Process. The current process encourages evolutionary requirements development, but in practice, the requirements, once set, tend to be rigid unless a program gets into trouble. The cultural barrier to evolutionary requirements seems to be the program offices' and contractors' resistance to change. Their natural desires are to work a well-defined, stable program with an immutable set of objectives. One can understand why, in the interests of program stability, this cultural barrier exists. The downside of this barrier is that it ignores the value of new information emerging from a program's executing phase. Because of the cultural barrier, we believe that there needs to be a "forcing function"—a formal process that periodically compels program managers to offer users alternatives that would reduce costs, improve cycle times or enhance the utility of the system to the user.

RECOMMENDATION 17. We recommend that the DAE institutionalize a formal requirements review process for each ACAT I development program. This review (which we call a "Summit" review) would consist of formal presentations by the program manager to flag-level user representatives at least biennially during development. The presentation would highlight new opportunities for cost, schedule and performance trade-offs. If the users decide to take advantage of these opportunities, the program and the requirement would be adjusted to reflect the change. The DAE should encourage the Service Chiefs to implement Summit reviews for other ACAT programs.

6.4. Contractor Oversight

a. The Nature of Contractor Oversight. Program offices and attendant support agencies are largely responsible for contractor oversight and review. Other agencies such as the Defense Contract Management Command, the Defense Contract Audit Agency, responsible test organizations, and user representative organizations also play major roles. In the aggregate, the total cost for people doing direct contractor oversight is very large. Not only is there a direct cost

for these people, but there is also a substantial indirect cost. Each functional within a program office or from an overseeing agency demands data in his or her functional area to do his or her job. Though formal requirements are established in the contract and through design reviews, constant inputs from program office engineers and user representatives often result in requirements changes which, in turn, can lead to cost growth and claims. Our other recommendations may allow for reducing headquarters staffs, but most of the acquisition work force reductions in the next few years will come from field activities since that is where most of the resources are. We believe these fact-of-life reductions alone will necessitate fundamental change in the way we review and oversee contractors.

b. Duplication in Contractor Oversight. Today there is substantial duplication and overlap between what program offices do and what the Defense Contract Management Command's local offices do, particularly in development programs. This overlap persists despite the efforts of senior leaders to prevent it. Duplicative work represents unnecessary activities as well as a source of substantial confusion to the contractor. There appear to be two reasons for continuing overlap. The first is the perceived lack of a sufficiently trained and experienced cadre of technical experts within the local plant representative offices who can serve as the manager's technical eyes and ears. The second reason is cultural. Program managers are reluctant to rely on people over whom they have no control, who may not be accountable and who may have other agenda. We conclude, in the interest of more efficiency, a clear redefining of roles and responsibilities is essential.

c. Contractor Oversight-Answering the Critical Questions. The program manager is the one person responsible and accountable for contractor oversight relative to the program he or she manages. That manager should be singularly responsible for answering the critical oversight questions and providing those answers to higher level decision makers. The manager's role and that of his arm, the program office, should be to provide requirements to the contractor, to establish and maintain interfaces that the contractor cannot control, to objectively assess and report progress, and to ask for help when the program needs help. The Defense Contract Management Command's role should be one of providing both general and program-specific oversight as well as the skilled cadre at the contractor facilities that can be the "eyes and ears" for the program office. We conclude that the Defense Contract Management Command should provide program assessments only as requested by the program manager.

RECOMMENDATION 18. Program offices should use in-plant Defense Contract Management Command or Supervisor of Shipbuilding personnel as the source for routine status information and avoid duplicating work that in-plant representatives do. Defense Contract Management Command's program office-independent assessing and reporting of contractor performance should immediately stop.

d. Contractor Past Performance. In a perfect world the DoD could follow the commercial model and buy equipment with little direct supplier oversight. From past history one might conclude that such an approach could not apply to us because we tend to have much higher risk ventures than commercial companies. However, this is not the entire story. Looking backward we have made some extremely poor contractor choices by placing too much faith in our

ability to discriminate among contractors based on their proposals. In a recent survey of Government and industry acquisition managers, around 60 percent of both groups believed that contractor performance (relative to proposals) was less-than-satisfactory.¹⁹ We must substantially streamline how we oversee and review contractor progress. But we should not make such a change blindly. Changing hinges critically on our, like world-class commercial companies, becoming much, much less tolerant of poor vendor performance. We would like to see a transition to a source selection process where past performance is as dominant a factor in our contractor selections as it is in the commercial world. We note that there is considerable work going on in this area, but there are major cultural barriers to institutionalizing this concept within the acquisition work force. The leadership must, we feel, make an extraordinary move to institutionalize the concept—a move similar to the recent one on military specifications and standards.

RECOMMENDATION 19. We recommend that the DAE direct that contractor past performance be elevated to a dominant factor in all source selections by not later than July 1, 1995. In rare instances where it may be inappropriate to elevate past performance to a dominant factor, the CAE can approve a waiver.

e. Contractor Self-Governance. When we are able to do a better job of selecting our contractors, then there is an opportunity to substantially reduce the cost of contractor oversight and review. We know, for example, that our Defense contractors have been able to satisfy commercial customers in commercial sales without the intrusive oversight and extensive interaction characteristic of most acquisition programs. Once contractors demonstrate they can perform, we should take full advantage of that opportunity. We think that the commercial practice of self-governance can work as well for DoD acquisitions as it does in the commercial sector.

RECOMMENDATION 20. When a contractor has demonstrated that he can perform to his contracts, the Government should adopt commercial practices by relying almost exclusively on contractor self-governance rather than on Government inspectors, auditors and compliance monitors.

6.5. Acquisition Support Commanders

a. Acquisition Support Commanders' Reporting Chains. Acquisition Support Commanders have two reporting chains. They report to their CAEs for acquisition matters, including program oversight and review. In the Air Force and the Army, they also report operationally to a Materiel Command.

b. Role of the Acquisition Support Commanders. We view the Acquisition Support Commanders as equivalent to PEOs. The major difference is that PEOs oversee high-profile, high-risk acquisition programs (usually ACAT I and related programs), while Acquisition Support Commanders normally oversee lower ACAT-level acquisition programs. Additionally, these

¹⁹ Defense Systems Management College Executive Institute, December 1994, p 41.

