OVERSIGHT OF DEFENSE DEPARTMENT ACQUISITIONS

JOINT HEARING

BEFORE THE

SUBCOMMITTEE ON NATIONAL SECURITY AND FOREIGN AFFAIRS

AND THE

COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM

HOUSE OF REPRESENTATIVES

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OVERSIGHT OF DEFENSE DEPARTMENT ACQUISITIONS

TUESDAY, APRIL 29, 2008

HOUSE OF REPRESENTATIVES, COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM, JOINT WITH THE SUBCOMMITTEE ON NATIONAL SECURITY AND FOREIGN AFFAIRS, COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM,

Washington, DC.

The committee and subcommittee met, pursuant to notice, at 10:04 a.m., in room 2154, Rayburn House Office Building, Hon. Henry A. Waxman (chairman of the Committee on Oversight and Government Reform) presiding.

Present: Representatives Waxman, Cummings, Tierney, Watson, Davis of Virginia, Burton, Duncan, and Issa.

Staff present from the Committee on Oversight and Government Reform: Phil Barnett, staff director and chief counsel; David Rapallo, chief investigative counsel; John Williams, deputy chief investigative counsel; Margaret Daum, counsel; Earley Green, chief clerk; Caren Auchman and Ella Hoffman, press assistants; William Ragland, Miriam Edelman, and Sam Buffone, staff assistants.

Staff present from the Subcommittee on National Security and Foreign Affairs: Dave Turk, minority staff director; Andrew Su, minority professional staff member; and Davis Hake, minority clerk.

Chairman WAXMAN. The committee will come to order. Today's hearing is this committee's 10th hearing in this Congress on waste, fraud and abuse in the Federal Government.

The subject of today's hearing is weapons acquisitions programs at the Department of Defense. This hearing was suggested by Ranking Member Tom Davis, and I commend him for his bipartisan leadership on this important issue.

We are holding this hearing for a simple reason: Weapons programs at the Defense Department are one of the biggest sources of wasteful spending in the Federal budget. The Department of Defense will spend hundreds of billions of dollars over the next 5 years buying weapons systems needed for our Armed Forces. And no one questions the need to give our troops the best possible equipment. But the American taxpayers are footing the bill for these weapons programs and no one seems to be looking out for their interests. Billions of dollars have been squandered due to waste and mismanagement at the Defense Department.

According to a recent report from the Government Accountability Office, cost overruns in major weapons acquisitions programs now reach nearly $300 billion. At the same time, delivery schedules are

slipping. The GAO says that delays of 2 years or more are the norm for weapons systems. The contractors and senior defense officials say that some cost increases and delays are inevitable given the complexity of building new weapons systems. I accept that. But that doesn't explain the persistent level of waste and mismanagement that GAO identifies.

In 2001, a GAO report found pervasive problems in weapons systems acquisition, including poor planning, inadequate requirements, unrealistic cost estimates, and the use of high-risk acquisition strategies.

Today, 7 years after that report was written, GAO says nothing has changed. There seems to be absolutely no accountability to the taxpayer. Despite report after report documenting mismanagement in weapons acquisition, nothing seems to improve. The contractors keep getting richer, senior Pentagon officials keep receiving lucrative job offers, and the taxpayer keeps getting stuck with the check.

In preparation for this hearing, my staff examined in detail one of the weapons acquisition programs identified in the GAO report, the Marine Corps' Expeditionary Fighting Vehicle [EFV]. And I ask that the staff report on the EFV be included in today's Record.

[The information referred to follows:]

UNITED STATES HOUSE OF REPRESENTATIVES
COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM
MAJORITY STAFF
APRIL 29, 2008

THE EXPEDITIONARY FIGHTING VEHICLE:
Over Budget, Behind Schedule, and Unreliable

PREPARED FOR
CHAIRMAN HENRY A. WAXMAN

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EXECUTIVE SUMMARY

On March 31, 2008, the Government Accountability Office (GAO) released a report assessing the management of major weapons acquisition programs by the Department of Defense. The report found widespread problems in the Department's acquisition practices, with the result that nearly all of the most important and costly projects "continue to cost significantly more, take longer to produce, and deliver less than was promised."[1]

This report examines in detail one of the acquisition programs identified in the GAO report: the Marine Corps' Expeditionary Fighting Vehicle (EFV). The report is based on a review of over 55,000 pages of documents provided by the Department of Defense and the project's lead contractor. The documents show that a series of mistakes have increased costs by billions of dollars and delayed production by years.

The key problems occurred in the process of "System Development and Demonstration" (SDD), which began in December 2000 and has cost the taxpayer $1.2 billion. This acquisition process was so poorly managed by Marine Corps officials and the prime contractor, General Dynamics, that the Defense Department announced in June 2007 that the entire vehicle development and demonstration phase needs to be repeated. The additional cost to the taxpayer will be nearly $1 billion and the additional delay will extend the SDD process from its scheduled completion date in 2003 to 2011.

As conceived by the Marine Corps, the EFV, an amphibious tank, is supposed to be able to transport up to 18 combat-ready Marines at high speeds on both land and sea, have advanced communications capabilities, provide increased armored protection against rocket-propelled grenades and improvised explosive devices, and deliver lethal firepower up to 2,000 meters. The procurement process started in 1996 when the Marine Corps awarded a contract to General Dynamics to begin developing the vehicle. In its early "Program Definition & Risk Reduction" phase, the EFV program was a model defense acquisition program. The program won two awards from the Department of Defense for its successful management of costs and technology.

Based on these early successes, the Marine Corps awarded a cost-plus contract to General Dynamics in July 2001 to lead the EFV project through the subsequent system development and demonstration phase. The SDD contract with General Dynamics envisioned that developing and demonstrating the EFV would cost $712 million and be completed by October 2003. After three contract modifications, the date of completion was delayed until December 2006 and the costs were increased by over 50% to $1.2 billion.

During the SDD phase, Defense Department auditors and GAO warned repeatedly of problems, including the lack of effective oversight. At one point, auditors called the project a "paper dream," reporting that "management does not have a handle on reality" and "[t]here seems to be

[1] U.S. Government Accountability Office, *Defense Acquisitions: Assessments of Selected Weapon Programs* (Mar. 2008) (GAO-08-467SP).

no one steering the ship." These concerns, however, were largely ignored and the project proceeded using a costly "test-fix-test" process under which the contractor would fix problems after they were discovered rather than anticipating them through a comprehensive design process. Marine Corps officials were so satisfied with General Dynamics's performance that they gave General Dynamics over $60 million in bonuses, including $25.6 million in bonuses for a "very good" job in being on schedule and under cost.

A crucial milestone for the EFV occurred in 2006, when the EFV was subject to an "Operational Assessment." According to an internal report of the operational assessment, the vehicles experienced multiple problems and failed to pass the milestone. The problems identified during the operational assessment included:

- **Frequent Breakdowns.** The EFVs had "very low vehicle reliability" and could operate only 4.5 hours between breakdowns. During the tests, the demonstration vehicles experienced 645 "Unscheduled Maintenance Actions" and required over three hours of corrective maintenance for every hour in operation.

- **Failure to Complete Tests.** The EFVs completed only two of eleven amphibious tests, only one of ten gunnery tests, and none of the land mobility tests. During the land mobility test, "[t]he turret basket floor bent and a turret support stanchion broke ... suggesting the turret structure might not be sufficiently robust to survive the forces generated during cross-country movement."

- **Excessive Weight.** Because the EFVs weighed too much, the vehicles could get "on plane" during high-speed water travel only if armor was removed from the vehicles and the Marines on board left vital equipment behind.

- **Excessive Noise and Limited Visibility.** During the test, the vehicles were so loud that "[e]mbarked Marines wore foam earplugs and earmuffs ... which made voice communications difficult and ineffective." There was also "poor crew visibility during water operations," with the driver's thermal sight "periodically washed out by water spray."

- **Other Problems.** The vehicle's weapons system failed in the tests, with the ammunition feed jamming and crews "unable to identify armored vehicle targets." The hydraulic system leaked. And the exhaust system generated a "significant thermal signature," contrary to the requirement that the EFV be designed to minimize detection.

The poor performance of the demonstration vehicles caused major and expensive reversals in the Department's procurement strategy. The decision to repeat the SDD phase will increase costs to the taxpayer by nearly $1 billion or more and delay completion of the demonstration phase until 2011 at the earliest. In 2000, the Defense Department estimated that it would be able to acquire 1,025 EFVs at a total cost of $8.4 billion. According to the revised estimates, the Department will be able to acquire only 593 vehicles at a total cost of $13.2 billion. On a per-vehicle basis, the EFV costs have increased 168% while the production deadline has slipped eight years.

I. BACKGROUND

In 1996, the Marine Corps awarded a contract to General Dynamics to begin developing an amphibious tank which was eventually named the "Expeditionary Fighting Vehicle" or EFV. The EFV would replace the Marine Corps' Vietnam-era fleet of "Amphibious Assault Vehicles."

The Marine Corps envisioned that the EFV would have a broader range and greater fighting capabilities than its predecessor. The new vehicle would be able to transport up to 18 combat-ready Marines at high speeds on both land and sea, have advanced communications capabilities, provide increased armored protection against rocket-propelled grenades and improvised explosive devices, and deliver lethal firepower up to 2,000 meters.[2] The project became a major acquisition for the Marine Corps. According to a recent estimate, the EFV will consume 23% of the Marine Corps' research and development budget from 2009 to 2014.[3] In 2009 alone, the EFV comprises 30% of the Marine Corps' research and development budget request.[4]

By December 2000, the program had successfully completed the so-called "Program Definition & Risk Reduction" phase of the acquisition. This phase of the EFV program was so successful that it was cited as a model defense acquisition program. In 1998, the Department of Defense awarded the program the Department's David Packard Excellence in Acquisition Award "for achieving significant reductions in total ownership cost through the implementation of cost as an independent variable, integrated product and process development, and virtual prototyping."[5] In 2000, the EFV program won a Defense Standardization Program award for accomplishments relating to the development of a new medium caliber gun system, which "reduced costs, development time, and risk."[6]

Based on the program's early successes, the Marine Corps awarded a cost-plus contract to General Dynamics in July 2001 to lead the EFV project through the "System Development and Demonstration" (SDD) phase.[7] This contract had a ceiling cost of $712 million.[8] During the SDD phase, which was originally scheduled to be completed by October 2003, the Marine Corps and the contractor were supposed to ensure that the various components of the EFV were successfully integrated and would conduct extensive testing on prototype vehicles.[9] At the

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[2] Marine Corps Combat Development Command, Operational Requirements Document for the Advance Amphibious Assault Vehicle (Undated; est. 1995-1997).

[3] E-mail from Paul Francis, Director of Acquisition, U.S. Government Accountability Office, to House Oversight Committee Staff (Apr. 23, 2008).

[4] *Id.*

[5] Department of Defense, *Press Release: Secretary Cohen Presents Packard Awards* (May 5, 1998) (online at www.defenselink.mil/releases/release.aspx?releaseid=1666).

[6] Department of Defense, *Press Release: Defense Standardization Program Awards for 1999 Presented* (July 27, 2000) (online at www.defenselink.mil/releases/release.aspx?releaseid=2537).

[7] Direct Reporting Program Manager Advanced Amphibious Assault, U.S. Marine Corps, *Program Highlights* (online at www.efv.usmc.mil/highlights_text.asp) (accessed Apr. 28, 2008).

[8] Briefing by David Heebner, President, General Dynamics Land Systems, to House Oversight Committee Staff (June 12, 2007).

[9] U.S. Government Accountability Office, Defense Acquisitions: The Expeditionary Fighting Vehicle Encountered Difficulties in Design Demonstration and Faces Future Risks (May 2006) (GAO-06-349).

completion of this phase, known as "Milestone C" in the Department's acquisition management framework, the vehicle was supposed to pass an "Operational Assessment" and be ready to go into the final "production" phase of the acquisition.[10]

In 2001, when the Marine Corps awarded the SDD contract, the Marine Corps estimated that it would cost the taxpayer $8.7 billion to acquire 1,025 EFVs, a cost of $8.5 million per vehicle. The Marine Corps estimated that "Initial Operational Capability," the date when the Corps could begin using the EFV in operations, would be in September 2006.[11]

II. THE SYSTEM DEVELOPMENT AND DEMONSTRATION PHASE

The July 2001 SDD contract envisioned that the system development and demonstration phase would be completed by October 2003.[12] This schedule proved too ambitious. In November 2002, March 2003, and again in March 2005, the Marine Corps extended the completion date for system development and demonstration through March 2007.[13] At the same time, the Corps increased the total program acquisition costs over time from $8.7 billion to $12.6 billion.[14] Ultimately, General Dynamics was paid $1.2 billion just under the SDD contract.[15]

From its early days, the SDD phase of the EFV acquisition was plagued with problems. The problems identified by Defense Department auditors included an unrealistic schedule that rushed construction and testing, the use of a risky "test-fix-test" demonstration process, poor management and oversight, and a failure to correct problems identified by auditors. Despite these problems, General Dynamics was regularly awarded millions of dollars in award fees for good performance during the development and demonstration phase of the project.

A. Failure to Set a Realistic Schedule

Under the best practices recommended by the Department of Defense and GAO, the schedule for a program in system development and demonstration is divided into two phases: (1) "system integration," in which the product's design is stabilized; and (2) "system demonstration," in which the program builds full-scale prototypes to demonstrate that the product meets

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[10] *Id.*; See Department of Defense Instruction 5000.2, *Operation of the Defense Acquisition System* (May 12, 2003) (online at https://akss.dau.mil/dag/DoD5002/Subject.asp).

[11] U.S. Government Accountability Office, *Defense Acquisitions: The Expeditionary Fighting Vehicle Encountered Difficulties in Design Demonstration and Faces Future Risks* (May 2006) (GAO-06-349).

[12] *Id.*

[13] *Id.*

[14] *Id.*

[15] *Expeditionary Fighting Vehicle Program: Award Fee Percentage Information Congressional Request* (Feb. 22, 2007).

requirements, works reliably, and can be manufactured at an acceptable cost.[16] The passage between these two phases is marked by "critical design review," in which the program determines that the design is sufficiently mature that the product can move into the "system demonstration" phase. GAO recommends that a program have completed at least 90% of engineering drawings and conducted prototype or variant testing prior to the critical design review.[17]

The EFV program did not follow these best practices. Instead, the program initiated critical design review in January 2001, just one month after it had entered the SDD phase. According to GAO, the accelerated schedule "did not allow adequate time for testing, evaluating the results, fixing the problems, and retesting to make sure that problems are fixed before moving forward."[18]

As early as 2002, Defense Department auditors expressed concerns about the decision to accelerate the system development schedule. In 2002, the Marine Corps asked auditors with the Air Force Software Technology Support Center to conduct an assessment of the contract. In December 2002, the auditors warned: "[M]anagement does not have a handle on reality, particularly with the unrealistic schedules."[19] The auditors reported that the schedule proposed by the Marine Corps was "described by some individuals as a paper dream that everyone accepts but has only a casual resemblance of reality."[20]

B. The "Test-Fix-Test" Demonstration Process

One result of the decision to quickly move into the "system demonstration" phase was that the management team and the contractor decided to follow a "test-fix-test" process to demonstrate that the EFV could meet the program's requirements.[21] Under the "test-fix-test" process, the contractor would fix problems as they were discovered, rather than minimize problems through a comprehensive design process.[22] Both General Dynamics and the Marine Corps have

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[16] U.S. Government Accountability Office, Defense Acquisitions: The Expeditionary Fighting Vehicle Encountered Difficulties in Design Demonstration and Faces Future Risks (May 2006) (GAO-06-349).

[17] U.S. Government Accountability Office, Defense Acquisitions: Assessments of Selected Weapon Programs (Mar. 2008) (GAO-08-467SP); U.S. Government Accountability Office, Defense Acquisitions: The Expeditionary Fighting Vehicle Encountered Difficulties in Design Demonstration and Faces Future Risks (May 2006) (GAO-06-349).

[18] U.S. Government Accountability Office, Defense Acquisitions: The Expeditionary Fighting Vehicle Encountered Difficulties in Design Demonstration and Faces Future Risks (May 2006) (GAO-06-349).

[19] U.S. Air Force Software Technology Support Center, *Final Report: Advanced Amphibious Assault Vehicle Assessment* (Dec. 4, 2002).

[20] *Id.*

[21] Briefing by David Heebner, President, General Dynamics Land Systems, to House Oversight Committee Staff (June 12, 2007).

[22] *Id.*

acknowledged that the "test-fix-test" process is significantly riskier than the best practices recommended by the Department and GAO.[23]

The "test-fix-test" process failed to remedy a series of unexpected design flaws that emerged during the "system demonstration" phase. For example, the program was forced to repeatedly redesign the EFV's "bow flap," a crucial part of the vehicle when it is conducting water operations. Although the program thought it had fixed the bow flap's problems during the earlier program development phase, it never tested the new design. When this new version of the bow flap subsequently bent and cracked during systems development testing, the program was forced to redesign the piece yet again. Similar problems occurred with the hydraulic system and the Hull Electronic Unit.[24]

In interviews with Committee staff, Marine Corps and General Dynamics officials stated that the "test-fix-test" approach was adopted as the best way to meet the program's schedule after Congress underfunded the SDD phase.[25] According to auditors, however, adopting the "test-fix-test" approach exacerbated the risks the program had already assumed by accelerating the systems development schedule.[26] The cumulative effect of these decisions was to expose the program to unnecessarily high levels of risk for cost increases, schedule delays, and performance problems.[27]

C. Management and Oversight Problems

The EFV program also experienced significant problems with program management and oversight. From the beginning of the SDD phase, the EFV program lacked the consistent, comprehensive management and oversight necessary to keep the program on track.

A key failure of the EFV's program management was the lack of coordination among program officials. The EFV project did not have an official acting as the system engineer, the person responsible for ensuring that the different components of the program and the vehicle work together. In 2002, Defense Department auditors expressed concerns that this failure would adversely affect the program, reporting:

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[23] Briefing by Col. John Bryant, EFV Program Manager, to House Armed Services Committee and Oversight Committee Staff (June 14, 2007); Briefing by David Heebner, President, General Dynamics Land Systems, to House Oversight Committee Staff (June 12, 2007).

[24] U.S. Government Accountability Office, Defense Acquisitions: The Expeditionary Fighting Vehicle Encountered Difficulties in Design Demonstration and Faces Future Risks (May 2006) (GAO-06-349).

[25] Briefing by David Heebner, President, General Dynamics Land Systems, to House Oversight Committee Staff (June 12, 2007).

[26] U.S. Air Force Software Technology Support Center, *Final Report: Advanced Amphibious Assault Vehicle Assessment* (Dec. 4, 2002); U.S. Government Accountability Office, *Defense Acquisitions: Assessments of Selected Weapon Programs* (Mar. 2008) (GAO-08-467SP); U.S. Government Accountability Office, *Defense Acquisitions: The Expeditionary Fighting Vehicle Encountered Difficulties in Design Demonstration and Faces Future Risks* (May 2006) (GAO-06-349).

[27] *Id.*

- "[T]here is no overall system engineer or system architect with the authority and responsibility to ensure products meet their allocated and integration requirements."
- "The lack of an overall systems integrator ... with the authority and responsibility to oversee the entire system development has also resulted in technical and communication breakdowns."
- "Having both a strong systems engineer and strong systems engineering processes ... will overcome several system issues now facing the program."[28]

In evaluating the progress in developing software for the EFV, the auditors reported: "There seems to be no one steering the ship technically on either the [government] or [contractor] sides. ... This is not something that a successful program delegates to lower levels within the organizational structure."[29]

The 2002 audit also concluded that the program was being hurt by inadequate communication between government and contractor personnel. The auditors reported that problems with the system weight, which resulted in a vehicle too heavy to operate as required, was the direct result of the lack of communication and coordination among the government and contract officials.[30]

D. Failure to Correct Program Management Problems

Four years after Defense Department auditors first raised serious concerns about the management of the EFV program, an audit team from the Office of the Assistant Secretary of the Navy for Research, Development and Acquisition issued another critical report. This December 2006 audit found many of the same problems the Air Force auditors reported in 2002. The auditors reported:

- "Oversight of the EFV program is ineffective."
- "The systems engineering process is inadequate and a major shortcoming of the EFV Program. It is a root cause of ... disarray, uncoordinated design decisions, reliability issues, and the general lack of planning and status monitoring."
- "Ineffective contract management since SDD award contributed significantly to the lack of positive control and oversight of the Program."[31]

Timothy Perkins, the lead auditor for the 2002 audit and a participant in the 2006 audit, told Committee staff that the auditors saw little change from 2002 to 2006. According to Mr. Perkins,

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[28] U.S. Air Force Software Technology Support Center, *Final Report: Advanced Amphibious Assault Vehicle Assessment* (Dec. 4, 2002).

[29] *Id.*

[30] *Id.*

[31] Office of the Assistant Secretary of the Navy for Research, Development and Acquisition, *Independent Expert Program Review (IEPR): Final Report for the Expeditionary Fighting Vehicle (EFV)* (Dec. 2006).

the program showed "no improvement" in such key areas as systems engineering and program management. [32]

In 2008, the Defense Contract Management Agency (DCMA) found that significant problems with the program's management persisted. DCMA's audit, which focused on General Dynamics's management controls, found that General Dynamics was neither following nor applying the practices recommended for successful program management known as "Earned Value Management Systems."[33] According to DCMA, "Key ... processes and procedures are below standard and do not provide the requisite definition and discipline to properly plan and control complex, multibillion dollar weapon systems acquisition programs."[34]
Like the 2002 and 2006 audits, the 2008 audit reported problems with the program's schedule, management, and oversight. According to DCMA:

- "EFV program was unable to demonstrate a scheduling process that met the minimum requirements of the ... guidelines. ... [Management officials] were unable to demonstrate that they understood, used or maintained any level of the program schedule."
- "The Government review team found that [management officials] were not able to demonstrate that they had taken direct responsibility for planning and controlling the work in their control accounts."
- "Work is being performed that has not been authorized in accordance with any processes that enable basic control of scope, time phasing of budgets, and scheduling of resources. The lack of an integrated management system ... allows developing cost, schedule, and performance trends to go undetected." [35]

DCMA reported that these problems "raise significant concerns" regarding the ability of General Dynamics to perform the contract on time and on budget.[36]

E. Award Fees Paid to General Dynamics

Despite the critical reports from the auditors and schedule delays and cost overruns, the Marine Corps awarded General Dynamics over $60 million in fees under the SDD contract through the end of 2007.[37]

Under the SDD contract, the Marine Corps evaluated General Dynamics's performance every six months to assess the company's entitlement to bonuses. The Corps awarded General Dynamics

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[32] Interview of Timothy Perkins by House Oversight Committee Staff (Sept. 27, 2007).

[33] Defense Contract Management Agency, Compliance Report for the Expeditionary Fighting Vehicle: General Dynamics Amphibious Systems Company (Jan. 2008) (CTR-2008-002).

