

THE
PENTAGON LABYRINTH:
10 SHORT ESSAYS TO HELP YOU
THROUGH IT



FROM 10 PENTAGON INSIDERS,
RETIRED MILITARY OFFICERS AND SPECIALISTS
WITH OVER 400 YEARS OF DEFENSE EXPERIENCE

STRAUS MILITARY REFORM PROJECT
CENTER FOR DEFENSE INFORMATION

The Pentagon Labyrinth

10 Short Essays to Help You Through It

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Essay 10

“Developing, Buying and Fielding Superior Weapon Systems”

by Thomas Christie

The current Defense Department acquisition process that develops, tests and procures new weapons for U.S. combat forces has evolved over the past five decades in response to multiple defense management strategy initiatives, external reform proposals and lessons-learned from the field. The conventional wisdom notwithstanding, the process as spelled out in DOD’s directives and instructions is fundamentally sound and could avoid its unending cost overruns, delays and performance failures, if it were implemented in a better informed and rigorously disciplined manner. The problem is not nearly as much in the laws and regulations as it is in the execution by the people who have been operating the system.

We should not waste time in this short essay reinventing bromides for the bureaucracy to cogitate and self-appointed reformers to contrive. Essential ingredients to a viable weapons acquisition system include –

- budgeting with truly independent estimates of program development, procurement and support costs;
- an evaluation process, again independent, to find and correct reliability problems early and throughout the entirety of a program’s life cycle, and
- conducting combat realistic operational tests of weapons and honest and complete reports to permit decision-makers inside and outside the Pentagon to make properly informed judgments.

Anyone paying attention to the way the system has broken down up to now knows these are needed, but there is also more. There are other features of the process that need attention and must be executed, not circumvented, to achieve successful weapons at affordable cost in a reasonable time. These other essential aspects include –

- insisting on discipline throughout the decision-making process;
- cleaning up the front end of the process where dubious requirements and buy-in cost and schedule promises are greeted without criticism and committed to;
- demonstrating—through empirical field testing, not success-oriented modeling and simulation—new technologies before each major decision-maker approval point;
- establishing and carrying out event-based strategies accompanied by realistic pass/fail criteria for each phase of a program;
- conducting continuous independent evaluations of programs all the way through development, testing, production, and even after introduction in the field—to include training exercises and combat results, and
- feeding back all such results completely and accurately to the entire acquisition community.

Nothing in today’s laws and regulations prevent any of the above; most are actually called for, and yet they almost never happen.

The Need for Reform Is Not New

Proceeding with any new weapon system development, production and fielding with the Pentagon acquisition process as currently implemented (or, perhaps more appropriately, not implemented) will only continue the debacles of the past. Both past and present Pentagon leadership has been painfully aware that “Something’s wrong with the system,” as Secretary of Defense Donald Rumsfeld told Congress in 2005.¹

¹ See Michael Bruno, “‘Bow Wave’ Of Acquisition Costs Coming,” Rumsfeld Tells Senators,” *Aviation Week*, April 28, 2005. Further evidence of Rumsfeld’s concern came in a June 7, 2005 memorandum from his acting deputy secretary of defense, Gordon England. Addressed to senior Pentagon leadership, it directed a thorough assessment of the acquisition process “to consider every aspect of acquisition, including requirements, organization, legal foundations, decision methodology, oversight, checks and balances – every aspect.” In kicking off yet another study at the time, England stated: “Many programs continue to increase in cost and schedule even after multiple studies and recommendations that span the past 15 years.” (See England’s “Acquisition Action Plan,” June 7, 2005, described at <http://www.heritage.org/Research/Reports/2005/10/Congressional-Restraint-Is-Key-to->

More recently, Secretary of Defense Robert Gates was perceptive in stating –

“First, this department must consistently demonstrate the commitment and leadership to stop programs that significantly exceed their budget or which spend limited tax dollars to buy more capability than the nation needs...

Second, we must ensure that requirements are reasonable and technology is adequately mature to allow the department to successfully execute the programs...

Third, realistically estimate program costs, provide budget stability for the programs we initiate, adequately staff the government acquisition team, and provide disciplined and constant oversight.

We must constantly guard against so-called “requirements creep,” validate the maturity of technology at milestones, fund programs to independent cost estimates, and demand stricter contract terms and conditions.”²

There is nothing wrong with the assertions, but even with Secretary Gates’ many subsequent program alterations, a few actual cancellations, and some modest overhead savings, can anyone say that the Pentagon has transformed into what Gates said he wanted? More, much more, actual implementation is required.

