

CNA Independent Assessment: Air Force acquisition

Return to excellence



Gary E. Christle

Dr. Dan Davis

Gene Porter

Executive Panel:

Lawrence P. Farrell Jr., Lt Gen (ret), Panel Chair • Honorable Claude M. Bolton Jr., Maj Gen (ret) •
Honorable R. Noel Longuemare Jr. • Tofie M. Owen Jr. • Mark H. Ronald • Lawrence A. Skantze,
Gen (ret) • Ronald W. Yates, Gen (ret)

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Photo:

Capt. Lowell H. Smith and Lt. John P. Richter receiving the first mid-air refueling on June 27, 1923, from a plane flown by 1st Lt. Virgil Hine and 1st Lt. Frank W. Seifert. Two Airco (De Havilland) DH-4B day-bomber biplanes.

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Jino Choi
Cost Acquisition Team
Resource Analysis Division

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Preface: A call to action

In the early 1960s, a strategic oriented Air Force found itself unprepared for the Vietnam War. Consequently it came out of the Vietnam War flying Navy aircraft carrying Navy weapons. Vowing not to let that happen again, it embarked on a successful journey to acquisition excellence.

During that journey, it delivered the F-15 and the F-16, two of the finest aircraft ever produced. The Air Force developed new project management tools, such as earned value, integrated master plans and integrated master schedules, and it became the DOD proponent for systems engineering through the introduction of Mil-Std-499. The Air Force Institute of Technology was a hot bed of research and new ideas in acquisition management. Air Force guides and pamphlets on acquisition tools and practices were widely used across the DoD. A robust Air Force acquisition community introduced technologies like GPS and stealth that revolutionized war fighting capabilities.

As we entered the 1990s, the Air Force was widely recognized as having the premier acquisition enterprise in the DoD. At its peak the, Air Force acquisition community consisted of nearly 52,000 military and civilian professionals, 31 flag officers, including one 4 star and three 3 stars, all with many years of significant acquisition experience.

Today the Air Force acquisition community is a mere shell of its former self, consisting of approximately 24,000 military and civilian professionals, with no four-star seat at the “Corona” table. Since the mid-1990s, not only has cost growth for Air Force programs been rising at an ever-increasing rate, but it is worse than the cost performance of its sister Services. Every day it seems, there is a new story in the public media suggesting Air Force acquisition incompetence. Certainly, the Navy has its Littoral Combat Ship, the Army has its Armed Reconnaissance Helicopter, the Marines its Expeditionary Fighting Vehicle, but the Air Force has its Space-Based In-

frared Radar System, CSAR-X search and rescue helicopter, and KC-X aerial tanker, now in its fourth attempt to award a contract. The Undersecretary of Defense for Acquisition, Technology, and Logistics, regularly rails against Air Force acquisition performance. As recently as 27 January 2009, the Secretary of Defense, in testimony before the Senate Armed Services Committee, singled out the Air Force as an example of the general deterioration of the acquisition workforce.

As we enter an era of technology driven war fighting transformation, CNA and its panel of exceptional retired senior officers and civilian acquisition leaders, call upon the senior leadership of the United States Air Force to commit themselves once again to acquisition excellence. This is not only a matter of national urgency, it is a matter of Air Force pride.

Summary

Task

A Secretary of the Air Force (SECAF) memorandum, dated 18 July 2008, directed the Assistant Secretary of the Air Force for Acquisition (SAF/AQ) to:

Provide terms of reference for an independent, 90-day assessment of the Air Force acquisition process that will identify specific problem areas and make recommendations for longer term improvement.

This was to happen no later than 1 September 2008.

On 18 September 2008, CNA was asked to select the members, appoint a chair, and manage the activities of an executive panel composed of retired senior uniformed and civilian executives with significant experience in managing acquisition programs and portfolios from an AF, defense, and industry perspective. Under the direction of CNA, the executive panel, supplemented by CNA acquisition experts, made a broad-ranging, top-to-bottom assessment of the current state of AF acquisition. We interviewed, in-depth, 48 current and former senior acquisition officials and executives from the AF, the office of the Secretary of Defense, the Navy, and private industry.

Problem definition

Since the mid 1990s, the AF has experienced a number of symptoms that indicate problems with its acquisition system and processes. Some of the most pressing of these symptoms have been:

- Numerous cost-schedule-performance issues;
- Numerous Nunn-McCurdy unit cost breaches;
- Increased time to bring major systems to the field; and

- Successful protests by contractors on major programs.

Not only has the Air Force been experiencing significant cost growth in recent years, its cost growth performance has been generally worse than that of the Army and Navy.

Significant findings and recommendations

This report is organized into two broad categories with six topic areas:

- People
 1. Culture,
 2. Senior leadership, and
 3. Workforce and structure.
- Process
 1. Acquisition process and policy,
 2. Requirements, and
 3. Budget discipline.

This report contains 24 recommendations, and 21 sub-recommendations. This summary recaps the 10 most important recommendations, including five that we believe are critical and *must be implemented*.

Culture

- Discussion

Based on some 48 interviews, CNA and its executive panel have concluded that the apparent failure of the broad Air Force community to value “acquisition” as a profession is a major impediment to significant improvements in Air Force acquisition.

It is our opinion that the ability of the Air Force to continue to provide combat capability to the joint warfighter over the long term is almost totally dependent on the skill, dedication,

and efficiency of its acquisition workforce. It is imperative that the acquisition profession be seen as a valued component of the Air Force. The equip function must be treated as equivalent to the organize and train missions. Without an effective equip function, the ability of the Air Force to provide the capability demanded by the joint warfighter will be in jeopardy.

If the Air Force is to return to its former preeminence in acquisition management, we believe that given the breadth and depth of the decline in Air Force acquisition, it is absolutely paramount that the SECAF and the Chief of Staff (CSAF) become personally involved in rebuilding the acquisition workforce and its leadership for an extended period of time. The Air Force descent to its current acquisition state has taken at least 15 years and will not be fixed overnight. When the Air Force's best leaders want to participate in building the future Air Force, the acquisition community will be valued. This is a major leadership challenge for the SECAF and the CSAF.

- Findings
 - The Air Force does not value acquisition as a profession.
 - The Air Force does not view the equip function equivalent to organize and train.
- Recommendation—*Critical*
 - The SECAF and the CSAF must take a personal, active, and sustained role to invigorate the Air Force acquisition workforce. (see report recommendation 1).

Senior leadership

- Discussion

The SAF/AQ, the CSAF, the commander, Air Force Materiel Command (AFMC), and the commanders of the user commands need to be more actively and personally involved, together, in defining requirements and resource priorities. This interaction is especially necessary when issues arise regarding adequacy of requirements and/or resource mismatches. In the past, such ad hoc meetings were referred to as “summits,”

which were normally called by the senior acquisition leader, but could have been called by any of the aforementioned principals. We believe summits should always be convened before an acquisition category one (ACAT I) requirements document is signed or forwarded to the Joint Requirements Oversight Council (JROC).

- Findings
 - The Air Force leadership is not focused on acquisition.
 - The chain-of-command does not enforce accountability or process discipline.
 - Leadership is not regularly engaged in review of programs.
- Recommendation—*Critical*
 - Headquarters Air Force should issue appropriate policy and implementation instructions to establish a “summit” process to achieve timely resolution of requirements and resource issues. (see report recommendation 2).

Workforce and structure

- Discussion

Of the 48 interviews we conducted only one person thought the wing/group/squadron (WG/GP/SQ) structure had been successful. These findings are consistent with CNA’s findings in 2006. The assessment team believes the wing structure is a major inhibitor to efficient and effective execution of the acquisition process. It inhibits efficient reallocation of personnel resources, disconnects employees from what should be their functional mentors, and inhibits proper career management. Furthermore, we were frequently told that the command selection process for wing commanders often results in wing commanders with limited acquisition experience.

The WG/GP/SQ construct results in organization wiring diagrams with dotted lines purporting to show that the DOD I 5000.2 restrictions on reporting levels is not being violated, while hard lines clearly show conflicting rating and reporting

schemes. Furthermore, the purported purpose of this organizational structure has not been fulfilled. People inside and outside the acquisition community told us that they needed “decoder rings” to find the system X program office.

We are in *unanimous agreement* that a return to a matrix structure with functional home rooms is a necessary ingredient in revitalization of the Air Force acquisition workforce. The wing structure:

- Inhibits functional management and development of the workforce;
- Inhibits deployment of critical skills and resources across and among wings and centers;
- Adds at least one additional organizational layer;
- Confuses reporting and rating chains;

The only positive comment we have heard about wings is that the wing commander owns his/her resources and can therefore allocate them when and wherever needed *within the wing*. This prerogative eliminates the need to get permission from the functional lead. Related to this “positive” attribute of the wing is the fact that the wing commander can override the workforce training plan of the functional lead. While we understand why a wing commander would like this control, the Air Force today clearly has a workforce development problem. We think the negative impact of the wing structure on workforce management and development outweighs the wing commander’s prerogatives.

We recommend that the wing structure be abolished as soon as practicable. This recommendation does not have to be studied! The structure is so obviously dysfunctional within the context of the acquisition mission that there should be no delay in ending this unfortunate experiment.

- Finding
 - WG/GP/SQ structure is inefficient and dysfunctional.
- Recommendation—*Critical*

- Immediately disestablish the WG/GP/SQ structure and return to a matrix organization. (see report recommendation 5).

Requirements

- Discussion

Virtually all of the people who discussed requirements with us complained that there were few if any constraints on requirements in terms of numbers, cost, or technological maturity. Acquisition participants in requirements High Performance Teams (HPT) tended to feel either ignored or intimidated. They said acquisition members are frequently chosen based on the fact that they are simply available and often were replaced at the next meeting. One interviewee called this “catch and release.”

We could not find evidence that there was any structured process to ensure their requirements are prioritized, doable, or had attributes that could be evaluated by a source selection board. The interpretation of what is a KPP (Key Performance Parameter) appears to be not well defined or understood. The current DOD I 5000.2 states

“users shall identify and the requirements authority shall approve a minimum set of key performance parameters. . . .”

It goes on to state

“To maximize program trade space and focus test and evaluation, the MDA [milestone decision authority], PEO [Program Executive Officer], and PM [Program Manager] shall work closely with the requirements authority to minimize KPPs and limit total identified program requirements (emphasis added).”

The nearly 40 KPPs and hundreds of derived requirements that were treated as KPPs on the KC-X, clearly indicates that this policy guidance was not followed.

- Findings
 - The requirements development process is seriously flawed.
 - There is an excessive number of KPPs.
 - Evaluability and testability is often neglected.
 - Technical feasibility is often overestimated.
 - Performance trades are not emphasized in requirements generation.
 - There are disconnects between requirements, acquisition, and resource communities and processes.
 - There is inadequate stratification of requirements to enable and institutionalize the concept of block acquisition.
- Recommendation—*Critical*
 - The SAF/AQ and the Deputy Chief of Staff for Operations, Plans, and Requirements (A3/5) should establish a SAF/AQ-led process for trading and prioritizing performance with cost and schedule risk. This process should assume that a “summit” will be called as necessary. (see report recommendation 18).

Acquisition process and policy

- Discussion

We found very little consistency in the use of processes and implementation of policies across the product centers. People we talked to also noted that the breadth and depth of knowledge and experience varies considerably across the centers. While this was disconcerting, of even greater concern was the fact that the Acquisition Centers of Excellence had no authority to implement or enforce policies, best practices, and acquisition initiatives in general.

Because of the obvious similarities between the Naval Air Systems Command (NAVAIR) mission and the Air Force acquisition mission, and because NAVAIR has garnered a reputation for acquisition excellence in recent years (a reputation once enjoyed by the Air Force), we interviewed the NAVAIR com-

mander. We were very impressed by the description of the source selection experts group in headquarters, NAVAIR. This group of experienced and knowledgeable source selection experts either leads or advises all NAVAIR source selections. They have a remarkable record of not having lost a protest in more than 16 years.

If the Air Force used organizational teams of experts, and abolished the wing structure and returned to matrix management as recommended in the previous section, outcomes should improve, especially in the contracting and source selection arena.

- Findings
 - There is very little consistency in the use of processes and implementation of policies across the product centers.
 - The breadth and depth of knowledge and experience varies considerably across the centers.
 - There is limited and ineffective use of key processes.
- Recommendation—*Critical*
 - Commander, AFMC, should stand up teams of 15 to 25 acquisition experts at each of the product centers, along the lines of that in place at the Naval Air Systems Command. (see report recommendation 12).

Rounding out the top 10

In addition to the above discussed five critical recommendations, we encourage the reader of this summary to contemplate the next five recommendations which complete our listing of the top 10 priority recommendations.

- The SECAF should direct that AFMC commander be designated a DAWIA (Defense Acquisition Workforce Improvement Act) level III, KLP (Key Leadership Position), with its primary focus on acquisition. (see report recommendation 4, under "Senior leadership").

- It is very difficult to leave this recommendation out of our top five. We believe that it is, in fact, critical to get an acquisition 4-star into the acquisition leadership process consistent with title 10 requirements. We have recommended reinstatement of the “summit” process and it would be best if that included a *uniformed* 4-star. We also believe that the reality of the Air Force governance structure and culture demands a *uniformed* 4-star seat at the Corona table. Additionally, we believe that this recommendation is a necessary enabler for delegation of acquisition workforce management to AFMC.
- SAF/AQ, in coordination with CSAF, should delegate management of the AFMC’s portion of the Air Force acquisition workforce to the commander, AFMC, under the direction, oversight, and guidance of the SAF/AQ. (see report recommendation 6, under "Workforce and structure").
 - AFMC owns approximately 60 percent of the personnel billets and virtually all of the billets associated with most significant acquisitions. Since SAF/AQ retains responsibility for policy and oversight, they should ensure appropriate consistency across the entire acquisition workforce. We believe that AFMC should manage their portion of the acquisition workforce but only if they have a significant stake in the performance of the workforce.
- The program control function should be restored and/or revitalized within program offices. (See report recommendation 13, Process).
 - The executive panel was amazed to learn that this critical function is frequently reduced to little more than a budget shop. The consensus opinion was "How can anyone run a program without the program control function?" When combined with the consequent move to place earned value functionals into financial job series, it is no surprise that the earned value function has virtually disappeared from the Air Force.
- The department should establish a quarterly program assessment review process that includes SAF/AQ, CSAF, and

SECAF. (see report recommendation 3, under "Senior leadership").

- Regular “drumbeat” program status assessments are a necessary part of keeping the AF senior leadership involved in acquisition. The mere preparation for these assessments enables problem resolution.
- Require that all CAP (Critical Acquisition Position) and KLP incumbents conduct continuous training sessions as part of their own continuous learning requirement. (See report recommendation 10, Workforce and structure).
 - Given the continuing and rapid “brain drain” in the Air Force acquisition community, and the need to upgrade Air Force acquisition expertise as rapidly as possible, the CAP/KLP talent that currently exists should be used to train and mentor the current workforce. This need not be an additional duty for these valuable people. It can be used to satisfy the DAWIA 80-hour continuous learning requirement every 2 years.

Other issues

The following report contains another 14 recommendations and 21 sub recommendations all of which are deserving of careful consideration. To underscore this point, our list of top 10 recommendations does not include any budget process recommendations. Obviously acquisition has serious budget process issues and every review of the acquisition system identifies such issues.

Finally, while we have no recommendations that *directly* address accountability although we discussed the subject in the following “Introduction and Background” section under the heading “Accountability, consequence and follow through.” We believe a general lack of accountability at all levels of the Air Force acquisition system is a primary reason that acquisition improvements have been so difficult to implement.