Commanders usually provide the matrix organizations that support the PEO programs. Some Acquisition Support Commanders also provide design, logistics and other system engineering functions and services to the PEOs and program managers. When the system acquisition phase of a program ends, most programs are transitioned from PEOs to the Acquisition Support Commanders for life-cycle management.

c. The Problem. Many of the duties and responsibilities of the Acquisition Support Commanders are outside of system acquisition. For Commanders, these non-acquisition responsibilities typically consume the preponderance of their time and result in a span-of-control much greater than that for typical PEOs. These additional functions and responsibilities dilute their ability to be directly and continually involved in the acquisition programs within their control. This means that program managers may not have the access to and oversight by a senior decision maker that they need. This can be a major problem since the Services tend to put their less experienced people on the lower ACAT programs. In addition, these Commanders may not have the acquisition qualifications that PEOs have. As a result, we believe that oversight and review would be greatly improved by aligning all acquisition programs in the program manager-PEO-CAE chain of command so the program manager has access to a person whose primary job is program oversight, and the CAE has a person whom he or she can reasonably hold accountable for program oversight.

RECOMMENDATION 21. We recommend that all acquisition programs, regardless of ACAT classification, be aligned in the program manager-PEO-CAE chain, wherein the PEO is a full-time acquisition manager and reports directly to and receives guidance from the CAE.

6.6. Defense and Component Acquisition Executives' Continuity

a. The Nature of the Acquisition Executives. The DAE and CAEs have many traits in common. Because the purpose of the acquisition oversight and review process is to serve these decision makers as well as the program manager, it is important to understand that—

- These executives are normally political appointees, usually with industry experience. In the normal case, they would not have had substantial acquisition experience from within the Department, though they would have had some significant exposure to the process.
- These executives are extremely busy people with hosts of obligations. Generally they have very little time for actively overseeing and reviewing individual problem programs and virtually no time for those that are on-track.

b. The Problem of Continuity. One of the issues we identified as a barrier to reengineering the oversight and review process was the lack of continuity in the CAE and DAE positions. The lack of continuity in these appointed positions introduces abrupt changes in emphasis that are highly personality-dependent. We discovered that the oversight and review process today contains many layered vestiges from previous CAEs and DAEs. Another

significant factor is that much of the CAEs' and DAE's time is consumed by matters virtually unrelated to individual program oversight. Too, there are sometimes lengthy delays whenever one executive departs and the replacement is not yet in place. We feel that a helpful step toward a more efficient system would be to introduce some stabilizing influence to modulate the rate of change in the process.

RECOMMENDATION 22. We recommend that the DAE and each CAE have a civilian deputy who is career civil service at the Senior Executive Service level and who has extensive acquisition experience, ideally as a PEO or an ACAT I program manager.

6.7. Performance Incentives

a. Incentives for Military Officer Performance. The premise that improving effectiveness of the oversight and review process should demand accountability, promote flexibility and encourage innovation, led us to focus on the experience and qualifications of program managers and PEOs. Our recommendations have assumed that decision makers should be able to have high confidence in the program managers and PEOs executing programs. However, decision makers cannot simply "award" this confidence; program managers and PEOs must demonstrate, by individual behavior, that the decision makers can trust them. We feel that there must be real incentives to perform to the higher standards our reengineering process demands. We have discussed some of these incentives in a previous section of this report. For the military program manager and PEO, allowing "in place" promotions is a useful incentive. Likewise, allowing officers holding these positions to be exempt from forced early retirements seems a sound incentive. Other than these, however, we were unable to find more that we thought were implementable without statutory relief.

b. Excepted Service for Civilian Program Managers and PEOs. The excepted service provides several potential advantages (as compared to career civil service) for key civilian positions, such as program manager or PEO:

- It is easier to hire the best qualified personnel.
- It is easier to release non-essential or non-performing personnel.
- It provides for maximum tour lengths.
- It allows use of flexible pay provisions.

c. Excepted Service as an Incentive and a Disincentive. The excepted service has some drawbacks from the employees' perspective. These are some of the same advantages described above. Employees may view the lack of job security and career protection as major disadvantages. However, excepted service could also be a major employee incentive since it is possible to negotiate pay and have special pay categories not available in the career service. The PAT had neither the expertise nor the time necessary to thoroughly examine the potential of using the excepted service for critical acquisition positions. There are many factors which need to be

examined such as how to decide which positions should be converted to the excepted service and also what the salary incentives should be.

RECOMMENDATION 23. We recommend that the DAE investigate the potential incentives for persons holding critical acquisition positions including opportunity for promotion in place, exemption from selective early retirement (for military) and use of excepted service and accompanying financial incentives (for civilians).

6.8. Audits and Inspections

a. Role of Audits and Inspections. Audits and inspections are two important ways of assisting the decision maker in fulfilling the oversight function. Complying with statutory requirements provides little flexibility, but most regulatory requirements do allow for significant management flexibility. We feel that auditors and inspectors have not always recognized this flexibility. Anticipating this rigidity, many program managers feel compelled to protect themselves by resorting to a "one-size-fits-all" execution and reporting process that they know the auditors and inspectors will accept.

b. Auditor and Inspector Qualifications. We recognize that independence is essential if auditors are to be effective and credible. However, we believe that auditors and inspectors can further enhance their competencies, through more training and experience in the acquisition management field. Audit/inspection teams are frequently comprised of personnel who have not served in program manager or PEO organizations. Many are not acquisition-trained and are not Defense Acquisition Workforce Improvement Act-certified. The result can be that they inspect or audit for strict functional compliance without regard to an integrated product focus. Accounting degrees and audit training are useful. But, we conclude that these qualifications alone are insufficient to evaluate the management process of a complex and diversified acquisition program. Recently, the DoD Inspector General has taken steps to get additional quotas for Defense Acquisition University courses. This is only an interim solution, in our judgment. The future goal should be for auditors and inspectors to have direct acquisition office experience and Defense Acquisition Workforce Improvement Act certification.

c. Costs of Inspections and Audits. Inspections and audits bring costs with them. It is not clear to us that decision makers always weigh those costs versus the marginal value added before undertaking audits and inspections. Among the issues we identified are the following--

- Despite policy and prior DoD Inspector General efforts to coordinate schedules and minimize duplication, program offices still must cope with frequent, multiple, and, often, redundant inspections. These come from the plethora of organizations (e.g., DoD Inspector General, Component audit and inspection agencies) who feel that they have audit and inspection responsibility over program office activities.
- Inspections and audits have large opportunity costs. Aside from the man-hours and costs expended by the audit/inspection teams, there are also costs associated with program office and contractor personnel who support the inspection/audit. In

addition, the time program offices spend responding to inspection and audit results can be a major distraction from their primary work. We think that there needs to be much more scrutiny on the value-added as compared to the costs before undertaking an audit or inspection.