[34] *Id.*

[35] *Id.*

[36] *Id.*

[37] *Expeditionary Fighting Vehicle Program: Award Fee Information Congressional Request* (Feb. 15, 2007); Briefing by Col. John Bryant, EFV Program Manager, to House Oversight Committee Staff (Apr. 10, 2008).

an average of 78% of the award fee available during each period.[38] That amount represents a rating of "good," meaning that the contractor's performance "meets contractual requirements."[39]

The Corps awarded General Dynamics 88% of the fee available for being on schedule and at or under cost.[40] This is a "very good" rating that is supposed to be awarded for performance that "meets contractual requirements and exceeds some to the Government's benefit."[41] In total, General Dynamics received $25.6 million for performing on schedule and under costs.[42] During one period, General Dynamics received 106% of the available bonus for being on cost and schedule.[43] Yet during this same rating period, program officials noted that "[t]he contractor did not meet the contractual delivery date. ... The schedule delivery performance reflects a serious problem."[44]

The program's external auditors reported that the award fees were not based on legitimate data. In 2002, the auditors found that the data used to calculate the award fees was "not accurate or predictive."[45] Four years later, the auditors reported that the practices used by General Dynamics to collect the data used to calculate award fees were "highly inappropriate" and the resulting award fees were "questionable."[46]

III. THE 2006 OPERATIONAL ASSESSMENT

A key milestone for the EFV program occurred in 2006, when the EFV was subject to an "Operational Assessment," a series of tests where the EFV would demonstrate that it could meet its performance requirements. Successful completion of the assessment, also known as "Milestone C," would have signaled that the EFV was ready to move into the production phase of the acquisition.

During the operational assessment, the EFV experienced multiple, varied, and often critical vehicle failures. Because of the repeated breakdowns, the EFV failed to achieve its reliability requirement and failed the assessment.[47]

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[38] Expeditionary Fighting Vehicle Program: Award Fee Information Congressional Request (Feb. 22, 2007).
[39] Expeditionary Fighting Vehicle Program: Contract Fee for General Dynamics 1995-2006 (undated, est. 2007).
[40] Expeditionary Fighting Vehicle Program: Award Fee Information Congressional Request (Feb. 22, 2007).
[41] Expeditionary Fighting Vehicle Program: Contract Fee for General Dynamics 1995-2006 (undated, est. 2007).
[42] Expeditionary Fighting Vehicle Program: Award Fee Information Congressional Request (Feb. 15, 2007).
[43] Expeditionary Fighting Vehicle Program: Award Fee Information Congressional Request (Feb. 22, 2007).
[44] Live Fire Period 3: Final Assessment (Sept. 20, 2005).
[45] U.S. Air Force Software Technology Support Center, *Final Report: Advanced Amphibious Assault Vehicle Assessment* (Dec. 4, 2002).
[46] Office of the Assistant Secretary of the Navy for Research, Development and Acquisition, *Independent Expert Program Review (IEPR): Final Report for the Expeditionary Fighting Vehicle (EFV)* (Dec. 2006).
[47] Marine Corps Operational Test And Evaluation Activity, Expeditionary Fighting Vehicle Personnel Variant (EFVP): Operational Assessment Independent Assessment Report (Nov. 2006).

A. Frequent Breakdowns

According to the test evaluators, the operational assessment was "dominated by very low vehicle reliability." On average, the vehicles could operate only 4.5 hours between breakdowns and required approximately 3.4 hours of corrective maintenance per operating hour. According to the evaluators, the maintenance burden for the EFV "would wear out a unit under realistic combat conditions."[48]

Other problems with reliability included 117 "Operational Mission Failures" during testing,[49] as well as 645 "Unscheduled Maintenance Actions" that exceeded the capability of the three Marines assigned to perform maintenance during the tests and required the Marine Corps to bring in "'surge' maintenance" from the contractor to keep up with the breakdowns.[50]

B. Failure to Complete Tests

Problems with the EFV's reliability resulted in the vehicle's failure to complete many of the tests included in the operational assessment. In total, the prototype EFVs completed only two out of fourteen mission profiles. Specific problems included:

- The program conducted 11 attempts to complete the five amphibious mission tests. Only two of the eleven were completed.
- Only one of ten attempts to complete the gunnery tests was completed without a breakdown. According to the test evaluators, the repeated breakdowns "greatly compromised" the program's ability to complete the gunnery tests.
- None of the three attempts to conduct the land mobility tests was completed. The test evaluators reported that the tests were aborted after "multiple vehicles suffered mission failures." The evaluators also reported significant problems with the gun turret: "[t]he turret basket floor bent and a turret support stanchion broke ... suggesting the turret structure might not be sufficiently robust to survive the forces generated during cross-country movement."
- During the "force-on-force" phase, the EFV-equipped blue force "was unable to conduct one of its two offensive missions because all of the [EFVs] broke down on the way to the objective."[51]

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[48] Department of Defense, Director of Operational Test & Evaluation, *Expeditionary Fighting Vehicle: Milestone C Operational Assessment DOT&E View* (undated).

[49] *Id.*

[50] Marine Corps Operational Test and Evaluation Activity, Expeditionary Fighting Vehicle Personnel Variant (EFVP): Operational Assessment Independent Assessment Report (Nov. 2006).

[51] Department of Defense, Director of Operational Test & Evaluation, *Expeditionary Fighting Vehicle: Milestone C Operational Assessment DOT&E View* (undated).

C. Excessive Weight

One requirement for the EFV is high speed and mobility in the water. The EFV achieves high speed by going up "on plane" or accelerating until the vehicle moves along the top of the water. The operational assessment revealed that the prototype EFVs weighed too much to get "on plane" with a full load of armor and Marines. The evaluators reported:

- "Approximately 1,900 pounds of armor had to be removed from the EFVPs to enable them to achieve high water speed."
- "Load excursions that included combat and personal equipment likely to be carried by embarked infantry units proved unsuccessful. Vehicles unable to attain high water speed consistently when carrying the additional weight."
- "Results indicate that vehicles as tested have insufficient payload margin to support a reinforced rifle squad under some climactic conditions (hot, cool, cold, or wet weather) or combat environments."
- "[T]he current design will be unable to accommodate the additional weight of equipment likely to be carried by embarked infantry to support sustained combat operations and still attain high water speed."[52]

D. Excessive Noise and Limited Visibility

During the operational assessment, the evaluators noted problems with the noise levels, vibration, and sight lines of the EFV. The evaluators reported:

- "Embarked Marines wore foam ear plugs and earmuffs, which they characterized as uncomfortable and which made voice communications difficult and ineffective."[53]
- "Current whole body vibration levels required that there be a 24-hour break between 12.5-hour land mobility OMPs."[54]
- "Poor crew visibility during water operations."[55]
- The driver's thermal viewer and gunner's thermal sight "periodically washed out by water spray while at high-water speed."[56]

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[52] *Id.*
[53] *Id.*
[54] *Id.*
[55] *Id.*
[56] *Id.*

- "The EFVP does not provide the crew an adequate vision capability to effectively support HWS [high water speed] operations at night."[57]

E. Other Problems

Other problems discovered during the operational assessment included frequent failures of the weapons systems and leaks in the vehicle's hydraulic systems. In addition, the vehicle generated significant heat and noise, contrary to the requirement that the EFV be designed to minimize detection. According to the test evaluators:

- The design and operation of the weapon system and gun turret were substantially flawed. The auditors reported that the ammunition feed system "causes jams and damages rounds"; the weapons are "difficult for the crew to reload during combat operations"; and the "structural integrity of the turret is questionable."
- "Crews were generally unable to identify armored vehicle targets; it is not clear whether this shortfall is attributable to shortcomings with the thermal imaging sight, to inadequate crew training, or to a combination of both factors."
- One EFV variant was unable to conduct water operations due to "accident-induced hull damage" incurred while being towed as a result of a hydraulic system leak."
- "The (temporary) exhaust system on the SDD prototypes ... contributed to a unique and significant thermal signature."[58]

IV. REVERSALS IN THE EFV PROCUREMENT STRATEGY

The performance of the EFV in the operational assessment has resulted in serious setbacks for the EFV program. In March 2007, the Marine Corps modified the original SDD contract to award General Dynamics an additional $143.5 million to redesign the vehicle.[59] The contract modification signaled that the EFV would require major changes before it would meet the requirements of the Marine Corps.

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[57] Marine Corps Operational Test and Evaluation Activity, Expeditionary Fighting Vehicle Personnel Variant (EFVP): Operational Assessment Independent Assessment Report (Nov. 2006).

[58] Department of Defense, Director of Operational Test & Evaluation, *Expeditionary Fighting Vehicle: Milestone C Operational Assessment DOT&E View* (undated).

[59] Briefing by David Heebner, President, General Dynamics Land Systems, to House Oversight Committee Staff (June 12, 2007); Briefing by Col. John Bryant, EFV Program Manager, to House Oversight Committee Staff (Apr. 10, 2008).

An even larger setback occurred in June 2007 when the Marine Corps made the decision to repeat the entire system development and demonstration process.[60] According to the Marine Corps, the Corps is currently negotiating with General Dynamics to award General Dynamics a second system development and demonstration contract in May 2008.[61] The estimated value of this second SDD contract is $700 to $800 million.[62] Combined with the costs of the March 2007 redesign contract, the costs of the redesign and new SDD contract will be at least $843.5 to $943.5 million.

In addition to the expense of repeating the system development and demonstration phase, the new SDD contract will significantly delay the project. Originally, the first SDD contract required that the development and demonstration process be completed by October 2003.[63] Under the new contract, this process will not be completed until November 2011, eight years behind schedule.[64]

The latest estimate of the overall cost of the EFV program was prepared in December 2007. The original SDD contract envisioned that the Marine Corps would be able to procure 1,025 EFVs at a total cost to the taxpayer of $8.5 billion.[65] The December 2007 estimate predicts that the cost will increase by over 50% to $13.2 billion and that at this price, the Corps will be able to afford only 593 EFVs.[66] The per-vehicle price of the EFV is now 168% higher than first estimated.[67]

V. CONCLUSION

The EFV program started in 1996 as a model acquisition program. But after the program entered its system development and demonstration phase, a multitude of management problems caused expensive cost overruns and long delays. Key factors undermining the acquisition program include a rushed critical design phase, a costly "test-fix-test" demonstration process, and failure to ensure appropriate coordination and oversight. These problems have caused the Marine Corps to make a decision to repeat the system development and demonstration process. The result is a project that is billions of dollars over budget and many years late.

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[60] Letter from Under Secretary of Defense Kenneth J. Kreig to President of the Senate Richard B. Cheney (June 5, 2007).

[61] Briefing by Col. John Bryant, EFV Program Manager, to House Oversight Committee Staff (Apr. 10, 2008).

[62] Telephone Communication from Jason Gerin, Congressional Liaison, U.S. Marine Corps, to House Oversight Committee Staff (Apr. 25, 2008).

[63] U.S. Government Accountability Office, Defense Acquisitions: The Expeditionary Fighting Vehicle Encountered Difficulties in Design Demonstration and Faces Future Risks (May 2006) (GAO-06-349).

[64] U.S. Government Accountability Office, *Defense Acquisitions: Assessments of Selected Weapon Programs* (Mar. 2008) (GAO-08-467SP).

[65] Department of Defense, Selected Acquisition Report (SAR) Summary Tables as of December 31, 2007 (Apr. 4, 2008).

[66] *Id.*

[67] U.S. Government Accountability Office, *Defense Acquisitions: Assessments of Selected Weapon Programs* (Mar. 2008) (GAO-08-467SP).

Mr. DAVIS OF VIRGINIA. Mr. Chairman, reserving the right to object, as I mentioned, we requested this hearing with you and you agreed to it. We are grateful for that. You and I and the subcommittee chairman and the ranking member signed joint invitation letters to witnesses, asking them to be prepared to testify about broad trends, incentives and challenges present in the defense system's current acquisition systems for major weapons programs.

The briefing memorandum to witnesses and to Members discussed only departmentwide problems and issues, not any specific weapons system. So we were disappointed to learn just late last evening about the decision to release a majority staff report critical of one specific program: the EFV, the Expeditionary Fighting Vehicle. And even if the EFV is illustrative of some systematic flaw in the DOD acquisition process, refocusing on that project at the last minute does a disservice to our Members and the witnesses. It needlessly injects a "gotcha" element into what should be a discussion of good government.

It was an unexpected and, frankly, an unnecessary departure from the the wholly cooperative and bipartisan approach leading up to this hearing. Had we had the opportunity to review the EFV analysis, we might have been in a position to agree it added a constructive case study around which to build today's discussion, but we weren't given that opportunity. So under the circumstances I would object to the unanimous consent request to include the staff report in the record of today's hearing.

Chairman WAXMAN. I thank the gentleman for his statement, and I regret his objection to the unanimous consent request. He has made some good points which we will take into consideration. And I won't, at this point, pursue the matter. But I think at some point in the committee hearing, we will make a motion to include this in the committee report, which would subject it to a vote, but I won't do it at this time.

Mr. DAVIS OF VIRGINIA. And I will remain open to discussion with the chairman on that.

Chairman WAXMAN. Thank you very much. When the EFV program was launched in 1996, the goal was to build a new state-of-the-art amphibious tank for use by the Marines, but the program has been so badly mismanaged that the Defense Department now says they have decided to start the program over again essentially from square one.

The story of the EFV acquisition is an embarrassment. Six years ago, Defense Department auditors called the project a paper dream and said management does not have a handle on reality. They pointed out elementary flaws in the Marine Corps acquisition strategy, such as the failure to set a realistic schedule, the reliance on an expensive test-fix-test approach, and a lack of anyone with overall responsibility for integrating the various components of the project.

But when a second set of auditors looked at the program 4 years later, they told us they saw no improvement. They found disarray, uncoordinated design decisions, reliability issues and a general lack of planning and status monitoring. A key milestone for the EFV occurred in 2006 when the vehicle was subject to a battery of tests

called an operational assessment. The EFV failed miserably. The prototype vehicles experienced over 600 breakdowns and could operate for only 4 hours before requiring extensive maintenance.

We have obtained a copy of the report on the operational assessment. The list of problems it describes is nearly endless. The vehicles weighed too much. In the water, they could reach cruising speeds only if the Marines on board left their equipment behind. On land, the gun turret bent and broke from the stress of cross-country movement. There was poor crew visibility during water operations, and the driver's vision was periodically washed out by water spray. The ammunition feed jammed and crews were unable to identify vehicle targets. The vehicles were so noisy that the Marines on board had to wear both ear plugs and ear muffs and could not respond to voice commands.

The contract with General Dynamics to develop the prototype EFVs cost the taxpayers $1.2 billion. But now this investment is going to be scrapped.

Last year the Marine Corps announced that the EFVs performed so poorly that the entire system development and demonstration process would have to be redone. This means additional cost to the taxpayer of nearly $1 billion or more, and at least 3 more years of delay.

While the project—and this is only one project we have singled out—has been a fiasco for the taxpayer, there has been at least one beneficiary, General Dynamics, the prime contractor. The contract for building and testing the prototype was a cost-plus contract, so the company got paid even though the vehicle flunked its tests.

Incredibly, General Dynamics even received over $60 million for its work on the development contract. What's more, the Marine Corps says that General Dynamics will now get the new contract for $700 million to $800 million to build another prototype, while the signal it sends is unmistakable: No matter how bad a job you do, there will be no accountability.

As we will learn today, the EFV experience appears to be the rule, not the exception. The GAO report that will be the focus of our hearing today looked at 72 weapons programs now underway at the Department. Not every program was as bad as the EFV project, but not a single one had followed the best practices recommended by both GAO and the Department of Defense.

We need to find a new and better way to procure weapons for our military. Everyone on this committee wants our military to have the equipment it needs to protect our Nation. But we simply cannot afford to continue to waste hundreds of billions of dollars on poorly planned and mismanaged weapons programs. And I hope our witnesses today will be able to help you understand what has gone wrong in these programs and what steps can be taken to protect the interests of the American taxpayer.

[The prepared statement of Hon. Henry A. Waxman follows:]

Opening Statement of Rep. Henry A. Waxman
Chairman, Committee on Oversight and Government Reform
Joint Hearing on Oversight of Defense Department Acquisitions
April 29, 2008

Today's hearing is the Committee's tenth hearing this Congress on waste, fraud, and abuse in the federal government. The subject of today's hearing is weapons acquisitions programs at the Department of Defense.

This hearing was suggested by Ranking Member Tom Davis. I commend him for his bipartisan leadership on this important issue.

We are holding this hearing for a simple reason: Weapons programs at the Defense Department are one of the biggest sources of wasteful spending in the federal budget.

The Department of Defense will spend hundreds of billions of dollars over the next five years buying weapon systems needed for our armed forces. No one questions the need to give our troops the best possible equipment.

But the American taxpayers are footing the bill for these weapons programs, and no one seems to be looking out for their interests. Billions of dollars have been squandered due to waste and mismanagement at the Defense Department.

According to a recent report from the Government Accountability Office, cost overruns in major weapons acquisitions programs now reach nearly $300 billion. At the same time, delivery schedules are slipping. GAO says that delays of two years or more are the norm for weapons systems.

The contractors and senior Defense officials say that some cost increases and delays are inevitable given the complexity of building new weapons systems. I accept that.

But that doesn't explain the persistent level of waste and mismanagement that GAO identifies. In 2001, a GAO report found "pervasive problems" in weapons systems acquisition, including poor planning, inadequate requirements, unrealistic cost estimates, and the use of high-risk acquisition strategies.

Today — seven years after that report was written — GAO says that nothing has changed.

There seems to be absolutely no accountability to the taxpayer. Despite report after report documenting mismanagement in weapons acquisition, nothing seems to improve: the contractors keep getting rich, senior Pentagon officials keep receiving lucrative job offers, and the taxpayer keeps getting stuck with the check.

In preparation for this hearing, my staff examined in detail one of the weapons acquisition programs identified in the GAO report: the Marine Corps' Expeditionary Fighting Vehicle (EFV). I ask that the staff report on the EFV be included in today's record.

When the EFV project was launched in 1996, the goal was to build a new state-of-the-art amphibious tank for use by the Marines. But the program has been so badly mismanaged that the Defense Department now says they have decided to start the project over again from essentially square one.

The story of the EFV acquisition is an embarrassment. Six years ago, Defense Department auditors called the project a "paper dream" and said "management does not have a handle on reality."

They pointed out elementary flaws in the Marine Corps acquisition strategy, such as the failure to set a realistic schedule, the reliance on an expensive "test-fix-test" approach, and the lack of anyone with overall responsibility for integrating the various components of the project.

But when a second set of auditors looked at the program four years later, they told us they saw "no improvement." They found "disarray, uncoordinated design decisions, reliability issues, and ... general lack of planning and status monitoring."

A key milestone for the EFV occurred in 2006 when the vehicle was subject to a battery of tests called an "Operational Assessment." The EFV failed miserably. The prototype vehicles experienced over 600 breakdowns and could operate for only four hours before requiring extensive maintenance.

We have obtained a copy of the report on the operational assessment. The list of problems it describes is nearly endless. The vehicles weighed too much. In the water, they could reach cruising speeds only if the Marines on board left their equipment behind. On land, the gun turret bent and broke from the stress of cross-country movement.

There was "poor crew visibility during water operations" and the driver's vision was "periodically washed out by water spray." The ammunition feed jammed and crews were "unable to identify vehicle targets." The vehicles were so noisy that the Marines on board had to wear both earplugs and ear muffs and could not respond to voice commands.

The contract with General Dynamics to develop the prototype EFVs cost the taxpayer $1.2 billion. But now this investment is going to be scrapped. Last year, the Marine Corps announced that the EFVs performed so poorly that the entire system development and demonstration process would have to be redone. This means additional costs to the taxpayer of nearly $1 billion or more and at least three more years of delay.

While the project has been a fiasco for the taxpayer, there has been at least one beneficiary: General Dynamics, the prime contractor. The contract for building and testing the prototype was a cost-plus contract, so the company got paid even though the vehicle flunked its tests. Incredibly, General Dynamics even received over $60 million in bonuses for its work on the development contract.

What's more, the Marine Corps says that General Dynamics will now get the new contract for $700 million to $800 million to build another prototype.

The signal that sends is unmistakable: no matter how bad a job you do, there will be no accountability.

As we will learn today, the EFV experience appears to be the rule, not the exception. The GAO report that will be the focus of our hearing today looked at 72 weapons programs now underway at the Department. Not every program was as bad as the EFV project. But not a single one had followed the "best practices" recommended by both GAO and the Department of Defense.

We need to find a new and better way to procure weapons for our military. Everyone on this Committee wants our military to have the equipment it needs to protect our nation. But we simply cannot afford to continue to waste hundreds of billions of dollars on poorly planned and mismanaged weapons programs.

I hope our witnesses today will be able to help us understand what has gone wrong in these programs and what steps can be taken to protect the interests of the American taxpayer.

Chairman WAXMAN. I want to recognize Mr. Davis for his opening statement.

Mr. DAVIS OF VIRGINIA. Thank you, Mr. Chairman. Chairman Waxman and subcommittee Chairman Tierney, I want to thank you for agreeing to our request to convene this hearing on chronic and costly problems plaguing major weapons system programs at the Department of Defense. This is critical oversight that transcends party, as the challenges we will discuss today have been faced in some form or another by virtually every administration since the earliest days of our Republic.

The recent report by the Government Accountability Office on 72 large-scale acquisitions once again found most programs' outcomes "sub-optimal." Apparently, that's understated auditor shorthand for "incredibly bad." In the aggregate, the systems analyzed exceeded original budget targets by $295 billion and were 21 months behind schedule.

This committee has spent substantial time and effort probing allegations of malfeasance and wrongdoing by contractors in Iraq and elsewhere. This GAO report reminds us there are far larger problems on the other side of the ledger, far from the war zone, where program managers continually fail to follow established best practices to measure the technical maturity and feasibility of these complex projects.

To put these cost overruns in perspective: The $295 billion in cumulative cost growth found by the Government Accountability Office is more than 2,000 times the alleged overage in the State Department's Baghdad Embassy project which the committee continues to probe extensively. We welcome sustained attention to deeply ingrained abuses and inefficiencies in weapons system programs already budgeted to costs many hundreds of billions of dollars.

As I have said, the problems cited by GAO—systemic failures to refine requirements, acquire mature technologies, and capture production efficiencies—are not new. In 1794, Congress authorized construction of six frigates. In order to "spread the work among the several States as equitably as possible and with the greatest political advantage," six private shipyards were leased to carry out the shipbuilding. The project was soon behind schedule. The six keels were not laid until the end of 1795, 17 months after construction had been authorized. Subsequent mismanagement, delays and cost overruns resulted in scaling back the ultimate requirements to three frigates. Does any of this sound familiar?

From those frigates to the F–22, that has been the sad history of weapons systems development throughout our history. In the modern era, major system acquisition has been on GAO's "high risk" list for many years because DOD processes "have often proved costly and inefficient, if not wasteful." In 1997, GAO found "many new weapons systems cost more and do less than anticipated, and schedules are often delayed."

To address these issues, the Pentagon has convened any number of task forces, working groups, committees and commissions, whose reports have resulted in sequential case waves of promised reforms and layers of ambitious initiatives. But, as cautious GAO auditors often conclude, "Challenges remain." Perhaps that's because DOD reforms, as well as congressional attempts to tame this inefficient

process, have focused too often on symptoms, while overlooking the root causes of chronic dysfunction in major system development projects.

This GAO report blames a lack of skilled managers, overuse of contractor employees, and the tendency to "gold-plate" new designs with immature technologies for cost, performance and schedule problems. But we've known about these issues in varying degrees for decades.

Today, we should look beyond the persistent symptoms to the broader, deeply ingrained personnel and management practices that can empower, or cripple, complex procurements like these. Freed from the cold war imperative to beat the Soviets by rushing into high-risk production of new weapons platforms, we now have the opportunity to retool the major systems acquisition process. Technical knowledge and sound management decisions should drive programs to key benchmarks, not internal DOD budget duels or military service rivalries.