To successfully implement the recommendations in this report:

The AF leadership must establish a basis for accountability. Leadership must articulate to those charged with carrying out these recommendations,

- That implementation of these decisions will be reviewed as they are executed;
- What, specifically, the headquarters leadership will be held accountable for; and
- What are the personal as well as institutional consequences of failure.

Implementation action plans must be structured and treated as the urgent actions they are. These actions need to take precedence over routine duties. SECAF and CSAF need to make clear the urgency of the situation.

“You’re looking at the calendar and I’m looking at my watch.”

Lieutenant General Russel L. Honoré,
Commander, Joint Task Force Katrina

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Introduction and Background

Secretary of the Air Force (SECAF) memorandum dated 18 July 2008, directed the Assistant Secretary of the Air Force for Acquisition (SAF/AQ) to, no later than 1 September 2008,

“Provide terms of reference for an independent, 90-day assessment of the Air Force acquisition process that will identify specific problem areas and make recommendations for longer term improvement.”

On 18 September 2008, CNA was asked to select the members, appoint a chair, and manage the activities of an executive panel composed of retired senior uniformed and civilian executives with significant experience in managing acquisition programs and portfolios from an Air Force, defense and industry perspective. Under the direction of CNA, the executive panel, supplemented by CNA acquisition experts,¹ made a broad ranging, top to bottom assessment of the current state of Air Force acquisition. We interviewed, in-depth, 48 current and former senior acquisition officials and executives from the Air Force, office of the Secretary of Defense, the Navy and private industry.²

The executive panel briefed its initial findings and recommendations to the Assistant Secretary of the Air Force for Acquisition on 8 December 2008, and to the Secretary, Chief of Staff and vice Chief of Staff of the Air Force on 9 December 2008.³ This report clarifies, expands and finalizes the findings and recommendations briefed by the CNA study team and executive panel.

-
1. Appendix A.
 2. Appendix B.
 3. Appendix C.

Accountability, consequence and follow through⁴

In a May 2001 interview with Defense News, then Defense Secretary Donald Rumsfeld posed the rhetorical question:

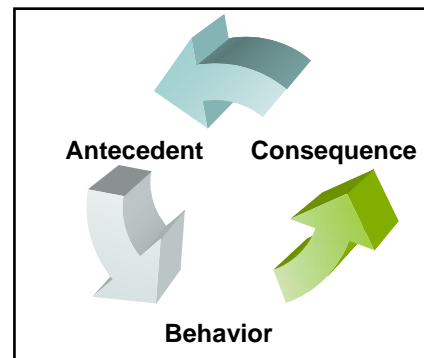
“Why has there been little fundamental change in the department’s acquisition process despite the 128 different studies that have chronicled the ills of the procurement system?”

Rumsfeld’s number of studies was of course hyperbole, but it reflects a common frustration with the endless series of studies conducted on the defense acquisition process—all with no real results. Today, eight years later, the litany continues. There have been two Quadrennial Defense Reviews, three Beyond Goldwater–Nichols reports, the Defense Science Board’s report on “Management Oversight in Acquisition Organizations,” and the “Defense Acquisition Performance Assessment”—collectively, the metaphorical 129th study to result in little fundamental change. So, the question the reader of this report needs to ask, “Will this study simply be one more chapter in the 129th study?”

We believe the answer to Rumsfeld’s question lies in a general lack of accountability up and down the acquisition system.

So, why is establishing a culture of accountability so hard to do? Behavioral scientists posit that people are motivated by antece-

dent, consequence or both. In other words, there are two ways to alter behavior: Do something before it occurs (antecedent) or do something after it occurs (consequence). Antecedents (e.g., policies and practices) set the stage for desired behavior but *only* the nature and likelihood of consequences can *sustain* a desired level of



4. See "The Abiding Cultural Problem," Defense AT&L; March - April 2008

performance. Too often, consequence is missing from the acquisition culture.

- CDR accepted with open action items;
- TRLs waived for milestone review;
- Milestone exit and entrance criteria not enforced;
- EVM placed on contract but not used;
- etc.

Consequently, acquisition officials tend to implement more and more policy antecedents to obtain the behavior they want but often don't enforce. However, they fail to realize that lack of consequence becomes a counteracting antecedent—resulting in little if any change.

Too many people react to the above discussion by saying something to the effect "Are you saying we need to fire more people?" Or, they will say "You're right, we need to fire more people!" These questions reflect a fundamental but common lack of understanding of accountability and what it means.

The Oxford Dictionary of the English Language defines accountability as the

“Liability to give account of, and answer for, discharge of duties or conduct; responsibility.”

We raise this subject here because we found what appear to be a significant erosion of personal accountability at all levels within AF acquisition, and related requirements and resource allocation processes. We do not discuss this serious issue in any detail elsewhere in this report, but we highly recommend the article in footnote 4 for some ideas on how to address this issue.

To successfully implement the recommendations in this report:

The Air Force leadership must establish a basis for accountability. The leadership must articulate to those charged with carrying out these recommendations.

- That implementation of these decisions *will be reviewed as they are executed*;
- What, specifically, the *headquarters* leadership will be held accountable for; and
- What are the *personal* as well as institutional consequences of failure.⁵

Implementation action plans must be structured and treated with the priority they demand. These actions need to take precedence over routine duties and SECAF and CSAF need to make clear the urgency of the situation.

“You’re looking at the calendar and I’m looking at my watch.”

Lieutenant General Russel L. Honoré,
Commander, Joint Task Force Katrina

5. Need not be overtly explicit but must be clearly understood.

Problem definition

In recent years, the Air Force has experienced a number of symptoms that indicate problems with its acquisition system and processes. Some of the most pressing of these symptoms have been:

- Frequent cost-schedule performance issues;
- Numerous Nunn-McCurdy Breaches;
- Increased time to bring major systems to the field; and
- Successful protests by contractors on major programs.

As figures 1 and 2 show, Air Force programs have been experiencing more Nunn-McCurdy breaches⁶ than the other services.

In simple terms,⁷ critical breaches are those that exceed the specified unit cost by at least 25% since establishment of the latest approved Acquisition Program Baseline (APB), or 50% since the APB approved at MS B. Critical breaches require the undersecretary of defense (AT&L) to certify that:

1. The program is essential to the national security;
2. There is no alternative which will provide equal or greater capability at less cost;
3. The new estimates of the [unit costs] are reasonable;
4. *The management structure is adequate to control [unit] costs.*

It is the "management structure" statement that is usually most difficult to certify, and it is at the heart of the problems we address in this report.

⁶ Figure 1 includes both critical and significant breaches while figure 2 shows only critical breaches.

⁷ See DOD Instruction 5000.2 for details.

Figure 1. All Nunn-McCurdy breaches (source: DAMIR)

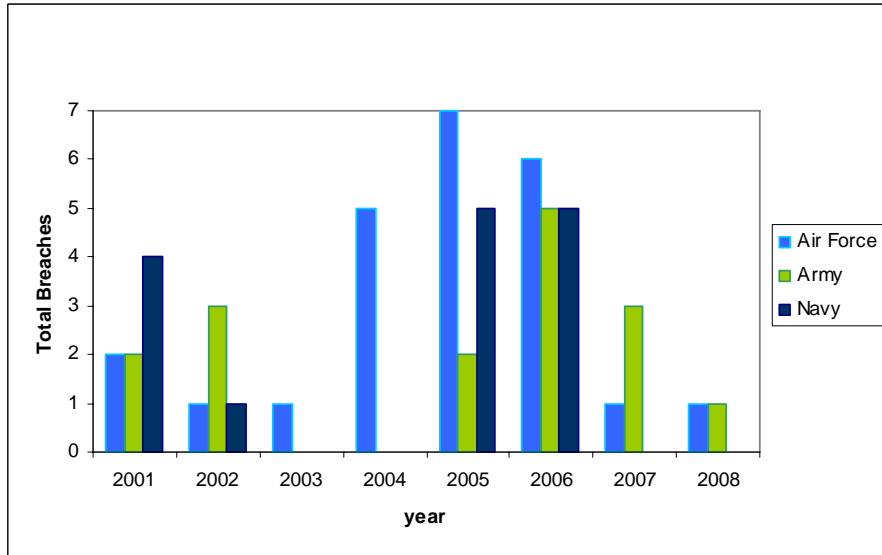


Figure 2. Critical Nunn McCurdy breaches (source: DAMIR)

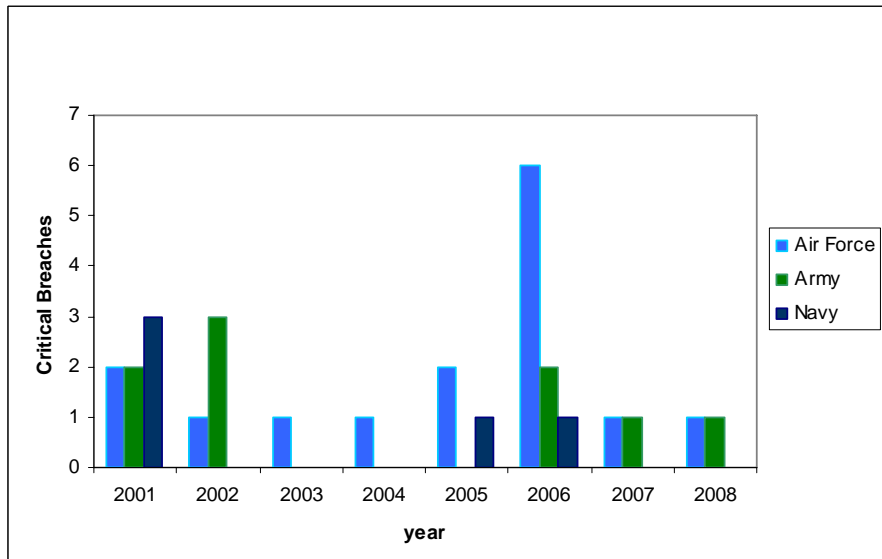
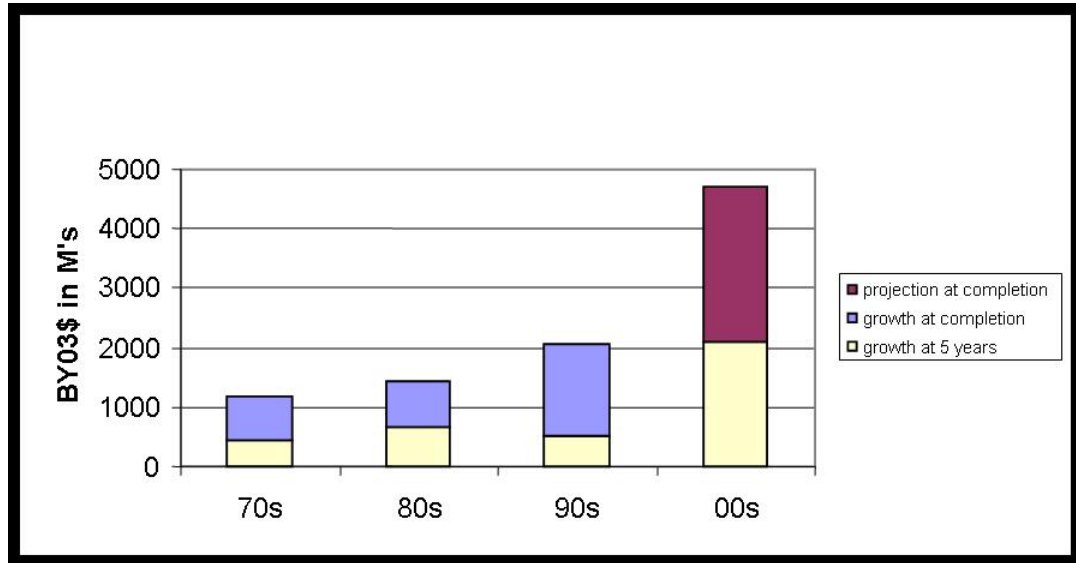


Figure 3 below shows cost growth for Air Force selected acquisition report (SAR) programs since the 1970s. Cost growth appeared to begin to increase significantly in the 1990s and has exploded in the 2000s.

In summary, Air Force cost growth performance has been generally worse than for the Army and Navy, but even within the Air Force alone, it is obvious that there is a burgeoning cost growth problem.

Figure 3. Cost growth for AF SAR programs (source: SAF/FMC)



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Major findings and recommendations

On 9 December 2008 the Executive Panel of the “CNA Independent Assessment: Air Force Acquisition” briefed its findings and recommendations to the Secretary of the Air Force (SECAF) Michael B. Donnelly, and Chief of Staff of the Air Force (CSAF) General Norton A. Schwartz . A copy of the annotated briefing can be found At Appendix C.

People

Culture

What we were told⁸

- The Air Force (AF) does not value the acquisition community.
- The AF needs to pay as much attention to its acquisition community as it does its pilots.
- Wings were adopted to make acquisition look like the rest of the AF. It was intended to solve a cultural problem.
- Acquisition is not valued by the AF. Acquisition professionals are] not like an F-15 pilot who I could put anywhere in the AF.

8. These are typical responses made by the interviewees. Some of these “quotes” are actually paraphrases. We did this to add context and in some cases it was necessary to protect the identity of the speaker. In all cases, we are true to the intent of the speaker. It should also be noted that all “quotes’ are not necessarily factual, but do represent perceptions voiced by more than one respondent. Correct or not, “legends” are part of the problem in AF acquisition culture.

- The Judge Advocate General (JAG) corps is not led by a fighter pilot.
- We don't have to reorient just AF acquisition; we also have to reorient the operational AF.
- The AF under-performs on flag promotions for acquisition types.
- There have been years in which no one from acquisition made general officer. This implies acquisition is under-valued
- The colonel promotion rate to general officer is very low for acquisition—about three acquisition types per year
- Acquirers are not being picked for War College in residence in sufficient numbers, nor are sufficient numbers being picked up below-the-zone. Both these are currently necessary to be competitive for general officer promotion.
- The Program Executive Officers (PEOs) at Aeronautical Systems Center (ASC) and Electronics Systems Center (ESC) reported without a day of training.
- Now, Program Manager (PM) appears to be a dead-end career. The AF needs to value the acquisition community.
- We need to separate and manage acquisition personnel as a professional workforce.
- We need to look joint, not blue. Think about the warfighter, not the pilot.

Discussion

Based on some 48 interviews, CNA and its executive panel have concluded that the apparent failure of the broad Air Force community to value “acquisition” as a profession is a major impediment to significant improvements in Air Force acquisition.

It is our opinion that the ability of the Air Force to continue to provide combat capability to the joint warfighter over the long term is almost totally dependent on the skill, dedication, and efficiency of its acquisition workforce. It is imperative that the acquisition profession be seen as a valued component of the Air Force. The equip

function must be treated as equivalent to the organize and train missions. Without an effective “equip” function, the ability of the Air Force to provide the capability demanded by the joint warfighter will be in jeopardy. To hammer the point home, one senior officer told us, “the Air Force devalued nuclear surety and acquisition, and in both cases got the same results.”