RECOMMENDATION 24. We recommend that the DoD Inspector General and other Audit and Inspection Agencies take immediate steps to enhance the qualifications of acquisition management auditors and inspectors. Among these should be requiring all acquisition management auditors and inspectors over time to have Defense Acquisition Workforce Improvement Act certification, appropriate to their grade level and functional area. A necessary step should be to require all audit/inspection team leaders to be Level III certified in program management within 2 years.

RECOMMENDATION 25. We recommend that the DoD Inspector General centrally schedule acquisition program audits and inspections in coordination with the DAE, the CAEs and all DoD and Component inspection/audit organizations. The DoD Inspector General will schedule audits no more than biennially (except for instances of fraud, waste, and abuse) and minimize program interference during critical periods (e.g., during preparation for a decision review).

RECOMMENDATION 26. We recommend that the DoD Inspector General study the feasibility of consolidating all acquisition management audits and inspections at the OSD level and provide a recommendation to the Secretary of Defense within 6 months.

6.9. Training and Education. We explored the impact of our recommended reengineered process on training and education of the Defense acquisition workforce. We recognized that successful implementation of any reengineered process is heavily dependent on how well the organization educates its workforce about recently approved policies and procedures, including the rationale that drove those changes. We concluded the following imperatives were essential for successful implementation of our recommendations:

- Develop and implement a training and information program that informs and educates currently serving PEOs, program managers and Defense Acquisition University faculty of the policy changes approved by the Secretary of Defense.
- Require that audit and inspection team members attend a course in program management, such as the Fundamentals of Systems Acquisition Management Course, Intermediate Systems Acquisition Management Course, or the Advanced Program Management Course at Defense Acquisition University. This should be an ongoing course open to other members of the defense acquisition community, since classroom interaction with acquisition community members is essential to audit/inspection team members' understanding of program office operations.
- Require that personnel working in the systems acquisition oversight and review community attend a course in program management at Defense Acquisition University.

- Require that newly assigned OSD and Component-level executives attend a mandatory Systems Acquisition Management Orientation Course. This could be a new course, a restructured Executive Short Course, or a shortened Executive Program Manager's Course. The briefings should be embellished with a broad interdisciplinary overview and a reflection of the process from the program manager and PEO perspectives. Recommend this be accomplished by a series of one-on-one desktide briefings delivered by the Defense Acquisition University..

RECOMMENDATION 27. We recommend that the Defense Acquisition University develop and implement a training and information program to inform currently serving PEOs, program managers, and Defense Acquisition University faculty of oversight and review process changes approved by the Secretary of Defense. Current Defense Acquisition University courses should be updated, as required.

RECOMMENDATION 28. We recommend that the Defense Acquisition University designate course quotas for DoD and Component auditors and inspectors, and for OSD and Component oversight and review community personnel to attend program management courses.

RECOMMENDATION 29. We recommend that the Defense Acquisition University develop and implement a mandatory Systems Acquisition Management Orientation Course for newly assigned OSD and Component-level Acquisition Executives.

6.10. Oversight and Review of Automated Information Systems. As part of our work we evaluated the unique oversight and review process the Department uses for automated information systems. Our goal was not to reengineer this special process, but to see if any of our recommendations might help streamline it. We found there were numerous Federal laws and Executive guidance which apply to acquiring automated information systems, but not to acquiring weapons systems. The result is that there is a separate, but similar, oversight and review process for automated information systems to the one for weapons systems. The most notable similarity was that the milestone decision review process and the generic information the decision maker needs to make smart decisions are virtually identical for both weapons systems and automated information systems. As a result, we think that the automated information system oversight and review process can benefit from our work.

RECOMMENDATION 30. We recommend that the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) adapt our recommendations on the milestone process, review documentation and any other areas that are appropriate.

VII. IMPLEMENTING OUR RECOMMENDATIONS

7.1. **Implementation Team.** We have presented the Secretary of Defense with 30 recommendations to reengineer the acquisition oversight and review process. Each recommendation also has an implementation plan assigning implementing responsibility to offices throughout DoD. This is what the Secretary asked us to do. We are anxious that momentum not be lost by any delay between the report and implementing action. We also recognize that there is great potential for the thrust of our recommendations to be lost through reinterpretation. We believe it is important that a small cadre be responsible for ensuring the recommendations are implemented and for changing DoDD 5000.1 and DoDI 5000.2 to reflect what the Secretary approves. We also believe that a few select PAT members should form a nucleus of that cadre. Because the scope of our recommendations transcend virtually every important element within DoD—including the Joint Chiefs, the Services, the Comptroller, and the DoD Inspector General—we conclude that implementing it will demand continuing and direct DAE mentorship of the implementing team. Moreover, experience in industry demonstrates that in reengineering efforts, chief executives must devote 20-50 percent of their time to the reengineering project to make it successful.²⁰ **We believe the industry experience will apply here!**

RECOMMENDATION 31. We recommend that the DAE appoint a small, Joint Service/OSD group, including members from the PAT, to guide the implementation of the Secretary of Defense-approved recommendations to reengineer the acquisition oversight and review process. This group should report to the DAE.

