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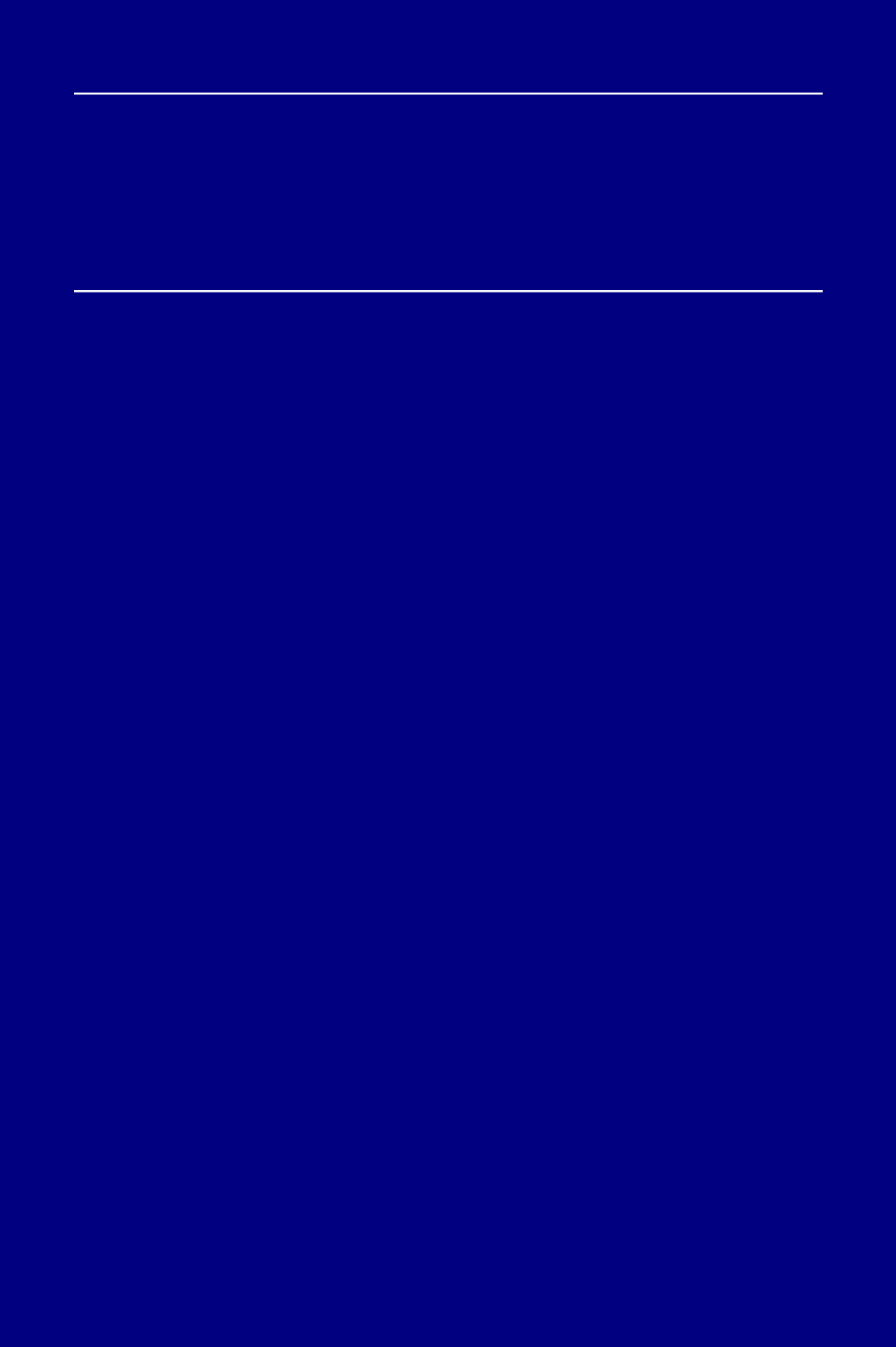
United States General Accounting Office
High-Risk Series

February 1995

Defense Weapons Systems Acquisition



GAO/HR-95-4



GAO United States
General Accounting Office
Washington, D.C. 20548

**Comptroller General
of the United States**

February 1995

The President of the Senate
The Speaker of the House of Representatives

In 1990, the General Accounting Office began a special effort to review and report on the federal program areas we considered high risk because they were especially vulnerable to waste, fraud, abuse, and mismanagement. This effort, which has been strongly supported by the Senate Committee on Governmental Affairs and the House Committee on Government Reform and Oversight, brought much needed focus to problems that were costing the government billions of dollars.