Much is made of the Goldwater Nichols legislation that places restrictions on the involvement of the chiefs of all the military components in the day to day operation of the acquisition system. Most people who bemoan these restrictions have never read what the statute actually says. We believe that in order to fully appreciate many of our recommendations, the reader of this study must understand what the law actually says. We have included the relevant language in appendix D and strongly suggest readers read it carefully. It should be clear, even to a non-lawyer, that while the statute prohibits the Chief of Staff from *duplicating* the acquisition function, it also states that this prohibition:

“does not preclude other elements of the executive part of the Department of the Air Force (including the Air Staff) from providing advice or assistance to the Chief of Staff *or otherwise participating in that function within the executive part of the Department under the direction of the office assigned responsibility for that function in the Office of the Secretary of the Air Force.*”

Combining the above direction with the fact that of the three primary decision systems of the Department of Defense (requirements, resource allocation, and acquisition) the CSAF controls two of them, the CSAF must be appropriately integrated into the acquisition process. The acquisition system *cannot function* effectively without the complete integration of all three decision processes.

In addition to the above, the CSAF has overall responsibility for the policies and organizations that recruit, train, assign and reward all uniformed and civilian members of the Air Force. Special statutory requirements for the acquisition workforce notwithstanding, the Chief of Staff clearly has a very large role to play in the ultimate success of the acquisition system.

A word on promotion rates

Several people we interviewed expressed their belief that promotions for AF acquisition corps officers lags behind those of non-acquisition officers. The discussions lead us to believe there is a common *perception* that there is a promotion rate discrepancy, and that perceived discrepancy helps feed the belief that the AF does not value its acquisition community.

Table 1 below shows promotion rate data from 1994 through 2008, for LtCol through MajGen, including below the promotion zone data for LtCols and Cols.

Table 1. Promotion rates-1994-2008

IPZ		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
MGEN	AC	26.7	25	25	30.8	33.3	35.7	33.3	35.7	27.3	41.7	38.5	33.3	41.7	15.4	Pending
	Non-AC	24.5	28.7	25.6	34.6	30.1	32.2	35.6	30.5	27.3	36	36.1	39	35.7	35.1	Pending
BGEN	AC	1.5	3.9	2.2	2.5	2.8	3.3	1.8	1.6	1.2	2.7	2.4	2.5	1.3	3.7	Pending
	Non-AC	2.2	2.8	2.3	2.4	2.5	2.6	2.6	2.3	2.3	2.3	2.2	2.2	2.3	2.7	Pending
COL	AC	46.5		41.9	32.1	41.2	45.6	45.1	41.4	46.3	48.4	42.7	46	39.2	44.9	44.5
	Non-AC	41.4		41.9	43.8	41.8	40.5	44.5	47.8	45.8	43.9	46	45	45.3	45.4	45.3
LCOL	AC	74.3	76.5	69.4	68.9	65.9	66/79.4	67.1	72.5	91.8	88.2	91.7	91.3	86.2/80	73.7	90
	Non-AC	62.5	62.2	62.5	62.6	62.4	64.8/64.9	65	65.4	71	71.7	73	73.8	74.5/74.8	74.7	73.9
BPZ		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
COL	AC	3		4.3	1.4	1.2	1.8	4.5	2.5	1.1	2.2	2.4	2.9	1.4	2.4	2.3
	Non-AC	3.7		3.5	2.9	3.3	2.4	3.6	3.7	3.2	3	3.1	2.5	2.4	3.2	3.2
LCOL	AC	4.4	6.6	4.5	3.3	3.6	3.6/5.1	4.9	2.4	7.7	4.7	12.5	0	0/8.7	0	10
	Non-AC	1.8	3	2.7	2.3	2.3	3.5/2.9	3	4.2	4.5	4	4.7	4	4.1/4.3	3.3	3.8

Note: starting in 2004 Non-AC is the board average

The Defense Acquisition Workforce Act (DAWIA) and Title 10 USC expect acquisition officers to be promoted at rates equal to or greater than their non-acquisition counterparts. This is because the legislation directs the secretary of defense to ensure that acquisition officers are *better qualified* than their non-acquisition counterparts.⁹ If in fact acquisition officers are better qualified, the law presumes that the promotion system will naturally promote them ahead of their non-acquisition peers.

⁹ Title 10, Section 1731 states: “The Secretary of Defense shall ensure that the qualifications of commissioned officers selected for the Acquisition Corps are such that those officers are expected, as a group, to be promoted at a rate not less than the rate for all line (or the equivalent) officers of the same armed force (both in the zone and below the zone) in the same grade.”

In table 1, red signifies those years in which promotion rates did not meet the DAWIA standard. Green signifies those years in which promotion rates met or exceeded the standard. Clearly, the expectation in the law has frequently not been met. However, a quick glance at the table might suggest the over and under rates may net to about the same on average. In fact, a limited statistical analysis of the data indicates that there is a measurable and statistically significant net bias in aggregate promotion rates that seems to *favor* acquisition officers.¹⁰ This bias appears especially strong for promotion to LtCol both within and below the zone. Unfortunately, statistical analysis also indicates a significant bias *against* acquisition officers in below the zone promotions to Col.

The *favorable* LtCol bias is clear in table 1 and is statistically significant. The data in table 1 also *suggest* a bias *against* acquisition officer promotions to Col. However, the unfavorable Col. promotion bias is *only statistically significant* for below the zone Col. promotions. Furthermore, while the chart shows selection to BrigGen and MajGen seems to favor non-acquisition officers in eight of the 14 years shown, there is no statistically significant difference between the two communities. That said, we note with concern the very large difference in promotions to MajGen. in 2007.

What does all this mean? It appears there is a strong bias in favor of the promotion of majors to Lt. Col., both within and below the zone. Unfortunately, the early favorable bias appears to be offset by the unfavorable below the zone promotion rate to Col. The low below the zone promotion rate for Col. probably adversely impacts the likelihood of general officer selection for acquisition officers.

In general, we conclude the perception of promotion rate bias against acquisition officers cannot be statistically demonstrated, making this perception something of a legend. We note however that this legend might be given legs due to the fact that non-acquisition officers were promoted below the zone to Col. more frequently than acquisition officers in 11 of the past 14 years.¹¹

¹⁰ Wilcoxon signed rank test with continuity correction, and robust least squares regression.

¹¹ There were no Col. promotions in 1995.

Furthermore, it has been suggested that the perception is based on the fact that many “rated” officers come into the acquisition corps late, typically Lt Col and even Col, and then are promoted and/or selected to wing and group command positions ahead of (or in lieu of) longer term, unrated acquisition work force members with more acquisition experience, including earlier DAWIA level III certifications.

We have some misgivings about this conclusion because analysis of promotion *rates* is not a good basis for drawing conclusions on this subject. Actual numbers of selections and pool size would yield much more reliable results.¹² The plausibility of the command selection claims are also troubling, and could explain the comments about “unqualified” wing commanders in the “Workforce and structure” section under “Wings.” Promotion rates and command selections are probably worthy of further study to determine the validity of these nagging issues.

In any case, as we discuss in the later “Workforce and Structure” section, we conclude the AF acquisition workforce has declined to such a low state of capability that promotion rates are no longer a good indicator of the state of workforce health. In fact, an objective observer might conclude that the poor performance of the AF acquisition workforce might suggest that acquisition officers should *not* be promoted at a rate equal to or greater than their non-acquisition counterparts.

In conclusion, if the Air Force is to return to its former preeminence in acquisition management, we believe that given the breadth and depth of the decline in Air Force acquisition, it is absolutely paramount that the Secretary and the Chief of Staff become *personally* involved, for an extended period of time, in rebuilding the acquisition workforce *and its leadership*. The Air Force descent to its current acquisition state has taken at least 15 years and will not be fixed overnight. When the Air Force’s best leaders want to participate in building and equipping the future Air Force, the acquisition

¹² Percentages (rates) can be significantly distorted by small numbers of selections from small pools.

community will be valued. This is a major leadership challenge for the Secretary and the Chief of Staff.

Findings

- The AF does not value acquisition as a profession.
- The AF does not view the equip function equivalent to organize & train.

Recommendations

1. *The Secretary (SECAF) and Chief of Staff (CSAF) must take a personal, active and sustained role to restore the Air Force acquisition workforce.*

To do this SECAF and CSAF must:

- a. issue a directive announcing their intent to restore professionalism to the acquisition workforce as a top Air Force priority;
- b. commit to providing the acquisition corps with sufficient DAWIA qualified general officers, and to define a sufficient structure of general officers to support such commitment;¹³
- c. examine policies, guidance, and practices to ensure that all acquisition officers are promoted at rates equal to or better than their counterparts, including below the zone, in accordance with established law.¹⁴
- d. examine policies, guidance, and practices to ensure that all acquisition officers have equal command selection opportunities regardless of rated or non-rated status.

13. See recommendation 4 under “Senior Leadership.”

14. Title 10, Section 1731

Senior leadership

What we were told¹⁵

- We have to have the will to change.
- The Chief is the key person—need to restore trust.
- Air Force Materiel Command (AFMC), the Chief, and the centers wrote themselves out of acquisition.
- A lot of work is done by email. It is hard for the Military Deputy to SAF/AQ [Assistant Secretary of the Air Force for Acquisition] to get on the calendar to see the Chief. He [MilDep] sees the Secretary all the time.
- The Military Deputy does not have a dominant voice working requirements between the Chief and the Secretary.
- The future of the AF is AF business. It is not Major Command (MAJCOM) business, at least not exclusively MAJCOM business.
- We need a 4-star in the acquisition business.
- There is an AF culture against giving the acquisition community a voice and authority.
- We need a 4-star summit on major programs, chaired by the chief, with the 4-star AFMC commander, the 4-star using [MAJCOM] commander, and the Military Deputy (MilDep) for acquisition. It could be chaired by the Vice Chief.
- We need to enforce policy, perhaps with the Inspector General (IG). When there is a failure (e.g., Nunn McCurdy Unit Cost breach), there needs to be a rigorous investigation of the root causes and timely reporting/promulgation of lessons learned.
- We need a structured process of due diligence reviews with PEOs done to a kind of “drumbeat.” We need to review the programs and get a commitment that you can execute within

15. See note 1.

given resources or if not, identify the additional resources needed.

- Fixing AF acquisition is a long-term project, but there are also short-term solutions that must show quicker returns so we at least know we are headed in the right direction and can demonstrate progress and a sense of urgency.
- It's not ten years before you see results. It may be ten years before you see [USAF acquisition] fixed, but we need progress now.
- If you look at measures of performance, you can change behavior.
- I haven't seen any measures of performance in acquisition for two months. My hunch is AFMC hasn't seen them either. Why is this?
- You may want to implement the old Program Assessment Review (PAR) process.
- The commander AFMC currently spends about 5 percent of his time on acquisition and 95 percent of his time on logistics.
- Logistics can consume the daily inbox.
- The chief has to make clear that the first priority for the commander of AFMC is acquisition.
- AQ should focus on policy, budgeting, and programming. AFMC should have more authority in acquisition.
- The AFMC commander and a 3-star deputy for acquisition must be acquisition-qualified.

Discussion

Closely related to the cultural issues discussed in the previous section, the SAF/AQ, the Chief of Staff, the commander, AFMC and commanders of the user commands, need to be more actively and personally involved, *together*, in defining requirements and resource priorities. This interaction is especially necessary when issues arise regarding adequacy of requirements and/or resource mismatches. In the past, such ad hoc meetings were referred to as "summits."

Summits are normally called by the senior acquisition leader, but could be called by any of the aforementioned principals. We believe summits should always be convened before an ACAT I requirements document is signed or forwarded to the Joint Requirements Oversight Council (JROC).

We have observed that, at least until recently, there has been no recurring “drumbeat” review of the Air Force programs portfolio. We note the extensive acquisition information system,¹⁶ but have seen little indication that these systems are routinely used by the senior leadership. We believe it is more effective to conduct regular face to face reviews of programs and/or program portfolios. Many interviewees told us that preparation for, and delivery of, the previous Program Assessment Reviews (PAR) were an effective way to surface and resolve problems. Such reviews should go to the assistant Secretary of the Air Force for acquisition, the Chief of Staff and the Secretary. They can be conducted in turn or collectively but above all need to be regular in occurrence.

Finally, we are convinced that the required interaction across all three major decision-making processes,¹⁷ at the principals’ level, demands that the acquisition function have a 4-star advocate. As one person told us, “the difference between 3-stars and 4-stars is not one star.” For this reason we believe that the commander, AFMC must become part of the acquisition community. We believe this can be done without infringing on the title 10 restrictions that prevent the Air Staff from *duplicating* acquisition functions.¹⁸ We also believe the operational exigency of the logistics mission dictates that the logistics mission will not be diminished by having an acquisition qualified AFMC commander. This is especially true if the commander has logistics and acquisition deputies.

Findings

- AF leadership not focused on acquisition.

16. For example, SMART and Probability of Program Success.

17. Requirements, resource allocation and acquisition.

18. Recall the Gold-Water Nichols discussion in the “Culture” section, third paragraph under “Discussion.” See also Appendix D.

- The AF is not nurturing senior officers to lead acquisition.
- The Chain-of-command does not enforce accountability or process discipline.
- AFMC Commander is not a coded (KLP) acquisition position and his role in acquisition is unclear.
- SAE and AFMC roles are not effectively aligned: policy development, program review, workforce management, and compliance.
- SAF /AQ MilDep’s role is unclear.
- AF leaders are not held accountable for doable, evaluable requirements.
- Leadership not regularly engaged in review of programs.

Recommendations¹⁹

2. *Headquarters Air Force should issue appropriate policy, procedures, and implementation instructions to establish a "summit" process to achieve timely resolution of requirements and resource issues.*
3. *SAF/AQ rtment should establish a quarterly program assessment review process that includes SAF/AQ, CSAF, and SECAF.*
4. *The Secretary should direct that AFMC Commander be designated a DAWIA level III, KLP, with its primary focus on acquisition.²⁰ (See also recommendation 1.c. under "Culture").*

19. All recommendations are consecutively numbered from the beginning of the "Findings and Recommendations" section.

20. Given that the current incumbent is the former SAF/AQ MilDep, we believe the current incumbent presents a rare opportunity to implement this transitional change. Consequently, it would be appropriate for the secretary to grant a one-time waiver of acquisition qualifications (see recommendation 7 on waivers in the "Workforce and Structure" section).

- a. Provide AFMC with two 3-star (or SES equivalent) deputies, one DAWIA level III KLP deputy for acquisition and a deputy for logistics;
- b. AFMC center commanders should all be designated as DAWIA level III KLPs.

Workforce and structure

What we were told²¹

- The number one issue is the people, the quality of the acquisition work force.
- 37 requirements [KC-X] “was stupid.” It should have been three to seven but no more than 10. However, this [limiting the number] won’t fix it. *If you don’t have good acquisition people they will pick the wrong 10.*
- The AF has cut acquisition personnel by 50 percent. This was a pure personnel action. There was no thought or rationale for the size or distribution of the cuts.
- We are short: cost estimators, systems engineers, contracting officers, etc. In addition, there is a significant skill mismatch.
- The personnel system is not even keeping pace with attrition rates.
- We need the ability to fill existing civilian vacancies and eliminate hiring impediments. We need to fill jobs quickly, with a plan within 30 days, subject to quarterly review.
- We need to rebalance the AF officer corps to eliminate vacancies wherever possible.
- We have more than enough billets in acquisition. We just need to allocate and distribute them properly to implement acquisition policy better

21. See note 1.

- Numbers are not the problem. Rather, it is the quality of the people in terms of training, experience, and so forth.
- There is no training ground to supplement the schoolhouse.
- The AF needs to start the education with industry program again. The Defense Acquisition University (DAU) is not a substitute.
- We need to do better mentoring in the AF. We need to use a group of retired greybeards with the functionals to help the program offices through a major activity.
- Centers need a stable of mentors.
- Every PM ought to have a mentor.
- We need to improve mentoring and teaching of young officers. We need to have them [young officers] “sitting around the wall” during program briefings.
- The current wing/group/squadron structure is dysfunctional.
- “I can’t find a program office in the wiring diagram.”
- Wing commanders are not in the acquisition chain.
- The wing structure prevents optimization of people and skills.
- In the matrix you can do better professional development for acquisition specialties
- The wing is mostly an administrative layer that rationalizes putting a non-acquisition qualified person in as its commander.
- The program execution chain is not the same as the rating chain. That’s nonsense.
- Acquisition reporting chains and rating chains may not be aligned. In Air Logistics Centers, the commander is the Designated Acquisition Official and may not meet DAWIA requirements. In addition, PEOs, as acquisition officials, report to the SAE; while PEOs, as center commanders, report to the commander AFMC.
- Dual hatting of PEOs is flawed and may not be legal.