7.2. **Moving Toward Stretch Goals**

a. **Metrics and Stretch Goals.** We described our four stretch goals in Section 2.2. We believe that the DAE and other decision makers need to use these as a basis for collecting top level metrics to both assess the progress of the reengineering effort and to stimulate continuing effort to meet the goals.

RECOMMENDATION 32: We recommend that senior acquisition managers use “stretch” goals to establish top level metrics to motivate implementation of the features of the reengineered oversight and review process and to measure results.

b. **Customer Satisfaction.** We believe that it is vital for the DAE to monitor the evolution of the reengineered system on the basis of its customers' perceptions. At some point each system stakeholder becomes a customer for information and a producer of added value. These include the user, program manager, OSD staff, CAEs and their staffs, PEOs, Joint Staff, and the various inspection, administration and audit agencies involved. Each of these stakeholders' perceptions is needed to gain a meaningful understanding of the total system and how the DAE must manage it over time. We think that the DAE needs to periodically

²⁰ Hall, Gene, and others. “How to Make Reengineering Really Work,” Harvard Business Review, November-December 1993, pp 119-131.

commission customer satisfaction surveys to assess the degree to which customer perceptions of the process change as our reengineering proposals take effect. The surveys would also help the DAE decide which areas need more work.

RECOMMENDATION 33: We recommend that the DAE commission periodic customer satisfaction surveys to help assess the progress of the reengineering process and to find other improvement opportunities that may emerge as the oversight and review system evolves.

VIII. SUMMARY

Starting with Secretary Perry's "Mandate for Change," our vision and stretch goals, this report has proposed a reengineered oversight and review process and provided thirty-three separate recommendations. Much of the report might be classified as streamlining, but we believe our goal of reducing Acquisition Program Baseline breaches goes beyond streamlining and to the heart of the matter. That is, we must create an environment which constructs sound programs in the first place and gives them the requisite long term commitment and stability. Only then can we have a process worth controlling. Enhancing the role of the warfighter, adopting a more robust affordability process, changing incentives, and creating Joint Acquisition Executives on an experimental basis are some of the features that seek to create this environment.

Many of our reengineered processes speak to reducing cycle time. While major drivers exist outside of oversight and review, adopting a three milestone process and a single formal review prior to milestone decisions will reduce both decision times and their variances—which are even more disruptive. Beyond the specific mechanisms we propose, the most important recurring theme is one of tailoring in processes rather than tailoring-out. This is embodied in the DAE's ability to elevate Milestone decisions when appropriate, to enter the information net where indicated, and to require acquisition documentation only where it helps manage. We are convinced our recommendations will drastically reduce the cost of oversight and review without sacrificing quality or increasing risk.

Though some may still debate the degree of change needed, workforce reductions are a fact of life and must drive our process design at all levels. Most reductions will continue to come out of field activities. We, the PAT, have offered several specific reductions on contractor oversight, such as increased emphasis on past performance in source selections and responsible use of contractor self-governance. However, we the Defense Acquisition Corps, must continue to challenge the value we add in our interaction with industry and endeavor to become industry's preferred customer.

Finally, reengineering is fundamentally about cultural change and top down commitment. Our military departments can rise above consensus if leadership will accept nothing less. Integrated product teams can break down functional barriers only when our most senior functional leaders are cheering them on from the sidelines. Participants from different organizations can be members of the same team if their respective leaders agree there is only one team. We realize our report poses a number of leadership challenges, but we see that our choice is between changing culture and paying a price our nation can no longer afford to pay.

APPENDIX A

ANALYTICAL APPROACH

ASSIMILATING THE DATA

The PAT researched and analyzed a significant amount of information and data to reach their conclusions and final recommendations. Some of the assertions and decisions outlined in the main paper of this report emerged from our accumulated years of personal acquisition experience. (**Annex A-1** to this Appendix lists the team members, accompanied by a brief biography.) Others are based on anecdotal experiences from a variety of sources: people in the acquisition process (see **Annex A-2** for those interviewed) and past studies (see **Annex A-3** for reference material used). In some areas, we made actual calculations and quantified analyses to examine trends and to assess relative "goodness" of concepts being explored.

THE TEAM APPROACH

With the charge to "start with a clean sheet of paper" in reengineering the acquisition oversight and review process, we spent days developing a team view of "Where We Need To Go" in Defense Acquisition and a vision statement for the new processes. We divided into two teams, with membership on each balanced between program manager/PEO and staff experience as well as Component affiliation.

Each sub-team's in-depth brainstorming and the total team's iterative discussions and red-teaming led to a consensus on decisions to be answered at Milestone reviews, on critical questions to be answered at each review and for useful oversight, and the essential information and data sources required for both oversight and review. Speakers from various aspects of today's processes provided their perspectives on the current process. They gave their insights on the added value and burdens/costs of the various aspects. Asked where they saw potential changes to the process to make it better and/or more affordable, the speakers provided their ideas for PAT consideration. These ideas aided in the refinement of the basic characteristics needed in the process.

CAPTURING THE PROCESSES

Our thought processes leading to who should make the decision and who should answer the critical questions (**Figure A-1**) were captured quantitatively in team-generated matrices. Ranking of five criteria determined the appropriate level of who should answer the critical questions. The criteria were proximity to the information, breadth of knowledge (corporate viewpoint), objectivity, experience and accountability/authority. Our rationale for the relative rankings was also captured. As an example, while the program manager may be rated as closest to the information on whether the program is ready to proceed, he/she may not be rated very high on the

objectivity and breadth of knowledge criteria. Similarly, potential "answerers" at the OSD level may rate high on the objectivity criteria, but they may fall short on accountability and on proximity to the information. Finding the appropriate level at which the question should be answered was not a totally definitive exercise. In many of the matrices, ratings indicated that several people would do a good job of answering the question.

MODEL DEVELOPMENT

Individual models differ in assigning which of these "good" answer sources would be used. Individual models also added mechanisms to adjust the ratings. For instance, to increase objectivity (and hence the CAE's confidence), Model 2 added a Steering Group of functionals at the PEO level to air and resolve differing viewpoints prior to going to a higher-level review. This then affected the overall ratings. For some of the questions, on the other hand, one source for the answer was clearly the best.