In this discussion, it has to be acknowledged these are highly complex, large-scale, inherently risky programs. Commercial and industrial best practices provide many valuable lessons, but offer only limited wisdom about packaging and projecting lethal technology across continents. Very often this is rocket science, not an automobile assembly line, and some measure of budgetary risk, even the occasional failure, may be an unavoidable cost of doing this aspect of the Nation's vital defense business.

This is a government problem. But the major defense contractors can exploit the system's weakness as well. If the Pentagon asks for a gold-plated flying Cadillac, that is what contractors will bid on, even if both sides of the deal know they are going to get much less that will end up costing much more. Even companies that should know better play the game.

The Boeing Corp. is the prime contractor on 16 of the 72 major systems in which GAO found requirements creep, schedule delays, or significant cost overruns.

Oversight like this, when consistent and constructive, can help mitigate those inherent risks while modernizing and improving major acquisitions at the Department of Defense and throughout government. We appreciate the extensive body of work GAO has undertaken on this subject and we hope this will be the beginning of an extended, in-depth focus by the committee on these issues. Thank you.

Chairman WAXMAN. Thank you very much, Mr. Davis.

[The prepared statement of Hon. Tom Davis follows:]

HENRY A. WAXMAN, CALIFORNIA
CHAIRMAN

TOM DAVIS, VIRGINIA
RANKING MINORITY MEMBER

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Statement of Rep. Tom Davis
Ranking Republican Member
Committee on Oversight and Government Reform
April 29, 2008

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Oversight like this, when consistent and constructive, can help mitigate those inherent risks while modernizing and improving major acquisitions at the Department of Defense and throughout government. We appreciate the extensive body of work GAO has undertaken on this subject and we hope this will be the beginning of an extended, in-depth focus by the Committee on these issues.

Chairman WAXMAN. This is a joint hearing with the subcommittee of our committee on National Security and Foreign Affairs, and I want to recognize the chairman of that subcommittee, Mr. Tierney, for his opening statement.

Mr. TIERNEY. Thank you, Chairman Waxman and Ranking Member Davis, both for scheduling the hearing and agreeing to hold it with the subcommittee. The Government Accountability Office's report—and, Mr. Sullivan I thank you and your colleagues for it—as the centerpiece of this hearing is pretty striking and should be reason for concern by Congress and the American people for at least two reasons: First, the scope of the money that we are talking about is immense. We currently spend as much as on military as every other country in the world combined. Last year we allocated 53 percent of all of our discretionary funding to Defense, $549 billion. And that doesn't even include the $115 billion as supplemental funding for the wars in Iraq and Afghanistan.

As the Government Accountability Office points out, we have $1.6 trillion in total planned commitments for weapons, and in 2007 the Pentagon exceeded original budget estimates by $295 billion.

Second, the Pentagon stewardship of our taxpayer money seems to be getting worse. In 2000 the Pentagon exceeded cost by $42 billion. Now it is exceeded by $295 billion. In 2000 original weapons cost grew by 6 percent. This year it was 26 percent in growth. In 2000 our average delays in delivering initial weapons capabilities were 16 months. Now it is almost 2 years. So today's hearing certainly asks the question whether we are being responsible to our taxpayers.

In other words when it comes to developing and buying weapons, are we spending America's tax dollars wisely? On that front, the report raises many, many important questions. Why are things getting worse when it comes to cost overruns and delays, especially when the underlying problems have been known about for years and years? In other words, why can't we do better? Why has the Pentagon failed to meet industry-accepted best practices in any of the 72 programs surveyed by GAO?

Why do we continually reward contractors, who now make up nearly half of the work force on these weapons programs. When they apparently are not delivering on budget and on time?

Is it unreasonable to ask that any proposed weapons systems have clear expectations, realistic technology, and appropriate testing? Why do we continue to buy before we fly? Tomorrow this subcommittee is going to hold its third hearing on the missile defense program, which I think exemplifies some of these issues very well. That is a decades-old program that has already cost taxpayers $120 to $150 billion. And according to the Congressional Budget Office, it may cost an additional $277 billion over the next 20 years. It has been plagued by delays and cost overruns and a lack of realistic testing. Yet we continue to throw good money after bad.

Our core defense budget, that is the defense excluding the hundreds of millions of dollars being funding for Iraq and Afghanistan has grown by an average of 8 percent per year over the last 8 years. As part of the problem here in terms of cost overruns, the fact that we currently lack any discipline or any budgetary pres-

sures on the Defense budget with these nearly double-digit yearly percentage budget increases; is there any fiscal discipline being exerted to hold down costs and to make difficult tradeoffs between what we really need and we can afford versus a system that gives everybody what they want?

Where is the evidence that the Pentagon or this administration has any broad strategy for identifying all of the threats or risks to our security; that is, threats or risks ranging from concerns of penetration of our seaports all the way through acts of terror in foreign territories that result in any prioritization of defenses to be engaged?

If it is clear that we have that kind of strategy, then let's have the joint chiefs of staff in, Mr. Chairman and Mr. Davis, and have them explain to the American people and show us how in fact there is any prioritization of weapons system production with those threats and the realistic likelihood of deployment against the United States.

Further, let's see what the cost/benefit analysis is when you compare those weapons systems with the value of other defensive systems that could have been or are being employed, or the need to strengthen the core of this country; the physical infrastructure and human capital, for instance.

One gets a sense from reading this Government Accountability Office report, and those that have preceded it, that the Pentagon is functioning as if the resources were unlimited and there are no competing demands existing. Moreover, as Defense Secretary Gates himself has repeatedly pointed out, national security in the 21st century must emphasize smart power as much as hard. He stated, "My message is that if we are to meet the very challenges around the world in the coming decades, this country must strengthen other reports of national power, both institutionally and financially, and create the capability to integrate and apply all of the elements of national power to problems and challenges abroad."

At a time of economic hardship and these myriads of foreign challenges facing us, couldn't we find a better way to spend $295 billion other than for weapons cost overruns? Thank you, Mr. Chairman.

Chairman WAXMAN. Thank you Mr. Tierney.

[The prepared statement of Hon. John F. Tierney follows:]

Opening Statement of Chairman John F. Tierney

Subcommittee on National Security and Foreign Affairs

Joint Oversight and Government Reform Committee and National Security and Foreign Affairs Subcommittee Hearing on

"Oversight of Defense Department Acquisition"

As Prepared for Delivery

April 29, 2008

Chairman Waxman and Ranking Member Davis, thank you both for scheduling this hearing and for agreeing to hold it with the National Security and Foreign Affairs Subcommittee.

The Government Accountability Office's report that is the centerpiece of our hearing today is striking – and should be a reason for concern by the Congress and the American people – for two central reasons.

First, the scope of money we're talking about here is immense. We currently spend as much on our military as every other country in the world combined. Last year, we allocated 53 percent of all our discretionary spending to defense – $549 billion – and that does not even include the $115 billion in supplemental funding for the wars in Iraq and Afghanistan. As the GAO points out, we have $1.6 trillion in total planned commitments for weapons, and in 2007 the Pentagon exceeded original budget estimates by $295 billion.

Second, the Pentagon's stewardship of our taxpayer money is getting worse:

- In 2000, the Pentagon exceeded costs by $42 billion; now, it's $295 billion.
- In 2000, original weapons costs grew by 6 percent; now, it's 26 percent.
- In 2000, our average delays in delivering initial weapons' capabilities were 16 months; now, it's nearly two years.

Today's hearing centrally asks the question whether we're being responsible to our taxpayers. In other words, when it comes to developing and buying weapons, are we spending Americans' tax dollars wisely?

On that front, the GAO report raises any number of important questions:

Why are things getting worse when it comes to cost overruns and delays, especially when underlying problems have been know about for years and years? In other words, why can't we do better?

Why has the Pentagon failed to meet industry accepted best practices in *any* of the 72 programs surveyed by GAO?

Why do we continually reward contractors, who now make up nearly half the workforce on these weapons programs, when they apparently aren't delivering under budget and on time?

Is it unreasonable to ask that any proposed weapon system have clear expectations, realistic technology, and appropriate testing?

Why do we continue to "buy before we fly?"

Tomorrow, the Subcommittee will hold its third hearing on the missile defense program, which I feel exemplifies many of these issues. This decades-old program has already cost taxpayers $120-$150 billion dollars, and according to the Congressional Budget Office, may cost another $277 billion over the next 20 years. It has been plagued by delays and cost overruns, and with a lack of realistic testing. Yet, we continue to throw good money after bad.

Our core defense budget – that is, the budget excluding the hundreds of millions of dollars of supplemental funding for Iraq and Afghanistan – has grown by an average of 8 percent per year over the last eight years.

Is part of the problem here in terms of cost overruns the fact that we currently lack any discipline or budgetary pressures in our defense budget?

With these nearly double-digit yearly percentage budget increases, is there any fiscal discipline being exerted to hold down costs and to make difficult trade-offs between what we really need and can afford versus a system that gives everybody what they want?

Where is the evidence that the Pentagon or this administration have any broad strategy for identifying all threats or risks to our security (from concerns about penetration of our seaports to acts of terror on foreign territory) resulting in any prioritization of defenses to be engaged? If it is claimed that one exists, then let's have the Joint Chiefs of Staff in to explain it to the American people and show how, in fact, there was any prioritization of weapons system production with those threats, and their realistic likelihood of employment against the United States. Further, let's see their cost-benefit analysis comparing them with the value of other defensive systems that could or are being employed and the need to strengthen the core of this country – its physical infrastructure and human capital, for instance. One gets the sense that the Pentagon is functioning as if resources are unlimited and no competing demands exist.

Moreover, as Defense Secretary Gates himself has repeatedly pointed out – national security in the 21st century must emphasize soft power as much as hard. He has stated, and I quote:

My message is that if we are to meet the myriad challenges around the world in the coming decades, this country must strengthen other important elements of national power both institutionally and financially, and create the capability to integrate and apply all the elements of national power to problems and challenges abroad."

At a time of economic hardship and these myriad of foreign challenges facing us, couldn't we find a better way to spend $295 billion, other than for weapons cost overruns?

Thank you again, Mr. Chairman.

Chairman WAXMAN. The Chair would like to recognize Mr. Duncan for a statement.

Mr. DUNCAN. Well, thank you, Mr. Chairman. And I thank you and Ranking Member Davis and subcommittee Chairman Tierney for calling this very important hearing. When I read the front-page story in the Washington Post on April 1st concerning this situation, I was disgusted. But I am sad to say that I doubt that anybody was very surprised by it, although everyone should have been shocked by this story.

I want to put in the record a couple of paragraphs from that story that said "Government auditors issued a scathing review yesterday of dozens of the Pentagon's biggest weapons systems, saying ships, aircraft and satellites are billions of dollars over budget and years behind schedule. The Government Accountability Office found that 95 major systems have exceeded their original budgets by a total of $295 billion, bringing their total cost to $1.6 trillion and are delivered almost 2 years late on average."

Apparently there are no fiscal conservatives at the Pentagon. Apparently they believe that the Congress will just keep giving them more money no matter how wasteful or inefficient they become. Of course, the International Herald Tribune said a few years ago—had a major article about the revolving door at the Pentagon, and the fact that all the defense contractors had hired, I think it was, 300 retired admirals and generals over the previous 10 years so that most of these contracts seemed to be sweetheart deals in the first place.

But it is really shocking; $1.6 trillion in total costs and $295 billion in cost overruns, and this was just on the major systems. No telling how much has been wasted on the hundreds of smaller contracts the Pentagon has; $295 billion would run the entire Government of the State of Tennessee, our schools, our health care, roads, prisons, parks, and on and on for the next 11 years.

Conservatives, above all, should realize that any gigantic government bureaucracy is always going to ask for more money and always find reasons to justify it. And Congress is afraid to cut the Defense Department for fear of being seen as unpatriotic. Yet it is a very false and very blind patriotism that allows the Pentagon to continually waste megabillions and allows the Defense Department to spend like there's no tomorrow.

In a few short years we will not be able to pay all of our veterans pensions and Social Security and all the other things we promised our people if we do not bring spending under some type of control. Conservatives, above all, should realize, as Jonah Goldberg wrote in a recent issue of National Review, that the insight that government abroad fuels the expansion of the State was central to the formation of the modern conservative and libertarian movements.

In other words, perpetual war leads to bigger government and goes very much against traditional conservativism.

Finally, Mr. Chairman, I would just like to read something that was in a column in the Washington Post yesterday by Dov Zakheim and Ronald Kadish. They wrote this. They said, "The GAO report lays bare a festering problem in our Nation's military procurement system: Competition barely exists in the defense industry and is growing weaker by the day.

"It was a different story just two decades ago. In the 1980's, 20 or more prime contractors competed for most defense contracts. Today, the Pentagon relies primarily on six major contractors to build our Nation's aircraft, missiles, ships and other weapons systems.

"It is a system that largely forgoes competition on price, delivery and performance, and replaces it with a kind of 'design bureau' competition, similar to what the Soviet Union used—hardly a recipe for success."

I think this is a very sad situation that we have at the Pentagon. And I suppose it will continue. But I certainly am pleased that at least we are trying to do a little something about it.

And I will ask, again, are there no fiscal conservatives at the Pentagon? Thank you, Mr. Chairman.

Chairman WAXMAN. Thank you very much, Mr. Duncan.

Ms. Watson, did you have any comments?

Ms. WATSON. Thank you, Mr. Chairman. And I, too, want to join my colleagues in reflecting on the findings of the recent GAO report which I find very disturbing as well.

The report, as we know, found that the Defense Department's 95 major weapons acquisition programs currently exceed their original budgets by nearly $300 billion and are, on average, 21 months late in delivering these weapons systems to warfighters.

The GAO report concludes that the current underperformance must be rectified, particularly in light of competing needs from other military and major nondiscretionary programs. In a time of declining discretionary spending, the fact that the DOD is not receiving expected returns on large investments in weapons systems has implications far beyond the DOD, where other government agencies and departments are competing for increasingly scarcer resources.

$300 billion in excess spending on weapons systems is a sizable amount of money that could be put to use for many other competing and worthy projects governmentwide. This is particularly true in an age of declining discretionary spending where every dollar not spent optimally translates into less money available for other budget priorities, both for domestic, entitlement, and other national security programs.

Mr. Chairman, the GAO Report on Defense Acquisitions notes that DOD has begun to develop several initiatives to improve outcomes. But GAO notes that there also must be a change in the DOD culture that led the military services to overpromise capabilities and underestimate costs in order to sell new programs.

If the DOD's current culture remains in place, it will circumvent and I believe, ultimately, undermine any new systems that are put in place to improve outcomes. I am looking very forward to hearing from our witnesses to see if they can make some sense of this procedure.

Thank you, Mr. Chairman.

Chairman WAXMAN. I turn to Mr. Burton if he has an opening statement.

Mr. BURTON. Mr. Chairman, I think the defense of the Nation is one of the most important things that we are charged with in our responsibilities as Congressmen. And we want to make sure that

we have the weapons and the ability and the equipment necessary to preserve and protect and defend this country.

I am a fiscal conservative, of course, and I want to make sure there is no waste, fraud and abuse in the Department of Defense, or at least we keep it to a minimum. So I am anxious to hear our witnesses today and to question them about this to see if there are ways we can economize and cut out waste, fraud and abuse.

But at the same time, I think one of the things we ought to keep paramount in our mind is that the defense of the Nation is our No. 1 consideration. And also we ought to make sure that we don't waste any money in the process. Thank you Mr. Chairman.

Chairman WAXMAN. Thank you, Mr. Burton.

Mr. Davis.

Mr. DAVIS OF VIRGINIA. Mr. Chairman, you had made a unanimous consent request, and I had raised an objection. I am prepared to withdraw my objection and make a unanimous consent that the majority report on the Expeditionary Fighting Vehicle and the GAO report on the Capitol Visitors Center, just to show that Congress isn't always great when we do our own procurements, that both of these be allowed to be entered into the Record to show the systematic problems we have throughout government.

Chairman WAXMAN. I think that is a reasonable request and I will certainly go along with it. Any objection? If not, then the unanimous consent agreement is ordered.

Well, we are pleased to welcome Michael J. Sullivan, Director of Acquisition and Sourcing Management Division at the Government Accountability Office, James Finley is the Deputy Undersecretary of Defense for Acquisition and Technology at the Department of Defense. And David Patterson, the Principal Deputy Undersecretary of Defense for Comptroller at the Department of Defense.

We want to welcome all three of you to our hearing today. It is the practice of this committee that all witnesses testify under oath. So I would like to ask if you would please stand and raise your right hands.

[Witnesses sworn.]

Chairman WAXMAN. The record will indicate that each of the witnesses answered in the affirmative.

We have your prepared statements, and they will be made part of the record in its entirety. We would like to ask, if you would, to try to keep the oral presentation to around 5 minutes. We have a clock that will indicate green while the 5 minutes is going. The last minute will be yellow, and then red when the 5 minutes has concluded.

Mr. Sullivan, there is a button on the base of the mic. Be sure it is pressed in. And we want to hear from you first.

STATEMENTS OF MICHAEL J. SULLIVAN, DIRECTOR, ACQUISITION AND SOURCING MANAGEMENT, GOVERNMENT ACCOUNTABILITY OFFICE; JAMES FINLEY, DEPUTY UNDERSECRETARY OF DEFENSE FOR ACQUISITION AND TECHNOLOGY; AND DAVID PATTERSON, PRINCIPAL DEPUTY UNDERSECRETARY OF DEFENSE FOR COMPTROLLER

STATEMENT OF MICHAEL J. SULLIVAN

Mr. SULLIVAN. Chairman Waxman and Chairman Tierney, Ranking Member Davis, and other members of the committee, it is my pleasure to be here today to discuss our sixth annual assessment of the Department's major weapons systems acquisition programs. My statement today will focus on outcomes for the major acquisition programs, what we believe are the reasons for them, and potential solutions, some of which we believe the Department recognizes and is now trying to implement.

With regard to outcomes since we began these assessments in 2000, the number of major weapons system acquisitions has grown by 20. The total investment has doubled. Cost overruns have increased from 27 percent, on average, to 40 percent. Overall acquisition cost overruns have increased from 6 percent to 26 percent. And delays in delivering initial capability have increased from 16 months to 21 months.

Our analysis of 72 separate programs reveal the lack of knowledge-based decisions at three critical junctures as some of the causes for this. For example, 88 percent of these programs started before required technologies to meet weapons systems capabilities were ready. Because technology development cannot be scheduled, neither can the cost of these programs be credibly estimated. A lack of technology design and manufacturing knowledge at critical junctures in each program accounts for the additional cost and time from original estimates to field the weapons system.

There are systemic problems that we believe contribute mightily toward these poor outcomes. At the strategic level, there are simply too many programs chasing available dollars. Two key processes in the Pentagon that precede the acquisition process, the requirement setting process and the funding process, should be responsible for ensuring a balanced investment strategy that matches the warfighters' needs with available funds. However, they do not work together very well to ensure that this happens.

The requirements process, which validates the need for a new program, tends to be stovepiped, meaning each of the services may offer different solutions to fill the same capability gap. This means that candidate programs, in order to compete, usually must promise very high, sometimes unachievable performance requirements, given available resources. They must also promise very low cost in order to fit into the Department's funding plan.

Because the funding process starts with overly optimistic cost estimates, problems with cost and schedule are a fait accompli for most programs. Each program begins with an unmanageable business case: cost and schedule estimates heavy on optimistic assumptions and light on data. Their definition of success is usually to become a program of record with a funding stream attached to it. As

a result, programs begin with cost and schedules that are, frankly, impossible to forecast.

To be sure, problems resulting from a poor match between program requirements and the resources available will quickly cascade into design changes, manufacturing inefficiencies, quality problems, parts shortages, and delays to testing that must eventually demonstrate the weapons systems capabilities.

Solutions are available. A well-balanced, well-prioritized mix of candidate acquisition programs would alleviate the pressure that each program now faces in winning the competition for funding. This means the Department must make early hard decisions and must truly move toward a joint process for validating requirements.

A business case that applies solid systems engineering practices to properly match a program's capability requirements with available resources before a program is approved would allow more predictable cost and schedule estimates at the outset of the program.

Finally, rules once a program begins, that require program managers who now, by the way, would be empowered with a business case that was much more reasonable, to show evidence that technology design and manufacturing knowledge have been achieved at the right places before moving past critical investment points in a program. This would bring accountability to each program as it is executed.

The Department understands all of this and, to its credit, it has been trying very hard in the past, I would say 12 to 18 months, very hard to move things in that right direction. However, the issue is large and complex. We have recommended several ways that we believe this process can be improved, such as limiting acquisition timeframes and embracing evolutionary knowledge-based product development processes that would allow earlier fielding of new weapons systems and then incrementally improving them as new technologies become mature.

However, as was stated by this committee earlier, the cultural barriers remain high. The transitory nature of the positions at the top in the Pentagon that can guide change makes this difficult.

Often, policy does not translate into practice because of this. Significant and lasting change can only take place with greater and continued support and advocacy from the Department's leadership as well as sustained oversight from this Congress. I conclude with that, and I look forward to any questions you may have.

Chairman WAXMAN. Thank you Mr. Chairman, Mr. Sullivan.

[NOTE.—The GAO report entitled, "Defense Acquisitions, Assessments of Selected Weapon Programs, GAO–08–467SP, March 2008," may be found in committee files.]

[The prepared statement of Mr. Sullivan follows:]

United States Government Accountability Office

GAO

Testimony

Before the Committee on Oversight and Government Reform and the Subcommittee on National Security and Foreign Affairs, House of Representatives

For Release on Delivery
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DEFENSE ACQUISITIONS

Results of Annual Assessment of DOD Weapon Programs

Statement of Michael J. Sullivan, Director
Acquisition and Sourcing Management

GAO-08-674T

April 29, 2008

GAO
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Highlights

Highlights of GAO-08-674T, a testimony before the Committee on Oversight and Government Reform and the Subcommittee on National Security and Foreign Affairs, House of Representatives

DEFENSE ACQUISITIONS

Results of Annual Assessment of DOD Weapon Programs

Why GAO Did This Study

DOD's investment in weapon systems represents one of the largest discretionary items in the budget. The department expects to invest about $900 billion (fiscal year 2008 dollars) over the next 5 years on development and procurement with more than $335 billion invested specifically in major defense acquisition programs. Every dollar spent inefficiently in acquiring weapon systems is less money available for other budget priorities—such as the global war on terror and growing entitlement programs.

This testimony focuses on (1) the overall performance of DOD's weapon system investment portfolio; (2) our assessment of 72 weapon programs against best practices standards for successful product developments; and (3) potential solutions and recent DOD actions to improve weapon program outcomes. It is based on GAO-08-467SP, which included our analysis of broad trends in the performance of the programs in DOD's weapon acquisition portfolio and our assessment of 72 defense programs, and recommendations made in past GAO reports.

DOD was provided a draft of GAO-08-467SP and had no comments on the overall report, but did provide technical comments on individual assessments. The comments, along with the agency comments received on the individual assessments, were included as appropriate.

To view the full product, including the scope and methodology, click on GAO-08-674T. For more information, contact Michael J. Sullivan at (202) 512-4841 or sullivanm@gao.gov.

What GAO Found

We recently released our sixth annual assessment of selected DOD weapon programs. The assessment indicates that cost and schedule outcomes for major weapon programs are not improving. Although well-conceived acquisition policy changes occurred in 2003 that reflect many best practices we have reported on in the past, these policy changes have not yet translated into practice at the program level.