In December 1992, we issued a series of reports on the fundamental causes of problems in designated high-risk areas. We are updating the status of our high-risk program in this second series. Our Overview report (GAO/HR-95-1) discusses progress made in many areas, stresses the need for further action to address remaining critical problems, and introduces newly designated high-risk areas. This second series also includes a Quick Reference Guide (GAO/HR-95-2) that covers all 18 high-risk areas we have tracked over the past few years, and separate reports that detail continuing significant problems and resolution actions needed in 10 areas.

This report discusses our concerns over the Department of Defense's annual expenditure of billions of dollars to acquire new weapons systems. It focuses on continuing

weaknesses in the way major weapons requirements are determined, planned, budgeted, and acquired. The underlying conditions and cultural attitudes that help foster these weaknesses are addressed in more detail in our report Weapons Acquisition: A Rare Opportunity For Lasting Change (GAO/NSIAD-93-15). This report also focuses on current efforts by the Department of Defense and by the Congress to address these long-standing problems.

Copies of this report series are being sent to the President, the Republican and Democratic leadership of the Congress, congressional committee chairs and ranking minority members, all other members of the Congress, the Director of the Office of Management and Budget, and the Secretary of Defense.

A handwritten signature in black ink, reading "Charles A. Bowsher". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Charles A. Bowsher
Comptroller General
of the United States





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Overview

The defense budget, measured in constant 1995 dollars, has declined from a peak of \$390 billion in 1985 to \$252 billion in 1995—a reduction of about 35 percent. A large part of the cuts is being achieved by reducing the development and procurement of new systems and reducing the quantities of those procured. Despite these reductions, the Department of Defense (DOD) spends about \$80 billion annually researching, developing, and procuring weapon systems.

The Problem

Despite past and current efforts to reform the acquisition system, wasteful practices still add billions of dollars to defense acquisition costs. Many new weapons cost more and do less than anticipated and experience schedule delays. Moreover, the need for some of these costly weapons, particularly since the collapse of the Soviet Union, is questionable. These problems repeat DOD's history of establishing questionable requirements for weapon systems; projecting unrealistic cost, schedule, and performance estimates; developing and producing weapons concurrently; and committing to production before adequate testing has been completed. These problems are discussed in more detail in our report entitled Weapons Acquisition:

Overview

A Rare Opportunity for Lasting Change (GAO/NSIAD-93-15, December 1992).

Progress

DOD is committed to reforming its major weapons acquisition process. Top DOD management officials recognize that budget reductions necessitate cultural and structural changes in the way DOD acquires new weapons. Accordingly, DOD has supported efforts to (1) eliminate overlapping and redundant weapon requirements among the services; (2) realistically estimate the costs and schedules of new weapon systems, given available funds; and (3) reduce high-risk acquisition strategies. The Secretary of Defense, in his fiscal year 1993 Federal Managers' Financial Integrity Act report to the Congress, identified the acquisition system as a problem area.

Since our initial high-risk report, Defense Weapons Systems Acquisition (GAO/HR-93-7, Dec. 1992), DOD has begun to reassess many of its most expensive weapon programs to determine which systems can be terminated, reduced, and/or delayed to meet anticipated shortfalls in funding. In December 1994, the Secretary announced reductions of several billion dollars in weapons programs. The

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Secretary's actions included terminating the Tri-Service Standoff Attack Missile program, deferring procurement plans for the Army's new Comanche helicopter, reducing research and development funding for—and thereby delaying—the Air Force's F-22 fighter aircraft program, reducing the Navy's DDG-51 destroyer program, and scaling back the Navy's New Attack Submarine program.

In addition to DOD's initiatives, the Congress mandated changes in the acquisition process through the Federal Acquisition Streamlining Act of 1994. And, in the National Defense Authorization Act for Fiscal Year 1994, the Congress established the independent Commission on Roles and Missions of the Armed Forces to reevaluate the military services' roles and missions. As a part of its review, the Commission is examining whether DOD's acquisition structure is too complex and duplicative.