We used the same criteria and basic process to define who appropriately makes the actual review decision to go, stop, or do more work, or the actual oversight decision to do nothing, intervene or get more information.

As sub-teams, and eventually the total team, came together on the basic needs of review and oversight, several individuals developed preliminary visuals of the information flows emerging from the discussions. When presented to the total team, they began to define the range of possible process improvements. Sub-teams turned to brainstorming barriers to implementation across the range of processes.

With insights from even more speakers and the results of the discussions on barriers and matrices, refinement of information flows generated six models which came to be known as Models A through F. These "models" ranged from a single joint agency with radical organizational changes to the basic structure of today with radical process changes. Analysis efforts turned to an iterative process of research on aspects of individual models, refinement of the models, presentation to the total team, and incorporation of fixes to address red-teaming comments.

PRELIMINARY DRAFT FOR COMMENT

At this point, we provided a preliminary draft to the OSD Acquisition Reform Senior Steering Group for review and comments from the acquisition community. Reasons for airing the preliminary draft were twofold: to be upfront with the acquisition community on our direction and the processes being followed, and to gain insights/comments as a sanity check on specific models which were emerging.

MODEL APPLICATION

Armed with comments from a number of reviewers, insights from more speakers, and early model-modified matrices of who should answer the questions and who should make the decisions, two "balanced" panels convened to "grade" and red-team the model concepts (Nominal Group technique). Using agreed-to criteria which correlated directly with "Where We Need To Go," the Vision statement, and with weightings of the criteria as determined directly by the values assigned by the team individuals, we discussed, critiqued and "graded" the models. Total team discussions and assessment of comments by model proponents allowed merging of models with similar features, elimination of non-implementable features, and extraction of core features from all models.

The resulting models, Models 1 through 4, forced development of new sub-teams. These sub-teams focused on refinement of the models and implementation plans. Total team discussions focused on critically examining feasibility of the model concepts and the barriers to realistic implementation. Panels were once again established to "grade" the resulting models against slightly modified criteria and criteria "weightings."

CORE CONCEPTS

More and more core concepts emerged from the discussions, leaving only a few unique characteristics of any of the four models. The core concepts and four model descriptions/implementation plans made up the first draft of the final report, which was again sent out for comment. Meanwhile, individuals or teams volunteered to draft implementation plans for the core concepts. Other volunteers started putting the core process together in text and visuals. Aspects that had not been fully developed previously, such as the cost of review and oversight and requirements for documentation, were assigned to teams for further research and refinement.

DISPOSITION OF COMMENTS/RECOMMENDATIONS

We developed a sub-team, charged with examination and documentation of all comments and their disposition. Frequent status briefings of the comments received and input on the disposition within individual report sections allowed continuous monitoring of, and agreement on, comment disposition.

We spent our last weeks red-teaming the recommendations and their implementation plans. Many refinements occurred; some issues were placed in the "PAT considered, but idea needs more examination" category. Finally, we documented the core ideas in a new visual and description that represented our overall views on improvements needed in the acquisition oversight and review process.