- We need removal of PEOs’ two hats. There should be a single line of authority.
- The center commander spends most of his/her time on the center. They believe they report to the AFMC commander, not the SAE.
- The center commander has a span of control that is too large.
- The ASC portfolio is too large. We need portfolios “right-sized” to be properly managed.
- The Air Force also needs a growth path for acquisition personnel akin to a succession plan in order to grow qualified leaders and executives.
- We don’t currently have a general officer pyramid to support an acquisition 4-star billet.

Discussion

Wings.

Of the 48 interviews we conducted only one person thought the wing/group/squadron (WG/GP/SQ) structure had been successful. These findings are consistent with CNA’s findings in 2006.²² We believe the wing structure *is a major inhibitor* to efficient and effective execution of the acquisition process. It inhibits efficient reallocation of personnel resources, disconnects employees from what should be their functional mentors and inhibits proper career management. Furthermore, we were frequently told the command selection process for wing commanders has resulted in wing commanders with little or no acquisition experience.²³

However, AFMC and SAF/AQX described the command selection process as follows:

22. Losing the Recipe—An Assessment of USAF Acquisition Organization and Processes, Christle, Davis, Schaefer, Wilson, CNA CAB D0015096.A2 / Final, December 2006

²³ We have been told that this problem has been corrected but we did not have time to collect the data to verify the claim.

The initial screening criteria for the Systems and Sustainment Wing Command screening board has been in place since 2002. To make the initial cut requires Officers in the following AFSCs (11E, 12E, 13S, 60C0, 61S, 62E, 63A, 64P) to have:

- a. Acquisition Corps membership
- b. Level 3 certified in an Acquisition Professional Development Program (APDP) functional area
- c. Completion of the Program Management Office Course (PMT 352 A&B, PMT 301, or PMT 302).

Logistics officers (21A, 21M, 20C0, 21R) must have previously served at the group level and beginning with CSB 2008, must have at least a level 2 certification.

The Command Screening Board then scores the records of the eligible officers and selects those best suited for Wing Command to be command candidates (1.5 candidate to requirement ratio).

Finally, the MAJCOM commanders select wing commanders from the available command candidates.

We were unable to verify that the wing commander selection process actually results in selections that meet *all* of the above described criteria, *without waivers*. We also did not determine how the low CAP and KLP qualification rates, discussed later in this section (figures 4 and 5) relate to wing commanders. We also note the previously discussed low Col. promotion rate may bear on this issue. Consequently, since the assertion was made so often, we consider the claim to be an open issue.

The wing/group/squadron construct results in organization wiring diagrams with dotted lines purporting to show that the DOD I 5000.2 restrictions on reporting levels is not being violated, while hard lines clearly show conflicting rating schemes. Furthermore, the purported purpose of this organizational structure has not been fulfilled. People inside and outside the acquisition community told us that they needed “decoder rings” to find the system X program office.

We are in *unanimous agreement* that a return to a matrix structure with functional home rooms is a necessary ingredient in revitalization of the Air Force acquisition workforce. The wing structure:

- Inhibits functional management and development of the workforce;
- Inhibits deployment of critical skills and resources across and among wings and centers;
- Adds at least one additional organizational layer;
- Confuses reporting and rating chains;
- Inserts a command selection process that has had a history of selecting non-acquisition qualified and/or minimally qualified commanders.²⁴

The only positive comment we have heard about wings is that the wing commander owns his/her resources and can therefore allocate them when and wherever needed *within the wing*. This prerogative eliminates the need to get permission from the functional lead. Related to this “positive” attribute of the wing is the fact that the wing commander can override the workforce training plan of the functional lead. While we understand why a wing commander would like this control, the Air Force today clearly has a workforce development problem. We think the negative impact of the wing structure on workforce management and development out weighs the wing commander’s prerogatives.

It has been suggested that the limitations of the wing structure enumerated above, can be mitigated without the disruption of yet another organizational change. We too are normally reluctant to propose solving problems through organizational changes. However, in this case it is difficult to imagine resolution of the wing’s inherent limitations within the acquisition function, without eliminating the one positive attribute of the wing – commander’s control.

We recommend that the wing structure be abolished as soon as practicable. This recommendation does not have to be studied!

²⁴ Recall the earlier discussion of low promotion rates to Colonel.

The structure is so obviously dysfunctional within the context of the acquisition mission that there should be no delay in ending this unfortunate experiment

Acquisition Workforce and Critical Skills.

A great many of the people we spoke with described with great concern the loss of work-force skills and experience. This situation was sometimes described as a bathtub between newer workforce members and those approaching retirement age. Of particular concern was the loss in systems engineering, cost estimating and contracting. We believe these concerns to be valid, but we were surprised to learn how little data is available to substantiate these claims at anything but the very highest levels.

Table 2 below shows that between fiscal year 1999 and fiscal year 2007 the total AF acquisition workforce declined by about 23percent, with a greater decline in the civilian workforce than in the military workforce. The current AF acquisition workforce is about 24,000 people. By comparison, the Army and Navy workforces are approximately 45,000 and 41,000 respectively. The comparatively small AF workforce suggests the AF workforce is undermanned. However, we are reluctant to say much more about the difference because there is uncertainty as to the comparability of the Services' workforce definitions; and because the numbers should be analyzed relative to the workload.

Currently, AFMC has an acquisition workforce of approximately 14,600 with 1000 open fill actions, and 1800 vacancies. The Air Force Space Command (AFSPC) workforce is about 2900, with 280 open fill actions and 450 vacancies. It is estimated that the total civilian workforce vacancy rate is about 15 percent. Most people we interviewed complained about the lengthy recruiting and staffing process, and thought the recruiting process for acquisition personnel should be given to AFMC.

Table 2. Air Force acquisition workforce 1999 through 2007

	Military	%	Civilian	%	Total
FY99	9918	31%	21683	69%	31601
FY00	8691	30%	20268	70%	28959
FY01	8509	31%	19312	69%	27821
FY02	8510	30%	19934	70%	28444
FY03	10108	36%	17589	64%	28067
FY04	9763	35%	18212	65%	27975
FY05	9695	35%	18250	65%	27945
FY06	9338	37%	15772	63%	25110
FY07	8633	36%	15550	64%	24183

Leadership qualifications

Figure 4 shows the total number of personnel assigned to CAPs who meet all position requirements (certification and acquisition corps membership). The figure shows that AF is staffing CAPs to only about 60 percent fully qualified. While that rate is unacceptably low, we note that the objective for 2009 is 85 percent with the remainder to be qualified by the end of 2010.

Since we believe it should be the AF goal to *staff all critical positions at 100 percent qualified*, we applaud the plan through 2010. We have been told that every candidate for a CAP position should be qualified prior to selection. We are hopeful that the plan will not only upgrade current CAP positions but the pool from which future CAPs will be drawn.

Funding for this workforce upgrade is to be made available as a result of Section 852 of the National Defense Authorization Act (NDAA) of 2008; Public Law No. 110-181 directed the establishment of the Defense Acquisition Workforce Development Fund (DAWDF). We have noted concerns from other Services regarding adequacy of Section 852 funding.

Figure 4. Critical acquisition position qualifications

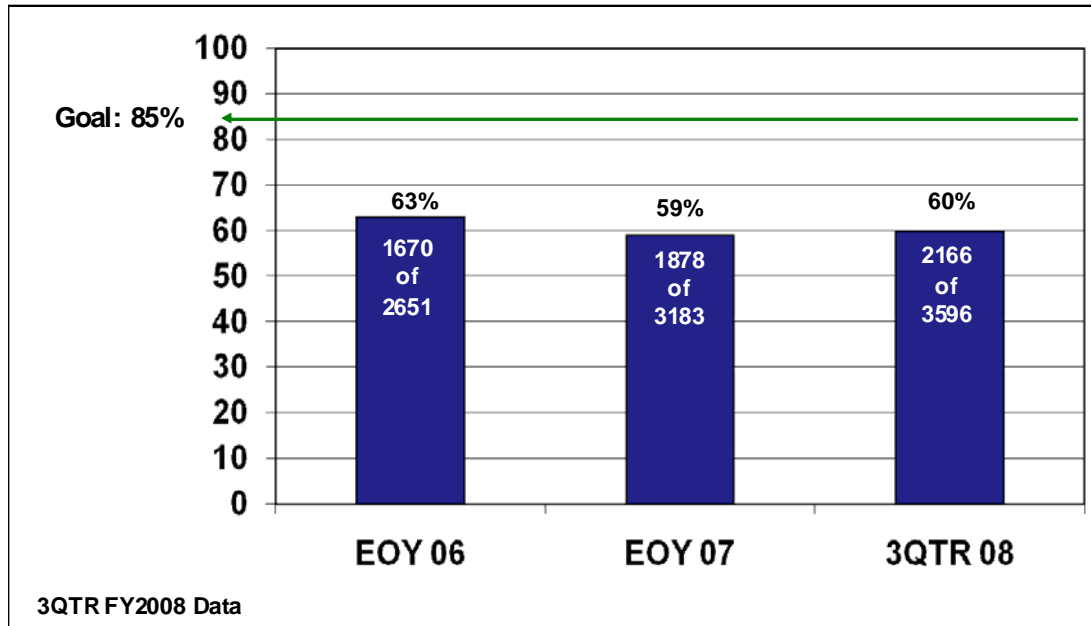


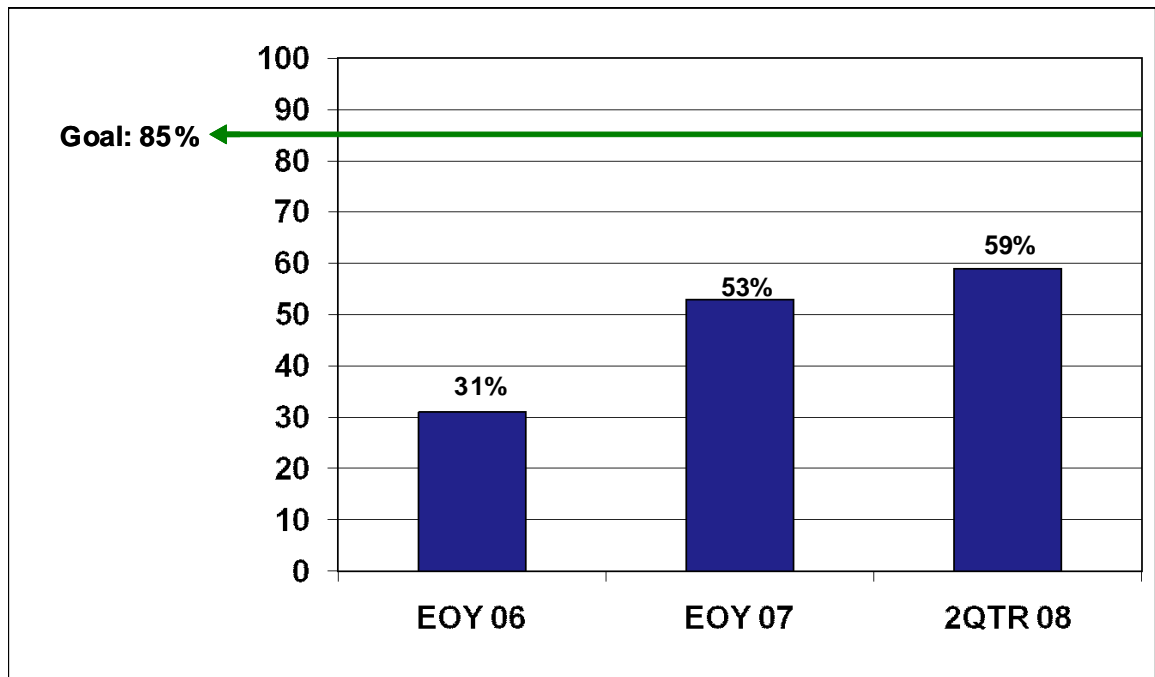
Figure 5 shows the percent of Personnel Assigned to KLPs who meet all position requirements (Certification, acquisition corps, statutory PEO/PM experience and training). As with CAPs, we question the goal of only 85 percent.

These low goals are symptomatic of a general AF tendency towards minimal standards for its acquisition workforce. DAWIA standards are *minimum* standards and should not be accepted as “good enough.” This is especially true for CAPs and KLPs. Does the AF really want an acquisition leadership that is no better qualified than the people they lead? A workforce that does not strive for excellence will not be excellent.

Underscoring how dismal has been AF performance in placing qualified personnel in critical and key leadership positions, Secretary of Defense Gates recently singled out the Air Force when on January 27, 2009, he told the Senate Armed Services Committee

“Over the past eight years, for example, the Department of Defense has operated with an average percentage of vacancies in the key acquisition positions ranging from 13 percent in the Army to 43 percent in the Air Force.”

Figure 5. Key Leadership Position qualifications



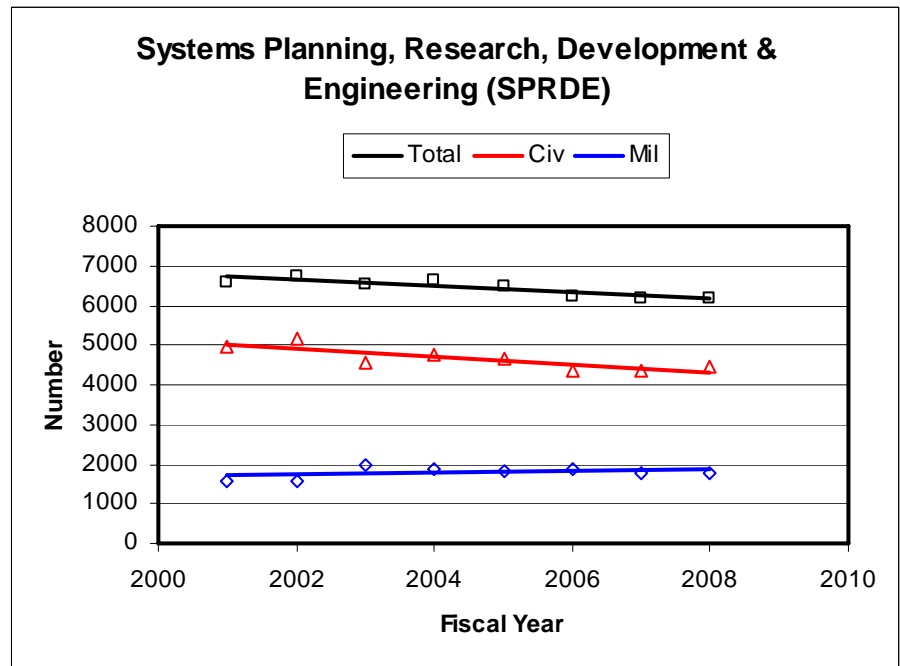
The next three figures display the available workforce data for the three workforce specialties we believe should be of critical interest to the AF:

- Systems Planning, Research, Development, and Engineering (SPRDE);
- Business, Cost Estimating and Financial Management (BCEFM);
- Contracting.