Outlook for the Future

The effectiveness of DOD's current initiatives to improve the acquisition process, which are in various stages of implementation, cannot yet be assessed. However, shrinking budgets, dwindling forces, and expanding missions should make the services more receptive to change than they have been in

Overview

the past. We believe that current fiscal constraints, reduced threats, congressional support, and DOD's commitment to reform its acquisition process offer more promise than heretofore for real progress in changing the structure and culture of the acquisition process.

Background

In our December 1992 high risk-report, we noted that DOD has produced many of the world's most technologically advanced and capable weapons systems. However, the process through which weapon requirements were determined and systems acquired often proved costly and inefficient, if not wasteful. DOD frequently experienced cost overruns, schedule delays, and performance shortfalls in its weapon acquisitions programs. Too often we found

- the acquisition of systems that were not the most cost-effective solution to the mission need,
- overly optimistic cost and schedule estimates that led to program instability and cost increases,
- programs that could not be executed as planned with available funds,
- program acquisition strategies that were unreasonable or risky at best, and
- the expenditure of too much money before a program was shown to be suitable for production and fielding.

We reported that the underlying cause of these persistent and fundamental problems was a prevailing culture dependent on generating and supporting the acquisition of new weapons.

Background

Inherent in the culture are powerful incentives and interests that influence and motivate the behaviors of participants in the process, including components of DOD, the Congress, and industry. Sometimes, these interests override the need to satisfy the most critical weapon requirements at minimal cost.

We reported that cultural changes were needed to (1) control interservice competition and self-interest that have led to the acquisition of unnecessary, overlapping, or duplicative capabilities; (2) discourage the overselling of programs through optimistic cost and schedule estimates and accelerated—and, therefore, high-risk—acquisition strategies; and (3) limit the incorporation of immature technologies into new weapons to reduce risks of technological failures.

Our high-risk report noted that a number of acquisition reforms either had been or were being implemented in response to the Packard Commission's recommendations, the diminished Soviet threat, and budget reductions. Nevertheless, our high-risk report update, GAO High-Risk Program (GAO/AIMD-94-72R, Jan. 27, 1994), noted that parochial interests and incentives were

Background

delaying or preventing the timely rationalization of defense weapons requirements and acquisitions in the post-Soviet threat era. Many weapon systems were being developed and produced despite the diminished Soviet threat. We also noted that defense cutbacks would require DOD to rely more on commercial products and practices to reduce costs and ensure an adequate defense industrial capability.

Weapons Acquisition Problems Persist

Although DOD has begun many acquisition reform initiatives since our December 1992 high risk-report, pervasive problems persist with respect to (1) cost and schedule estimates, (2) program affordability, and (3) high-risk acquisition strategies.

Overly Optimistic Cost and Schedule Estimates

Our 1992 report stated that a combination of internal controls and other forms of incentives and disincentives were needed to reduce the tendency to promote the acquisition of weapons through optimistic cost and schedule estimates and accelerated—and, therefore, high risk—acquisition strategies. We noted that in DOD’s culture, the success of participants’ careers is more dependent on moving programs through the process than on achieving better program outcomes. Accordingly, overselling a program works in the sense that programs are started, funded, and eventually fielded. The fact that a given program costs more than estimated, takes longer to field, and does not perform as promised is secondary to fielding a “new and improved” system.

The quality and credibility of cost information available to decisionmakers remains a problem. In October 1993, we

Weapons Acquisition Problems Persist

reported on the information systems the Army uses to identify, record, and report weapon systems costs. We concluded that cost information provided to the Congress and DOD to support critical weapons decisions was highly questionable. We noted that the Army's cost information, which came from 18 disparate financial and logistics systems, (1) was incomplete and inconsistent among systems, (2) did not include all cost required by Army guidelines, (3) reflected unsupported adjustments, and (4) could not be independently verified.

Despite initiatives to improve cost and schedule estimates, the unit cost of weapons, such as the Army's \$5.1 billion Javelin antitank weapon program, continues to increase. The costs of Navy systems, such as the \$12.9 billion SSN-21 class attack submarine program, the \$6.6 billion V-22 tilt-rotor aircraft program, and the \$56.8 billion DDG-51 destroyer program, continue to increase and unit costs have roughly doubled original estimates. Weapons such as the Air Force's advanced cruise missile still encounter costly production and support problems.