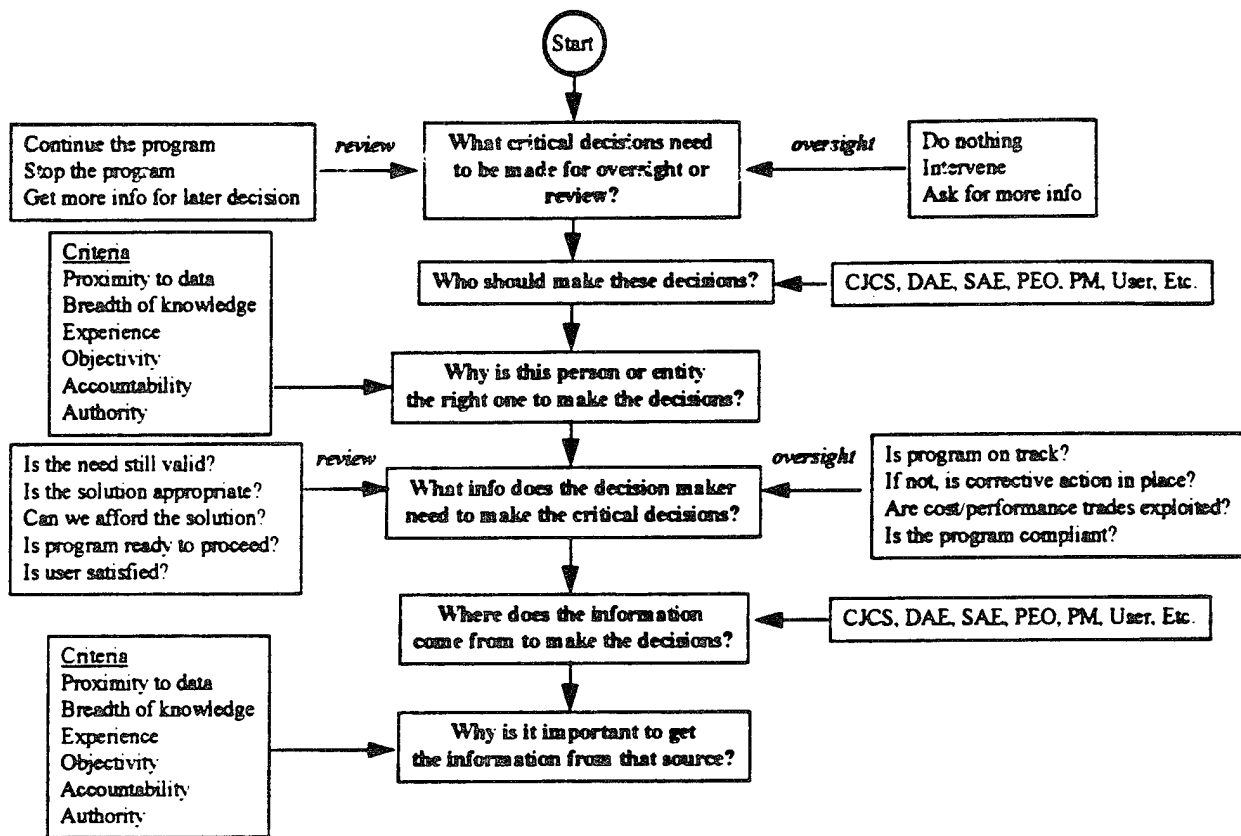


Figure A-1. THOUGHT PROCESS FOR DEVELOPING ALTERNATIVES

APPENDIX A
ANNEX A - 1

ACQUISITION REFORM OVERSIGHT AND REVIEW
PROCESS ACTION TEAM MEMBERS

Team Leader

COL(P) John Caldwell, USA

Membership

Mr. Dave Anderson	Mr. Stuart Layman
Mr. Edmund Anderson	Mr. Bob Leach
Mr. John Baranowski	Mr. Robert Lehnies
Col(S) Patricia Bayless, USAF	Mr. Terry Little
Ms. Teresa Brooks	Mr. Dave Mullins
Ms. Vicki Carey	Mr. Abdi Nazari
Mr. Chuck Cochran	Ms. Jo Nichols
Mrs. Patricia Cook	Dr. Larry Noggle
LtCol Stephen DeFrank, USAF	Dr. James Price
COL Richard Engel, USA	LtCol Joe Price, USAF
Mr. Gary Falconer	CAPT(S) Bud Sawyer, USN
Col Harvey Greenberg, USAF	Col Jeanne Sutton, USAF
Mr. Jerry Hall	

Advisors/Support

Mr. Neal Atkinson	Ms. Mona Lush
Dr. Rick Burke	Dr. Spiros Pallas
Dr. David Gallagher	Mr. Don Reed
Ms. Collie Johnson	Mrs. Traci Yates

**ACQUISITION REFORM OVERSIGHT AND REVIEW
PROCESS ACTION TEAM**

BIOGRAPHIES

- **DAVID K. ANDERSON** - Assistant DAB Executive - Secretary in OUSD (A&T) for 16 years; Official DoD point of contact on 5000.1/2; Project Engineer on US Army night vision goggles for 8 years; 2 years experience on TOW/DRAGON and M-60 thermal sight source selections; Certified member of DoD Acquisition Corps; two US Patents; BS in Physics, MS in R&D administration; total of 30 years in Acquisition.
- **EDMUND R. ANDERSON** - Serving as a PM for PEO(CU). PM for Cruise Missiles and UAV Battlefield Synchronization Program; and does PEO(CU) program strategies for technology insertion in support of user requests. Performs organization and staffing assessments including training IPTs. Level III Acquisition Corps cert. with 25 yrs experience. BS in Mechanical Engineering/Aerospace. Advanced Degrees in Statistical Design (Certified) and Engineering Management (MS). DPM for TSSAM 1986-1993.
- **NEAL W. ATKINSON** - Member of the SES; over 30 years Acquisition experience and currently the Deputy PEO Communications Systems, Army; Other Acquisition Experience includes: Director of Acquisition and Engineering, US Army Communications Electronics Command; PM/DPM of several Army Program Management Office; Education - BS/MS in Electrical Engineering; Fellow - Princeton University, Woodrow Wilson School of Public and International Affairs; DSMC - Executive Management Course.
- **JOHN G. BARANOWSKI** - Special Assistant to the ASN, RDA Staff, for Acquisition Reform; 15 yrs with the NAVAIRSYSCOM as the Assistant Program Manager for Logistics for USN/USMC Aircraft engines; Production Support Team Leader for the AV-8B and A-6 aircraft; Deputy Assistant Program Manager for Logistics for the AV-8B Night Attack Program and Assistant Program Manager for Logistics for the OV-10 Program; Level III Certified and Acquisition Prof. Community member; DSMC PMC Graduate, 1988.
- **COL (S) PATRICIA M. BAYLESS, USAF** - Acquisition Staff Officer, Weapon Systems Team; HQ Defense Contract Management Command; 19 years Acquisition experience; Level III Certification in Contracting; DCMC DAES Focal Point; Director of Contracting - ACAT I D Program; Deputy Director, R&D Contracting; Deputy Director, Contract Management, Manufacturing, Quality and Operational Contracting, HQ AFLC, Procuring Contracting Officer, Administrative Contracting Officer.

- TERESA A. BROOKS - Procurement Analyst, Defense Systems Procurement Strategies, OUSD(A&T); Procurement Analyst, HQs Air Force Systems Command - 1986-1992; Procuring Contracting Officer, Contract Negotiator, Price Analyst at AF Aeronautical Systems Division - 1979-1986; Acquisition Corps Level III; 1991 ICAF Graduate; 16 years Acquisition experience.
- COL(P) JOHN S. CALDWELL, JR., USA - Military Assistant, Major Systems Acquisition, Deputy Under Secretary of Defense (Acquisition Reform); Project Manager, ABRAMS Tank Systems - July 90 -July 94; Joint Staff, J-5; Army Staff, ODCSOPS and OCSA; Tank Battalion Commander; Acquisition Corps (10 years Acquisition experience); 7 years in ABRAMS Program Office.
- VICKI CAREY - US Special Operations Command (USSOCOM). 14 Years Acquisition experience; Presently Chief Acquisition Policy and Executive Secretariat to Special Operations Acquisition Board at USSOCOM. Previously PM at ASC/WPAFB for 8 yrs (Managed International, Joint, SAR, and AF programs), also previous Test Manager at ASC/WPAFB for 3 yrs; 1991 DSMC Graduate; Program Management Level III certified.
- CHARLES B. COCHRANE - Professor, Acquisition Policy Dept., DSMC; US Army Combat Developments, Field Artillery School - 1979-1982; J-3, Joint Staff, 1982-1984; HQDA, Office of the Deputy Chief of Staff (RDA) - 1984-1987; Army Staff Action Officer for Implementation of Packard Com. Rpt; Acquisition Staff Officer for HQDA Implementation of DoD Reorganization Act; Developed the PEO structure for the Army; Certified Level III Program Management.
- PATRICIA J. COOK - Principal Assistant to the Director for Acquisition Policy and Eval. at the US Army Materiel Sys Analysis Activity (reporting to Army Materiel Cmd); 20 years Acq. experience - from test design, and technical independent evaluation of both tank and command and control systems to Chief of Combat Survivability Analysis Branch; AMSAA Test and Eval Mgr and Chrmn of the AMSAA Quality Council; Certified Level III Acquisition.
- LT COL STEPHEN M. DEFRANK JR, USAF - Acquisition Staff Officer, BS Electrical Engineering; MS Engineer Administration; 13 years Systems Acquisition Experience; 3 years HQAF - Set policy for T&E; 3 years AFMC/IG - Acquisition Inspector; 3 years Director, Multiservice Test Team; 4 years Joint Maj. Systems Program Office; Acquisition Corps; Certified level III Program Manager; Certified level III T&E Manager; Certified Level III Systems Engineer.