Analysis of DOD Major Defense Acquisition Program Portfolios (fiscal year [FY] 2008 dollars)

	FY 2000 Portfolio	FY 2005 Portfolio	FY 2007 Portfolio
Portfolio size			
Number of programs	75	91	95
Total planned commitments	$790 Billion	$1.5 Trillion	$1.6 Trillion
Commitments outstanding	$380 Billion	$887 Billion	$858 Billion
Portfolio performance			
Change in total acquisition cost from first estimate	6 percent	18 percent	26 percent
Estimated total acquisition cost growth	$42 Billion	$202 Billion	$295 Billion
Share of programs with 25 percent or more increase in program acquisition unit cost	37 percent	44 percent	44 percent
Average schedule delay in delivering initial capabilities	16 months	17 months	21 months

Source: GAO analysis of DOD data.

None of the weapon programs we assessed this year had proceeded through system development meeting the best practices standards for mature technologies, stable design, and mature production processes—all prerequisites for achieving planned cost, schedule, and performance outcomes. In addition, only a small percentage of programs used two key systems engineering tools—preliminary design reviews and prototypes to demonstrate the maturity of the product's design by critical junctures. This lack of disciplined systems engineering affects DOD's ability to develop sound, executable business cases for programs.

Our work shows that acquisition problems will likely persist until DOD provides a better foundation for buying the right things, the right way. This involves making tough decisions as to which programs should be pursued, and more importantly, not pursued; making sure programs are executable; locking in requirements before programs are ever started; and making it clear who is responsible for what and holding people accountable when responsibilities are not fulfilled. Moreover, the environment and incentives that lead DOD and the military services to overpromise on capability and underestimate costs in order to sell new programs and capture funding will need to change. Based in part on GAO recommendations and congressional direction, DOD has begun several initiatives that, if adopted and implemented properly, could provide a foundation for establishing sound, knowledge-based business cases for individual acquisition programs and improving outcomes.

Mr. Chairmen and Members of the Committee and Subcommittee:

I am pleased to be here today to discuss the Department of Defense's (DOD) management of its weapon system acquisitions—an area that has been part of GAO's high risk list since 1990. We have recently released our sixth annual assessment of selected DOD weapon programs. The assessment indicates that cost and schedule outcomes for the DOD's major weapon system programs are not improving.

Continuing poor acquisition outcomes have implications for DOD and the government as a whole. DOD's investment in weapon systems represents one of the largest discretionary items in the budget. While overall discretionary funding is declining, DOD's budget continues to demand a larger portion of what is available, thereby leaving a smaller percentage for other activities. Investment in weapon acquisition programs is now at its highest level in two decades. The department expects to invest about $900 billion (fiscal year 2008 dollars) over the next 5 years on development and procurement with more than $335 billion invested specifically in major defense acquisition programs. Every dollar spent inefficiently in acquiring weapon systems is less money available for other budget priorities—such as the global war on terror and growing entitlement programs.

My statement today focuses on (1) the overall performance of DOD's weapon system investment portfolio; (2) our assessment of 72 weapon programs against best practices standards for successful product developments; and (3) potential solutions and recent DOD actions to improve weapon program outcomes. It is drawn mostly from our annual assessment of selected DOD weapon programs, as well as recommendations made in past GAO reports. Our assessment provided information on 72 individual weapon programs and analyzed overall trends in DOD acquisition outcomes. The programs assessed—most of which are considered major acquisitions by DOD—were selected using several factors: high dollar value, acquisition stage, and congressional interest.[1] We conducted this performance audit from June 2007 to March 2008 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient,

[1] Major defense acquisition programs (MDAP) are those identified by DOD that require eventual total research, development, test, and evaluation (RDT&E) expenditures of more than $365 million or $2.19 billion for procurement in fiscal year 2000 constant dollars.

appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Summary

Since fiscal year 2000, DOD significantly increased the number of major defense acquisition programs and its overall investment in them. During this same time period, acquisition outcomes have not improved. Based on our analysis, total acquisition costs for the fiscal year 2007 portfolio of major defense acquisition programs increased 26 percent and development costs increased by 40 percent from first estimates—both of which are higher than the corresponding increases in DOD's fiscal year 2000 portfolio. In most cases, programs also failed to deliver capabilities when promised—often forcing warfighters to spend additional funds on maintaining legacy systems. Our analysis shows that current programs are experiencing, on average, a 21-month delay in delivering initial capabilities to the warfighter, a 5-month increase over fiscal year 2000 programs.

At the program level, none of the weapon programs we assessed had proceeded through system development meeting the best practices standards for mature technologies, stable design, and mature production processes—all prerequisites for achieving planned cost, schedule, and performance outcomes.[2] In addition, only a small percentage of programs used two key systems engineering tools—preliminary design reviews and prototypes to demonstrate the maturity of the product's design by critical junctures. This lack of disciplined systems engineering, especially prior to starting system development, affects DOD's ability to develop sound business cases for programs and can contribute to contract cost increases and long development cycle times. In addition, we found four factors that have the potential to impact acquisition outcomes on individual programs: (1) unsettled requirements in acquisition programs can create significant turbulence including increased cost growth; (2) frequent program manager turnover during system development challenges continuity and accountability; (3) extensive reliance on contractors to perform roles that have in the past been performed by government employees raises questions about whether DOD has the appropriate mix of staff and

[2] Not all 72 programs in this year's assessment provided information for every knowledge point or had proceeded through system development. Details of our scope and methodology can be found in GAO-08-467SP.

capabilities within its workforce to effectively manage programs; and (4) difficulty managing software, as evidenced by changes to the amount of software that needs to be developed, indicates the potential for cost and schedule problems.

There is some reason for optimism. Based in part on GAO recommendations and congressional direction, DOD has begun to develop several initiatives that, if adopted and implemented properly, could provide a foundation for establishing sound, knowledge-based business cases for individual acquisition programs and improving program outcomes. For example, a new concept decision review initiative, acquisition approaches based on capability need dates, a move to require more prototyping early in programs, and the establishment of review boards to monitor weapon system configuration changes are all designed to enable key department leaders to make informed decisions well ahead of a program's start. If implemented properly, these initiatives can help establish a more balanced mix of programs in which to invest, establish manageable business cases for individual programs, and empower and hold accountable program managers to deliver weapons less expensively and on-time. However, improving acquisition outcomes will also require a change in the environment and incentives that lead DOD and the military services to overpromise capabilities and underestimate costs in order to sell new programs and capture the funding needed to start and sustain them.

DOD's Major Acquisition Programs Continue to Experience Significant Cost Growth and Schedule Delays

DOD is not receiving expected returns on its large investment in weapon systems. While it is committing substantially more investment dollars to develop and procure new weapon systems, our analysis shows that the 2007 portfolio of major defense acquisition programs is experiencing greater cost growth and schedule delays than programs in fiscal years 2000 and 2005.[3] For example, as shown in table 1, total acquisition costs for 2007 programs have increased 26 percent from first estimates, whereas programs in fiscal year 2000 had increased by 6 percent. Total RDT&E costs for programs in 2007 have increased by 40 percent from first estimates, compared to 27 percent for programs in 2000. The story is no better when expressed in unit costs. Based on our analysis for the 2007

[3] Our analysis in this area reflects comparisons of performance for programs meeting DOD's criteria for being a major defense acquisition program in fiscal year 2007 and programs meeting the same criteria in fiscal years 2005 and 2000. The analysis does not include all the same systems in all 3 years.

portfolio, 44 percent of DOD's major defense acquisition programs are paying at least 25 percent more per unit than originally expected. The percentage of programs experiencing a 25 percent or more increase in program acquisition unit costs in fiscal year 2000 was 37 percent.

Table 1: Analysis of DOD Major Defense Acquisition Program Portfolios

Fiscal year 2008 dollars			
	Fiscal year		
	2000 portfolio	2005 portfolio	2007 portfolio
Portfolio size			
Number of programs	75	91	95
Total planned commitments	$790 Billion	$1.5 Trillion	$1.6 Trillion
Commitments outstanding	$380 Billion	$887 Billion	$858 Billion
Portfolio performance			
Change to total RDT&E costs from first estimate	27 percent	33 percent	40 percent
Change in total acquisition cost from first estimate	6 percent	18 percent	26 percen
Estimated total acquisition cost growth	$42 Billion	$202 Billion	$295 Billion
Share of programs with 25 percent or more increase in program acquisition unit cost	37 percent	44 percent	44 percent
Average schedule delay in delivering initial capabilities	16 months	17 months	21 months

Source: GAO analysis of DOD data.

Note: Data were obtained from DOD's Selected Acquisition Reports (dated December 1999, 2004, and 2006) or, in a few cases, data were obtained directly from program offices. Number of programs reflects the programs with Selected Acquisition Reports. In our analysis we have broken a few Selected Acquisition Report programs (such as Missile Defense Agency systems) into smaller elements or programs. Not all programs had comparative cost and schedule data, and these programs were excluded from the analysis where appropriate. Also, data do not include full costs of developing Missile Defense Agency systems.

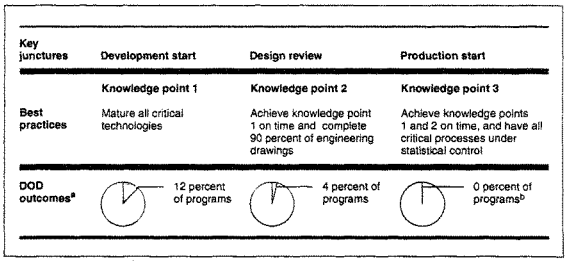
The consequence of cost growth is reduced buying power, which can represent significant opportunity costs for DOD. In other words, every dollar spent on inefficiencies in acquiring one weapon system is less money available for other priorities and programs. Total acquisition cost for the current portfolio of major programs under development or in production has grown by nearly $300 billion over initial estimates. As program costs increase, DOD must request more funding to cover the overruns, make trade-offs with existing programs, delay the start of new programs, or take funds from other accounts.

Just as importantly, DOD has already missed fielding dates for many programs and many others are behind schedule. Because of program delays, warfighters often have to operate costly legacy systems longer than expected, find alternatives to fill capability gaps, or go without the capability. The warfighter's urgent need for the new weapon system is often cited when the case is first made for developing and producing the system. However, on average, the current portfolio of programs has experienced a 21-month delay in delivering initial operational capability to the warfighter and, in fact, 14 percent are more than 4 years late.

DOD Weapon System Programs Continue to Move Forward Without Proper Knowledge about Requirements, Technology, Design, and Manufacturing Processes

In assessing the 72 weapon programs, we found no evidence of widespread adoption of a knowledge-based acquisition process within DOD despite polices to the contrary. Reconciling this discrepancy between policy and practice is essential for getting better outcomes for DOD programs. The majority of programs in our assessment this year proceeded with lower levels of knowledge at critical junctures and attained key elements of product knowledge later in development than expected under best practices (see fig. 1). This exposes programs to significant and unnecessary technology, design, and production risks, and ultimately leads to cost growth and schedule delays. The building of knowledge over a product's development is cumulative, as one knowledge point builds on the next, and failure to capture key product knowledge can lead to problems that eventually cascade and become magnified throughout product development and production.

Figure 1: Knowledge Achievement for Weapon System Programs in 2008 Assessment at Key Junctures



Source: GAO analysis of DOD data.

[a]Not all programs provided information for each knowledge point or had passed through all three key junctures.

[b]In our assessment of two programs, the Light Utility Helicopter and the Joint Cargo Aircraft, are depicted as meeting all three knowledge points when they began at production start. We excluded these two programs from our analysis because they were based on commercially available products and we did not assess their knowledge attainment with our best practices metrics.

Programs Begin without Matching Product Requirements with Available Resources

Very few of the programs we assessed started system development with evidence that the proposed solution was based on mature technologies and proven design features. As a result, programs are still working to mature technologies during system development and production, which causes significantly higher cost growth than programs that start development with mature technologies. Only 12 percent of the programs in our assessment demonstrated all of their critical technologies as fully mature at the start of system development and they have had much better outcomes than the others. For those programs in our assessment with immature technologies at development start, total RDT&E costs grew by 44 percent more than for programs that began with mature technologies. More often than not, programs were still maturing technologies late into development and even into production.

In addition to ensuring that technologies are mature, best practices for product development suggest that the developer should have delivered a preliminary design of the proposed weapon system based on a robust systems engineering process before committing to system development. This process should allow the developer—the contractor responsible for

designing the weapon system—to analyze the customer's expectations for the product and identify gaps between resources and those expectations, which then can be addressed through additional investments, alternate designs, and ultimately trade-offs. Only ten percent of the programs in our assessment had completed their preliminary design review prior to committing to system development. The other 90 percent averaged about 2 1/2 years into system development before the review was completed or planned to be completed. Programs like the Aerial Common Sensor and Joint Strike Fighter did not deliver a sound preliminary design at system development start and discovered problems early in their design activities that required substantial resources be added to the programs or, in the case of Aerial Common Sensor, termination of the system development contract.

Programs Continue to Move into System Demonstration and Production without Achieving Design Stability

Knowing that a product's design is stable before system demonstration reduces the risk of costly design changes occurring during the manufacturing of production representative prototypes—when investments in acquisitions become much more significant. Only a small portion of the programs in our assessment that have held a design review captured the necessary knowledge to ensure that they had mature technologies at system development start and a stable system design before entering the more costly system demonstration phase of development. Over half of the programs in our assessment did not even have mature technologies at the design review (knowledge that actually should have been achieved before system development start). Also, less than one-quarter of the programs that provided data on drawings released at the design review reached the best practices standard of 90 percent. We have found that programs moving forward into system demonstration with low levels of design stability are more likely than other programs to encounter costly design changes and parts shortages that in turn caused labor inefficiencies, schedule delays, and quality problems. Even by the beginning of production, more than a third of the programs that had entered this phase still had not released 90 percent of their engineering drawings.

In addition, we found that over 80 percent of the programs providing data did not or did not plan to demonstrate the successful integration of the key subsystems and components needed for the product through an integration laboratory, or better yet, through testing an early system prototype by the design review. For example, the Navy's E-2D Advanced Hawkeye moved past the design review and entered systems demonstration without fully proving—through the use of an integration lab

or prototype—that the design could be successfully integrated. The program did not have all the components operational in a systems integration lab until almost 2 years after the design review. While the program estimated it had released 90 percent of the drawings needed for the system by the design review, as it was conducting system integration activities, it discovered that it needed substantially more drawings. This increase means that the program really had completed only 53 percent of the drawings prior to the review, making it difficult to ensure the design was stable.

Programs Enter Production without Demonstrating Acceptable Manufacturing Processes and Weapon System Performance

In addition to lacking mature technologies and design stability, most programs have not or do not plan to capture critical manufacturing and testing knowledge before entering production. This knowledge ensures that the product will work as intended and can be manufactured efficiently to meet cost, schedule, and quality targets. Of the 26 programs in our assessment that have had production decisions, none provided data showing that they had all their critical manufacturing processes in statistical control by the time they entered into the production phase.[4] In fact, only 3 of these programs indicated that they had even identified the key product characteristics or associated critical manufacturing processes—key initial steps to ensuring critical production elements are stable and in control. Failing to capture key manufacturing knowledge before producing the product can lead to inefficiencies and quality problems. For example, the Wideband Global SATCOM program encountered cost and schedule delays because contractor personnel installed fasteners incorrectly. Discovery of the problem resulted in extensive inspection and rework to correct the deficiencies, contributing to a 15-month schedule delay.

In addition to demonstrating that the product can be built efficiently, our work has shown that production and post-production costs are minimized when a fully integrated, capable prototype is demonstrated to show it will work as intended and in a reliable manner. We found that many programs are susceptible to discovering costly problems late in development, when

[4] We have excluded two programs from this calculation, Light Utility Helicopter and Joint Cargo Aircraft. While we have assessed these programs as having mature manufacturing processes, this is because they are commercial acquisitions, not because processes were demonstrated to be in statistical control. Also, the Multifunctional Information Distribution System (MIDS) program indicates that its two critical processes are in statistical control but it has not formally entered the production phase.

the more complex software and advanced capabilities are tested. Of the 33 programs that provided us data about the overlap between system development and production, almost three-quarters still had or planned to have system demonstration activities left to complete after production had begun. For 9 programs, the amount of system development work remaining was estimated to be over 4 years. This practice of beginning production before successfully demonstrating that the weapon system will work as intended increases the potential for discovering costly design changes that ripple through production into products already fielded.

Forty programs we assessed provided us information on when they had or planned to have tested a fully configured, integrated production representative article (i.e., prototype) in the intended environment. Of these, 62 percent reported that they did not conduct or do not plan to conduct that test before a production decision. We also found examples where product reliability is not being demonstrated in a timely fashion. Making design changes to achieve reliability requirements after production begins is inefficient and costly. For example, despite being more than 5 years past the production decision, the Air Force's Joint Air-to-Surface Standoff Missile experienced four failures during four flight tests in 2007, resulting in an overall missile reliability rate of less than 60 percent. The failures halted procurement of new missiles by the Air Force until the problems could be resolved.

Absence of Disciplined Systems Engineering Practices Leads to Unexecutable Business Cases

DOD's poor acquisition outcomes stem from the absence of knowledge that disciplined systems engineering practices can bring to decision makers prior to beginning a program. Systems engineering is a process that translates customer needs into specific product requirements for which requisite technological, software, engineering, and production capabilities can be identified. These activities include requirements analysis, design, and testing in order to ensure that the product's requirements are achievable given available resources. Early systems engineering provides knowledge that enables a developer to identify and resolve gaps before product development begins. Consequently, establishing a sound acquisition program with an executable business case depends on determining achievable requirements based on systems engineering that are agreed to by both the acquirer and developer before a program's initiation. We have recently reported on the impact that poor systems engineering practices have had on several programs such as the

Global Hawk Unmanned Aircraft System, F-22A, Expeditionary Fighting Vehicle, Joint Air-to-Surface Standoff Missile and others.[5]

When early systems engineering, specifically requirements analysis, is not performed, increased cost risk to the government and long development cycle times can be the result. DOD awards cost reimbursement type contracts for the development of major weapon systems because of the risk and uncertainty involved with its programs.[6] Because the government often does not perform the necessary systems engineering analysis before a contract is signed to determine whether a match exists between requirements and available resources, significant contract cost increases can occur as the scope of the requirements change or becomes better understood by the government and contractor. Another potential consequence of the lack of requirements analysis is unpredictable cycle times. Requirements that are limited and well-understood contribute to shorter, more predictable cycle times. Long cycle times promote instability, especially considering DOD's tendency to have changing requirements and program manager turnover. On the other hand, time-defined developments can allow for more frequent assimilation of new technologies into weapon systems and speed new capabilities to the warfighter. In fact, DOD itself suggests that system development should be limited to about 5 years.

Additional Factors Can Contribute to Poor Weapon Program Outcomes

This year, we gathered new data focused on other factors we believe could have a significant influence on DOD's ability to improve cost and schedule outcomes. These factors were changes to requirements after development began, the length of program managers' tenure, reliance on contractors for program support, and difficulty managing software development.

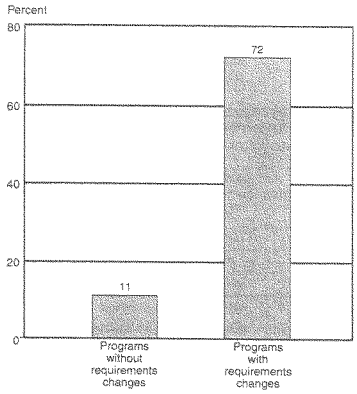
Foremost, several DOD programs in our assessment incurred requirement changes after the start of system development and experienced cost

[5] GAO, *Best Practices: Increased Focus on Requirements and Oversight Needed to Improve DOD's Acquisition Environment and Weapon System Quality*, GAO-08-294 (Washington D.C.: Feb. 1, 2008).

[6] In contrast, a firm-fixed price contract provides for a pre-established price, and places more risk and responsibility for costs and resulting profit or loss on the contractor and provides more incentive for efficient and economical performance. With either a cost reimbursement or firm-fixed price type contract, if the government changes the requirements after performance has begun, which then causes a price or cost increase to the contractor, the government must pay for these changes.

increases. Among the 46 programs we surveyed, RDT&E costs increased by 11 percent over initial estimates for programs that have not had requirements changes, while they increased 72 percent among those that had requirements changes (see fig. 2).[7]

Figure 2: Average RDT&E Cost Growth for Programs since Initial Estimates



Source: GAO analysis of DOD data.

At the same time, DOD's practice of frequently changing program managers during a program's development makes it difficult to hold them accountable for the business cases that they are entrusted to manage and deliver. Our analysis indicates that for 39 major acquisition programs started since March 2001, the average time in system development was about 37 months. The average tenure for program managers on those programs during that time was about 17 months—less than half of what is required by DOD policy.

[7] This average does not include the C-130 J program because of its extreme RDT&E cost growth. The average including C-130 J is 210 percent.

We also found that DOD is relying more on contractors to support the management and oversight of weapon system acquisitions and contracts. For 52 DOD programs that provided information, about 48 percent of the program office staff was composed of individuals outside of DOD (see table 2). In a prior review of space acquisition programs, we found that 8 of 13 cost-estimating organizations and program offices believed the number of cost estimators was inadequate and we found that 10 of those offices had more contractor personnel preparing cost estimates than government personnel. We also found examples during this year's assessment where the program offices expressed concerns about having inadequate personnel to conduct their program office roles.

Table 2: Program Office Staffing Composition for 52 DOD Programs

Percentage of staff

	Program management	Administrative support	Business functions	Engineering and technical	Other	Total
Government	**70**	**39**	**64**	**48**	**45**	**52**
Support contractors	22	60	35	34	55	36
Other non-government[a]	8	1	1	18	1	12
Total non-government	**30**	**61**	**36**	**52**	**56**	**48**

Source: GAO analysis of DOD data.

Note: Table may not add due to rounding.

[a]Other includes federally funded research and development centers, universities, and affiliates.

Finally, as programs rely more heavily on software to perform critical functions for weapon systems, we found that a large number of programs are encountering difficulties in managing their software development. Roughly half of the programs that provided us software data had at least a 25 percent growth in their expected lines of code—a key metric used by leading software developers—since system development started. For example, software requirements were not well understood on the Future Combat Systems when the program began; and as the program moves toward preliminary design activities, the number of lines of software code has nearly tripled. Changes to the lines of code needed can indicate potential cost and schedule problems.

The Way Forward: Potential Solutions

Our work shows that acquisition problems will likely persist until DOD provides a better foundation for buying the right things, the right way. This involves (1) maintaining the right mix of programs to invest in by making better decisions as to which programs should be pursued given existing

and expected funding and, more importantly, deciding which programs should not be pursued; (2) ensuring that programs that are started are executable by matching requirements with resources and locking in those requirements; and (3) making it clear that programs will then be executed based on knowledge and holding program managers responsible for that execution. We have made similar recommendations in past GAO reports.

These changes will not be easy to make. They will require DOD to reexamine not only its acquisition process, but its requirement setting and funding processes as well. They will also require DOD to change how it views program success, and what is necessary to achieve success. This includes changing the environment and incentives that lead DOD and the military services to overpromise on capability and underestimate costs in order to sell new programs and capture the funding needed to start and sustain them. Finally, none of this will be achieved without a true partnership among the department, the military services, the Congress, and the defense industry. All of us must embrace the idea of change and work diligently to implement it.