Program Affordability

We reported in 1992 that DOD's Future Years Defense Program could not be executed with

Weapons Acquisition Problems Persist

available funds. DOD's tendency to overestimate the amount of future funding available for defense, coupled with the tendency to underestimate program costs, had resulted in the advent of more programs than could be executed as planned. We noted that DOD's 5-year spending plan for 1986-90 was about \$553 billion more than was ultimately funded. When DOD finally faced funding reality, it often reduced, delayed, and/or stretched out programs—substantially increasing the cost of each system purchased.

DOD is now required by law to ensure that its spending plans and the President's budget are consistent. Although DOD has made significant progress in reducing this gap, spending plans have still not kept pace with the rapid changes in the national security environment. We recently reported that DOD's 1995-99 Future Years Defense Program's overprogramming could exceed \$150 billion. The spending plan contained billions of dollars in understated costs and overstated savings and reductions. These include (1) less costs and more savings than expected from base closures, (2) less costs for environmental remediation and peacekeeping operations, (3) more savings than expected from the Defense

Weapons Acquisition Problems Persist

Management Report initiatives, (4) understated cost growth in weapon system acquisitions, (5) understated inflation estimates, and (6) DOD's use of undistributed future adjustments that amount to unspecified overprogramming.

**High-Risk
Acquisition
Strategies**

We reported in 1992 that accelerated high risk acquisition strategies were being based on the need to meet the threat and to reduce acquisition costs. We noted that one common characteristic of high-risk strategies is the acquisition of weapons based on optimistic assumptions about the maturity and availability of enabling technologies. Research and technology efforts should be disassociated from weapon programs until they reach the demonstration and validation phase.

We also reported on the high-risk practice of beginning production of a weapon system before development, testing, and evaluation are complete. A highly concurrent strategy forces decisionmakers to act without adequate information about a weapon's demonstrated operational effectiveness, reliability, logistic supportability, and readiness for production. Also, rushing into production before critical tests have been

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successfully completed has resulted in the purchase of systems that do not perform as intended. These premature purchases have resulted in lower-than-expected availability for operations and have quite often led to expensive modifications.

Despite an increased emphasis on the sound development and testing of weapons, DOD still commits to production of many major and nonmajor weapons without first proving that the systems will meet critical performance requirements. In March 1994, we testified that DOD is continuing to produce systems with inadequate knowledge of their technical and operational capability. We have reported that the Advanced Medium Range Air-to-Air Missile, the C-17, the Short-Range Unmanned Aerial Vehicle, and other systems have started production prematurely with little, if any, indication of the systems' operational effectiveness and suitability and that the \$71.6 billion F-22 fighter aircraft program continues to feature a concurrent and risky development, test, and production strategy.

We recently evaluated DOD's policy to begin low-rate initial production of weapons without doing any operational testing and evaluation. We reported that this policy has

Weapons Acquisition Problems Persist

resulted in the procurement of substantial quantities of unsatisfactory weapons requiring costly modifications and, in some cases, the deployment of substandard systems to combat forces. We noted that in today's national security environment, low-rate production without demonstrating that the system will work as intended should rarely be necessary.

Acquisition Reform Initiatives

The reduced Soviet threat, declining defense budgets, and a strong commitment by the administration and the Congress to reform are providing the ingredients for both structural and cultural changes in the way major weapons requirements are determined and the systems are acquired. Since our last report, DOD has continued to implement several ongoing acquisition reform initiatives and has also initiated new reform efforts. The Congress has also passed additional acquisition reform legislation. However, it is too soon to fully assess the extent to which these changes are improving outcomes in current defense acquisition programs.

Ongoing Acquisition Reform Initiatives

Top DOD management has demonstrated a strong commitment to acquisition reform initiatives. The Packard Commission's acquisition organization and management recommendations have been largely implemented and are becoming institutionalized. For example, the role and authority of the Under Secretary of Defense for Acquisition and Technology are more firmly established. This position was established, as recommended by the Packard Commission in its report A Quest for Excellence (June 1986), to provide more centralized control and supervision of the

Acquisition Reform Initiatives

weapons acquisition process by the Office of the Secretary of Defense. DOD has established a new acquisition strategy that embodies the idea that the feasibility and producibility of advanced technologies must be proven before they are incorporated into new or ongoing acquisition programs.