Congress has behaved similarly—with words more grandiose than actions. In 2009, it weighed in with its latest attempt to rescue the Pentagon’s acquisition processes: the Weapon Systems Acquisition Reform Act of 2009 (WSARA 2009). In addition to re-establishing test and evaluation and system engineering capabilities eliminated by the Clinton administration with Congress’ consent, WSARA 2009 directed the application of several ideas that had been advocated for decades; these included independent cost assessments; evaluating trade-offs of cost, schedule and performance; and competitive prototype development and testing.

But will the Pentagon actually follow what Congress says it intends with this legislation, or will it exercise the many loopholes that Congress consciously inserted into virtually every requirement—at the explicit request of top DOD

[Successful-Defense-Acquisition-Reform](#) and available at <http://www.thefreelibrary.com/Subject%3a+Acquisition+Action+Plan.-a0140554367>.

² Gates made these comments in his Defense Budget Recommendation Statement on April 6, 2009, available at <http://www.defense.gov/speeches/speech.aspx?speechid=1341>.

management—to permit circumvention of most, or all, of these reforms? History suggests the latter.

The Problem is Not Lack of Study

It is difficult to find another process that has been studied more than DOD acquisition. Every three to four years, yet another high-level study is commissioned to review DOD management in general and the acquisition process in particular, or Congress steps in and legislates, in great detail, how the Pentagon should organize and carry out its mission. The commissions, studies and statutes are many.³

The common goal for many of these efforts has been “streamlining” the acquisition process. Typical techniques recommended were efforts, not always successful, to reduce management layers, eliminating reporting requirements, replacing regulated procurement with commercial off the shelf (COTS) purchasing, reducing oversight from within as well as from outside DOD, and eliminating perceived duplication of testing.

Advertised as reform, most of these efforts had the real effect of reducing objective supervision and independent management. While oversight by government agencies and the associated reporting requirements can indeed be burdensome, they are not the causes of the continuing miserable record of program stretch-outs and cost growth. This is true independent of whether those agencies and their reporting requirements are internal to DOD, such as the Defense Contract Management Agency (DCMA), independent cost analysis groups, and operational test and evaluation organizations; or external entities, such as the congressional committees and the Government Accountability Office (GAO). This finding is borne out by my decades of participation in the acquisition process and some of the more competent official reviews, such as that done in 1990 by the Defense Science Board (DSB).⁴

³ The more recent ones include but are not limited to the following: The 1970 Fitzhugh Blue Ribbon Commission, the 1977 Steadman Review, the 1981 Carlucci Acquisition Initiatives, the 1986 Packard Commission and Goldwater-Nichols Act, the 1989 Defense Management Review, the 1990 Defense Science Board (DSB) Streamlining Study and another DSB Acquisition Streamlining Task Force in 1993-1994, the Total System Performance Responsibility (TSPR) initiative of the late 1990s, the early 2000s focus on Spiral Development and Capabilities-Based Acquisition, the Defense Acquisition Performance Assessment (DAPA) of 2006, the DSB Task Force of 2008 on Development Test and Evaluation, the 2009 Weapon System Acquisition Reform Act, and the new “IMPROVE” Acquisition Act passed by the House of Representatives in 2010.

⁴ This DSB Task Force on Acquisition Streamlining was commissioned by the Under Secretary of Defense for Acquisition, John Betti, in late 1989 and was chaired by John Rittenhouse, a General Electric corporate executive. A sub-group of that task force

That 1990 DSB review concluded that failure to identify and admit to technical problems, as well as real costs, before entry into what was known as Full-Scale Engineering Development (FSED)—now referred to as Engineering and Manufacturing Development (EMD)—was the overwhelming cause for subsequent schedule delays, often years, and the resulting cost growth. Oversight enabled the discovery and reporting of test failures during FSED/EMD that often necessitated additional time and dollars for system redesign, testing and retesting of fixes, and costly retrofits of those fixes. It is a viable question, however, whether these delays discovered early caused more, or less, schedule alteration to utility in the field than discovering the problems late, after deployment. Without question, testing and finding problems early, before serial production, is cheaper – by a very large margin.

After all the reforms of previous decades, here we are in 2010 and what’s demonstrably different from the past? Major defense programs are taking 20 to 30 years to deliver less capability than planned, very often at two to three times the cost. It all may be worse now than ever before.