Buy the Right Things: Develop and Implement an Investment Strategy

The first, and most important, step toward improving acquisition outcomes is implementing a new DOD-wide investment strategy for weapon systems. We have reported that DOD should develop an overarching strategy and decision-making processes that prioritize programs based on a balanced match between customer needs and available department resources—that is the dollars, technologies, time, and people needed to achieve these capabilities. We also recommended that capabilities not designated as a priority should be set out separately as desirable but not funded unless resources were both available and sustainable. This means that the decision makers responsible for weapon system requirements, funding, and acquisition execution must establish an investment strategy in concert.

DOD's Under Secretary of Defense for Acquisition, Technology and Logistics—DOD's corporate leader for acquisition—should develop this strategy in concert with other senior leaders, for example, combatant commanders who would provide input on user needs; DOD's comptroller and science and technology leaders, who would provide input on available resources; and acquisition executives from the military services, who could propose solutions. Finally, once priority decisions are made, Congress will need to enforce discipline through its legislative and oversight mechanisms.

Table 3: Key Actions for Developing an Investment Strategy for Acquiring New Systems

Who	Under Secretary of Defense for Acquisition, Technology and Logistics in concert with other senior officials
Action	Analyze customer needs vs. wants based on available technology and available resources
	Compare analysis to DOD's long-term vision
	Determine priorities for acquisitions based on this comparison
	Separate other programs as "desirable," resources permitting
	Enforce funding for priorities annually; measure success against the plan

Source: GAO.

Buy the Right Way: Ensure Individual Programs Are Executable

Once DOD has prioritized capabilities, it should work vigorously to make sure each new program is executable before the acquisition begins. More specifically, this means assuring requirements for specific weapon systems are clearly defined and achievable given available resources and that all alternatives have been considered. System requirements should be agreed to by service acquisition executives as well as combatant commanders. Once programs begin, requirements should not change without assessing their potential disruption to the program and assuring that they can be accommodated within time and funding constraints. In addition, DOD should prove that technologies can work as intended before including them in acquisition programs. More ambitious technology development efforts should be assigned to the science and technology community until they are ready to be added to future generations of the product. DOD should also require the use of independent cost estimates as a basis for budgeting funds. Our work over the past 10 years has consistently shown when these basic steps are taken, programs are better positioned to be executed within cost and schedule.

To keep programs executable, DOD should demand that all go/no-go decisions be based on quantifiable data and demonstrated knowledge. These data should cover critical program facets such as cost, schedule, technology readiness, design readiness, production readiness, and relationships with suppliers. Development should not be allowed to proceed until certain knowledge thresholds are met—for example, a high percentage of engineering drawings completed at critical design review. DOD's current policies encourage these sorts of metrics to be used as a basis for decision making, but they do not demand it. DOD should also place boundaries on the time allowed for system development.

Table 4: Key Actions for Making Sure Programs Are Executable

Who	Military services and joint developers with support from USD AT&L
Action	• Keep technology discovery/invention out of acquisition programs • Follow an incremental path toward meeting user needs; assure all alternatives are considered • Ensure system requirements are agreed to by service acquisition executives and warfighters and that no additional requirements are added during execution • Use systems engineering to close gaps between requirements and resources prior to launching the development process • Require the use of independent cost estimates as a basis for budgeting funds; update cost estimates annually and track against the original baseline estimate • Encourage the use of earned value data at each systems engineering technical review in order to track program progress against original baseline estimates • Use quantifiable data and demonstrable knowledge to make decisions to move to next phases • Employ additional management reviews when deviations of cost or schedule exceed 10 percent against baseline estimates. • Place boundaries on time allowed for specific phases of development

Source: GAO.

To further ensure that programs are executable, DOD should pursue an evolutionary path toward meeting user needs rather than attempting to satisfy all needs in a single step. This approach has been consistently used by successful commercial companies we have visited over the past decade because it provides program managers with more achievable requirements, which, in turn, facilitate shorter cycle times. With shorter cycle times, the companies we have studied have also been able to assure that program managers and senior leaders stay with programs throughout the duration of a program.

DOD has policies that encourage evolutionary development, but programs often favor pursuing more revolutionary, exotic solutions that will attract funds and support. The department and, more importantly, the military services, tend to view success as capturing the funding needed to start and sustain a development program. In order to do this, they must overpromise capability and underestimate cost. In order for DOD to move forward, this view of success must change. World-class commercial firms identify success as developing products within cost estimates and delivering them on time in order to survive in the marketplace. This forces incremental, knowledge-based product development programs that improve capability as new technologies are matured.

Hold People Accountable

To strengthen accountability, DOD must also clearly delineate responsibilities among those who have a role in deciding what to buy as well as those who have role in executing, revising, and terminating programs. Within this context, rewards and incentives must be altered so that success can be viewed as delivering needed capability at the right price and the right time, rather than attracting and retaining support for numerous new and ongoing programs.

To enable accountability to be exercised at the program level once a program begins, DOD will need to (1) match program manager tenure with development or the delivery of a product; (2) tailor career paths and performance management systems to incentivize longer tenures; (3) strengthen training and career paths as needed to ensure program managers have the right qualifications for run the programs they are assigned to; (4) empower program managers to execute their programs, including an examination of whether and how much additional authority can be provided over funding, staffing, and approving requirements proposed after the start of a program; and (5) develop and provide automated tools to enhance management and oversight as well as to reduce the time required to prepare status information.

DOD also should hold contractors accountable for results. As we have recommended, this means structuring contracts so that incentives actually motivate contractors to achieve desired acquisition outcomes and withholding fees when those goals are not met.

Table 5: Key Actions for Accountability

Who	The Secretary of Defense and military service secretaries
Actions	Make it clear who is accountable on a program for what, including program managers, their leaders, stakeholders, and contractors
	Hold people accountable when these responsibilities are not met
	Require program managers and others, as appropriate, to stay with programs until a product is delivered or for system design and demonstration
	Empower program managers to execute their programs so that they can be accountable; strengthen training and career paths as needed to ensure that qualified program managers are being assigned
	Improve the use of fees in order to hold contractors accountable

Source: GAO.

Recent DOD Actions Provide Opportunities for Improvement

DOD has taken actions related to some of these steps. Based in part on GAO recommendations and congressional direction, DOD has recently begun to develop several initiatives that, if adopted and implemented properly, could provide a foundation for establishing sound, knowledge-based business cases for individual acquisition programs and improving program outcomes. For example, DOD is experimenting with a new concept decision review, different acquisition approaches according to expected fielding times, and panels to review weapon system configuration changes that could adversely affect program cost and schedule. In addition, in September 2007 the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics issued a policy memorandum to ensure weapon acquisition programs were able to demonstrate key knowledge elements that could inform future development and budget decisions. This policy directed pending and future programs to include acquisition strategies and funding that provide for two or more competing contractors to develop technically mature prototypes through system development start (knowledge point 1), with the hope of reducing technical risk, validating designs and cost estimates, evaluating manufacturing processes, and refining requirements. Each of the initiatives is designed to enable more informed decisions by key department leaders well ahead of a program's start, decisions that provide a closer match between each program's requirements and the department's resources.

DOD also plans to implement new practices similar to past GAO recommendations that are intended to provide program managers more incentives, support, and stability. The department acknowledges that any actions taken to improve accountability must be based on a foundation whereby program managers can launch and manage programs toward greater performance, rather than focusing on maintaining support and funding for individual programs. DOD acquisition leaders have told us that any improvements to program managers' performance hinge on the success of the department's initiatives.

In addition, DOD has taken actions to strengthen the link between award and incentive fees with desired program outcomes, which has the potential to increase the accountability of DOD programs for fees paid and of contractors for results achieved.

Concluding Observations

In closing, the past year has seen several new proposed approaches to improve the way DOD buys weapons. These approaches have come from within the department, from highly credible commissions established by the department, and from GAO. They are based on solid principles. If they are to produce better results, however, they must heed the lessons taught—but perhaps not learned—by various past studies and by DOD's acquisition history itself. Specifically, DOD must do a better job of prioritizing its needs in the context of the nation's greater fiscal challenges. It must become more disciplined in managing the mix of programs to meet available funds. If everything is a priority, nothing is a priority.

Policy must also be manifested in decisions on individual programs or reform will be blunted. DOD's current acquisition policy is a case in point. The policy supports a knowledge-based, evolutionary approach to acquiring new weapons. However, the practice—decisions made on individual programs—sacrifices knowledge and realism about what can done within the available time and funding in favor of revolutionary solutions.

Reform will not be real unless each weapon system is shown to be both a worthwhile investment and a realistic, executable program based on the technology, time, and money available. This cannot be done until the acquisition environment is changed along with the incentives associated with it. DOD and the military services cannot continue to view success through the prism of securing the funding needed to start and sustain new programs. Success must be defined in terms of delivering the warfighter capabilities when needed and as promised and incentives must be aligned to encourage a disciplined, knowledge-based approach to achieve this end.

The upcoming change in administration presents challenges as well as opportunities to improve the process and its outcomes through sustained implementation of best practices, as well as addressing new issues that may emerge. Significant changes will only be possible with greater, and continued, department level support, including strong and consistent vision, direction, and advocacy from DOD leadership, as well as sustained oversight and cooperation from the Congress. In addition, all of the players involved with acquisitions—the requirements community; the Joint Chiefs of Staff; the comptroller; the Under Secretary of Defense for Acquisition, Technology and Logistics; and perhaps most importantly, the military services—must be unified in implementing reforms from top to bottom.

Mr. Chairmen and Members of the Committee and Subcommittee, this concludes my statement. I will be happy to take any questions that you may have at this time.

Contacts and Staff Acknowledgements

For further questions about this statement, please contact Michael J. Sullivan at (202) 512-4841. Individuals making key contributions to this statement include Ron Schwenn, Assistant Director; Ridge C. Bowman; Quindi C. Franco; Matthew B. Lea; Brian Mullins; Kenneth E. Patton, and Alyssa B. Weir.

Related GAO Products

Best Practices: Increased Focus on Requirements and Oversight Needed to Improve DOD's Acquisition Environment and Weapon System Quality. GAO-08-294. Washington, D.C.: Feb. 1, 2008.

Defense Acquisitions: Assessments of Selected Weapon Programs. GAO-07-406SP. Washington, D.C.: March 30, 2007.

Best Practices: Stronger Practices Needed to Improve DOD Technology Transition Processes. GAO-06-883. Washington, D.C.: September 14, 2006.

Best Practices: Better Support of Weapon System Program Managers Needed to Improve Outcomes. GAO-06-110. Washington, D.C.: November 1, 2005.

Defense Acquisitions: Major Weapon Systems Continue to Experience Cost and Schedule Problems under DOD's Revised Policy. GAO-06-368. Washington, D.C.: April 13, 2006.

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Best Practices: Commercial Quality Assurance Practices Offer Improvements for DOD. GAO/NSIAD-96-162. Washington, D.C.: August 26, 1996.

Chairman WAXMAN. Mr. Finley. We will hear from you next.

STATEMENT OF JAMES FINLEY

Mr. FINLEY. Good morning. Chairman Waxman, Ranking Member Davis, subcommittee chairman Tierney, and distinguished members of the Committee on Oversight and Government Reform and the Subcommittee on National Security and Foreign Affairs, I am pleased to come before you today to address the broad trends, incentives, and challenges present in the Defense Department's current acquisition system for major weapons programs. I will also discuss the report recently issued by the GAO entitled, "Defense Acquisitions Assessments of Selected Weapons Programs."

I am fully committed to acquisition excellence and the restoration of the confidence in our leadership for our acquisitions system. Thank you for the opportunity to appear here today.

The history of acquisition reform for the Department of Defense covers more than 60 years. The most recent studies of the Defense Acquisition Performance Assessment [DAPA], the Center of Strategic International Studies [CSIS], and the Defense Science Board [DSB], serves to assist my preparation for confirmation as the Deputy Undersecretary of Defense for Acquisition Technology by the U.S. Senate in February 2006.

My perspectives come from industry, with over 30 years of experience in aerospace and defense, have been shaped utilizing that experience along with the acquisition reform and transformation initiatives, especially those most recent studies by DAPA, CSIS, DSB and the GAO reports.

At the time of my confirmation hearing, the consensus seemed to be that the DOD acquisition process, the DOD 5000.2, was broken.

Once confirmed, we quickly moved to recruit and fill key positions with civilian executives that had significant industry and military experience and a passion to serve our country. We eliminated a layer of management to tighten communication. We aligned the organization for better accountability and we improved the efficiency of our work force within AT&L and OSD, the joint staff and the components.

After my first 90 days in office, where I listened, discussed, and reflected on the leadership perspectives of Congress, industry, and DOD military and civilian personnel, my opinion was that the acquisition process was not broken. We needed to add discipline into the process and ensure that the basic blocking and tackling in executing the acquisition process was being done correctly. We also needed to properly scale and tailor processes, where and when needed, to implement changes that streamlined and simplified processes, to reduce cycle times to increase competition, and to broaden communications up down and across with Congress industry, academia, our coalition partners and within DOD.

We developed a 3-year plan, established our vision and strategy, and implemented goals and initiatives with a sense of urgency. Today, we are 26 months into implementing that plan.

We are striving for acquisition excellence with a broad set of objectives by using short- and long-term initiatives. These objectives include: One, enabling decisionmaking for balancing the program and portfolio trade space with convergence of affordability, sched-

ule and performance. Two, getting programs started right with improved upfront planning and awareness of risk. Three, improving process efficiency with focus on tailored, agile, open and transparent communications with checks and balances. Four, providing program stability with program management tenure, utilization of capital funding accounts and configuration steering boards.

These objectives and initiatives are examples, with more examples provided in the semiannual section 804 Congressional Report, in accordance with the John Warner National Defense Authorization Act of Fiscal Year 2007.

In addition, contracting terms and conditions for weapons systems have shifted over the past couple of decades due to increased technical complexity, associated affordability issues, and predictable performance challenges. Accordingly, DOD has shifted from the fixed firm price environments to the fixed price incentive and cost-plus award, incentive fee structures to motivate and encourage industry performance.

Our goal is to utilize objective criteria to measure contract performance where incentive structures are being implemented. A comprehensive analysis of the GAO report 08–467 SP, Assessments of Selected Weapons Systems, has not been completed. However, we are developing questions to better understand the report and work with the GAO.

For example, our initial perspectives of conclusions from the GAO report are summarized as follows: One, the GAO report opening statement excerpt, "Of the 72 programs, none of them proceeded through systems development and meeting best practices standards for mature technology, stable design or mature production processes by critical junctures of the program, each of which are essential for achieving planned cost, schedule, and performance outcomes." That statement is not understood.

The DOD drives Lean Six Sigma, continuous process improvement as an example for best practices and best of best practices with CPI across all our organizations in Department of Defense, including acquisition.

Two, the GAO report opening statement talks about "The average tenure to date of program managers has been less than half of of what is called for by DOD policy." The DOD policy is 24 months. The actual average tenure of program managers today across all services is 23.8 months with an expected tenure of 42 months average. I see I am out of time so I will cut to my summary.

We look forward to working with the GAO to better understand their data, methodologies, and conclusions associated with the assessments of selected weapons systems.

In summary, measurable progress for acquisition excellence has been accomplished on a broad front of initiatives. We have traction. We will continue to improve. Much work remains to be done. A plan for that work has been established.

Chairman Waxman, Congressman Davis, subcommittee Chairman Tierney and distinguished members of the committee, thank you for supporting our troops. I will be pleased to address any questions.

Chairman WAXMAN. Thank you very much Mr. Finley.

[The prepared statement of Mr. Finley follows:]

TESTIMONY

OF

THE HONORABLE JAMES I. FINLEY

DEPUTY UNDER SECRETARY OF DEFENSE

(ACQUISITION AND TECHNOLOGY)

BEFORE

THE UNITED STATES HOUSE OF REPRESENTATIVES

COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM

AND

SUBCOMMITTEE ON NATIONAL SECURITY AND FOREIGN AFFAIRS

April 29, 2008

STATEMENT

Chairman Waxman, Congressman Davis, Subcommittee Chairman Tierney, Congressman Shays and distinguished members of the Committee on Oversight and Government Reform and the Subcommittee on National Security and Foreign Affairs, I am pleased to come before you today to address the broad trends, incentives, and challenges present in the Defense Department's current acquisition system for major weapon programs. I will also discuss the report recently issued by the GAO entitled "Defense Acquisitions, Assessments of Selected Weapon Programs". I am fully committed to Acquisition Excellence and the restoration of the confidence in our leadership for our acquisition system. Thank you for the opportunity to appear before you in today's hearing.

The history of acquisition reform for the Department of Defense (DoD) covers over 60 years. The most recent two decades of reform and transformation are often times referred back to the Packard Commission in 1986. The Gold-Water Nichols Act of 1986, the Acquisition Streamline Act of 1994, the Clinger-Cohen Act of 1996 and Intelligence Reform and Terrorism Prevention Act of 2004 all addressed improvements for our Acquisition System. The most recent studies of the Defense Acquisition

Performance Assessment (DAPA), Center for Strategic and International Studies (CSIS) and Defense Science Board (DSB) served to assist my preparation for confirmation by the Senate in February 2006.

My perspectives, coming from industry with over 30 years of experience in Aerospace and Defense, have been shaped utilizing that experience along with the acquisition reform and transformation initiatives, especially the most recent studies. At the time of my confirmation hearing, the consensus seemed to be that the DoD acquisition process (DoD 5000.2) was broken. As a back drop to my confirmation, my position had not been filled for some time and there were several vacancies in my direct reports. That too was considered, by many, as broken. We quickly moved to recruit and fill the vacancies with civilians with significant military and industry experience that had a passion to serve our Country. We eliminated a layer of management to tighten communications. We aligned the organization for accountability and improved efficiency of our workforce within AT&L, OSD, the Joint Staff and the Components.

After my first 90 days in office where I listened, discussed and reflected on the leadership perspectives of Industry, Congress and DoD military and civilian personnel, my opinion was that the acquisition process was NOT broken. We needed to add discipline into the process and ensure

that "the basic blocking and tackling" in executing the acquisition process was being done correctly. We also needed properly scale and tailor processes where and when needed, to implement changes that streamlined and simplified processes, to reduce our cycle times, to increase our competition and to broaden our communications – up, down, across and within Congress, Industry, Academia and our Coalition Partners and especially within our DoD. We developed a three year plan, established our vision and strategy, and implemented goals and initiatives with a sense of urgency. Today, we are twenty-six months into implementing that plan.

TRENDS

We utilized the 2006 Quadrennial Defense Review as a strategic framework to enable aggressive initiatives in support of the most recent studies – DAPA, CSIS and DSB. Those reports represent collectively, fifty –five unique recommendations for acquisition reform. Of those fifty-five recommendations, forty-eight have been implemented fully or partially. Our trends and strategic direction are aligned with Mr. Young's vision and strategic thrust areas:

- to define effective and affordable tools for the Joint Warfighter,
- to responsibly spend every single tax dollar,
- to take care of our people, and

- to address the DoD transformation priorities with a sense of urgency.

We are striving for acquisition excellence with a broad set of objectives by using short and long term initiatives. These objectives include balancing the trade space, getting programs started right, improving process efficiency, and providing program stability.

- Balancing the Trade Space

  Examples of initiatives that enable decision making to balance the trade space focus on affordability and schedule. Concept Decision and Time-Defined Acquisition were QDR initiatives that were successfully piloted utilizing four, diverse programs ranging from traditional platforms, to information management programs, to special programs, to systems-of-systems programs. These programs each represented unique challenges to attempt to shorten cycle time, to make earlier investment decisions, to make strategic choices with debate and differences vetted between the Component, Joint and OSD organizations. We have emphasized the utilization of incremental vs. "big bang" acquisition strategies. Tradeoff decisions were bounded with the convergence of affordability, technical performance and time-certainty.

- Starting Programs Right

  Examples of initiatives that enable starting programs right focus on improved, up front planning and awareness of risk. Increased focus on Milestone A and the Utilization of Prototyping.

  The Joint Light Tactical Vehicle (JLTV) Program and Broad Area Maritime Surveillance (BAMS) Program are examples of increased focus on Milestone A and utilizing prototyping in preparation for Milestone B decision making. Prototyping provides insight for performance, cost, manufacturability, integration and testing. Design reviews, drawing releases, bills of material, assembly documentation and basis for cost and schedule estimates, from components to systems are enabled utilizing early and competitive prototyping.

- Continuously Improve Process Efficiency

  Examples of initiatives that continuously improve process efficiency are focused on tailored, agile, open and transparent communications with checks and balances. Lean Six Sigma, Restructured Executive Reviews, implementation of Configuration Steering Boards, integrating Development Test (DT) and Operational Test (OT), System Assurance, Risk Management and Utilization of

Common Data have been implemented. These initiatives are applied to all MDAP programs.

Executive Reviews were reengineered to reduce the support documentation by half, to focus on decision making and to standardize and simplify Red, Yellow, Green indicators for cost, schedule and performance. Leading metrics were established and closure plans were required with 30/60/90 day horizons for known problems. The standard Systems Engineering likelihood vs. consequences methodology was implemented to address risks and associated mitigation plans. Continuous improvement has been utilized to incorporate quad charts for tracking Key Performance Parameters (KPP's), Cost Drivers, Technology Maturity Status and Acquisition Program Baseline performance for cost and schedule. Quarterly Triage is also conducted of all ACAT-1 Programs in the portfolio to provide a more in depth to identify troubled programs.

- Enable Program Stability

Examples of initiatives that enable program stability are the Configuration Steering Board, Program Management Tenure and Utilization of Capital Funding Accounts. Technology Readiness Level (TRL), Manufacturing Readiness Level (MRL), Integration

Readiness Level (IRL), Funding Stability, Earned Value Management Systems with Trip Wires, Earlier Integrated Baseline Reviews are initiatives that we are implementing. Trip Wires have been added as an additional metric for Earned Value Management Systems (EVMS).

The EVMS Trip Wires have provided excellent insight for trends and projections of planning execution in a variety of cost, schedule, and performance criteria on a monthly basis utilizing EVMS as a management tool for decision making.

INCENTIVES

Incentives are very important for consideration when establishing the acquisition strategy for programs. The program manager, systems engineer and contract manager work as a team to understand the challenges, opportunities and risk in a program. Risk management has become an increasingly important factor for managing large, complex programs.

Contracting terms and conditions for large programs have shifted over the past couple decades due to increased technical complexity and associated cost and schedule impacts. Accordingly, DoD has shifted from the fixed firm price environments to the fixed price incentive and cost plus award/incentive fee structures to motivate and encourage industry performance.

Every weapon system is planned to meet cost, schedule and performance requirements. Providing incentives to industry should motivate and encourage achievement of those requirements. Our objective is to utilize objective criteria, whenever possible, to measure contract performance where incentive structures are utilized.

CHALLENGES

One of the challenges facing our Department of Defense is the career planning for our acquisition workforce. As Mr. John Young stated at the 2007 USD (AT&L) Development Award Presentation, "The AT&L team must continue the legacy we have inherited – a legacy of providing unmatched weapons technology that has assured the security and freedom of our Nation". With a workforce of over 128,000 members, comprised of military and civilian personnel from across all of the DoD Services and Agencies, we are serving to sustain our world-class mission for the defense of our national security on a global scale. We are actively working to assure our workforce continues to meet that mission.

GAO REPORT 08-467SP

ASSESSMENTS OF SELECTED WEAPON SYSTEMS

A comprehensive analysis of the GAO Report has not been completed. However, we are developing questions to better understand the relevance, usefulness and credibility of many of the methodologies and conclusions presented in the report.