These are three of the 13 career fields that are tracked under the requirements of DAWIA. Data has been collected only since about 1999 and there is no further breakout available from either the Air Force or the Defense Acquisition University, which is charged with maintaining DAWIA statistics. Note that SPRDE is where systems engineers are categorized. They are presumed to be significantly less than one half of that population. Similarly, BCEFM includes cost and earned value analysts but there is no break-out of those two communities. There is strong reason to believe that the bulk of the BCEFM community is made up of financial management job codes.

Given those limitations, figure 6 shows that the total AF SPRDE population has declined by nine percent since 2001. The trend lines suggest most of the decline has occurred in the civilian SPRDE workforce. Again, we note the data do not provide specific insight into systems engineers.²⁵

Figure 6. Systems Planning, Research, Development, and Engineering (SPRDE)

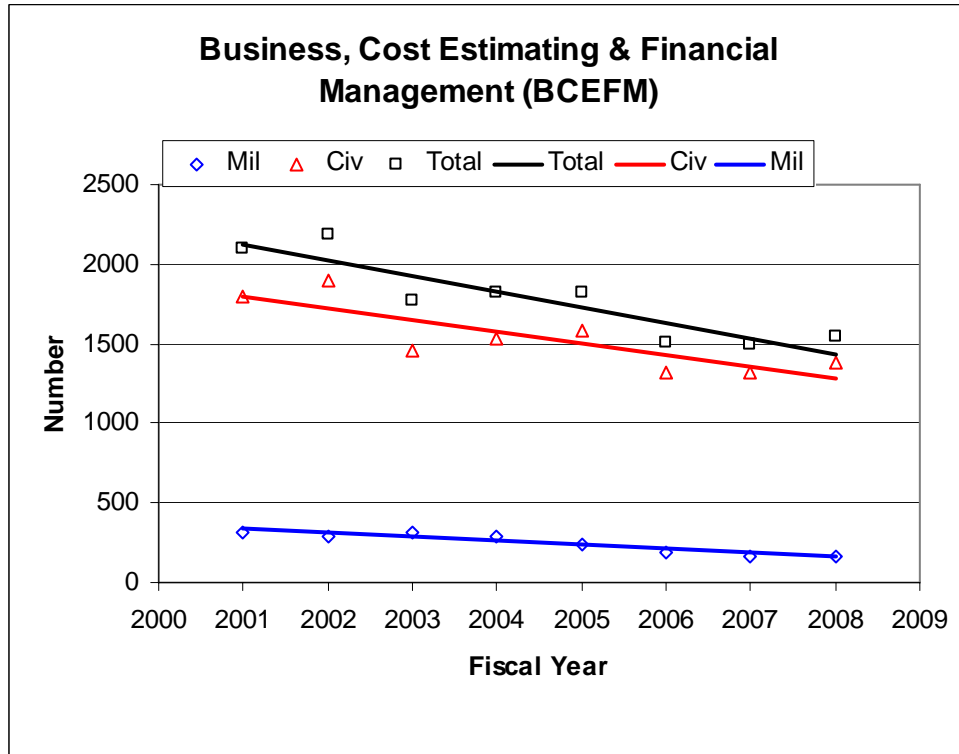


25. Systems engineering is an interdisciplinary engineering management process that evolves and verifies an integrated, life-cycle balanced set of system solutions that satisfy customer needs. From "Systems Engineering Fundamentals," Defense Acquisition University Press, January 2001.

In addition to the problem that the data do not specifically show systems engineers, there is a problem with not having any data for the 1990s. Most people believe that the largest reductions in systems engineers in the Air Force occurred in the late 1990s as part of “acquisition reform” initiatives such as Total System Performance Responsibility (TSPR), but there is no hard data to show this. Most members of this study lived through the period and believe, along with those we interviewed, that large reductions did occur prior to the post 2000 data we were able to obtain.

Figure 7 shows the total AF BCEFM community has declined by twenty-seven percent since 2001, including a 51percent decline in uniformed members of the community. Exacerbating the need for better insight into this community is the fact that in order to provide better career opportunities for cost analysts in this primarily *budget* career field, is the fact that most cost analysts are coded in budget specialties. In addition, the Air Force abolished the program

Figure 7. Business, Cost Estimating and Financial Management (BCEFM)



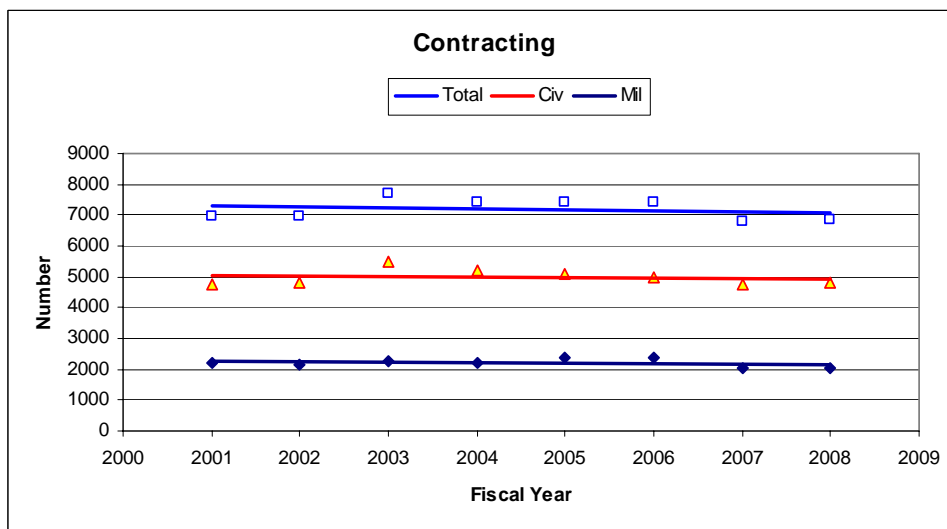
Control function in program offices which is where most of the earned value capability used to be. See recommendation 14 in the “Acquisition process and policy” section.

The director of the Air Force cost center (SAF/FMC) told us that between 1995 and 2005 cost analysts were reduced by 60 percent. According to SAF/FMC, cost estimators make up only 2.5% of the AF BCEFM workforce. By comparison, the Army’s FM workforce is made up of 4.6% cost estimators. Perhaps a better comparison is the Naval Air Systems Command. In 2008 NAVAIR had a demand for over 400 cost estimators,²⁶ a number greater than the entire AF cost workforce, which, SAF/FMC places at 300 across all AF product centers. Similarly, the director, Air Force Cost Center, told us “there are but a handful of qualified government earned value management (EVM) analysts working in the entire AF.” This compares to approximately 100 analysts in the NAVAIR cost organization (AIR 4.2) alone. AIR 4.2 operates a very robust project execution metrics capability for all NAVAIR programs (NAVAIR is a data-driven, matrix organization). They have integrated a plethora of earned value, schedule and risk information that most programs (including Air Force programs offices) collect but rarely actually use. We note with dismay that the AF elimination of the former Program Control sections from System Program Offices, is directly responsible for the huge decline in earned value capability. We also note EVM is a tool and discipline that the AF invented and was the clear leader in prior to the 1990s. See recommendation 14.

Figure 8 shows the available data on the contracting workforce. As with the other workforce data, we were unable to obtain data prior to 2001.

²⁶ It should be noted that NAVAIR cost and EVM support is industrial base (i.e., program office) funded.

Figure 8. Contracting



The data show that the contracting workforce has been relatively stable, with a very slight downward decline, over the last eight years. While it is clear that the contracting function has had serious difficulties recently, it is less clear how much those difficulties have been caused by workforce size. Several people told us the community has been severely impacted by an increasing acquisition workload and heavy support to the war effort in Iraq and Afghanistan. We are inclined to agree, but the contracting issues we have seen seem to have much more to do with quality and experience than with numbers of people. On that point we were told that experience levels are down, with a 41 percent loss in the 11-20 year experience group.

Most key programmatic decisions involve cost estimating considerations, and as shown in the section “Defining the Problem,” AF programs continue to fail on cost issues. Given the above data and discussion, it is clear to us that the cost estimating, including earned value management, workforce needs a significant rebuilding effort.

Managing the acquisition workforce.

As to overall management of the acquisition workforce, we note that while the Air Force material Command owns and funds the personnel resources of that part of the acquisition community with which this report is primarily concerned (the product center acquisition

workforce), it has no direct stake in the quality and availability of that workforce to program offices. We heard numerous accounts of personnel reductions that are mandated as budget cuts from headquarters Air Force, through Headquarters AFMC, to the Product Centers. Such reductions appear to be driven by "budget drills" that are totally lacking of any workforce mission or quality consideration. We believe this budget driven personnel turmoil will be mitigated by returning workforce funding back to program funding.

We note that in the years before the early 1990s, the former Air Force Systems Command:

- controlled assignments;
- mentored military and civilian personnel;
- established and maintained strong home offices and functional expertise; and
- Ensured, through existing AF processes, that sufficient numbers of military officers were promoted at the right times to ensure the ability to execute the AF acquisition mission.

As previously discussed in the "Culture" section, the performance of the AF acquisition system in recent years would cause an objective observer to say the acquisition promotion rates should be lower than the average. Perhaps, if the acquisition workforce is actually managed for mission success (including civilians) the AF acquisition system may begin to produce results worthy of enhanced promotion rates.

AFMC owns approximately 60 percent of the personnel billets and virtually all of the billets associated with most significant acquisitions. We strongly believe that AFMC should be given a clear stake in the acquisition community by assigning it management responsibility for its portion of the acquisition workforce, under the strict guidance, direction, and supervision of SAF/AQ.

AFMC should manage its portion of the acquisition workforce in the same way as did the former Systems Command. Since SAF/AQ retains responsibility for policy and oversight, they should ensure appropriate consistency across the entire acquisition workforce.

With regard to the rebuilding and retraining of the acquisition workforce, we believe waiting for billets and funding for DAU courses is going to take too long. We strongly urge AF to consider utilizing its remaining “graybeards” as an immediate jumpstart to training. One way to do this is to require that all CAPs and KLPs be required to conduct local training seminars at the product centers. This activity could satisfy their DAWIA mandated 80 hours of continuous training every two years. We further suggest that these local training sessions be product center centric. That is, each center assesses its greatest training needs and tailors the training seminars to its most critical current needs. While we propose this idea as an immediate near-term solution, if it is successful it should be considered as a permanent element of AF acquisition workforce training.

PEO span of control

We heard frequent comments about PEO span of control. The concerns expressed were with regard to both the number of programs but also the non-acquisition responsibilities associated with being a center commander. DoD Instruction 5000.2 states:

The PEO shall be dedicated to executive management and shall not have other command responsibilities unless waived by the USD (AT&L).

Currently, AF has a waiver from AT&L to permit PEOs duties to be expanded to include those of center commanders. We believe AF should return to complete compliance with the intent and spirit of 5000.2. Even with that change, the number of programs for some PEOs may still result in an excessive span of control. Returning AF acquisition to excellence will demand executive attention that is not distracted by unrelated duties.

Findings

- WG/GP/SQ Structure is inefficient and Dysfunctional.
- AF acquisition manpower is insufficient to the task.
- PMs rank/skill/expertise has receded.
- AF functional skills have atrophied.

- The PEO span of control for program and other command responsibilities is too broad.
- The Acquisition workforce is not fully qualified
- Personnel shortages exist.
- The acquisition corps is not managed for growth, career paths, and succession.
- AF leadership does not enforce training and experience criteria in accordance with the Defense Acquisition Workforce Improvement Act (DAWIA).
- The AF places unqualified personnel in Key Leadership Positions (KLPs).
- Funding civilian acquisition workforce through operations and maintenance funding results in personnel turbulence

Recommendations

5. *Immediately disestablished the wing/group/squadron structure and return to a matrix organization.*
6. • *SAF/AQ, in coordination with CSAF, should delegate management of the AFMC portion of the Air Force acquisition workforce to the commander, AFMC, under the direction, oversight and guidance of the SAF/AQ. To implement this recommendation, the commander, AFMC should immediately initiate the following actions:*
 - a. Create a program for managing the career paths of uniformed and civilian acquisition professionals;
 - b. Create a separate cost estimator job series. Strengthen experience, certification, and education requirements for cost estimator jobs.
 - c. Define a pyramid structure of KLPs to support management succession planning for senior executives and general officers, and obtain the appropriate number of general officer billets to sustain the structure.
 - d. Expeditiously fill existing vacancies and add the requested additional acquisition billets.

- e. Apply the principles of "lean six" and AFSSO21 to the entire recruiting and hiring process;
7. *SECAF should establish a policy requiring approval by SECAF for experience or training waivers for anyone assigned to a Critical Acquisition Position (CAP)*
8. *Fund the acquisition workforce through program funding to the maximum extent possible;*
9. *Limit Program Executive Officers to executive management and eliminate all other command responsibilities.*
10. *Require that all CAP and KLP incumbents conduct continuous training sessions as part of their own continuous learning requirement.*

Process

Acquisition process and policy

What we were told²⁷

- The GAO [Government Accountability Office] hearings were hair-raising experiences with many hours of cross examination. Should we do mock hearings?
- There was no CONOPS [Concept of Operations] for fuelers from AMC.
- Perhaps we should use models in the source selection process.
- We have not done a formal "root-cause" analysis.
- We need to do realistic cost estimates vice optimistic cost estimates.
- The AF destroyed its ability to independently estimate cost.
- We need to bring back systems engineering and more development planning, modeling, and simulations.

27. See note 1.

- The AF needs to rebuild systems engineering and force the use of the integrated master schedule [IMS].
- Processes are not consistent across centers.
- Nobody checks on compliance with processes and best practices until after a program fails. There is no discipline. Imagine if we put the same discipline in the following of processes as we do in how we check out people before we let them fly airplanes.
- ACE [Acquisition Center of Excellence] recommendations are not necessarily enforced.
- Everything is nice to do, according to the ACE, but there is no teeth, no discipline, no commitment, and no plan.
- We have lost the art of organization and program control.
- The EVMS [Earned value management system] is broken.
- PMs need to do a better job of using EVMS.
- When possible you should pay to do IBR work before award. “Go slow now to go fast later. Pay now, to pay less later.”
- We should pay both contractors [competitors] for a detailed [EVM] program plan before we go to MS B and not wait for the IBR [Integrated Baseline Review]. We need to impose baselines.
- We need to do configuration control and manage to the baseline.
- “There are a lot of undefinitized contracting awards (UCAs).”
- We need to incentivize contracts so there is more correlation between profitability and performance. But today 80-90 percent of awards are for 91-100 percent of the award fee.
- Contractors are not being held accountable. There is only about 30 percent correlation between CPARs and performance award fee.
- There are too many “checkers checking checkers check checkers.”

- We want a CONOPS with firm requirements, revalidated with the JROC if necessary. “If you want to change a KPP [Key performance parameter] you have to go back through the JROC process.”

Discussion

We found very little consistency in the use of processes and implementation of policies across the product centers. People we talked to also noted that the breadth and depth of knowledge and experience varies considerably across the centers. While this was disconcerting, of even greater concern was the fact that the Acquisition Centers of Excellence had no authority to implement or enforce policies, best practices and acquisition initiatives in general.