- COL RICHARD A. ENGEL, USA - PM Survivability Systems, PEO Armored Systems Modernization; Director, Plans & Programs, SARDA (1991-92); Commander, Detroit Tank Plant (1988-90); APM, Readiness & Fielding, ABRAMS Tank (1986-88); Deputy Operational Test Director (Logistics)(1977-79); 13 Years Acquisition experience; Certified level III Acquisition Corps.
- GARY H. FALCONER - Acquisition Documentation Manager for PEO Space, Communications and Sensors (PEO-SCS); Special Assistant in the Information Transfer Technology Directorate (SPAWAR); 20 years experience as a Business/Financial Manager for three ACAT ID Joint programs; Certified level III in Program Management and member of the Acquisition Corps.
- COL HARVEY R. GREENBERG, USAF - Program Director, Air Force Command and Control Systems, Standard Systems Center (AFMC), Maxwell AFB - Gunter Annex AL. Previously as Program Manager, E-8C (Joint STARS), served as principal action officer for a JSTARS DAB Program Review and Four Star Summit; 8 yrs acquisition experience, DSMC graduate (PMC 90-1), and Level III Program Manager.
- JEROME D. HALL - Staff Specialist, Strategic and Tactical Systems Directorate, Office of Munitions, 6 years; Branch Head, Materials Science Branch, and Weapons Program Manager, Naval Surface Warfare Center ('75-'88); Project Manager; Weapons Systems Development ('68-'75); Development and Acquisition experience - 26 years, Level III Acquisition Corps Certified.
- STUART F. LAYMAN - Staff Specialist in the Office of the Undersecretary of Defense for Acquisition and Technology/Director, Test and Evaluation; 26 years acquisition experience - Night Vision and Electro-Optical Center, AMC, Army DCSLOG; Electronic Engineer - UVA, Masters in Engineering Administration; DSMC - PMC 81-1; Acq. Corps - Program Management Level III.
- ROBERT J. LEACH - Program analyst in Office of the Under Secretary of Defense (Acquisition and Technology), Acquisition Program Integration and DoD Comptroller for 14 years; lead DoD action officer for "Nunn McCurdy" unit cost reporting; lead OSD action officer for Systems Acquisition Management Corporate Information Management initiative; B.S. - Mathematics; M.S. - Operations Research; Acquisition Corps Program Management - Level III.
- ROBERT LEHNES - Chief of Op's; PEO Communications Sys, Army; 25 years Acq. exp.; Cert. Acq. Corps level III; Grad.-Industrial College of the Armed Forces; Grad.-Senior Acq. Course, DAU; Deputy PEO Communications Systems; Chief, Sys. Eng. PEO Communication Systems; Grad.-Prog. Mgmt Course, DSMC; Deputy PM, Mobile Subscriber Equipment; Deputy PM, Army Tactical Communications Systems.

- **TERRY R. LITTLE** - Program Director for the Joint Direct Attack Munition, an ACAT ID program. Previously the program manager for two highly classified major acquisition programs as well as the Air Force program manager for the Joint Short Range Air-to-Air Missile. Twelve years experience as manager of major acquisition programs; total weapons acquisition experience is 20 years; Level III Program Manager.
- **DAVE MULLINS** - Computer Specialist, ODASD, C3I Acquisition, 5 years; Contract Specialist, Air Force, 4 years; Procurement Analyst, GSA (10 years); Masters Degree in procurement and contracting; Certified Level III in Acquisition Corps, 19 years acquisition experience.
- **ABDI NAZARI** - Special Assistant for Acquisition Programs to the Deputy Under Secretary of Defense (OUSD) Environmental Quality (EQ); 9 years of Ship Systems acquisition programs experience, R&D to production; Director, Environmental Programs, including (SSN-21, NSSN) Submarines, Naval Sea Systems Command, Submarine Directorate, Selected for NAVSEA Commander's (Executive) Development Program.
- **JO ANN NICHOLS** - Air Force Systems Acquisition Review Council (AFSARC); Executive. Sec.; Program Analyst; AF liaison with OSD on DAB matters; 10 years Acquisition experience; Assists program and Acquisition staffs on preparing ACAT ID, IC, and II programs for AFSARC & DAB review. This includes AFSARC & DAB policy guidance; SAF/AQ focal point on Milestone 0 programs.
- **LARRY W. NOGGLE, Ph.D.** - Deputy Systems Support Manager for the F-22; 6.5 years as the Deputy System Program Director (F/EF-111 and classified programs); 5 years on Secretariat Staff as Special Assistant to the Assistant Secretary of the Air Force (Acquisition); Member of the Defense Acquisition Corps and certified level III (Program Management and Acquisition Logistics); Graduate of DSMC - PMC, ICAF, and FEI.
- **DR. JAMES E. PRICE** - Chair, Integrative Program Management Department, Defense Systems Management College (DSMC), Defense Acquisition University (DAU), Ft. Belvoir, VA; Project Manager for several large scale OSD-level joint service information system programs; 13 Years of Acquisition experience; Published and lectured extensively; certified Level III Program Management..
- **LT COL J. STERLING PRICE, USAF** - HQ, Air Force Materiel Command staff officer. 15 years in acquisition: six in missile, sensor and radar program offices; six in field management of Army, Navy and Air Force program contracts., DSMC's Program Manager Course graduate. Level III Program Management certified, member Acquisition Corps. BS Industrial Management, Georgia Tech. MS Logistics Management, AFIT.