For example, our initial perspectives of five conclusions provided in the GAO Summary page are summarized as follows:

- The opening statement, "Of the 72 programs, none proceeded through System Development meeting best practices....".

  That statement is not understood. The utilization of best practices and Lean Six Sigma are embraced and practiced throughout the Department of Defense and in particular the Acquisition Community for continuous process improvement. Improvements are well documented and demonstrated on such programs such as the F/A 18 engine overhaul and repair at NAS Lemoore, CA that substantially reduced overhaul and repair time.

- The statement, "The absence of wide-spread adoption of knowledge-based acquisition [GAO] processes ... major contributor...lack of maturity".

  That statement is not understood. DoD knowledge based decision making may not utilize the GAO process; however, the acquisition system (DoD 5000.2) utilizes extensive sources of knowledge and expertise to make decisions with a variety of methodologies.

- The statement, "63% of the programs had changed requirements once system development began..."

  That statistic may be true but the conclusion reflects a naivety about derived requirements, management of necessary change tradeoffs for cost, schedule and performance during system development.

- The statement, "Average tenure to date of program managers has been less than half of that called for by DoD policy".

  The comparison may be true; however, the data is based on benchmarks over five years old and may only be a "snap shot" of time. For example, if the program manager comes in for a two year assignment and that data was taken at month three,

then the tenure may only reflect three months vs. twenty four months planned. Program manager tenure agreements have been established with all the Services, have been a fundamental change in our Acquisition Excellence initiatives for tenure agreements with four year goals and correlated to major milestones. The actual average tenure of program managers today, across all Services is 23.8 months with an expected tenure of 42 months, average.

- The statement, "...roughly half the programs that provided GAO data experienced more than a 25 percent increase in the expected lines of software code since starting their respective system development programs".

  The statistic may be true. However, the benchmarks date back five years. There is also a lack of insight as to the cause of code change, for example poor estimating or legitimate requirement changes. The demand for software is growing exponentially with ever increasing complexity. Software Engineering has been elevated to the Senior Executive Service level. Software training is being added as a core competency in Acquisition Workforce and industry/government relationships have been

established with senior executive participation for software continuous improvement. Our data reflects the cost per line of code has dropped as productivity has increased over past decade. We do not have a sense of comfort, in that regard, and continue to increase the technical rigor and management focus of software and its role our weapon systems.

We look forward to working with the GAO to better understand their data, methodologies and conclusions.

SUMMARY

In summary, measurable progress for acquisition excellence has been accomplished. Much work remains to be done. A plan for that work has been established.

Chairman Waxman, Congressman Davis, Subcommittee Chairman Tierney, Congressman Shays and distinguished members of the Committee and Subcommittee, I am pleased to address any questions that you may have for me. Thank you.

Chairman WAXMAN. Mr. Patterson.

STATEMENT OF DAVID PATTERSON

Mr. PATTERSON. Chairman Waxman, Ranking Member Davis, subcommittee Chairman Tierney, and distinguished members of this committee and subcommittee, thank you for the opportunity to discuss the Department of Defense's current acquisition process for major weapons systems and other concerns arising from the Government Accountability Office's recent report on this issue.

First, let me make it very clear that we appreciate the mutually beneficial relationship that the Office of the Undersecretary of Defense Comptroller shares with the GAO as we strive to ensure that the American taxpayer is well served.

We also appreciate Congress' frustration with what is quite literally one of the oldest problems in government. And to Ranking Member Davis' point it was George Washington, I believe, who first complained about the ineffective response to his request for cannon castings. And we have been trying to improve the process for acquiring weapons ever since.

In more than 130 acquisition studies, reviews and evaluations that have been conducted over the past two decades, most, if not all of them, found that the key elements in successful programs are program stability and funding predictability. Instability drives cost growth. Schedule slippages, and in some cases, failure of the weapons systems to perform as anticipated.

Several initiatives have been cosponsored by the Undersecretary of Defense for Acquisition Technology and Logistics and the Department to address this problem. But from a Comptroller's perspective, the most noticeable is the Capitol Funding Pilot Program. Under the capital funding concept, the Department guaranties a certain level of funding for a fixed period of time—from Milestone B, the beginning of system development and demonstration to initial operating capability of the program. Funding is then held at a guaranteed level by avoiding up-and-down adjustments until the project is delivered.

When industry and program managers know that the annual program funding will be provided at a predictable level and that other aspects of the program, such as unfunded performance or requirements changes are not allowed, there is an increasing probability that the program will be delivered on schedule and within budget.

To qualify for capital funding, a program must have a well-understood funding profile from Milestone B to initial operating capability, will not be used as a bill-payer by the services or the Department. It will provide by biannual reports to the Congress on cost, schedule and performance progress, will have a technology readiness level of at least six at Milestone B. It will be time-definite.

Finally, capital funding programs will be canceled if they fail to make established cost, schedule, and performance objectives three reviews in a row.

The capital funding concept is being formalized in three pilot programs: The Combat Search and Rescue Helicopter program by the Air Force, as soon as that program is a program of record; the Joint High Speed Sea Lift Vessel managed by both the Army and the

Navy; and the General Funds Enterprise Business Systems managed by the Army. Because these systems are within the Department's current authorities, they can be implemented in the near-time term.

Finally, I would offer that this administration has made solid financial management a serious and successful priority. With sound financial management, successful acquisition program management is far less likely.

In 2001 critics predicted that the Department would be unable to turn around its complex management operations. Today, the Department is poised to achieve a clean audit opinion in 2009 on more than two-thirds of the $2.4 trillion of assets and liabilities—an extraordinary achievement.

We are on track to eliminate the remaining 18 of the original 116 managers' internal control weaknesses, and we are lowering costs and increasing productivity and saving the taxpayer billions of dollars.

The Defense Finance and Accounting Service alone has increased productivity by 52 percent, saving $317 million since 2001.

Audits conducted by the Defense Contract Audit Agency on fiscal year 2007 contracts not only saved the Department $2.4 billion, but armed investigators with information that recovered an additional $225 million. These are only a few areas where we have made progress since 2001.

Whether it is sound financial management or providing the American taxpayers with the most effective weapons systems acquisition process, the Department of Defense is absolutely committed to the wise and efficient management of resources. The American people deserve nothing less.

Thank you for this opportunity and I am ready to take your questions.

Mr. TIERNEY [presiding]. Thank you, Mr. Patterson.

[The prepared statement of Mr. Patterson follows:]

Testimony

of

Mr. J. David Patterson
Principal Deputy Under Secretary of Defense (Comptroller)

before the

House Committee on Oversight and Government Reform and
National Security and Foreign Affairs Subcommittee

Hearing on "Oversight of Defense Department Acquisitions"

April 29, 2008

713 words; 5 minutes

OUTLINE

THANK YOU FOR THE OPPORTUNITY TO RESPOND TO GAO CONCERNS

- Thank you for the opportunity to discuss the DoD acquisition process, and respond to your concerns regarding the GAO report.
- Appreciate mutually beneficial relationship of GAO and OUDC for the benefit of the American taxpayer
- Appreciate Congress' continuing frustration with one of government's oldest problems.

ESTABLISHING A STABLE BUDGET ENVIRONMENT / CAPITAL FUNDING

- Acquisition studies show key elements of successful programs are program stability and funding predictability.
- Several initiatives have been co-sponsored by AT&L and OUSDC to address the problem – most notably, Capital Accounts Pilot Program
- Guaranteeing stable funding for a fixed period of time avoids program changes that derail schedules and increase costs.
- Capital Accounts concept is being formalized in three pilot programs; Combat Search and Rescue Helicopter, Joint High Speed Sealift Vessel, General Funds Enterprise Business System.
- Program qualifications

ADMINISTRATION HAS MADE FINANCIAL EFFICIENCY A PRIORITY

- In 2001, critics predicted DoD would not be able to turn around its complex financial operations.
- Today, the Department has made substantial progress toward achieving a clean opinion, eliminating weaknesses, lowering costs, increasing productivity, and saving the taxpayers billions.
- Whether it is financial management or acquisition or anything else, the Department is committed to financial efficiency.

Thank you for the opportunity to respond to GAO concerns

- Chairman **Waxman**, Congressman **Davis**;
  Subcommittee Chairman **Tierney**, Congressman **Shays**;
  Distinguished members of the Committee and Subcommittee,
  thank you for the opportunity to discuss the Department of Defense's current acquisition process for major weapons systems,
  and other concerns arising from the Government Accountability Office's recent report on this issue.

- First, let me make clear that we appreciate the mutually beneficial relationship the Office of the Under Secretary of Defense-Comptroller shares with the GAO as we strive to ensure that the American taxpayer is well served.

- We also appreciate Congress' frustration with what is, quite literally, one of the oldest problems in government. General George Washington was the first, I believe, to complain about the ineffective response to his request for cannon castings – and we've been trying to improve the process for acquiring weapons ever since.

Establishing a Stable Budget Environment

- In the more than 130 acquisition studies, reviews, and evaluations that have been conducted over the past two decades, most – if not all – of them found that the key elements in successful programs are program stability and funding predictability.

- Instability drives cost growth, schedule slippages and, in some cases, failure of the weapons system to perform as anticipated.

- Several initiatives have been co-sponsored by the Under Secretaries of Acquisition, Technology and Logistics and Comptroller to address this problem, but, from a Comptroller perspective, the most notable is the Capital Funding Pilot Program.

- Under the capital funding concept, the Department guarantees a certain level of funding for a fixed period of time – from Milestone B, the beginning of the System Development and Demonstration, to Initial Operating Capability of the program. Funding is then held constant, by avoiding up or down adjustments until the project is delivered.

- When industry and program managers know that annual program funding will be provided at a predictable level, other aspects of the program – such as unfunded performance or requirements changes – are not allowed, thus increasing the probability that the program will be delivered on schedule and within budget.

- To qualify for capital funding, a program:

  - Must have well understood funding profiles from Milestone B (SDD) to Initial Operation Capability;

  - Will not be used as bill payers by the Services or DoD;

  - Will provide bi-annual reports to Congress on cost schedule and performance progress;

  - Will have a Technology Readiness Level of at least six at Milestone B (SDD);

  - Will be a "time-definite" program.

  - Finally, capital funding programs will be cancelled if they fail to meet established cost, schedule and performance objectives three reviews in a row.

- The capital funding concept is being formalized in three pilot programs:
  - the Combat Search and Rescue Helicopter (Air Force) as soon as there is a program of record;
  - the Joint High Speed Sealift Vessel (Army/Navy);
  - the **General Funds** Enterprise Business System (Army).

- Because these initiatives are within the Department's current authorities, they can be implemented in the near term.

Administration Has Made Financial Efficiency a Priority

- Finally, Mr. Chairman, I would offer that this administration has made solid financial management a serious and successful priority; without sound financial management, successful acquisition program management is far less likely.

- In 2001, critics predicted that the Department would not be able to turn around its complex financial management operations. Today, the Department is:

  - Poised to achieve a clean audit opinion in 2009 on more than two-thirds or **$2.4 trillion** of its assets and liabilities – an extraordinary achievement;

- We're on track to eliminate the remaining 18 of the original 116 managers' internal control weaknesses;

- And we are lowering costs, increasing productivity, and saving the taxpayers billions of dollars.

    - The Defense Finance and Accounting Service alone has increased productivity by 52 percent, saving **$317 million** since 2001; and

    - Audits conducted by the Defense Contract Audit Agency (DCAA) on FY 07 contracts not only saved the Department **$2.4 billion**, but armed investigators with information that recovered an additional **$225 million.**

- Those are just a few of the areas where we have made progress since 2001.

- Mr. Chairman, whether its sound financial management or providing the American Taxpayer with the most effective weapons system acquisition process, the Department of Defense is absolutely committed to the wise and efficient management of resources. The American people deserve nothing less.

- Mr. Chairman, I'm happy to take your questions.

Mr. TIERNEY. I thank all of you for your testimony here. Mr. Waxman has been called away for a short period of time.

We are going to have initial 10-minute rounds from the ranking member and the chairman before we move to 5-minute rounds to the Members.

Mr. Davis, you are recognized for 10 minutes.

Mr. DAVIS OF VIRGINIA. Let me start with our GAO rep. You state that improving acquisition outcomes will require changes in environment and incentives as well as improved processes.

Is there anything we in Congress can do to help change that environment that leads the DOD to overpromise capabilities and underestimate the cost of these programs? Or is this basically just executive branch management issues?

Mr. SULLIVAN. I think that the oversight capability that the Congress has is critical to keeping these, the Department on track. But I think basically it's the Department. The way we see it is the Department has plenty of funding to invest properly in the major weapons system acquisitions that they believe they need to equip the warfighter; and even within that universe within the Department, oversight within there needs to improve significantly.

Probably the bigger problem is between the Department and the stovepipes that they have to deal with, meaning the acquisition communities, the various acquisition communities within the Pentagon.

You know, there is an oversight mechanism that these gentlemen obviously have to take care of. The services all have different solutions that they want to provide in terms of capabilities. And there are other acquisition agencies in the Department as well. That is the critical place. I think when you have the parochial nature and the stovepipes of the acquisition community coming forward, the oversight that happens within the Pentagon is critical. That is where hard decisions have to be made. Of course, I think the Congress, your responsibility and your power of the purse, obviously, is critical to all of that.

Mr. DAVIS OF VIRGINIA. You have mentioned that the DOD often asks contractors to develop cutting-edge systems under cost-type contracts, in essence reimbursing the firm for its best efforts rather than results. Do you think that the Defense Department would be better served by awarding some of these contracts under fixed-price contracts and placing more of the risk on the contractor, and do you think they would get the requisite number of bidders there?

Mr. SULLIVAN. You know, Congressman, that is a very sensitive issue because of the technical nature, the really cutting-edge nature of these programs. There are a number of reasons I think that the, cost-plus contracts are important for these major development programs.

No. 1 is these companies, no matter how well you understand the technologies for these, there is going to be tremendous risk in moving forward to build a thoroughbred system that is going to meet all the performance requirements they have. So even integration risk, which we think is a little more knowable, probably there are no contractors that would take on that kind of risk with a fixed price, in a fixed-price kind of environment.

But in addition to that, the low volumes and the lack of a market, an after market for products and things like that, just makes it much easier for contract. If they are going to expend the $20 or $30 billion that it sometimes takes to develop a weapons systems, they have to have protection to do that. So we understand that.

The critical thing there is that if you're going to take on a risky project like that, the first thing that you want to know is you need to understand the requirements. And you don't want to sign that contract until you've done really proper systems engineering analysis, maybe even to the point of prototyping before you would actually begin a weapons systems program.

The way that is done today is many of these programs are started before they even do a preliminary design. You know the requirements process comes out with the needed capabilities, the funding process, the process that is going to resource that, tends to get cost estimates, one from the program office that is going to run the acquisition, and maybe another one from the Department of Defense's cost analysis improvement group, that are based on very little systems engineering analysis, very little reality. There has not been, you know, forget about prototypes. They are not even close to that.

So these programs begin without any knowledge about, you know, the studies that we've done in the past, on some of the big major weapons systems, F–22 or the B–2 bomber long ago, those programs began and received a funding stream that would allocate billions of dollars in investments to them over the years, before they really had any true understanding whether or not they would ever be able to build that weapons systems.

And so I would say that cost-plus contracting, that is a contracting mechanism that certainly is important here. You have to be able to keep risk under control for the defense industrial base.

But if you don't have the requirements, well established, well understood, with available technologies and the funding process has the available funding stream, this is going to continue to happen.

Mr. DAVIS OF VIRGINIA. I have always felt cost-plus was probably appropriate in these cases, given the flexibility and changing requirements. But you know what? If you went out fixed price, somebody would bid; they would just be much higher. But given the cost overruns here, I am not sure that shifting the risk, I think that is the——

Mr. SULLIVAN. Congressman, an analogy. If you are building a new house or if you want to buy a new car and you just want a contract, you expect that there are going to be some cost overruns. So you're not necessarily signing a fixed price with them. You get their estimate and you have an agreement that they're going to deliver within 10 percent of that perhaps.

Well, if you then ask for, you know, a nuclear-powered furnace to power the heating and cooling in the house—and what is the contractor going to say to you? "That is impossible." Well, in the Department of Defense they might have a requirement like that, and the contractor is not in any way constrained at that point to say, "You know, we don't think we can do that." Because it is a requirement that has been put on, it is best effort.

Mr. DAVIS OF VIRGINIA. They always say they can do it don't they?

Mr. SULLIVAN. They always say they can do it because they have been released from the cost risk.

Mr. DAVIS OF VIRGINIA. That is part of the problem. I don't know how you get at that, but there may be a portion that you can fix prices on pieces of that or somewhat.

Mr. SULLIVAN. I think those are things that can be looked at, but the critical thing to me there is not to start that program unless you have documented you know what you want.

Mr. DAVIS OF VIRGINIA. You know what you want.

We just held a hearing on this, the chairman and myself, on the Census Bureau with some hand-held computers that jeopardized the census now, because they didn't know what they wanted. They came in with so many changes and it is way behind schedule. It is not getting what we wanted. This is not just DOD. It has been going on for a long time. But I tell you what we will spend time on the floor fighting over $20, $30 million for funding for the arts, and then you have cost overruns here that go into billions of dollars.

And it seems when government needs to lose weight in a tight budget, then we chop off fingers and toes, but in point of fact, the fat is layered throughout the system in the way we do our acquisition in our business processes. And we need to give a lot of focus to that. And this is just a prime example.

Let me ask this. Your report recommends that DOD holds program managers more accountable. What do you mean by holding managers more accountable? I don't think anybody is ever fired over this. Is anybody ever fired for any of these? Are you familiar with any managers being fired over these acquisitions? I know you are paying out, the contractors are getting their fees, their award fees. But are managers being fired?

Mr. FINLEY. Yes, there are actions taken in the Pentagon to remove program managers from their duties and reassign them. Yes.

Mr. DAVIS OF VIRGINIA. They are reassigned. They don't lose their job.

Mr. FINLEY. Well, they are serving their country. They get reassigned to another requirement for the service. They are removed from their positions.

Mr. DAVIS OF VIRGINIA. Does it happen very often?

Mr. FINLEY. In my short tenure, I have probably seen it happen more than I have seen in industries in a comparable time.

Mr. DAVIS OF VIRGINIA. What's the downside? Traditionally, managers are risk-averse. I understand. That is good or it's bad. But, in a case like this, in managing something that's difficult, what does a manager do in a situation like that? Do they go upstairs for help when they have to get the change orders? Explain to me the manager's perspective on this. Because they are seeing these things creep out of control. They can't be too comfortable with with it.

Mr. FINLEY. I believe Mr. Young is very focused in this area as well to help facilitate the environment for program managers to come forward and be far more open and transparent about what are the real issues. And in that respect, we have done a lot of streamlining and simplifying of the monthly processes for executive reviews. For example, risk management of these programs is fun-

damental to making the proliferation of cost overruns, you know, a thing of the past. And it is an absolute must-do. And it is an absolute—my opinion—doable.

The programs, in my opinion, should not be starting—a CAT I one program should not be starting with low technology levels. We have TRL's, Technology Readiness Levels that are measured. Programs do not go through Milestone B without a level 6 approval. We believe that is adequate to start.

Programs in the pipeline that have been cited in the GAO report, for example, have started with IIs, IIIs, IVs. All of the histories and all of the stories are there of why these programs should not started.

Mr. DAVIS OF VIRGINIA. Let me just ask this last question.

GAO reports that a significant increase in the number of major defense acquisition programs since 2000, huge increase, but the acquisition work force has remained static in terms of numbers. With this type of program growth and the lack of concurrent increase in the numbers of acquisition personnel, should we have seen the current growth in the use of contracting support for the management of these systems? Has that been a problem?

Mr. SULLIVAN. Is that for me?

Mr. DAVIS OF VIRGINIA. It is for all of you.

Mr. SULLIVAN. You know, this year when we did this, this is a survey we do and we send it out to all these programs. This year because of interests, congressional interest and the use of service contracts and things like that, we included a question on how much of your program office work force is contracted out. The response we got back, I don't think that we are prepared to say if that is good or bad yet. But it is something that seems questionable to us where the use of outsource contractors is growing and it just is a trend that we want to keep an eye on.

We don't have anything, any evidence, that's good or bad at this point.

But if I could go back to the program manager discussion, you brought up the accountability of program managers. The report that we did, that was another thing we asked in the survey. We asked—Secretary Finley had the numbers that DOD has, and those are probably more up to date and more universal than what we had.

I just want to make it clear that in our report we indicate that our analysis of that included 39 of these programs that gave us information back on what the tenure was of their program managers. Of those 39, it was 17 months. But, in addition, the way we hold program managers more accountable is you give them a better business case, I think we were talking about early.

I don't think you can really hold someone accountable for managing risk given the business case of the capabilities that they are going to need to achieve with the funding that they are going to be given and the cost estimates that are based on really not enough data at the time. Not only that, but the timeframes of these programs can be 10, 12, 15 years.

Mr. DAVIS OF VIRGINIA. Let me ask you this. If you are doing a $25 billion program or $50 billion program and you manage it

under time or under budget, what about a bonus system? Does that make sense?

Mr. SULLIVAN. Yes, I think that would make a lot of sense.

Mr. DAVIS OF VIRGINIA. You certainly would get a bonus if you were in the private sector.

Mr. FINLEY. Yes, I think a bonus system does make sense. I think that——

Mr. DAVIS OF VIRGINIA. It certainly would be cost-effective, as opposed to these other issues.

How about you, Mr. Patterson?

Mr. PATTERSON. As a matter of fact, when we have civilian employees who are program managers, they do get bonuses; and their bonus is commensurate with their success in the program. But military program managers, it's a little bit more problematic, as you might suspect.

Mr. DAVIS OF VIRGINIA. All right. Thank you.

Chairman WAXMAN [presiding]. Thank you, Mr. Davis.

We are talking in a more general way, and GAO gave us a lot of examples, but I want to focus on one example that I brought up in my opening statement earlier of just how money seems to be used without any accountability and without any result.

The Expeditionary Fighting Vehicle, supposed to be an amphibious tank that was developed to transport Marines from ship to shore and then to conduct land-based combat operations; and this was thought up in 2001. The Marine Corps awarded a contract to General Dynamics to design and test the EFV in order to prepare it for large-scale production, and they thought through a schedule. They were supposed to finish this phase of development by 2003, and then the Marines would have the vehicle available to them by 2006.

The original budget was $712 million. Through a series of contract modifications, the budget grew to $1.2 billion, and the deadline for completing the system development and demonstration was pushed back to 2006. When the Marine Corps tested the EFV in 2006, it broke down every 4½ hours; crucial parts for the vehicle, including the bow flap and the gun turret, had serious structural problems.

I have a chart that I am going to put up on the screen. It shows the slide that the Marine Corps prepared discussing the results of this test—and I don't know if it's visible enough to you—but, according to the slide, the vehicle will only reach high speeds in the water if Marines don't bring their combat and personal equipment with them on the craft. Well, that means that the vehicle could only work as envisioned if the Marines left behind their battle gear.

Since those tests failed, the program has gone back to square one.

Last year, the Defense Department announced that the EFV would have to go through a second development and demonstration process at an additional cost of the taxpayer of nearly $1 billion more. In effect, the Department said, even though we spent $1.2 billion and 6 years on the first system development contract, we need to start the process all over again and spend another billion dollars to build a new prototype vehicle.

Mr. Finley, how could this have happened? Why didn't the contractor deliver what it promised? Why didn't the Defense Department manage the program better? Why are the U.S. taxpayers out over $1 billion as a result?