Because of the obvious similarities between the Naval Air Systems Command (NAVAIR) mission and the Air Force acquisition mission, and because NAVAIR has garnered a reputation for acquisition excellence in recent years (a reputation once enjoyed by the AF), we interviewed the NAVAIR commander. We were very impressed by the description of the source selection experts group in headquarters, NAVAIR. This group of experienced and knowledgeable source selection experts either leads or advises all NAVAIR source selections. They have a remarkable record of not having lost a protest in more than 16 years.

We were also impressed by the NAVAIR cost organization. It is located under the engineering directorate rather than the financial management directorate. It includes both cost estimating and earned value management and it has total manpower of some 400 people. By comparison no Air Force, or Army, for that matter, product center has anywhere near this many people. Unique to NAVAIR is the fact that cost analysis and earned value support to the project offices is mandated to come from the AIR 4.2 cost organization unless, Air 4.2 specifically authorizes a project office to contract for outside support. Furthermore, the AIR 4.2 project office support is industrially funded. The combination of a near monopoly and industrial funding has allowed the NAVAIR cost

organization to grow during a period of general downsizing, and to provide robust government expertise in this critical area.²⁸

It is the collective opinion of the assessment team that one of the major reasons that acquisition improvement initiatives seem to have such little impact is the fact that the Air Force has no process to “check” on the policies and practices it has promulgated. As one of our panel members said, things don’t just happen because we write them down, you have to “check, check, check.”²⁹ We would not necessarily recommend setting up a “checking team,” but there are numerous opportunities to ask the questions “Did you receive it? Did you read it? Did you do it?” New policies and initiatives can be asked about during any of the numerous ad hoc and recurring site visits and program reviews. Furthermore, these questions seem to be ideally suited for tasking to the various inspectors general (IG).

We were briefed on what was purported to be the root cause analyses of the KC-X and CSAR-X difficulties. It is our opinion however that they were not true root cause assessments. The assessments identified a litany of things that were done wrong, and a list of corrective actions that essentially say “Don't do this anymore.” But, these analyses and consequent actions do not appear to answer or address the question “*Why* did this happen?” The model for root cause analyses should be the process used for safety and accident board investigations. Identifying true root causes ensures that we identify solutions that will in fact keep us from repeating the same mistakes.

- Finally, recent difficulties in the contracting arena were a prime motivator for this study, and yet the Air Force is a major contributor of contracting support in Iraq and Afghanistan. In fact, the former defense Contract Management Agency (DCMA) and current Joint Contracting Command-Iraq/Afghanistan (JCC-I/A) commander is an Air Force Ma-

28. See the related Business, Cost Estimating and Financial Management (BCEFM) discussion with figure 7 in the “Workforce and structure” section.

29. Recall the “Accountability, consequence and follow through” discussion in the “Introduction and Background section.”

Major General widely recognized as a leading DOD contracting expert. His expertise should be sought and used.³⁰ Recall the discussion of declining expertise under figure 8 in the “Workforce and structure” section. That discussion combined with the following “Requirements” section discussion indicates there is a significant problem with rationalizing requirements in the RFP and source selection processes.

Findings

- There is no clear, concise, expression of AF acquisition policy.
- There is limited and ineffective use of key processes.
- There is no follow-up to ensure implementation of processes.
- Rationalizing requirements in the RFP and source selection processes is not effective.
- CPARs do not correlate to award fee percentages.
- Effective “root-cause” analysis is not routinely performed.

Recommendations

11. *Commander, AFMC, should establish a process to routinely check implementation of acquisition policy and related initiatives (including implementation of any recommendations in this report), and enforce compliance.*
 - a. Consider making this a recurring IG priority.
12. *Commander, AFMC, should stand up teams of 15 to 25 acquisition experts at each of the product centers, along the lines of that in place at the Naval Air Systems Command. These teams should:*
 - a. include a cadre of experts in all aspects of source selection;
 - b. replace the ACE;

30. See related contracting discussion in the "Workforce & Structure" Section.

- c. be augmented with outside experts (e.g., legal);
and

13. *Functional/matrix “home rooms” should be reestablished at the center level.*
14. *Program control function should be restored and/or revitalized within program offices.*
15. *SAF/AQ should assess the NAVAIR model for establishing and financing its source selection and cost estimating expertise, and determine its applicability in the Air Force.*
16. *SAF/AQ should establish a policy and procedure for root cause analyses modeled after the Air Force Safety and Accident Investigation Board’s process.*
17. *Reestablish a general officer position in SAF/AQC (contracts).*

Requirements

What we were told³¹

Nobody in acquisition stands up and says “no.” The cultural imperative is to give the warfighter whatever he wants.

Acquirers say “when we push back we get ignored. At some point, we have to reject the requirement if we cannot deliver on it.”

When the MAJCOM writes the requirements and calls an HPT [High Performance Teams], then it’s a “pick up” game to fill the team with acquisition-types (who’s available, etc.). Sometimes we send majors.

HPTs are a “catch and release” deal. They will meet for about a week then disperse.

The Chief has to make clear to AMC, ACC [Air Combat Command], etc. that they are responsible for requirements that are executable so that we can execute a program and deliver a capability.

31. See note 1.

Maybe the AFMC commander and the MAJCOM need to agree on requirements before we go forward.

The “summit process” used to establish corporate AF requirements.

There are too many KPPs.

“Everything can’t possibly be a KPP.”

The definition of a KPP should be: “If it can’t do this, we don’t want the system.” A rule of thumb: “There should be no more than ten KPPs.

37 [KC-X] requirements was stupid. It should have been three to seven but no more than ten. [However], limiting the number [of KPPs] won’t fix it. *If you don’t have good acquisition people they will pick the wrong ten.*

There was no CONOPS for fuelers from AMC.

If you model requirements before source selection, you will write better requirements.

Modeling activity is scattered around the AF. I can’t get SSEBs [Source Selection Evaluation Board] to do this until I have a program. I can’t get a proper program going until I model it.

The AF should maximize the use of spiral or block development.

Nobody understands block development.

We need to constrain initial requirements and use block improvements. We fielded the F-15A in 7 years. We took 18 years to field the F-22A and we really fielded the F-22 “Block 60.”

We may need to write the CDD [Capability Development Document] in blocks

Discussion

Virtually all of the people who discussed requirements with us complained that there were few if any constraints on requirements in terms of numbers, cost, or technological maturity. Acquisition par-

ticipants in requirements High Performance Teams (HPT) tended to feel either ignored or intimidated. According to what we were told, HPTs are typically staffed with acquisition personnel who tend to be outranked by the user participants and are frequently chosen based on the fact that they are simply available. Such participants tended not to return to the next HPT meeting, apparently because of the availability criterion. One interviewee called this “catch and release.”

We could not find evidence that there was any structured process to ensure their requirements are prioritized, doable, or had attributes that could be evaluated by a source selection board. The interpretation of what is a KPP appears to be not well defined or understood. The current DOD I 5000.2 states

“Users shall identify and the requirements authority shall approve a *minimum* set of key performance parameters. . . .”

It goes on to state

“To maximize program trade space and focus test and evaluation, the MDA [milestone decision authority], PEO, and PM shall work closely with the requirements authority to minimize KPPs and limit total identified program requirements.”

The nearly 40 KPPs and hundreds of derived requirements that were treated as KPPs on the KC-X, clearly indicates that this policy guidance was not followed.

CJCSM 3170.01C, “Operation of the Joint Capabilities Integration and Development System (JCIDS) states:

“Failure to meet a CDD [Capability Development Document] or CPD [Capability Production Document] KPP threshold may result in a *reevaluation or reassessment of the program. . . .*”

It does not appear that Air Force is defining KPPs with this kind of rigor.

Findings

- The requirements development process is seriously flawed.
 - There is an excessive number of KPPs.
 - CONOPS are often missing.
 - Evaluability and testability is often neglected.
 - Technical feasibility is often overstated.
 - The requirements change process is excessively lengthy and rigid.
 - Performance trades are not emphasized in requirements generation.
- There are disconnects between requirements, acquisition, and resource communities and processes.
 - Communities work in stovepipe fashion, resulting in lack of healthy tension between acquisition & user communities
 - Inadequate prioritization and trades
- There is inadequate stratification of requirements to enable and institutionalize the concept of block acquisition.

Recommendations

18. *The SAF/AQ and the Deputy Chief of Staff for Operations, Plans, and Requirements (A3/5) should establish a SAF/AQ-led process for trading and prioritizing performance with cost and schedule risk. This process should assume that a “summit” will be called as necessary.*³²
19. *The SAF/AQ and the Deputy Chief of Staff for Operations, Plans, and Requirements (A3/5) should establish policy and instructions to ensure that material requirements are structured as evolutionary blocks tied to well defined and controlled requirements blocks with associated cost and schedule increments.*

³² See recommendation number 2.

20. *The Deputy Chief of Staff for Operations, Plans, and Requirements (A3/5), in coordination with the SAF/AQ should issue policy and instructions to enforce the intent of Key Performance Parameters (KPPs). The policy should:*

- a. Reflect the preference to terminate the program if a KPP is not met;
- b. Limit KPPs to a specific small number (e.g., fewer than 10) unless an exception is approved by the SAF/AQ.

Budget discipline

What we were told³³

What is the exit criterion? When do we terminate?

We need to make hard decisions, not “I need more.” If we try to keep all programs running as budgets fall, they will fail. The Chief owns requirements and resources but rarely makes the hard choices choosing one or aligning the two.

We create a lot of programs, none killed, all underfunded, all stretched.

We’re oversubscribed. There is too much emphasis on “iron on the ramp.” Proper programming is not being done.

We don’t understand how to run a business or the portfolio decision-making process. “Strategic choice is about what you decide not to do, not what you do.”

You need to “deprogram” the AF. There are too many programs.

It is better to sacrifice some programs in toto than to make all of them sick. Spiral development is less risky and gets the capability sooner but it is more difficult to maintain the system over its lifetime, often retrofit planning is not done, often you may not end up with the capability you want, and ultimately it ends up costing more.

33. See note 1.

We have lost budget discipline. Without it, there can be no program control.

Program directors need more control over the budget for acquisition and its development.

We have lost the concept of “road maps.”

We have lost the ability to lay out the logic connecting missions to capabilities to programs.

When the MAJCOMs got the money, amateurs got into the system.

I like the idea of capital budgeting. We may need to try a demonstration of capital budgeting to show if it could work.

It is almost certain that programs will be underfunded at the beginning, especially when they are only funded to 50-50. “This is a recipe for failure.”

We need to fund to 80 percent confidence, not 50 percent. If you fund to 50-50 you will underfund, because we live in a right-skewed world. Alternatively we should fund to the mean, which would implicitly be at the 50 to 65 percent confidence level.

We need realistic Expectations Management Agreements (EMAs), but unfortunately these don’t matter when the programmers decide to “whack off” dollars from a program.

We need to put more emphasis on the original baseline to include realistic cost estimates.

We need to baseline against realistic costs at Milestone B.

Discussion

The Air Force acquisition budget, like the acquisition budgets of all Services, is bloated by too many programs chasing too few dollars. This is a problem that causes program instability with or without difficulties in the program’s cost and technical execution. The problem has existed for years, if not decades, but we are most likely entering a long period of very constrained resources. We can no longer afford to carry programs with large out-year bow waves re-

flecting program plans that will likely never materialize. The Air Force needs a top to bottom review of its modernization budget to terminate programs reflecting lower priority capabilities or capabilities that can be deferred to a future start date. Target should be programs that:

- are underperforming in terms of cost, schedule, and performance;
- do not contribute significantly to the delivery of Air Force warfighting capability to the joint warfighter; and/or
- are simply unaffordable.

Having pruned the modernization budget, the Air Force should establish a new resource allocation process that will support rational program execution plans that minimize the currently over-used excuse “It’s not my fault. I don’t control my budget.”

A capital budget may be one solution to this budgeting problem. It has been popping up in government circles since the 1945 Hoover Commission, and it was seen most recently in the March 1999 report of the “President’s Commission to Study Capital Budgeting.” While very useful for making investment decisions in the private sector, the idea of capital budgeting has never gained traction in government. This is probably because the concept of present value and a government appropriate discount rate does, not seem to make much sense to many in the government environment.³⁴

However, we believe that the fundamental principle of having a portion of the Air Force budget carved out to be managed through the PPBES process *only* at the aggregate level is a useful concept. What does this mean? The Air Force could collect all or a portion of its modernization budget (e.g., all Acquisition Category (ACAT) I, or I and II, or any other aggregation of programs desired) into an aggregate amount that would be subject to management and resource allocation as either a percent of AF top line or as an absolute dollar amount. Only that *aggregate* amount should be adjusted through the resource allocation process. But, the impact of that adjustment on the individual programs in this “capital portfolio,” should be left

34. See Capital Budget Nixed for Now, David Mathiasen, Government Executive, June 1, 1999.

to SAF/AQ and the MAJCOMs, with final decisions either by SAF/AQ or the previously described “summit.”

Some will argue that this cannot work unless there is buy-in from OSD and Congress. Although certainly helpful, we do not believe this to be absolutely necessary. While OSD and Congress may still meddle at the line item level if they wish, at least the Air Force will be presenting all of its programs in an integrated, rational, program portfolio. That portfolio can be rebalanced either after apportionment or in the next budget submission. Either way, this will almost certainly be better for program execution of most programs than the free-for-all that exists today.

We are aware and supportive of the current SAF/AQ control of the acquisition budget *after* it has been appropriated. We believe the capital portfolio process described above will allow SAF/AQ to bring similar control to the POM and budget process.

Initially, overcoming OSD staff interference in his capital portfolio management process may require that SECAF and CSAF go to the mat personally, with the Secretary of Defense. This is a leadership issue.

Findings

- Resources, requirements, and acquisition processes are not integrated.
- There are too many programs chasing too few dollars.
- Programs are systematically underfunded.
- There is no process in place to kill programs.
- There is a lack of budget discipline.
- Program adjustments are made as “dollar drills” rather than rationale program assessments.
- There is little to no effective acquisition management input in the POM/budget process.
- Programs are discouraged from programming reserves.
- AF has lost the concept of “roadmaps.”

- There is no capital budgeting process for modernization.

Recommendations

21. *The Chief of Staff, in coordination with the Assistant Secretary for Acquisition, should complete, before the 2011 budget submission, a thorough scrub of the current acquisition portfolio and terminate programs that,*
 - a. are underperforming in terms of cost, schedule and performance;
 - b. do not contribute significantly to the Air Force war fighting capability; and/or
 - c. are simply unaffordable.
22. *Ratify the decisions described in recommendation 21 through a summit.*
23. *The Secretary and the Chief of Staff should direct establishment of a capital portfolio budgeting process prior to the 2011 budget submission.*
24. *The Secretary and the Chief of Staff should direct reinstatement of the "roadmap" process to support the above recommendations.*

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Appendix A: CNA report team

CNA

Gary E. Christle, CNA project director

Dr. Danny M. Davis

Gene H. Porter

Executive panel

Lawrence P. Farrell Jr., Lt Gen (ret), Panel Chair

Honorable Claude M. Bolton Jr., Maj Gen (ret)

Honorable R. Noel Longuemare, Jr.

Tofie M. Owen, Jr.

Mark Ronald

Lawrence A. Skantze, Gen (ret)

Ronald W. Yates, Gen (ret)

Biographies

The Honorable Claude M. Bolton, Jr., DSc

The Honorable Claude M. Bolton, Jr. became the Executive-In-Residence for the Defense Acquisition University (DAU) on January 3, 2008. In this position, Mr. Bolton supports the DAU president, faculty and students with strategic planning, courses development and mentoring. Mr. Bolton's primary focus is assisting the DAU

president achieve the Congressional direction to recruit, retain, train and educate the DOD acquisition workforce.