The basic problem is not the official directives.⁵ Instead, Pentagon acquisition officials too often have violated the regulation’s intent by approving “low-balled” estimates of the costs and time required to deliver new capabilities, and ignoring independent assessments that were often available and more realistic. Time and again, early-on funding for building and testing prototypes to better understand technical and operational issues has gone by the wayside. A powerful – overwhelming – factor in the making of these slipshod decisions is the competition for dollars inside the bureaucracy: approve the money now, lest it be grabbed by another program.

A typical hardware program will involve three to five administrations and ten, or more, congresses. By the time the technical and cost issues finally become known, few, if any, of those involved initially are still around, and those who are refuse to admit they had been wrong, to cut their losses before the problems

examined some 100 major programs under OSD oversight during the 1986-1990 timeframe. Most of the programs were plagued by cost increases and schedule stretch-outs; the study group used available program documentation and extensive interviews with DOD officials to determine root causes for these problems. A final DSB report was never published, but the Institute for Defense Analyses produced IDA Paper P-2551, entitled “The Role of the Office of the Secretary of Defense in the Defense Acquisition Process,” documenting the sub-group’s analyses and findings. It is available at <http://pogoarchives.org/labyrinth/10/01.pdf>.

⁵ Find these materials, DOD Directive 5000.1 and DOD Instruction 5000.2 governing the Pentagon’s acquisition process, at <http://www.dtic.mil/whs/directives/corres/pdf/500001p.pdf>, and <http://www.dtic.mil/whs/directives/corres/pdf/500002p.pdf>.

worsen, or to discipline the system by making an example of program officials and their contractors who have sold the department and the taxpayers a bill of goods.

To be fair, there are indications more recently a Pentagon leader has begun to take these considerations to heart in his decision-making. Secretary Gates has stopped further production on one major program (the F-22); he has reduced the future buy for others (such as the DDG-1000), and he has reconstituted several under new nomenclature, requiring a redo (such as the Future Combat Systems and the VH-71 presidential helicopter). This imposes some discipline, some of it applied in a laudable and hard-nosed manner, on a process that had run on autopilot for decades.

However, exemplary as some of these decisions may be, the surface has scarcely been scratched. One needs only to scan down the list of unaffected major defense acquisition programs currently in various stages of development or production to see, with few exceptions, a continuation of many horror stories similar to those that have plagued defense acquisition for decades. Not even all of the low hanging fruit has been removed.

What Is Needed?

There isn't much that knowledgeable observers of, and participants in, this process haven't already identified as problems and have proposed solutions for. They all appear in existing acquisition directives and instructions. Implementing them, rather than exercising their loopholes, is the starting point for fixing the process.⁶

With the current national fiscal environment and the lack of significant threats projected for the foreseeable future, waivers of the procedures and criteria for success that the regulations were designed to uphold should be few and far between, if they occur at all. In addition, they should be escalated to the

⁶ Fundamentally, the directives and instructions specify three basic milestones with benchmarks required for approval to proceed into the next phase of the program: **Milestone A** – a decision to move into the technology development and demonstration phase, where system and sub-system prototypes are built and tested—also known as demonstration/validation (Dem/Val); **Milestone B** – formal program initiation with decision to proceed into Engineering and Manufacturing Development (EMD), previously called Full-Scale Engineering Development (FSED) or System Development and Demonstration (SDD); **Milestone C** – a production and deployment decision, starting with low-rate-initial production (LRIP) intended to provide production-representative systems for initial operational testing to support subsequent decisions to proceed with full-rate production (FRP) and deployment for initial operational capability (IOC).

Secretary of Defense for major, and even some lesser, programs. Finally, the Defense Department should not proceed with any program with waived requirements until the Congress and its independent arm, the GAO, have evaluated the rationale for the requested waivers, and the appropriate Congressional committees give explicit, statutory approval to proceed.⁷ There is no rationale for not taking the necessary time for scrupulous analyses to determine whether we should embark on a new program. The responsibility and accountability must be clearly established and accepted at the top of the system.

The Front End: Setting Requirements

Hard-nosed discipline on the part of decision-makers at the front end of the process is crucial to reining in the appetite of the requirements community and precluding ill-informed development decisions based on immature technologies and optimistic projections of system costs, schedule and performance. Upfront realistic cost estimates and technical risk assessments, developed by independent organizations outside the chain of command for major programs, should inform Defense Acquisition Executives. The requirement for those assessments to be independent, not performed by organizations already controlled by the existing self-interested sections of the bureaucracy – as is the case now, even after WSARA 2009 – is essential.