Mr. FINLEY. Thank you, Mr. Chairman.

I do not have the facts on EFV with me. I am not as prepared as I would like to be for this particular subject.

I will share with you that, in my tenure, this program came up for Nunn-McCurdy. It was recertified as a program and restructured last year, 2007. It is my understanding that coming into the Nunn-McCurdy as part of the causal mechanisms behind the performance on this program was funding stability, and yet for some number of years, the funding on this program had been cut dramatically from some level but approaching 50 percent of what they had.

Chairman WAXMAN. I don't see any cuts. I see only increases in the amount of money that went into this program. It was a cost-plus project, and the costs were paid. In fact, at the end of the day the contractor got bonuses for a failed effort.

Mr. FINLEY. I would have to take the question for the record, sir.

Chairman WAXMAN. Mr. Sullivan, I believe you have looked at this EFV contract. What, in your view, went wrong?

Mr. SULLIVAN. I think with the EFV they had very tough requirements to begin. Actually, in the beginning of this program, they tried to go forward before they had mature technologies, particularly with the engine, the propulsion that you would need to literally skip across the ocean like a stone with this thing.

To their credit at the time—we are going back to the mid-'90's—the Navy told them to hold up and work on some of those technologies. I think that led to some of the—you know, the annual funding increments they did reduce, a lot of the annual funding increments in the beginning, which slowed them down in that regard.

But once they did get mature technologies and begin, they had reliability—as you mentioned, I believe it was 4 hours between breakdowns on this. I think the reliability requirement was 47 hours.

So when they finally got to a point where they thought they had designed a full-up prototype, they had ignored the critical design review. That second thing that we talk about is, you know, managing the design, building a prototype before you go forward, having a good critical design review at about midpoint. That was ignored, I think. As a result, they got the reliability problems that they have, and they have to start over.

Chairman WAXMAN. Well, there were plenty of warning signs that the contract was not going to work, but nobody seemed to pay attention to those warning signs.

In 2002, the Defense Department auditors issued a scathing report that found that the program was being poorly managed. Here is what the 2002 report said, "Management does not have a handle on reality, particularly with unrealistic schedules."

The report also said the project lacked leadership, and there seems to be "no one steering the ship" and that the project was a "paper dream that everyone accepts but has only a casual resemblance of reality."

Mr. Finley, that was 6 years ago. These warnings weren't heeded in 2002. Why do you think that happened? You don't know specifically about this, but if there are warnings, doesn't the DOD take those warnings seriously?

Mr. FINLEY. That's an unequivocal yes. We do take all warnings seriously. I cannot speak for 2002. I will be happy to take the question for the record, though, sir.

Chairman WAXMAN. Well, in 2006, they had another audit that was performed; and this audit found exactly the same problems that were reported in 2002. Four years had passed, hundreds of millions of dollars had been spent, but there was no improvement in the contract management.

Here is what the auditor said in their 2006 report: "Oversight of the program is ineffective."

"The system's engineering process is inadequate and a major shortcoming of the EFV program. It is a root cause of disarray, uncoordinated design decisions, reliability issues, and the general lack of planning and status monitoring."

Well, it appears that everyone who examined the EFV contract knew for years that it had serious flaws, yet the Defense Department still committed more than $1 billion of taxpayer funds to the contract.

Mr. Sullivan, you mentioned this earlier, there are supposed to be checks and balances in this process to prevent this kind of thing from happening. What do you think went wrong here? Why weren't there checks and balances to take these warnings seriously?

Mr. SULLIVAN. One of the things that happened on this program is they signed the contract to go to system demonstration and development, which is the cost-plus contract to go ahead that opens up the funding. In December 2000, they declared the design stable. In January 2001, in 1 month, they had a complete critical design review that OKed the program to continue toward manufacturing, engineering, manufacturing and development.

Obviously, in 1 month—and I don't think that they had the proper engineering prototypes—they had not accumulated the knowledge that any program manager in any world-class company would have to accumulate before they got more investment dollars in that timeframe. So I really think probably, as a major defense acquisition program, it wasn't getting the oversight it probably deserved.

Now, that's back in the 2000 timeframe—that's probably the genesis of when this really started going wrong.

Chairman WAXMAN. If I hire a contractor to do work for me and they run over budget and run out over time and then they fail, I would want my money back. Why can't the government get its money back?

Mr. SULLIVAN. I think, probably, you know, one of the things that has to happen in this environment that we are talking about is decisions like that have to be made. This is a program that probably was a very good candidate for, you know, if not termination, then somehow, you know, scaling back the dollars that were going into it back in that timeframe.

Chairman WAXMAN. Is it possible to get the money back if it's a cost-plus contract? Or do the contractors say they are not taking the risk; it's the government that's taking the risk?

Mr. SULLIVAN. I don't think—you know, that's kind of outside—I would have to talk to some of our lawyers that we have to understand the legalities of that. But I don't think it's—it's not easy to get the money back. I know that.

Chairman WAXMAN. Well, the problem I see is that nobody in this process is advocating on behalf of the taxpayers. The company is doing fine. It has a contract. It's structured so that it will get paid no matter what the result, even if the result is total failure.

The responsible officials at DOD are not being disciplined. In fact, they may get lucrative job offers from other defense contractors.

But the Marines who need this equipment have to go without, and the taxpayers that foot the bill pay out billions of dollars, and we get nothing in return. That just can't be a system that we ought to be sustaining. I think that's the reason we are holding this hearing, and many of us are very concerned.

Mr. Finley, I do want you to be able to respond to the record. I don't think you were adequately advised we were going to focus in on this weapons system. So I apologize to you for surprising you. But this is something that the GAO looked at and our staff looked at, and I do think it's an illustration of our frustration with this whole system that we have.

Mr. FINLEY. I would be happy to, sir.

Chairman WAXMAN. Thank you very much.

Mr. Burton.

Mr. BURTON. Thank you, Mr. Chairman.

Well, from your testimony, it sounds like there needs to be improvement in oversight and management; and, in many cases, it's inadequate. But if you have a cost-plus contract, the contractor pretty much, as long as he is doing the best he can, you can't really go back and say, hey, we want our money back, as long as he is going to perform as he said he was going to.

Some of these weapons systems—and I have tried to follow this over the years. You are talking about such things that are so complex that, even if you have a design, once you get into the actual production of a prototype, you start finding design flaws that you didn't think there were. I mean, it's not an exact science, is it?

Mr. SULLIVAN. No, it isn't.

Mr. BURTON. Because of that, the contractor pretty much has to work with the Defense Department. The contractor has to work with the Defense Department in order to make sure that those flaws or the design changes are corrected and need to be made. That sometimes involves cost overruns, right?

Mr. SULLIVAN. Yes, sir.

Mr. BURTON. I think that's one of the things we want to talk about. I don't think anybody here—Democrat, Republican liberal or conservative—doesn't want to make sure that we minimize waste, fraud and abuse in the Defense Department or any other department, but the thing that is important to me is that we have the defense capability to defend this country against any enemy, domestic or foreign.

That means sometimes we have to look at weapons systems that may be new and on the drawing boards that we think are going to be necessary to defend this country and we let a cost-plus con-

tract for design and engineering. Once they get into it, we find out that, hey, this thing really needs a lot more work. So you have to go back to the drawing boards and try to make those corrections.

Then when you get a prototype built, you find, many times, more design problems and changes that have to be made; and the contractor and the Defense Department have to go back to the drawing boards one more time to make sure that those corrections are made.

I have seen helicopters that are supposed to be the best in the world, and we have seen them crash. I have seen planes that we have developed that were supposed to be the best in the world. During the test phase, and even after the test phase, they found flaws and they caused crashes and people were killed. When you are talking about defense items, many times you are going to have to make those changes.

Now, one of the things I want to ask is, you know, we go up and down with Defense budgets; and the Defense Department has to pick and choose which Defense programs, which weapons systems that they want to produce. Do the fluctuations between administrations, for instance, change the amount of money that could be allocated, say, for different defense programs, different programs?

I mean, do you have a program to say, OK, we are going to allocate this much, this amount of money through the Defense Department for a program and then the Defense budget is reduced and so the funds aren't there and you have to pick and choose? What kind of an impact does that have on defense design and programs?

Mr. SULLIVAN. Is that for me?

Mr. BURTON. For any of you.

Mr. SULLIVAN. You know, we have looked at—the trend of acquisition funding over the past, I would say, 25 years shows a kind of a buildup in acquisition funding for weapons systems beginning in the 1980's. And then, as the Soviet Union fell and world events changed, we talked about the peace dividend. So you do see a trough beginning in the late 1980's when the Soviet Union fell, through the 1990's, and it is up again now. A lot of that is due to the war and other things.

But acquisition spending, the RDT&E budget and the procurement budget right now are as about as high as they have ever been, probably, for the last——

Mr. BURTON. Let me pose this question. Let's say we have a weapons system that we are developing right now that we think is going to be very imperative for the 21st century to deal with nuclear development by an enemy or a lot of other things; and a new administration comes in and says, OK, we want to cut the Defense budget. There's too much going on, and the Defense Department has to pick and choose the programs that they want to proceed with.

Isn't it possible that some of those programs will be shortchanged and so they have to cut back on research and development? And then as time goes by, if it becomes necessary for that program to be restarted or funded to a higher degree because of the necessity of it, that there needs to be changes, design changes, and there needs to be more money because enough money wasn't allocated in the first place?

Mr. SULLIVAN. If I could just take a minute, and I think you just gave a very good description of what happens to a weapons system. Everyone knows you are going to have to deal with a lot of unknowns and contractors. You signed a cost-plus contract for a reason, because contractors are going to have to deal with a lot of risk, just as you explained.

I think the problem we have here is there are two processes, the requirements process that validates a need and the funding process that will establish the available funding for that. What comes out of the requirements process may validate a need that would overwhelm a threat that they see 10 or 15 years out. But the reality of it is that there's nothing available today that can achieve that need. It's got to come out of the tech base.

They begin the product development for that before that tech base has even invented it. That's where they need—there's a process and the 5,000 process, the acquisition policy. There's a milestone A, and then you work maybe a 2-year process between the milestone A to a milestone B to where that's where you get your big money and you start your program.

That process is really what you are talking about. That's where the need and the available resources and technologies have to—somebody has to come in and apply some reason to that and say, you know, can we get that F–22 fighter to do all of these things by 1996? The systems engineers have to say, no, we can't do that. Let's try to get this—you know, the requirements have to be level. Oftentimes, that's not done; and that's what really gets them in trouble.

If these programs were coming in at 25 percent, 30 percent even, over cost in product development, I think, while that's not acceptable, that is not in the area, really, of wasteful dollars. I think we would understand. But often these programs, EFV is an example, that's over 100 percent over cost.

Not only that, the quantities eventually have to be reduced. So the warfighter doesn't get the numbers that they were talking about; and they are always late, as a result of that.

Mr. BURTON. Mr. Chairman, let me just make one final comment.

No question. I agree with you and everybody on the committee that we need to really police the amount of money that's being spent on these weapons systems. Wherever possible, Congress ought to, you know, pound whoever is in charge over there to make sure that they are not wasting taxpayers' dollars.

But, on the other hand, it's extremely important that we realize on these cost-plus contracts with defense systems that are extremely important in the opinion of the people at the Defense Department and the administration that we properly fund those, even though we know that there may be cost overruns, to make sure that this country is well protected.

Thank you very much, Mr. Chairman.

Chairman WAXMAN. Thank you, Mr. Burton.

Mr. Tierney.

Mr. TIERNEY. Thank you, Mr. Chairman.

Let me continue on that vein, because I am not sure that it looks like anybody ever makes a decision that some of these systems ought not to proceed.

When you look at 92 systems and so many of them behind schedule by such large periods of time and so many over budget by so many dollars, let me ask you, Dr. Finley and Mr. Patterson, have any of these systems ever been scaled back or eliminated?

Has there ever been a decision where somebody finally says, you know what? This thing has been going on for decades showing no progress. We can build now only a fraction of the ones we really intended to build, doesn't meet the original specifications or the change requirements. Let's move on. Let's just put this one on the burner and move on.

Mr. PATTERSON. Yes, sir.

Mr. TIERNEY. Maybe about a half a dozen of those?

Mr. PATTERSON. Joint common missile comes to mind, where we determined that the requirement was not sufficient to continue the program; and the program was terminated. That's the most recent example.

Mr. TIERNEY. Well, how about the F–22, where at one point Vice President Cheney was all for eliminating it? It's, what, two or three decades overdue now. It's billions of dollars—tens of billions of dollars over budget. It was originally designed to go deep in the Soviet Union. That doesn't exist any more. Is the real problem that some parts of it are made in 48 States, and we can't get Congress to kill this beast? Or what's going on with that?

Mr. PATTERSON. I believe it's the Defense Department V–22 that Secretary Cheney had a problem with. As you know, the V–22 is performing quite well in Iraq today. Had we canceled it, it probably would have been a bad thing, but it did take a long time.

But your point is well taken, quite frankly, the fact that we oftentimes live under a circumstance where we live in hope. We hope that it will perform the way that we intended it to. We hope that it will be on budget. But the fact is that the circumstances we find ourselves in oftentimes make that impossible.

I would like to point out and to comment on the GAO's reports that have, in fact, prompted a great deal of effort on the part of the Department of Defense. Back in 2005, the GAO reported a report similar to this one that was used extensively in the confirmation hearing for the Deputy Secretary of Defense that then prompted him to ask for a complete review of the Defense Department acquisition system from the bottom to the top; and those recommendations, which we have started to implement, as Secretary Finley has expressed, are beginning to show progress and promise. Things don't happen overnight, but the fact is that we have started to do that, and I think that we will show success in the future.

Mr. TIERNEY. One of the problems, I think, is that people keep changing; and it's always, we are talking about the past. That's not us. We are doing a better job. Then you move on. Somebody comes in and says that was them. That's not us. But we are doing a better job.

But, Mr. Sullivan, you laid out in the report pretty clearly the best practices. At what point in time do you do the concept refinement and technology development? Then you should move on to the system development and demonstration and then move on to production and deployment.

From your report, it looks like these are overlapping significantly. That just doesn't seem to make sense. We are flying before we are buying on so many of these systems, and then it just creates more work down the line.

The story in the New York Times on the littoral ship being one of those cases where they put it all together and they thought it would work in small spaces and they go backward on the project. So do you see that this is going to change?

Mr. Finley, I would ask you to answer as well. Are we going to get back to the best practices where we actually test and get them to a point of time where we have some assurance they will be able to work in a realistic operational environments before we can move to the next stage? You certainly are not recommending that we don't do that, that we just continue to keep building and paying, building and paying when they don't work and go to the point go.

Mr. SULLIVAN. You know, the way that we look at this, the recommendations that we come up with would be literally it would be a good idea to fully fund a product development program. In order to do that, the thing pretty much has to take 5 years or less. So you have to have requirements that you know are achievable in that timeframe, and that way you can upgrade.

We talk about an evolutionary knowledge-based acquisition process that might get you an F–22A, an F–22B, an F–22C, understanding your requirements all the way along.

There's significant overlap still in most of the big weapons systems that they are building now. The joint strike fighter, there's overlap now. They are going into production. They are in the limited procurement contracts now, and they have just begun testing the aircraft, so that's risky to us.

I would like to say that in the past couple of years—in fact, the Congress, with this section 804 from the Defense Authorization Act a couple of years ago, asked the Department to start looking at things.

I really, to be fair, would like to say in the past 18 months or so there have been—even us, GAO, looking at it from the outside, we have seen things happening at the OSD level that indicate that harder decisions are being made.

I think the JLTV you could probably talk about better that I, but that is an example where they have asked them to go back and look at the requirements before they let them be in a program.

That, as we say in our statement, there's reason for optimism. But, as you said, the transitory nature of the people at the top is really what keeps anyone from being able to change the underlying culture.

Mr. TIERNEY. That and I think just the unending desire, apparently, by Congress to keep writing a check. Nobody ever says this is how much money we have to spend, given all of our other challenges here.

We have to keep the core of the country solid as well as a better defense and morality, but we say, well, that will have to just set aside. Because we will keep writing the Pentagon as many checks they want, no matter how many billions of dollars they go over budget or how many decades they go behind schedule.

I would suggest that some of these auditors ought to come up at some point and say, you know what? Here are X billion dollars off the table. Now realign your strategy here and tell us what you can do.

Mr. FINLEY. I think we are completely aligned on that, Congressman Tierney. We have made a lot of changes, probably way too many, to discuss in this particular hearing, as pointed out by both Mr. Patterson and Mr. Sullivan. And they are very wide-ranging. They are very sweeping.

To your point about people, people oftentimes ask me, you know, I have 265 days to go—my wife is counting.

Mr. TIERNEY. Counting, yes.

Mr. FINLEY. But when I came in we brought in very senior executive people that had the industry experience and the military experience and the passion to serve their country, our country. That has made an astounding difference from a leadership point of view. These are career SESs.

What we have been doing for these 26-some odd months is getting the traction empowered and embedded and, you know, deployed throughout the building, if you will. So the relationship with the four-stars, the three-stars, all the way down to the iron majors is what's been going on.

I can do the tests. I can go to the field today, and I can see things like Lean Six Sigma, continuous process and improvement working in the field in terms of dramatic performance at that end.

At our end of the food chain up here in acquisition, where they think of us at the front end, you know, early preliminary design reviews. We're pushing this entire acquisition process to the left by years. That's what we are talking about. We are talking about competitive prototyping, one of Mr. Young's top strategic initiatives to prototype at milestone A or sooner.

Industry, I believe, is more than happy to invest their R&D money to get better performance out of products before we start making major milestone decisions at B early. And more competition even through milestone B, more competition through milestone C, I believe, will enable us to get our industrial base far more mobilized and able to afford affordable solutions for our warfighter needs.

Right after we sign contracts, for example, at milestone B, we have also instituted what we call a B prime. At B prime, within 30 days, what we want to try to do is have a meeting of the minds that what we are going to sign on the contract is, in fact, what we actually need. Eyeball to eyeball, what have we really got here that we think that we need, make sure we are both talking from the same sheet of paper.

I have heard a lot about contracting. We have shifted from fixed firm price. We are trying to get ACAT 1 programs with predictable performance. That means it needs an additional acquisition strategy. That means it needs a block acquisition strategy. ACAT 1 programs should not have a spiral acquisition strategy mainstreamed into that program planning.

The discovery of some of the programs—in fact, that is what we have found. That is where you see technology, low maturity starting at the get-go, and that's where you see requirements creep at

the get-go. It just does not get stopped without having mature technology.

I fundamentally believe today we have got technology maturity and requirement creep in hand. We have those systems stopped. We have the processes working so that we can move on to other critical issues like funding stability. I think funding stability is imperative to be fixed.

Chairman WAXMAN. Thank you very much.

Mr. Issa.

Mr. ISSA. Thank you, Mr. Chairman.

260—how many days?

Mr. FINLEY. Five, 265, I think.

Mr. ISSA. Is your wife also counting when you go from four to five grandchildren? Does she keep track of all of these things for you?

Mr. FINLEY. No.

Mr. ISSA. I appreciate your service.

Since we have a wealth of historic information here and we are in the waning days of an administration, I am not going to dwell on what this administration can't change; and I am certainly going to try not to overly dwell on the fact that this administration doesn't seem to have done worse than its predecessors. It's just we are disappointed it may not have done as much better than we would have hoped.

Just historical, you know—I mean, I grew up in the military during the MX missile, failed night vision devices, secure radios that were never secure. They were theoretically secure, but they couldn't stay secure long enough to communicate, so, ultimately, you transmitted in the open.

I watched the Vulcan system repeatedly fire an amazing amount of rounds and never hit anything. I know that the A–10 was a disaster, unable to kill or survive in a Soviet environment, and we kept buying and building them. But I was told it got better. They got so good that the Governor of Pennsylvania objected when we tried to retire them on him because he needed them for homeland defense in case there was a riot in Pittsburgh.

I have sort of enjoyed a little bit of history here with you, but I would like to dwell for a moment on how we can change the future so that the next administration and, more importantly, the next Congress can make sure we do a better job.

Mr. Patterson, you are intimately familiar with the C–17.

Mr. PATTERSON. I have been acquainted with the C–17 for a very long time, yes.

Mr. ISSA. I am going to dwell for a moment—by the way, I noticed you are an old 19O2 Ford observer.

Mr. PATTERSON. That's correct.

Mr. ISSA. Now there was an inexpensive contract. We just bought a Cessna 182, put a big engine in it and hoped it would stay in the air. I hope it always did for you in Vietnam.

Mr. PATTERSON. It did, quite frankly. I wouldn't be here otherwise.

Mr. ISSA. Well, that's how you do something on the cheap. You buy a Cessna and say, can you make it a little more powerful? We will put the radios in it and hope that no one shoots it down, because it has no armor.

The C–17 has been a tremendous success. Why is it—two questions. Why is it that the C–17 continues to be bought in bits and pieces? We never shut down the line, because, ultimately, it is a great performer, and we keep realizing that we can and should have more of them. But, at the same time, we have never made a purchase essentially for the end game. Even today, we are not really accurately stating the end game. We zero it out, and then we plus up in order to keep the line running.

I will make it a two-part question for a good reason. The GAO, rightfully so, talked about the C–130J. The C–130J appears as though we are trying to morph endlessly the C–130 from a basic short field, deliver a small amount of cargo in theater to something in many, many fields that it wasn't. As a result, it creeps up to the cost of a C–17 and it exceeds it on a payload basis.

Can you touch on those two areas and how we got there? I really want to know how we got through this trouble. We are not going away from it yet. How is this Congress going to begin thinking about giving instructions to this next generation so we will stop making the same mistake we made in plain sight?

Mr. PATTERSON. Let me talk to the C–17 first. The C–17, in fact, continues to perform in a more capable way than we had anticipated. It performs its night mission. It lands in the short field, carrying the amount of cargo that we had thought it would; and it continues to do that.

While the C–17 performs as well, we have problems that you are well aware of in terms of the C–5 and re-engining the C–5 and having it available——

Mr. ISSA. Please don't go to the C–5. I am on record as saying, except for special missions, we should shut them down. It is the worst decision of the Air Force, but because it is an ongoing Air Force decision that I have fought and lost, I would rather not go there.

I am concerned about these other aircraft—including, by the way, the short-field version of the C–17. We look and say that's sort of like the Cessna 182 with the big engine. We know it can work. We know we can get a guaranteed contract to deliver it at a fixed price and make sure that it meets that requirement or we don't pay. But, at the same time, we continue to go buy C–130's as though it's the only thing that can do a short-field message.

That's why I am limiting you in my limited 5 minutes.

Mr. PATTERSON. The C–17, in fact, does land in short fields, carries a lot of stuff, carries three times what the C–130 carries. The fact that the C–130 is truly a less expensive airplane that the Air Force believes that it can use that in an effective way in the intratheater mission and has chosen to emphasize the intratheater mission.

The C–17, on the other hand, has been used in its long range and long-range direct delivery capability. It is a question of the instant mission that they are having to deal with, and I think that's where the Air Force is going.

I don't want to put words in the Air Force's mouth—and they are probably better able to tell you why they do things—but those are the issues that I believe continue to make the two airplanes marketable to the Department of Defense.

Mr. ISSA. Mr. Chairman, if you could just finish up on the C–130J and how we can justify the continued cost increases there, because that is sort of the mirror of the first half he has answered.

Mr. PATTERSON. I believe—and I will get you the precise answer for the record—but Lockheed has come in with a reduced cost for the C–130J, which is an appealing cost for a continued purchase of that airplane, and that is why the Air Force has seen this as an opportunity, sir.