Prior to becoming the DAU Executive-In-Residence, Mr. Bolton served as the Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASAALT). As the ASA (ALT), Mr. Bolton served as the Army Acquisition Executive (AAE), the Senior Procurement Executive, and the Science Advisor to the Secretary. Mr. Bolton was also the senior research and development official for the Department of the Army, and had principal responsibility for all Department of the Army matters related to logistics.

While the ASAALT/AAE, Mr. Bolton led the execution of the Army's acquisition function and acquisition management system. His responsibilities included providing oversight for the life cycle management and sustainment of Army weapons systems and equipment, from research and development through test, evaluation, acquisition, logistics, fielding, and disposition. In addition, Mr. Bolton oversaw the Elimination of Chemical Weapons Program, and had oversight and executive authority over the Project and Contracting Office charged with Iraq reconstruction. Mr. Bolton was responsible for appointing, managing, and evaluating program executive officers as well as managing the Army Acquisition Corps and Army Acquisition Workforce.

A veteran of more than thirty years of active military service, Mr. Bolton retired as a Major General in the United States Air Force (USAF) following a highly decorated career. Some highlights of Mr. Bolton's USAF service include serving as the Commander, Air Force Security Assistance Center, where he managed foreign military sales programs with totals exceeding \$90 billion that supported more than 80 foreign countries; serving as a test pilot for the F-4, F-111, and F-16; Program Executive Officer for the Air Force Fighter and Bomber programs; and the first Program Manager for the Advance Tactical Fighter Technologies program, which evolved into the F-22 System Program Office. An experienced command pilot with more than 2,700 flying hours in more than 40 different aircraft including Army helicopters; during the Vietnam War he flew 232 combat missions, 40 over North Vietnam. Mr. Bolton served as commandant of the Defense Systems Management College, as spe-

cial assistant to the assistant secretary of the Air Force for acquisition, and as Inspector General and director of requirements at Air Force Materiel Command headquarters.

Mr. Bolton received his USAF commission in 1969 through the University of Nebraska's Air Force ROTC Program, where he was a distinguished graduate. Mr. Bolton's education includes a Bachelor's degree in electrical engineering from the University of Nebraska; a Master's degree in management from Troy State University; and a Master's degree in national security and strategic studies from the Naval War College. In July 2006, he was awarded a Doctor of Science (Honoris Causa) degree from Cranfield University in England. In May 2007, he was awarded an Honorary Doctor of Science degree from the University of Nebraska-Lincoln, his alma mater.

His numerous military awards include Defense Distinguished Service Medal, Legion of Merit, Distinguished Flying Cross with oak leaf cluster, Meritorious Service Medal with two oak leaf clusters, Air Medal with 16 oak leaf clusters, Vietnam Service Medal with three service stars, Republic of Vietnam Gallantry Cross, and Republic of Vietnam Campaign Medal.

Gary E. Christle

EXPERIENCE

Mr. Christle retired from Federal Service in October 2000 as the Deputy for Acquisition Management, Office of the Under Secretary of Defense (Acquisition, Technology and Logistics) and is currently with the Center for Naval Analyses. In his prior position, he was responsible for Department of Defense (DoD) Acquisition policy as embodied in the DoD 5000 series documents. This responsibility included the role of Defense Acquisition Board (DAB) Executive secretary, establishment of Acquisition Program Baselines (APB), and supervision of the monthly Defense Acquisition Executive Summary (DAES) process for monitoring the cost, schedule and technical status of major acquisition programs. He was also responsible for policies regarding contractors' internal cost and schedule control systems (Earned Value Management Systems (EVMS)) and was a member of the DoD Cost Analysis Improvement Group.

As a senior staff analyst with the Center for Naval Analyses Mr. Christle has published reports on Headquarters reorganization, project office organization, program manager training, acquisition metrics, balanced scorecards, earned value implementation, and risk management for executives.

As an independent consultant, Mr. Christle has also done program management process assessments of business units of several major Defense contractors.

EDUCATION

- 2002 Boeing Program Manager's Workshop
- 2002 Lockheed Martin LM21 Lean Leadership Program
- 1997 Aspen Institute Executive Seminar, Aspen Institute, Aspen, CO
- 1995 Program for Senior Managers in Government, Harvard University, Cambridge, MA
- 1976 MBA, Finance, George Washington University, Washington, DC
- 1968 BS Mechanical Engineering, Northeastern University, Boston, MA

AWARDS, PROFESSIONAL CERTIFICATIONS, AND MEMBERSHIPS

Mr. Christle is a Distinguished Military Graduate of Northeastern University and is a recipient of the Northeastern University Outstanding Alumni Award in the Field of Public Service; the Defense Distinguished Civilian Service Medal (twice); the Presidential rank designation of Meritorious Executive; the David Packard Excellence in Acquisition Award; the General Hans H. Driessnack Distinguished Service Award, and the Vice President's "Hammer" Award. Mr. Christle holds a DoD level III certification in Program Management, and is a member of the National Defense Industrial Association and the Project Management Institute, which has endowed an annual scholarship in his name. He is a frequent guest lecturer and Honorary Professor of the Defense Acquisition University.

Dr. Danny M. Davis

2006-Present Center for Naval Analyses

- Coauthor, December 2006 “Losing the Recipe—An Independent Assessment of USAF Acquisition Organization and Processes.”
- Lead author of the April 2007 contract execution earned value assessment model, “A Stitch in Time Saves Nine: Program Diagnostics Using the Rayleigh Model for Executive Decision-Makers”
- Co-author, June 2007 “Armed Reconnaissance Helicopter (ARH) Root Causes Assessment”
- Co-author, September 2007 of independent assessment of BioShield program for HHS
- Co-author, September 2007 of annual operationing plan paper for the Navy
- Co-author, February 2008 of independent graybeard panel assessment of Navy Acquisition
- Lead author, July 2008 of information markets paper
- Lead author, January 2009 of early warning paper for the Navy that included a robust software application

2000-2006 Teaching Assistant/Instructor

University of North Carolina, Chapel Hill.

1976-1998 Officer, U.S. Army

- Director, School of Advanced Military Studies (SAMS), Ft. Leavenworth, Kansas.
- Numerous command and staff positions in the 82nd Airborne Division and 75th Ranger Regiment, including combat deployments for Operations Just Cause, Desert Shield and Desert Storm.
- Aide to the Vice Chief of Staff of the Army.

- Instructor, military studies, political philosophy, defense policy, and international relations , U.S. Air Force Academy, Colorado Springs, Colorado.

Education

- 2006 Doctor of Philosophy in economics, University of North Carolina, Chapel Hill
- National Security Fellow (war college) at the John F. Kennedy School of Government, Harvard University
- 1989 Masters of Military Arts and Sciences, Command and General Staff College (SAMS),
- BA/MA, Philosophy, Politics, and Economics, University of Oxford, UK
- BS, Basic Sciences (concentration in mathematics), U.S. Military Academy, West Point

Scholarships/Awards:

- Omicron Delta Epsilon Honor Society (economics), UNC, Chapel Hill, 2003
- Teaching Assistantship (economics), UNC, Chapel Hill, 2000-2006
- Royster Fellowship (University of North Carolina, Chapel Hill), 1998
- Rhodes Scholar (1976-1978), University of Oxford, UK

Awards upon graduating from the U.S. Military Academy at West Point (1976):

- Green Award, graduated first in the class in general order of merit
- Wood Award, graduated first in the class in general order of merit
- Peruvian Army Award, graduated first in the class in general order of merit

- Pershing Award, highest standing in military science (all four years)
- Lee Award, highest standing in mathematics
- Bradley Award, highest standing in elective mathematics courses
- Mathew Award, highest standing in Russian language studies
- Law Award, highest standing in law studies
- Congressional Medal of Honor Society Award, highest standing in earth sciences
- Forney Award, highest standing in military science (junior year)

Military Awards:

Legion of Merit, Bronze Star, Meritorious Service Medal (w/ 3 OLC), Army Commendation Medal, Air Force Commendation Medal, Army Achievement Medal (w/ OLC), Armed Forces Expeditionary Medal (Panama), National Defense Service Medal (w/star), Southwest Asia Service Medal (w/2 stars for Desert Shield and Desert Storm), the Expert Infantryman's Badge, the Master Parachutist's Badge, and the Ranger Tab

Lawrence P. Farrell, Jr, Lieutenant General, USAF (Ret.)

President, National Defense Industrial Association

Prior to his retirement from the Air Force in 1998, General Farrell served as the Deputy Chief of Staff for Plans and Programs, Headquarters U.S. Air Force, Washington, D.C. He was responsible for planning, programming, and manpower activities within the corporate Air Force and for integrating the Air Force's future plans and requirements to support national security objectives and military strategy.

Previous positions include Vice Commander, Air Force Materiel Command, Wright-Patterson Air Force Base, Ohio, and Deputy Director, Defense Logistics Agency, Arlington, Virginia. He also served as Deputy Chief of Staff for Plans and Programs at Headquarters

U.S. Air Forces in Europe. A command pilot with more than 3,000 flying hours, he flew 196 missions in Southeast Asia, and commanded the 401st Tactical Fighter Wing, Torrejon Air Base, Spain. He was also the system program manager for the F-4 and F-16 weapons systems with the Air Force Logistics Command, Hill Air Force Base, Utah.

He has also been a CNN military analyst commenting on matters related to U.S military operations and programs.

General Farrell has had in-depth business development experience, having served on various business strategy groups for such companies as LABBLEE Corp, Raytheon, Labat-Anderson Inc., KPMG, Huber Corp, The Boeing Company, and Philadelphia Electric Company. He has also served on a number of study groups supporting The United States Air Force, The Rand Corporation, and The Logistics Management Institute. In addition, he has been a member of the advisory boards of UNISPHERE Inc., BAE Systems Simulation and Training, Miltope Group Inc., Learning Byte International, and The Camber Corporation.

He is a graduate of the Air Force Academy with a BS in Engineering and an MBA from Auburn University. Other education includes the National War College and the Harvard Program for Executives in National Security.

A native of Montgomery, Alabama, he is married to the former Victoria Leigh Kruzal of Richmond, Virginia. They have a son, Captain Sean Farrell and a daughter, Kelly Farrell Lowder.

The Honorable Noel Longuemare, Jr.

Mr. Longuemare has served in top-level management and technical positions for both the Department of Defense and the Defense Aero-space Electronics Industry. He currently operates his own consulting firm where he remains active in these same areas, and continues to be called upon to participate in various studies and advisory boards for both the Government and Industry.

Prior to his current activities, Mr. Longuemare served as the Principal Deputy Under Secretary of Defense for Acquisition and Tech-

nology from 1993 to 1997, and is credited with instituting numerous Acquisition Reform initiatives—perhaps most notably, the concept of Cost as an Independent Variable (CAIV), and the introduction of the Modular Open Systems Approach (MOSA). While in that assignment, he also served two 6-month terms as Acting Under Secretary of Defense (A&T). For his contributions to the Department of Defense he was awarded three DoD Distinguished Public Service Awards, along with the prestigious Department of Defense David Packard Award.

Prior to his government service, Mr. Longuemare served as a Corporate Vice President and General Manager of the Systems Development and Technology Divisions at the Westinghouse Electronic Systems Group in Baltimore. After joining Westinghouse in 1952, he worked in design and development engineering as well as line and project management positions. He played a leading role in the development of modern radar and avionics systems for airborne, land, and surface applications. He was heavily involved in Low Observable/Counter Low Observable programs, and took a leading role in successfully applying Defense technology to non-DoD applications.

Mr. Longuemare holds eight patents and 17 patent disclosures, and is active in technical and industrial societies in the Aerospace field. He continues to serve on numerous panels for the Defense Department, and was a member of both the Defense Science Board and the Air Force Scientific Advisory Board. He recently served two terms as Vice Chairman of the National Research Council Air Force Science Board (AFSB), and was also a consultant to the National Commission for the Review of the National Reconnaissance Office.

Mr. Longuemare is a member of the National Academy of Engineering. He was also elected to the grade of Fellow in the Institute of Electrical and Electronics Engineers (IEEE), the American Association for the Advancement of Science (AAAS), and the American Institute of Aeronautics and Astronautics (AIAA).

Mr. Longuemare graduated from the University of Texas-El Paso (BSEE), the Johns Hopkins University (MSE), and the Stanford University Executive Program. He is a registered engineer in the State of Maryland, and resides in Ellicott City, Maryland, with his wife Julie

Tofie M. Owen, Jr.

Mr. Owen joined SAIC as Corporate Vice President of Business Development in April 1996. He was subsequently promoted to Senior Vice President, Corporate Development. He assists all the groups in developing new business opportunities, especially in Air Force, Army, Defense Agencies (DISA, DLA, DIA) and Joint Command programs related to Systems Integration, Command and Control, Logistics, Information Technology, Electronic, Combat, and Training Modeling and Simulation.

Mr. Owen has had over 35 years of diversified acquisition, logistics, requirements and operational experience spanning a whole range of Defense Electronics and Avionics programs. He has served in key leadership positions in both industry and the U.S. Air Force. More recently he has had considerable experience in marketing both domestically and internationally, as well as in strategic planning. He also served as a key advisor on acquisition policies and strategies and taught courses particularly dealing with the "Acquisition of Services". He has served on a number of advisory groups dealing with Acquisition and attended both courses and seminars at Defense Acquisition University.

PRIOR PROFESSIONAL EXPERIENCE:

Magnavox Electronic Systems Company (June 1991 - March 1996)
Corporate Vice President of Marketing

He was responsible for Washington Operations, Congressional Activities, field marketing, marketing communications, international marketing, and strategic planning.

Tofie Owen and Associates (February 1983 - May 1991)
Founder and President

Advised major aerospace companies including SAIC on marketing strategies and programs.

U.S. Air Force (June 1960 - January 1983)

Retired as a Colonel
Assignments included:

Chief of Electronic Warfare Division, DCS/Research & Development, HQ USAF;

Chief of Defense Suppression Branch, Directorate of Operational Requirements HQ USAF; Action Officer, Electronic Warfare Division, DCS/Research & Development, HQ USAF; Chief of Systems Engineering Section, Warner Robins ALC; Electronic Warfare Officer, B52s and EC-121s

PROFESSIONAL AFFILIATIONS:

AUSA Member

AFA Member

Life Member, Armed Forces Communications Electronics Association (AFCEA)

Chairman Emeritus of the Board, National Defense Industrial Association (NDIA)

Member, National Training Systems Association (NTSA)

Past President and Member Board of Directors, , Nations Chapter, Air Force Association (AFA)

Board of Directors, Washington Chapter, Armed Forces Communications Electronics Association (AFCEA)

Member of the Board of Advisors, Robins AFB Museum

Member of the Board of Directors, National Guard Youth Foundation

Member of the Partnership Executive Board, National Science Center

EDUCATION:

B.S., Electrical Engineering, University of Notre Dame, 1959

M.S., R&D Systems Management, University of Southern California, 1968

Distinguished Graduate, Naval War College, 1979

Gene H. Porter

EDUCATION:

M.S. (Honors), ABD, Physical Oceanography, University of Washington, (USN Burke Scholar)

B.S. (Honors) , Marine Engineering, United States Naval Academy

Naval Nuclear Propulsion Program

PROFESSIONAL HISTORY:

1999 to Present – Institute for Defense Analyses, Research Staff Member. Team Leader on several projects for the Undersecretary of Defense (Acquisition Technology and Logistics) that identified needed changes to the formal DOD acquisition system. Led a team effort to support the Office of the Secretary of Defense in developing a comprehensive series of scenarios that respond to the national security strategy and provide templates for evaluating alternative potential U.S. military force structures, postures, and equipment across all military Services, with the goal of improving DoD resource allocation. Leading internal IDA project to scope potential improvements to persistent maritime domain awareness in support of both Homeland Defense and Homeland Security mandates.