The existing process has heartily approved presumed quantum leaps in claimed capability that are reflected in high-risk, often unattainable, technical and operational requirements. Many of these system performance goals have resulted from the salesmanship of the DOD research and development communities, combined with industry lobbying, in successfully convincing the user and the rest of the acquisition community that the hypothetical advanced capabilities could be delivered rapidly and cheaply.

In case after case, Pentagon decision-makers have acquiesced to programs entering FSED/EMD and even low-rate initial production before technical problems are identified, much less solved; before credible independent cost assessments are made and included in program budget projections; and before the more risky requirements are demonstrated in testing. This is nothing more than a “buy-in” to “get the camel’s nose under the tent.”

The MV-22 is a good example of a major program that encountered technical and cost problems after entering EMD in 1986, yet was approved to enter low-

⁷ An accelerated version of this process can easily be designed to permit development and production for systems for the war in Afghanistan, but unjustified exploitation of the defense community’s concern for the welfare of the troops must be prevented, and even the new accelerated process must include constant, independent oversight.

rate initial production (LRIP). In 1999, the declared urgency of replacing aging CH-46s drove decisions to severely reduce development testing before its completion, to enter operational testing prematurely and to gain approval for LRIP.

In April 2000, an MV-22 crashed during an operational test resulting in the deaths of 19 Marines. The official investigation into this tragic accident reported that the Flight Control System Development and Flying Qualities Demonstration (FCSDFD) Test Plan investigating the phenomenon known as power settling was reduced from 103 test flight conditions to 49, of which only 33 were actually flight-tested with particularly critical test points not flown at all.

This series of events, culminating in the April 2000 accident and another crash in December of that year, brought the program to halt, nearly resulting in termination. However despite these setbacks, the program continued in low-rate production while Pentagon leadership debated whether to continue the program. In the end, the MV-22 program recovered, executed the full range of technical testing that should have been done previously, and was introduced into Marine Corps medium-lift forces in 2005, nearly 25 years after the decision to initiate the program. In the meantime, some 70 or more MV-22s had been procured, many of which required expensive modifications to correct deficiencies discovered in testing.

Among the Many False Reforms

The process has become even more cumbersome with the increased involvement of the Joint Chiefs of Staff (JCS). Over the years, the Joint Requirements Oversight Council (JROC) and the Joint Capabilities Integration and Development System (JCIDS) process were established to ostensibly provide the combat forces a greater voice in setting requirements. There is, however, little evidence that the “reformed” process has made any significant changes to programs as originally proposed by the advocates.⁸

⁸ A report on January 2006, known as the Defense Acquisition Performance Report (DAPA) at <https://acc.dau.mil/CommunityBrowser.aspx?id=18554> highlighted these continuing problems after decades of reform. Headed by retired Air Force Lt. Gen. Ronald Kadish, the panel found that “...the current requirements process does not meet the needs of the current security environment or the standards of a successful acquisition process. Requirements take too long to develop, are derived from Joint Staff and Services views of the Combatant Commands’ needs and often rest on immature technologies and overly optimistic estimates of future resource needs and availability.”

Real Reform: Considering Alternatives

Approval to proceed with any new development should depend on requirements, both technical and operational, that are attainable, affordable and testable and are based on realistic threat and funding projections. Most crucial to an effective new start is the conduct of an independent Analysis of Alternatives (AOA) that explores other approaches to meeting an identified need. The proposed solutions should run the gamut from continuing existing systems, to incremental improvements to those systems, to launching the development and procurement of a new system. DOD's regulations in Instruction 5000.2 call for AOAs to be completed and/or updated before each "Milestone" review, but in reality they have been few.⁹

A thorough AOA should be a hard and fast prerequisite for any milestone review. It should focus on an independent lifecycle cost estimate (R&D, procurement, and operating and support) and on the affordability of the various alternatives. It should also include realistic projections into the out years for cost, force levels, manpower support requirements, total procurement quantities, and affordable annual procurement rates. Done properly, an AOA should generate cost and schedule thresholds as well as key performance parameters (including measures of effectiveness, survivability, interoperability, and reliability and maintainability thresholds) upon which the rationale for a new program is based and where it fails in comparison to others. The performance thresholds should include both technical and operational measures that, in turn, should guide the planning and execution of both development and operational testing focused on those key parameters that constitute the justification for proceeding with the new program.