Mr. ISSA. Thank you, Mr. Chairman.

I would only say that you can tell I would love to have a whole hearing on sort of our lift capability and those—because I believe those, in the long run—you and I will be long retired, and we will still be paying for a fleet of C–5s that can't be cost justified.

Thank you, Mr. Chairman.

Chairman WAXMAN. Thank you, Mr. Issa.

Ms. Watson.

Ms. WATSON. Thank you so much, Mr. Chairman.

Dr. Finley, can you justify paying General Dynamics $60 million in bonuses to build a vehicle that didn't work and had to be scrapped?

Mr. FINLEY. Congresswoman, I am not familiar with the facts. I would, I think, certainly be honored to take the question for the record.

Ms. WATSON. Well, let me inform you that over $25 million—and you better write this down, since you don't have the facts—over $25 million in bonuses was paid to General Dynamics for doing its work on time and under budget. But the work wasn't done on time and wasn't done on budget.

Under the contract, General Dynamics was supposed to build a working prototype by the year 2003. It's now 2008, I believe, and we still don't have a working prototype. In fact, the Defense Department is about to issue a new contract worth nearly $1 billion to build a new prototype because the one General Dynamics built didn't work.

I just feel that if you set out a contract, regardless of the problems the contractor runs into, how do we reward poor behavior? I would like to know how the Defense Department can justify giving a bonus—and this is taxpayers' money. We have a war going on in Iraq, and we still have conflicts in another nation, and we are giving a bonus to a contractor who failed to live up to the contract.

So you can give it to me in writing and please help me to understand so I can go back to my constituents who pay their taxes and let them know what is happening with their precious dollars. Thank you.

Mr. FINLEY. You are welcome.

I would just comment, shortly after I was confirmed, award fee policy was one of the first things that came up on my radar screen, and we immediately did initiate policy change.

Where we are today is we really do not believe award fee structures are appropriate. We are promulgating policy to conduct business with objective goals and requirements for being paid in terms of incentive fees and not award fees.

We will be happy to take this question for the record.

There's rollover provisions that our contracts had historically that we have eliminated. You know, the rollover provisions that they used to have, you know, when not earned in one period could roll over to the next period. So we will be delighted to take the question for the record and get back to you.

Ms. WATSON. Mr. Chairman, reclaiming my time, may I ask Mr. Sullivan to respond to the question I was raising with Mr. Finley.

Mr. SULLIVAN. This is something—if you would like, I could look into that further and get back to you. You are talking about the expeditionary fighting vehicle contract?

Ms. WATSON. Yes.

Mr. SULLIVAN. The one thing I would add to that is I think the new contract they have established has a lot more incentives in it today that are tied to achieving reliability targets. So the Department may have at least looked back at the mistakes they have made with it.

Ms. WATSON. Well, let me ask you this. How is it you would say they justify paying the bonus money out when they didn't meet their contract at all and we are looking at maybe a new contractor? It's inexplicable to me. Maybe you can help me.

Mr. SULLIVAN. Well, Congresswoman, you know, we, actually, wrote a report about award fees in general and the policies that the Department uses. Because we feel, you know, we had the same idea, that the award fee policies were a bit too generous, given the outcomes that they have. I think we found that the Congress did, I think, eventually pass some laws in one of the authorization acts for the Department to look at that. I think that's what Mr. Finley is talking about now, is that the Department has looked at that thoroughly. I think they did recognize that the award fee process had gotten a little bit undisciplined and are trying to tighten it up now again. So I don't think it is justified. I agree with you.

Ms. WATSON. I would hope so, because there's another emergency supplement coming our way, and we have to find out a way to fund it. We want to protect our troops and give them what they need. But when we throw money away and reward bad behavior, it's unjustifiable to me.

Thank you so much. I yield back.

Chairman WAXMAN. Thank you very much, Ms. Watson.

Mr. Cummings.

Mr. CUMMINGS. This is a very interesting discussion, and I am trying to figure this thing out. Because, to be very frank with you, it's a bit confusing.

The question is, how do we move to a culture of excellence? I think that we are mired in a culture of mediocrity, a culture of complacency and a culture of just don't give a hoot. I mean, if we listen to everything that was said—and, Mr. Sullivan you just said something that was very interesting. You were talking about items delivered, delivery of items, and you said they are always late.

I am not here knocking anybody. I am really not. You know, I sit as a chairman of the Deepwater—of the Coast Guard Subcommittee on Transportation, and this thing—I tell you, if I closed my eyes and didn't read a document I would swear I was going through Deepwater.

It's the same kinds of problems: product not delivered on time, bonuses given out to people who don't deserve them, not getting what we bargained for. That's a basic contract concept. You pay. You get what you bargain for.

I mean, I could go on and on; and it seems to me that there is some type—I think we can back up. You just keep backing up, backing up, backing up, and say, OK, guys, it's going to be all right. Just slap your hand. We will correct that for you.

But what is happening is that we have this—time passes on, money being spent, product not being produced, bonuses being given out, American people being cheated. That's a problem; and, at the same time, our national security—and this is probably No. 1—our national security being compromised.

So I guess what I am trying to figure out is, you know, in the Deepwater program, one of the problems was they didn't have the kinds of people—this is my opinion—in the Coast Guard who had the skill to even put together a contract that made sense.

As I said to the Coast Guard, I believe that a first-year law student could have done a better job than having, for example, the person who—the contractors deciding whether they get bonuses, for example.

But I am trying to figure out where are—I heard you, Mr. Finley, talk about we are bringing in all of these people, and then I hear us talking about how we have this turnover and how at what point—going back to some of the things that Mr. Issa was saying—how do we make sure that we are not—we are in a place where we are not having this same discussion 5 or 10 years from now, for example, Mr. Finley, when you are retired and chilling out, you know, in the summer sun.

I am very serious. I mean, what kinds of things must we do now? Because a lot of this stuff comes down to reaching for the very best in America.

I have this saying I tell my kids. I tell them, you know, we can—at some point, you have to meet your maker.

What I say is that people will—you can jive and play games and act like we are doing something successfully and everything is going to be fine, but sometimes the rubber is going to have to meet the road. And the sad part is sometimes we discover there's no road. This is happening more and more in this country. It's not just you guys. Like I said, the Coast Guard is almost a mirror image of this.

So the question then is, how do we make sure that we have the kind of people that we need? How do we lift up that standard of excellence? Because if we are going to be No. 1 in the world and maintain No. 1 status in the world, we have to be on that level. We just can't say, well, they are going to be late.

I see my time is run out, but I hope I can get an answer to that question.

Mr. FINLEY. Well my answer to that question is, sir, we do not accept mediocrity. It does start with the leadership. We do set the pace. We set the bar. I am a very big believer in Lean Six Sigma, been through it numbers of times with a number of companies. It is being implemented in the Pentagon.

There's a shift in the way we do business in the Pentagon to measure performance objectives. Performance bonuses don't come unless you have achieved your objectives. If you have excelled in your objectives, then maybe you get a little bit more. But it starts with leadership; and it ends with the fact that you simply do not accept mediocrity, as you have very eloquently stated.

In the Lean Six Sigma—the good thing about the Lean Six Sigma is you establish a bar of performance, and that performance bar is not measured by who is in charge or personalities. That's measured by process control.

Once you have achieved that processability, you then raise the bar another notch, and you raise the bar. They call it Six Sigma for a reason. You can go to Nine Sigma if you want. It's a continuous process of improvement.

The balance you have to strike is we cannot invest in process improvement at the cost of complex outputs. My process can be so complicated, as 5000.2 has been accused of from time to time.

The process is so complicated we can't find our way through it. That's where we have to slash, cut and simplify the process for better outcomes, not compromise quality, do not accept mediocrity. This is a way of doing business, and we do it as a team.

Mr. CUMMINGS. Thank you.

Chairman WAXMAN. Thank you, Mr. Cummings.

Mr. Tierney.

Mr. TIERNEY. Thank you very much.

There's a lot to go over that we won't have time for here today, but I appreciate the give and take on this a little bit.

I want to clarify something if I can between Dr. Finley and Mr. Sullivan. Mr. Patterson, if you have something to say—I am not sure where you are with Dr. Finley's role—sort of overlap a little bit.

Can we be comfortable now going forward that all the projects, the 92 various programs, are going to go through sort of the knowledge achievement process that the GAO outlined in its report? Do you have that confidence, Mr. Sullivan?

Mr. SULLIVAN. Well, if you look at the portfolio that we are examining, the 95 programs, many of them are beyond that. I mean, this is a snapshot in time of all the major——

Mr. TIERNEY. Some of them have gone by the by.

Mr. SULLIVAN. We have F–22 in there. We have Global Hawk. There are a lot of programs beyond that.

But a study should be done of what is starting now and begin to track these new ones. So the 95 programs that we are talking about, these are not all new starts. I would hope that——

Mr. TIERNEY. I would just ask Dr. Finley just that. The programs that you are starting now, Dr. Finley, can we anticipate that they will follow the knowledge achievement system that the GAO talks about in its report?

Mr. FINLEY. Well, the knowledge achievement system in itself is one I don't understand necessarily; and I need more work with my friend, Mike, to figure that out.

Mr. TIERNEY. Where did you get that, Mr. Sullivan? This isn't something you invented, is it?

Mr. SULLIVAN. It's something that we probably articulate for the first time, but I think the three points that we talk about are——

Mr. TIERNEY. Pretty confident.

Mr. FINLEY. Yes, but the programs that are in this pipeline of acquisition at the ACAT 1 level, all of these programs are in the process of going through very simplified, very streamlined reporting to OSD, first of all.

These have leading metrics. We are looking ahead 8, 12 months, performance, cost, schedule performance and survivability.

We are also, as a result of all the Nunn-McCurdy actions that we have had last year, are looking at what we call triage; and we are able to discern programs that may not be in trouble today but at leading indicators that's where they may be tomorrow. As he implied, not only the pipeline but to programs that are typically outside of the so-called OSD pipeline and milestone C.

Once you get into production, once you get in sustainment, oftentimes, these programs lose our radar screen. We are bringing all of those back into our radar screen; and we are pushing the front end of the radar screen, if you will, at the very, very beginning into the format 13170 requirements process to help facilitate dialog about our critical technologies, what our readiness is to make the entire process end to end far more streamlined and effective.

Mr. TIERNEY. Thank you.

Mr. Sullivan, can you talk a little bit about the ground-based, mid-course defense systems block system of finding—the spiral development thing, whether they are developing it in blocks and so forth. Does that comport with best practices in the industry, and how does that affect or not affect the ability to make sure we don't fly before we buy?

Mr. SULLIVAN. Is this part of the Missile Defense Agency?

Mr. TIERNEY. It is.

Mr. SULLIVAN. Congressman, it is something I can look into and get back to you on. I don't know enough. I know a little bit about how the MDA is going through the three points or not going through the three points that we talk about. I can get something for you and give you my opinion on that in writing.

Mr. TIERNEY. Thank you. I would appreciate that if you would.

Dr. Finley, do you have any say over that MDA program?

Mr. FINLEY. I am sorry? Can you repeat the name of the program at MDA?

Mr. TIERNEY. Missile defense?

Mr. FINLEY. No, I am familiar with missile defense, but which program?

Mr. TIERNEY. It was the ground-based, mid-course defense system itself. We also involved the Aegis, airborne laser, that stuff.

Mr. FINLEY. I am sorry. What is the question again?

Mr. TIERNEY. The question had been whether or not you are directly involved with establishing that block sort of accountability process.

Mr. FINLEY. Yes, sir, we are involved. Oversight of MDA and ballistic missile defense has fallen into the four different committees, subcommittees, standing subcommittees. I am on two of those standing subcommittees as co-chairman.

One committee that Mr. Patterson and myself are involved in is the budgeting and the programmatics end of the business. The other committee is testing evaluation.

Mr. SULLIVAN. One of the things that I thought of there is the Missile Defense Agency is interesting in that it has one selected acquisition report; and there are probably 20—I am not sure how many—but many major acquisitions going on within that. And that's a—you know, there's a difference being able to manage properly and being able to fund elements across a wide matrix of things you are trying to get done and oversight.

But from our point of view it's very difficult to have oversight of 20 different programs when they are all part of one report. That's just kind of an aside.

Mr. TIERNEY. That's our point as well, and we have issues on that.

Let me just, if I can—and I don't want to overstay my welcome here, but I want to talk a little bit about the contractors that are out there.

Mr. Sullivan, you indicated, of the 72 programs, about 48 percent of the personnel involved in that were contractors. So I guess the question is, are we relying too heavily on contractors? What are the dangers? If we are—dangers in terms of how that might affect the program and the inability to say no when it's necessary? But also dangers—are we not having enough people on the government payroll able to manage these contracts? Whether that seems to be a problem with people retiring. I have noticed that the age group is in the 40's and up on that. And from all three of you, what are we going to do about that, and what are the problems of having so many contractors?

Mr. SULLIVAN. If I can clarify, we did look at 72 programs overall. But when we sent the survey out, I am not sure—there was some percentage of those programs that actually answered that question for us. So it is some—probably half of those we have data back on. So it's a much smaller subset.

Mr. TIERNEY. Of half of those programs they had almost half of the personnel.

Mr. SULLIVAN. That's right. I think the reason we were asking that question is because of interest in the Government, generally, speaking about, well, are you raising it? Are you contracting out some of the things that the government really needs to keep in hand?

As I stated earlier, we have not found any evident bad effect of that yet, but we question it a lot. We think that the Government should try to maintain a more organic work force than they have now. I think it goes to some of the things that Mr. Cummings was talking about. You know, as you contract things out, you lose the organic capability and probably get more mediocre and lose the Government's interests in the process.

Chairman WAXMAN. Thank you, Mr. Tierney.

Mr. Issa, do you wish a second round?

Mr. ISSA. Yes, Mr. Chairman. Thank you.

Mr. Sullivan, when did you join the government?

Mr. SULLIVAN. 1986.

Mr. ISSA. I apologize. Yours was the only bio I couldn't get.

So you sort of came in at the height of Nixon's buildup. The 600 ships was somewhere in sight over the horizon.

Mr. SULLIVAN. Six hundred ship Navy, right.

Mr. ISSA. During that period of time, was contracting better or less well done than it is here today? Did we do a better job? Was there less waste?

Mr. SULLIVAN. Just kind of generally speaking, I would say that it is about the same, really.

Mr. ISSA. Ten years into your career, midway through your rise, was it any better, any worse in 1996?

Mr. SULLIVAN. From my perspective, the things that were taking place in the Department, there was an acquisition reform movement that began with the end of the cold war. It seems to me that there was at least initiative and the idea that things could improve, a lot of acquisition reform with very good thinking trying to be put in place by people like William Perry.

Mr. ISSA. Did they pull it off?

Mr. SULLIVAN. No.

Mr. ISSA. And I am not going to overly pick on one thing, but the Crusader was ordered, designed, nearly procured all post cold war so that we would have a big frigging gun that could shoot a long way and weighed not just a ton but more tons than any road can hold.

Isn't it essentially true that if we're going to really improve government procurement to get us the right systems, the right time, with the minimum mistakes—and there will always be mistakes. When you say I want to see at night, I want to fight at night, I want to know where the enemy is and where the friendlies are, and I want to be able to pinpoint them with a smart bullet, that is not going to be easy to do. But if we are going to do that, we are going to have to take career professionals like yourself and not these two gentlemen who came from industry but the people who worked on the BFE program, and we are going to have to change how they do business. We're going to have to do another reform. Isn't that true?

Mr. SULLIVAN. I think that the culture needs a change, yes.

Mr. ISSA. And just for the record, because I think it is critical. And not only are you a career professional but how many people on these programs that you cite in your report that failed, how many people in one of those programs was a political appointee? Out of every 10, essentially 10 were career professionals. Either they were active duty military or they were career professional civilian.

Mr. SULLIVAN. Yes, sir.

Mr. ISSA. So because the other side of the aisle sometimes wants to make it seem as though a change in Congress or a change in administration really hasn't made any change in your oversight, your job and how well it is done, could I ask it straightforward—the administration per se or the previous administration, this Congress or the previous Congress, realistically, although we may have failed to improve things, did we really have any impact? Or isn't it essentially what you are complaining about in your report part of a culture that has been unwilling or unable to be changed by

both previous administrations and this administration, previous Congresses and this Congress?

Mr. SULLIVAN. I would say that is fair. It is about the culture of this acquisitions community that we talk about has been impervious.

Mr. ISSA. Secretary Finley and Mr. Patterson, I am going to ask you both together. You both came from industry. You both have been on both sides now on this. Going forward as part of your legacy to the next administration, because you have tried for 7 years, I am sure, to improve things, and I know you can cite things you have improved, but what is it that this committee, the primary Committee of Government Reform—and the oversight's worked. We found out that this is a problem that has been around since not the cold war but since World War II. What is it you leave us with that should be the beginning of our process of reforming the system so that these career professionals who want to do a good job will do a better job?

Ms. PATTERSON. Well, I think the first thing that I would recommend is that—and I don't want anybody to get the idea that, despite that we have a great relationship with the GAO, that I embrace this particular study. I don't. But——

Mr. ISSA. We will assume for a moment that, if it wasn't there, there would be other things that could be done.

Mr. PATTERSON. That I do embrace, yes. But what I would say is we should be directed to work together with the Government Accountability Office to come up with a mutually agreeable way forward that takes into consideration the pressures and limitations and resources that the Department has, the kinds of requirements and budgetary and acquisition rules, regulations and limitations that we have, with the clear—the clarity that the Government Accountability Office brings in terms of what the government and its oversight requirements need in order to achieve the end state of on cost, on schedule and performing. And that is really what we are all about.

And I think that also having been the executive director of the Defense Acquisition Performance Assessment, having had over 1,000 different observations, over 100 different people coming and talking to us, I concluded that, because we have a dearth of competent people as a consequence of us reducing the real skill levels during the 1990's, we have to replace it with a series of rules.

And Secretary Finley has talked to you about the process in which we are starting to implement those kinds of things. But something very simple; and he raised this, that you build what you bid. I know it sounds simple. But the fact is that, oftentimes, while the ink is drying on a contract, everybody has better ideas; and we start to change what we had originally asked for. We have to stop that kind of behavior.

And those are the kinds of things that I would offer, and that came out of the DAPA study. And I appreciate the question, and we certainly appreciate being here with the Government Accountability Office.

Chairman WAXMAN. Thank you, Mr. Issa.

Mr. ISSA. Mr. Sullivan, had one more comment.

Mr. SULLIVAN. You know, I was thinking through this as Mr. Patterson was talking. I don't know how long ago it was but the Goldwater-Nichols Act by the Congress, 20 years ago, whenever it was——

Mr. PATTERSON. 1986.

Mr. SULLIVAN [continuing]. The year I came into the government—looked at how the warfighters fought wars and wanted more jointness in that and wrote a law to do that; and I think we now have warfighters that fight wars jointly very well. I think the same thing, that kind of focus has to be given to how we acquire weapons systems, too. Because in a lot of ways it is the stovepipes and the parochial nature of this culture that creates all of the inefficiencies.

Mr. ISSA. So you are calling for a Waxman-Issa reform before the Senate beats us to it. It is OK to say yes, as long as the chairman lets you.

Mr. SULLIVAN. Sounds good.

Mr. ISSA. Thank you, Mr. Chairman.

Chairman WAXMAN. Thank you, Mr. Issa. This hearing was requested by Mr. Davis, so I am thinking we will have him as the co-author of the reform.

Mr. ISSA. We will make it the Davis-Waxman, just one for the Gipper.

Chairman WAXMAN. Sounds good to me.

Ms. Watson, did you want a second round?

OK, I had some further questions to wrap up the hearing. Because we want to be constructive, but we can't be constructive unless we get accountability in the system. And I talked about the EFV program. I am troubled even more by the complete lack of accountability for the mistakes in that program. There were massive screw-ups that cost the taxpayers billions of dollars.

Yet, Dr. Finley, you seem—you are going to get back to us on the record on some of these things. I am looking forward to your responses. But GAO has reported that the Defense Department failed to follow best practices in its weapons development programs. Your comments were that, to the GAO, that the GAO was wrong. On page 10 of your written statement you said, "the best practices are embraced and practiced throughout the Department of Defense."

So I want to ask you about specifics. First, as I understand it, you are generally supposed to complete your engineering drawings before you conduct the critical design review. Mr. Sullivan, in the GAO report, you say that a program should complete at least 90 percent of the engineering drawings before the critical design review, is that right?

Mr. SULLIVAN. That is general. And when we speak to large world-class firms that do these sorts of things, that is the general rule.

Chairman WAXMAN. And I think it makes sense.

Mr. SULLIVAN. In fact, the Department of Defense has policies that agree with that.

Chairman WAXMAN. You want your engineers to plan everything out and make all their calculations to make sure the project will work on paper before you proceed. You agree with that, Dr. Finley.

But in the case of the EFV, the Defense Department didn't do that. They didn't wait until the engineering drawings were done.

In fact, they started the critical design review in January 2001. That was just 1 month after the program started, and GAO concluded this was a major problem. GAO warned that this did not allow adequate time for testing, evaluating the results, fixing the problems and retesting to make sure that the problems are fixed before moving forward.

So, Dr. Finley, this contradicts what you said in your testimony. The Department didn't follow the best practices. It did not complete the engineering plans before it launched the critical design review. GAO warned that this would cause major problems; and, in fact, it did.

What I would like to know is who made that decision? And you may have to supply that for the record. Who decided not to follow the standard procedure? Who decided that you didn't need to complete the engineering plans before proceeding? And what accountability has there been for that mistake?

That decision has resulted in more than $1 billion in taxpayer funds being wasted. Has that person been fired? Has that official been disciplined?

And I assume that you're not prepared to answer that question now, but you will get an answer to us.

Mr. FINLEY. I will be pleased to take it for the record, sir.

Chairman WAXMAN. Another best practice according to GAO is to have an official responsible for ensuring that all of the different parts of the program work together and a senior-level engineer whose job it is to make sure that all the plans make sense when combined into one coherent system. But the Defense Department didn't do that.

According to the audit from 2002, "There is no overall system engineer or architect with the authority and responsibility to ensure products meet their allocated and integration requirements." Here is what the auditor said. "There seems to be no one steering the ship."

Dr. Finley, this also appears to me to contradict your testimony that the Pentagon follows best practices. What accountability has there been for this mistake? And we will look forward to getting your answer on that.

Our oversight and GAO's oversight both show the same thing. The same problems happen over and over and again. One reason that this happens is that there seems to be a culture of complacency at the Defense Department. When mistakes are made, there is no accountability. That leads to more mistakes and more ways to spending. There seems to be no one looking out for the taxpayer, and that is the concern that we have about this system.

And I know you are not prepared to answer the questions about this particular system at this moment, but we would like to have you submit in writing for the record responses to these questions.

Mr. FINLEY. Yes, sir.

Chairman WAXMAN. Members may want to ask additional questions for the record, and we would like to ask the three of you to be prepared to respond in writing to further questions, and we will hold the record open for such requests.

I thank you for your participation at this hearing. I think it has been a good one to get to the point where maybe we can change

the direction and in another 10 years, Mr. Sullivan, you won't come back here and say, it is pretty much the same now as it was 10 years ago. We'll have you come in and say, things have improved a lot; and then we will argue with you why we haven't even done better. But with all of your help we will do better in the future.

That concludes our hearing today, and the hearing stands adjourned.

[Whereupon, at 12:15 p.m., the committees adjourned.]

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