Increasingly, the Deputy Under Secretary of Defense for Advanced Technology is using advanced concept technology demonstrations to prove out technologies prior to entering the acquisition cycle. Although none have entered the acquisition cycle, these demonstrations more directly involve warfighters/users in demonstrating the operational feasibility of new technologies and concepts before commitments are made to acquisition. Furthermore, a Deputy Under Secretary of Defense for Acquisition Reform position has been established to initiate, promote, and support key acquisition reform efforts.

DOD continues to make progress in implementing the provisions of the Defense Acquisition Workforce Improvement Act. The act establishes benchmarks for a more professional acquisition workforce with defined training and education requirements and an acquisition career path. It is designed

Acquisition Reform Initiatives

to produce an acquisition workforce that is more responsible and accountable for meeting program costs and schedule estimates.

In the Secretary of Defense's February 1994 white paper entitled Acquisition Reform—A Mandate for Change, the need for change is stated and a vision and strategy for change are presented. A key element of the strategy is greater reliance on commercial products and processes. Also in 1994, the Secretary of Defense launched an effort to reengineer the systems acquisition review process. This effort is intended to reduce non value-added layers of review and oversight. We have one cautionary note: in streamlining and simplifying the acquisition process, DOD must carefully balance the cost of oversight and controls against the risk of making inadequately informed program decisions.

New Acquisition Reform Initiatives

Since our 1992 report, the Vice Chairman of the Joint Chiefs of Staff, as Chairman of the Joint Requirements Oversight Council, has begun a Joint Warfare Capability Assessment initiative that could significantly increase the Council's role and influence in reviewing and approving the services' weapon acquisitions requirements. If key acquisition decisions

Acquisition Reform Initiatives

are made at such higher organizational levels, competing demands, available resources, and the needs of theater commanders can be more fairly assessed before a specific program is acquired.

In addition to DOD's efforts, the Congress has enacted reforms in the Federal Acquisition Streamlining Act of 1994. Some reforms in this act involve (1) raising the dollar threshold for using more simplified small purchase procedures, (2) requiring a statement to the Congress by the Secretary of Defense if a low-rate initial production quantity exceeds 10 percent of the total number of articles to be produced, (3) requiring a performance-based, incentivized approach to managing acquisition programs, and (4) emphasizing the streamlining of the acquisition process and greater reliance on commercial products and processes.

The act requires the Secretary of Defense to define or approve cost, schedule, and performance goals for each major defense acquisition program by phase of the acquisition cycle and to relate the pay and promotions of personnel involved in each program to the achievement of the goals. Further, the Secretary must annually assess

Acquisition Reform Initiatives

and report to the Congress whether DOD is achieving on average 90 percent of the cost, schedule, and performance goals. These provisions of the act have not been implemented.

Other reforms were enacted in the Defense Authorization Act for Fiscal Year 1994. For example, the Congress established the Commission on Roles and Missions of the Armed Forces to examine the division of labor and responsibility among and within the military services. The seven member independent Commission is examining key missions to determine the most cost-effective mix of weapons to accomplish those missions and the services' responsibilities. The Commission is seeking to identify unnecessary overlap and duplication in weapons and responsibilities and the impacts of changing technology on the traditional mix of weapons and service roles. Roles and missions being examined include (1) close air and fire support, (2) deep battle and conventional strike, (3) overseas presence, and (4) joint warfare.

The Commission is also examining a number of organizations and processes to identify where and how improvements can be made. For example, it is examining whether DOD's

Acquisition Reform Initiatives

weapons acquisition structure is too complex and duplicative. The Commission notes that despite a 40- percent reduction in acquisition activity, no acquisition organizations have been eliminated. The Commission is to report to the Congress in May 1995. The results of the Commission's work should contribute to identifying the most cost-effective weapons to meet mission needs, a problem we reported on in our 1992 high-risk report.