These independent analyses should be updated at regular intervals, not just for each program milestone. The process should be one of continuous evaluation, incorporating updated cost estimates and system performance projections, based on experience in development and testing to-date.

Periodic program assessments should weed out programs that are falling behind schedules, growing in cost and falling short of key measures of effectiveness and suitability.

Real Reform: Fly-Before-Buy/Competitive Prototype Demonstration

The "Fly-before-Buy" philosophy should be the mandated standard for all programs. Perhaps a better term would be "Fly-before-Decide." Done properly, it will demand the demonstration, through actual field testing of new

⁹ WSARA 2009 also recognized this by calling for analyses that considered tradeoffs of cost, schedule and performance as part of the process for developing requirements.

technologies, subsystems, concepts, etc. to certain success criteria before proceeding at each milestone, not just the production decision. Accordingly, successful and competitive prototype development and testing should be a hard and fast prerequisite for any new development proceeding into the FSED/EMD phase. The Achilles heel of many defense programs has been their failure to adhere to this strategy, resulting in technical difficulties and costly development delays that could have been avoided had the decision-makers demanded successful completion of realistic prototype testing and evaluation.

Critical to the success of such a strategy is allocating sufficient up-front funding and schedule to permit a robust comparative evaluation of prototype systems in an operational environment during the Demonstration/Validation (Dem/Val) phase. The Defense Department has paid only lip service in the past to the competitive prototype demonstration requirement spelled out in its own directives. DOD should establish, adequately fund, and maintain operational units (e.g., aircraft squadrons, ground force brigades/battalions), independent of R&D organizations, to conduct tests and experiments to effect this concept.¹⁰

¹⁰ Directly related to the “fly-before-buy” strategy are independent assessments of technology maturity or readiness levels before entering each stage of program development. It is crucial to any successful development program that appropriate levels of technology maturity/readiness be demonstrated, primarily through testing of systems and subsystems (as opposed to paper studies or simulations), before decisions to proceed to a given stage in program development. The July 2009 DOD Technology Readiness Assessment (TRA) Deskbook (at http://www.dod.mil/ddre/doc/DoD_TRA_July_2009_Read_Version.pdf) spells it out. The purpose is to provide the decision-maker with an independent view of whether or not the technologies embodied in a new system have demonstrated appropriate levels of maturity to justify proceeding into the next phase of development or procurement. The Deskbook provides definitions of the nine technology readiness levels (TRLs) to be used in independent evaluations of critical technology maturity. The Deskbook spells out specific TRLs to be demonstrated for the critical program milestones B and C. Milestone B approval, or entry into EMD, requires TRL level 6 to include a “representative model or prototype system ... is tested in a relevant environment. Examples include testing a prototype in a high fidelity laboratory environment or in a simulated operational environment.” Unfortunately, this criterion does not go far enough. Rather, the process should be altered to demand demonstration of TRL 7, defined in the Deskbook as “Prototype near or at planned operational system ... requiring the demonstration of an actual system prototype in an operational environment, such as an aircraft, vehicle, or space.”

In a similar vein, TRL 7, required for successful entry into Low-Rate Initial Production (LRIP) at Milestone C, is insufficient: “Prototype near or at planned operational system” does not go far enough in ensuring the readiness of a system for production. Rather, the success criterion for LRIP approval should depend on an independent assessment that TRL 8 has been achieved: “Technology has been proven to work in its final form and under expected conditions. In almost all cases, this TRL represents the end of true system development. Examples include development test and evaluation of the system in its intended weapon system, to determine if it meets design specifications.” Without

Real Reform: Event-Based, Not Schedule-Based Decisions

DOD's experience with systems entering operational testing prior to completion of sufficient development testing is chronicled in innumerable GAO and several Defense Science Board (DSB) reports in recent years. A May 2008 DSB Task Force Report on Development Test and Evaluation found that, in the ten year period between 1997 and 2006, over two-thirds of Army systems failed to meet their reliability requirements in operational testing.¹¹ In almost all these cases, the systems had entered operational test and evaluation (OT&E) with little or no chance of success, based on the failures demonstrated during development testing. These programs had not met the criteria for successful completion of development testing and had entered OT&E doomed to fail.

The acquisition decision authority should impose an event-based strategy on programs with meaningful and realistic pass/fail criteria for each stage of development and production. Only if the criteria are satisfied (through actual testing where applicable) should the decision-maker allow a program to proceed to its next phase. For example, when a program is approved at Milestone B to move into EMD, approval to successfully pass a future Milestone C and proceed into low-rate initial production should be predicated on the program demonstrating specific performance/reliability/cost thresholds. Failure to achieve these goals should result in program termination or at least significant restructure until they are met.