- CAPT (SEL) L.M. BUD SAWYER, USN - Naval Sea Systems Command (PMS 325), Project Manager for New Start Acquisition Programs and Mine Counter Measures Support Ship (MCS), Certified level III Program Manager/DSMC (Program Manager Course graduate); 17 years Acquisition experience; B.S. Naval Architecture, USNA; M.S. Mechanical Engineering, USNPGS.
- COL JEANNE C. SUTTON, USAF - Chief, Theater Defense International Programs, Ballistic Missile Defense Organization; 10 years acquisition experience; Level III certified-Program Manager; DSMC and ICAF. Won the 1992 Chairman of the Joint Chiefs of Staff Distinguished Essay Award for published article: "Marrying Commercial and Military Technologies-A Strategy for Technological Supremacy."

APPENDIX A

ANNEX A - 2

INDIVIDUALS CONTACTED BY THE PROCESS ACTION TEAM

Acquisition Executives/Deputies

Dr. Paul Kaminski	Undersecretary of Defense (Acquisition & Technology)
Ms. Nora Slatkin	Assistant Secretary of the Navy (Research, Development & Acquisition)
Mr. Gilbert Decker	Assistant Secretary of the Army (Research, Development & Acquisition)
Mr. Clark Feister	Assistant Secretary of the Air Force (Acquisition & Management)
Mrs. Darleen Druyun	Principal Deputy Assistant Secretary of the Air Force (Acquisition & Management)
Mr. Gary Smith	Deputy for Acquisition, United States Special Operations Command

OSD Staff

Mr. I. N. Blickstein	Director, OSD Acquisition Program Integration
Mr. Ronald Garant	Director of Investments, OSD Comptroller
Mr. Frank Kendall	Former Chairman, OSD Tactical Systems Committee
Mr. Noel Longuemare	Principal Deputy Undersecretary of Defense (Acquisition & Technology)
Mr. David McNichol	Chairman, OSD Cost Analysis Improvement Group
Mrs. Colleen Preston	Deputy Undersecretary of Defense (Acquisition Reform)
Dr. George Schneider	Chairman, OSD Strategic & Tactical Conventional Systems Committee
Acquisition Reform Senior Steering Group	

Joint Staff

RADM F. W. Lacroix	Deputy Director for Force Structure & Resources, J-8 Joint Staff
Panel of Joint Staff Officers	

System Commander

VADM G. Sterner

Commander, Naval Sea Systems Command

PEOs/Deputies

MG John Longhouser

Army Program Executive Officer, Armored Systems
Modernization

BG David Gust

Army Program Executive Officer, Communications
Systems

Mr. John DeSalme

Navy Program Executive Officer Space,
Communications & Sensors

Mr. Jerry Chapin

Army Deputy Program Executive Officer, Armored
Systems Modernization

COL John Stoddart

Army Program Executive Officer, Tactical Wheeled
Vehicles

Panel of Air Force

Program Executive Officers

Panel of Navy

Program Executive Officers

Others

MAJ Tim Crosby

Army Comanche Program Office

Mr. Tom Dolan

Defense Systems Management College

Mr. Dan Fink

Deputy, Integrated Logistics Support Policy &
Assessment, Chief of Naval Operations

Mr. John Hickok

Defense Systems Management College (A-12
Program)

Dr. Walter Laberge

Visiting Professor, Defense Systems Management
College

Mr. Richard Russell

Hughes Electro-Optical Systems Division

APPENDIX A
ANNEX A - 3

REFERENCE MATERIAL

DIRECTIVES, INSTRUCTIONS AND REGULATIONS

United States House of Representatives Conference Report 103-712, *Federal Acquisition Streamlining Act of 1994*, August 21, 1994.

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APPENDIX B

LIST OF ACRONYMS

ACAT	Acquisition Category
ACTD	Advanced Concept Technology Demonstration
ADM	Acquisition Decision Memorandum
AP	Acquisition Plan
APB	Acquisition Program Baseline
ARSSG	Acquisition Reform Senior Steering Group
ASC	Acquisition Support Commander
ASR	Acquisition Strategy Report
ATD	Advanced Technology Demonstration
BLRIP	Beyond Low Rate Initial Production
CAE	Component Acquisition Executive
CAIG	Cost Analysis Improvement Group
CE	Concept Exploration
CINC	Commander-in-Chief
CJCS	Chairman of the Joint Chiefs of Staff
COD	Cooperative Opportunities Document
COEA	Cost and Operational Effectiveness Analysis
DAE	Defense Acquisition Executive
DAES	Defense Acquisition Executive Summary
DFARS	Defense Federal Acquisition Regulation Supplement
DOD	Department of Defense
DODD	Department of Defense Directive
DODI	Department of Defense Instruction
DT	Developmental Test
EMD	Engineering and Manufacturing Development
FCT	Foreign Comparative Testing
ICE	Independent Cost Estimate
IPS	Integrated Program Summary
IPT	Integrated Product Team
J&A	Justification and Approval
JROC	Joint Requirements Oversight Council
LFT&E	Live Fire Test and Evaluation
LRIP	Low Rate Initial Production
MDA	Milestone Decision Authority
MILCON	Military Construction
MNS	Mission Need Statement
MOP	Memorandum of Policy
MOU	Memorandum of Understanding

O&M	Operations and Maintenance
OMB	Office of Management and Budget
ORD	Operational Requirements Document
OSD	Office of the Secretary of Defense
OT	Operational Test
PAT	Process Action Team
PDR	Program Deviation Report
PM	Program Manager
PEA	Program Environmental Assessment
PEO	Program Executive Officer
POE	Program Office Estimate
POM	Program Objective Memorandum
PPBS	Planning, Programming, Budgeting System
R&D	Research and Development
RDT&E	Research, Development, Test and Evaluation
RFP	Request for Proposal
SAR	Selected Acquisition Report
STAR	System Threat Assessment Report
TEMP	Test and Evaluation Master Plan
USC	United States Code
VCJCS	Vice Chairman of the Joint Chiefs of Staff