Taking Further Action

In our 1992 high-risk report, the need for and nature of procurement reforms centered on improving weapon requirements determination and acquisition organizations and processes. While these reforms remain critical, the impact of reduced defense procurements on the defense industry, together with the budget-driven need to reduce procurement costs, has elevated the importance of reform efforts designed to broaden DOD's industrial base by increasing reliance on commercial products and processes. In his February 1994 white paper, the Secretary of Defense states that to meet the new national security challenges, DOD must

- maintain its technological superiority and a strong national industrial base by relying more on commercial state-of-the-art products and technology, assisting companies in the conversion from defense-unique to dual-use production, aiding in the transfer of military technology to the commercial sector, and preserving defense-unique core capabilities and
- reduce acquisition costs (including overhead costs) through the adoption of business processes characteristic of world-class buyers.

Taking Further Action

The paper includes an acquisition reform strategy, or “vision for the future,” for accomplishing these objectives. Key elements of the strategy include (1) reducing the use of defense-unique specifications and relying more on commercial performance-based specifications in defense procurements; (2) eliminating non value-added oversight, controls, and requirements that discourage commercial companies from doing business with DOD or substantially increase the cost of doing business compared to the commercial sector; and (3) adopting acquisition processes and practices similar to those of commercial companies.

Success in achieving greater integration of DOD and commercial products and practices, as with the other acquisition reforms, will require overcoming cultural and structural barriers. The ingredients for making lasting improvements to the weapons acquisition process—the need, the opportunity, and the leadership—currently exist. The combination of a budget-driven incentive to improve the effectiveness and efficiency of weapons acquisitions, congressionally enacted procurement reform measures, and DOD’s commitment to acquisition reform

Taking Further Action

offers a promising environment for real change. Nevertheless, it is too soon to tell how successful DOD will be in overcoming cultural and structural barriers. The procurement bureaucracy will not be dismantled overnight. Regulations are needed to implement the provisions of the recently enacted acquisition reform law. Achieving real and lasting change, in our opinion, will require DOD's continued commitment to full and effective implementation of procurement reform strategies and initiatives, along with congressional support.

Related GAO Products

Weapons Acquisition: Low-Rate Initial Production Used to Buy Systems Prematurely (GAO/NSIAD-95-18, Nov. 21, 1994).

Future Years Defense Program: Optimistic Estimates Lead to Billions in Overprogramming (GAO/NSIAD-94-210, July 29, 1994).

Navy Ships: Seawolf Cost Increases and Schedule Delays Continue (GAO/NSIAD-94-201BR, June 30, 1994).

Strategic Missiles: Issues Regarding Advanced Cruise Missile Program Restructuring (GAO/NSIAD-94-145, May 31, 1994).

Tactical Aircraft: F-15 Replacement Issues (GAO/T-NSIAD-94-176, May 5, 1994).

Navy Modernization: Alternatives for Achieving a More Affordable Force (GAO/T-NSIAD-94-171, Apr. 26, 1994).

Tactical Aircraft: F-15 Replacement is Premature as Currently Planned (GAO/NSIAD-94-118, Mar. 25, 1994).

Related GAO Products

Acquisition Reform: Role of Test and Evaluation in System Acquisition Should Not Be Weakened (GAO/T-NSIAD-94-124, Mar. 22, 1994).

Procurement Reform: Comments on Proposed Federal Acquisition Streamlining Act (GAO/T-OGC-94-1, Mar. 10, 1994).

Army Acquisition: Information on the Status and Performance of the Javelin Antitank Weapon (GAO/NSIAD-94-122BR, Mar. 9, 1994).

U.S. Special Operations Forces: Helicopter Cost is Understated and Reliability Measures Are Inadequate (GAO/NSIAD-94-46, Jan. 25, 1994).

Electronic Warfare: Costly Radar Warning Receiver Duplication Continues (GAO/NSIAD-94-4, Nov. 29, 1993).

Army Acquisition: Problems With the Sense and Destroy Armor Munition (GAO/NSIAD-94-59, Nov. 23, 1993).

Financial Management: Reliability of Weapon System Cost Reports Is Highly Questionable (GAO/AIMD-94-10, Oct. 28, 1993).

Related GAO Products

Missile Development: TSSAM Production
Should Not Be Started as Planned
(GAO/NSIAD-94-52, Oct. 8, 1993).

Antiarmor Weapons Acquisition:
Assessments Needed to Support Continued
Need and Long-Term Affordability
(GAO/NSIAD-93-49, Mar. 4, 1993).

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