Real Reform: Continuous Evaluations

As a new program begins, a process of continuous and independent evaluation must be established to track the program through development, testing and production, and eventual fielding and employment by operational forces. In the early stages, such evaluations should be based on emerging test results and updated cost estimates, and should focus on those attributes or capability measures that formed the basis for program approval. These evaluations should be updated with results presented to senior leadership on a routine basis—certainly at least annually. Such evaluations should inform decisions whether or

question, a new system should not be put into production until development testing has shown that the design is complete and proven to work.

As currently implemented, the evaluations of technology maturity and assignment of TRLs are the responsibility of the Research and Technology organization in the Pentagon, with input from the test community. This arrangement casts doubt on the true independence of the TRAs. A more appropriate approach would have the testing community tasked with final responsibility for the independent TRAs at Milestones B and C.

¹¹ See the May 2008 Defense Science Board Task Force on Development Testing and Evaluation at <http://www.acq.osd.mil/dsb/reports/ADA482504.pdf>.

not to proceed with the program or to restructure the program goals and acquisition strategy.

It is extremely important that this process of continuous evaluation extend beyond development. Organizations, independent of both the development and operational communities, should be established and maintained to track experience with new and existing systems in the field, evaluating data gathered in training sorties and exercises as well as in combat, where applicable. Assessments should include not only the usual measures of system performance, but also all aspects of system supportability, to include reliability, availability and maintainability (RAM), as well as safety, training and human factors.

Feedback loops from the field to the requirements and acquisition communities should be established and maintained throughout the life of a weapon or system. Such arrangements should take full advantage of operational experience in developing plans and requirements for starting a new program, determining needed fixes for deficiencies encountered in the field, and continuing and/or upgrading existing systems. Such lessons learned should be invaluable to the acquisition community in shaping its approach to the development of new systems as well as to the test and evaluation and analytic communities in structuring their evaluations of similar systems in the future.

Conclusion

As the country enters what promises to be a prolonged period of fiscal austerity, it can no longer afford the extravagance of spending hundreds of billions of dollars and not receiving the capabilities it paid for. Fortunately, we have an extensive base of experience, derived from both military and commercial programs that we can draw upon to avoid the mistakes of the past. These lessons have been codified in DOD regulations, and the evidence shows that the vast majority of cost overruns and schedule delays come from avoiding their requirements, particularly in the initial stages of a program.

We are also fortunate that there is no need to rush new systems into development and procurement in order to counter some imminent new threat. The F-16, for example, entered operational service in 1980 and is still in production. It and the remaining A-10s in the Air Force's inventory are more than adequate aircraft for existing missions in Afghanistan and for conventional threats, should they arise. There is no projected threat on the horizon that would justify taking additional risk by compressing development schedules for any new system (such as the highly problematic F-35 program). Moreover, compressing prescribed schedules when real threats actually exist, such as during the Cold War, has proven to be a huge cost and performance disaster – and to save no time.

We have the tools and expertise we need to make substantial reductions in the cost overruns, performance disappointments and schedule slips that plague our weapon programs. What we do not have, or have not had consistently, is the determination to apply the available tools, especially when it means canceling programs that are generating careers in the Pentagon and jobs, campaign contributions and votes outside it.

The Pentagon Labyrinth aims to help both newcomers and seasoned observers learn how to grapple with the problems of national defense. Intended for readers who are frustrated with the superficial nature of the debate on national security, this handbook takes advantage of the insights of ten unique professionals, each with decades of experience in the armed services, the Pentagon bureaucracy, Congress, the intelligence community, military history, journalism and other disciplines. The short but provocative essays will help you to:

- identify the decay—moral, mental and physical—in America’s defenses,
- understand the various “tribes” that run bureaucratic life in the Pentagon,
- appreciate what too many defense journalists are not doing, but should,
- conduct first rate national security oversight instead of second rate theater,
- separate careerists from ethical professionals in senior military and civilian ranks,
- learn to critique strategies, distinguishing the useful from the agenda-driven,
- recognize the pervasive influence of money in defense decision-making,
- unravel the budget games the Pentagon and Congress love to play,
- understand how to sort good weapons from bad—and avoid high cost failures, and
- reform the failed defense procurement system without changing a single law.

The handbook ends with lists of contacts, readings and Web sites carefully selected to facilitate further understanding of the above, and more.