1994-1999 – Center for Naval Analyses; Team Leader, Analytic Support to the Commission on the Roles and Missions of the U.S. Coast Guard; a Presidentially directed study of the Coast Guard and its relationships to the Customs Service, Border patrol, DoD, and other agencies. Deputy Executive Director, Commission on Roles and Missions of the Armed Forces (“CORM”). Congressionally mandated study made recommendations for major changes to the DoD’s management processes to facilitate improved “Jointness . Served as Scientific Analysts to the Assistant Secretary of the Navy (RD&A)

1990-1994 – Office of the Undersecretary of Defense (Acquisition and Technology), Deputy, then Director (SES-6), Acquisition Policy and Program Integration; Managed the process by which the Defense Acquisition Executive formally reviewed the progress of each major weapon system acquisition, including the establishment and

measurement of the criteria seemed essential for permitting programs to proceed. Also managed a periodic reporting process that permitted the OSD staff to independently assess the status of each major program to provide early indications of emerging problems. Also represented the interests of the DoD acquisition management community during the annual development and review of the Department's future plans and budgets to help ensure consistency between the approved acquisition program plans and the supporting budget proposals.

1981-1990 – Sanders, a Lockheed Martin Company. Director of Strategic Planning. Working directly for the President of the \$500M Federal Systems Group, established long range corporate strategic and resource allocation plans

1971 - 1980 –Office of the Assistant Secretary of Defense (Systems Analysis) (PA&E)

Various positions of increasing responsibility, including Principal Deputy Asst. Sec.

1966-1971 Various nuclear submarines of the US Atlantic Fleet

Mark H. Ronald

Mark Ronald is a management consultant to industry specializing in leadership development, senior executive coaching and mergers and acquisitions.

Mr. Ronald is a Senior Advisor to Veritas Capital participating in M&A and Management oversight. He serves on the Board of Directors of ATK (Alliant Techsystems Inc.), Cobham plc and DynCorp International, Inc. He serves on the US Department of Defense Business Board.

Mr. Ronald retired from BAE Systems in December 2006 where he held the positions of Chief Operating Officer and member of the Board of Directors for BAE Systems plc, a \$25 billion global aerospace and Defense Company; and President and Chief Executive Officer of BAE Systems Inc., the Company's wholly-owned U.S. subsidiary. He was responsible for building a business which grew to

over \$10 Billion in revenue with 45,000 employees in the United States, United Kingdom, Sweden, Israel and South Africa.

Prior to joining BAE Systems, Mr. Ronald was President of AEL Industries in Lansdale, PA. He previously spent ten years with Litton Industries, Amec Division, College Park, Md, rising to the position of Vice President, Program Management.

Mr. Ronald holds the Honorary Commander of the Most Excellent Order of the British Empire (CBE), awarded in recognition of the services he has rendered to furthering closer transatlantic cooperation in the U.S.-U.K. defense industries. He was honored by the Marine Corps Scholarship Foundation with the Semper Fidelis Award for his efforts in support of the men and women of the U.S. Armed Forces and their families. He was awarded The Curtis Sword Award by Aviation Week and Space Technology in recognition of his leadership in the Anglo-American aero-space industry.

Mr. Ronald is a graduate of Bucknell University, where he received a Bachelor of Arts and a Bachelor of Science in Electrical Engineering. He received his Master of Science in Electrical Engineering from Polytechnic Institute of New York and currently serves on its Board of Trustees. He has received the Distinguished Engineering Alumni Award from both institutions.

Mr. Ronald is an active member of the community participating in numerous educational, civic and charitable organizations

General Lawrence A. Skantze, U.S. Air Force (Ret.)

General Skantze, a member of the Elbit Systems of America Board of Directors, is an internationally known authority on air power and aerospace systems research and development. Today, General Skantze is a consultant to corporate executives, the Defense Science Board, the National Academy of Science, and Missile Defense Agency. General Skantze served for 35 years in the U.S. Air Force, including appointments as Vice Chief of Staff and Commander of the U.S. Air Force Systems Command at Andrews Air Force Base. A graduate of the U.S. Naval Academy, General Skantze received a Master of Science degree in Nuclear Engineering from the Air Force Institute of Technology at Wright-Patterson Air Force Base

and also completed Squadron Officer School at Maxwell Air Force Base and Armed Forces Staff College. A command pilot who wears the Senior Missile Badge, General Skantze's military decorations and awards include the Distinguished Service Medal with two oak leaf clusters, Legion of Merit with oak leaf cluster, Meritorious Service Medal with oak leaf cluster, Army Commendation Medal, and the U.S. Air Force Association's Outstanding Management Award.

Elbit Systems of America is a leading provider of high performance products and system solutions focusing on the defense, homeland security, and commercial aviation markets. With facilities throughout the country, Elbit Systems of America is dedicated to supporting those who contribute daily to the safety and security of the United States and its allies. Elbit Systems of America, LLC is wholly owned by Elbit Systems Ltd. (NASDAQ: ESLT), a global electronics company engaged in a wide range of programs for innovative defense, commercial aviation, and homeland security applications.

General Ronald W. Yates, USAF, (Ret)

Ronald W. Yates, General, USAF, Retired, is an independent consultant to the aerospace industry. He spent 35 years in the US Air Force. He is a combat fighter pilot and test pilot and has over 5000 flying hours in over 50 different types of aircraft. He has extensive experience in the acquisition business having served as Program Director of both the F-15 and F-16 System Program Offices. He was also a Test Wing Commander. He served as Air Force Director of Tactical Programs in the Pentagon, and as Deputy Assistant Secretary of the Air Force for Acquisition. He was the Commander of both the Air Force Systems Command and the Air Force Materiel Command, where he was responsible for all Air Force research, development, acquisition policy, and logistics. After his Air Force retirement, he served as Commissioner on the National Research Council, on the Board of Visitors at both the National Defense University and the Carnegie Mellon Software Engineering Institute, as a Director of the Air Force Academy Association of Graduates, and on the Board of Directors of several publicly traded companies. He is a member of the Society of Experimental Test Pilots. He is a graduate of the US Air Force Academy and holds a Masters Degree in Systems Management from the University of Southern California. In

2004, General Yates was selected as only the seventh Distinguished Graduate of the U S Air Force Academy.

Appendix B: List of interviewees

United States Air Force and Government

1. Mr. Robert Martin, SAF/ACE
2. Mr. J. Michael McWilliams, SAF/ACPO
3. Mr. Harry Disbrow, AF/A5R
4. Ms. Shawn Riordan, AF/A5R
5. BG Janet Wolfenbarger, Director, Intelligence and Requirements, AFMC
6. LtCol Carol Beverley, SAF/AQR
7. Mr. Randall Culpepper, SAF/AQCK
8. LtCol Steve Grupenhagen, AF/A5R
9. Mr. Steve Burke, 866 AESG/JCA, deputy product director
10. Mr. Pat Hogan, SAF/AQXD
11. Ms. Sue Payton, SAE, ASAF/Acquisition
12. Mr. Robert Martin, SAF/ACE
13. Mr. Robert Marx, KC-X Program
14. Col. John Mueller, SBIRS
15. Mr. Luke Schaub, AEHF
16. Mr. Doug Loverro, TSAT
17. Gen Lester Lyles, Former Commander, AFMC

18. Ms. Judy Stokely, Executive Director, AAC
19. Brig Gen Taco Gilbert, AMC/A5/8
20. Maj Gen (ret) Jeffery Riemer, former commander AAC, PEO F-22
21. Maj Gen Mark Matthews, ACC/A8
22. Brig. Gen. (ret) Frank Anderson, President, DAU
23. Gen. (ret) Gregory Martin, former commander AFMC
24. Mr. Gary Payton, SAF/US(D)
25. Mr. Ira Kemp, former SAF/AQC
26. Brig. Gen. Wendy Masiello, AFPEO/CM
27. Gen (S) Donald Hoffman, designated commander of AFMC
28. Lt. Gen. Mark Shackelford, Military Deputy to SAF/AQ
29. Gen. Norton Schwartz, Chief-of-Staff, USAF
30. Mr. David Van Buren, SAF/AQ Principal Deputy
31. Mr. Shay Assad, Director, Defense Procurement and Acquisition Policy
32. Mr. Blaise Durante, Deputy Assistant Secretary for Acquisition Integration
33. Gen. Bruce Carlson, outgoing commander AFMC
34. Gen. (ret) Larry Welch, former Chief of Staff, USAF
35. Mr. Mike Wynne, former Secretary of the United States Air Force
36. Lt. Gen. John Hudson, ASC Commander/PEO
37. Mr. Ken Krieg, former USD (AT&L)
38. VADM David Venlet, COMNAVAIR

39. Dr. Al Someroff, Civilian Deputy to COMNAVAIR
40. Mr. Terry Kasten, KC-X program director
41. Mr. Mike Maglio, Chief, Policy and Implementation, Deputy Assistant Secretary for Contracting
42. Mr. Roger S. Correll, SAF/AQC
43. Mr. Ty Hughes, GCQ
44. Mr. Richard K. Hartley, SAF/FMC

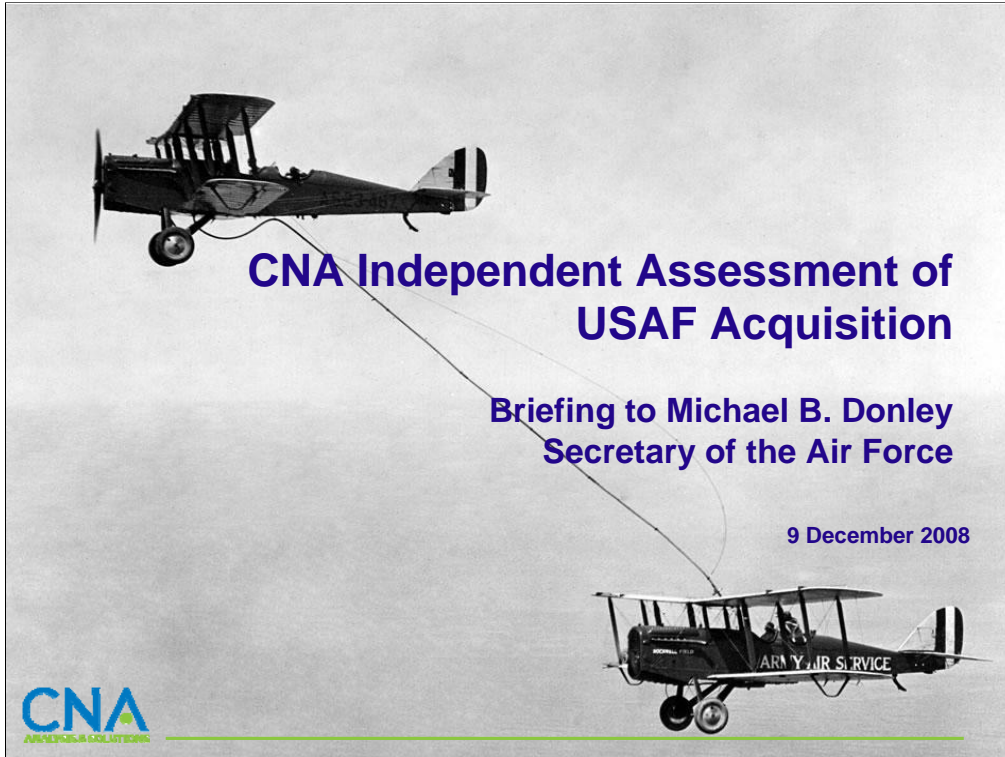
Private Industry

Four current Chief Executive Officers (CEOs) were interviewed, off the record.

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Appendix C: CNA Independent Assessment of USAF Acquisition

**Briefing to Michael B. Donley
Secretary of the Air Force**
9 December 2008



CNA Independent Assessment of USAF Acquisition

Briefing to Michael B. Donley
Secretary of the Air Force

9 December 2008



Project Team & Interviewees

CNA

Gary E. Christle, CNA Project Director
Dr. Danny M. Davis CNA
Gene H. Porter CNA

Executive Panel

Lawrence P. Farrell Jr., Lt Gen (ret) Panel Chair
Honorable Claude M. Bolton Jr., Maj Gen (ret)
Honorable R. Noel Longuemare Jr.
Tofie M. Owen Jr.
Mark Ronald
Lawrence A. Skantze, Gen (ret)
Ronald W. Yates, Gen (ret)

Interviews: 44 AF & government plus 4 current CEOs



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CNA Independent Assessment of USAF Acquisition

Background

A Secretary of the Air Force (SECAF) memo dated 18 July 2008 requested the Assistant Secretary of the Air Force for Acquisition (SAF/AQ) to:

“Provide terms of reference no later than 1 September 2008 for an independent, 90-day assessment of the Air Force acquisition process. This assessment will identify specific problem areas and make recommendations for longer-term improvement. The independent assessment will complement the current and completed SAF/AQ assessments, which look for ways to strengthen the Air Force acquisition process and workforce over the longer term.”

In accordance with an 18 September 2008 tasking from SAF/AQI, CNA initiated action

- To select the members, and manage the activities of, an executive panel to support CNA's independent assessment of the Air Force acquisition system.
- The executive panel was to include retired senior uniformed and civilian executives with recognized expertise in management of weapons acquisition.

This briefing responds to the direction to brief findings, conclusions, and recommendations to the Secretary of the Air Force no later than 9 December 2008. This interim presentation will be fully documented in a CNA final report in February 2009.

Success Factors

- ***Equip function*** equivalent to organize & train
- Treat acquisition as we treat operational matters
- Treat acquisition as a Profession
- Take the time to get it right up front-Discipline
- Responsibility-Accountability-Compliance
- Senior Leadership:
 - Commit
 - Participate
 - Lead



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Return of the Air Force to its former position of preeminence in defense acquisition, will be determined by its ability to embrace the above success factors.

Study Categories

- Cultural
- Senior Leadership
- Acquisition Process & Policy
- Workforce & Structure
- Requirements
- Budget Discipline



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This study addresses six specific issue areas:

1. Cultural
2. Senior Leadership
3. Acquisition Process & Policy
4. Workforce & Structure
5. Requirements
6. Budget Discipline

Study Categories

- Cultural
- Senior Leadership
- Acquisition Process & Policy
- Workforce & Structure
- Requirements
- Budget Discipline

Two Big Buckets:

- People
- Process



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The six study categories can be summarized into two general areas of attention:

1. People
2. Process

Cultural issues – Findings

1. AF does not value acquisition as a profession.
2. AF does not view the equip function equivalent to organize & train.
3. AF leadership does not enforce training & experience criteria IAW with DAWIA.
4. AF places unqualified personnel in Key Leadership Positions



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1. The AF does not value the acquisition profession.
 - a. The cultural issues reflect the attrition of the Air Force's acquisition leadership & processes following the demise of the AF Systems Command (AFSC) in 1992.
 - b. AFSC was not merged into AFLC. It was subsumed, & with that the AFSC leadership of acquisition general officers simply attrited, as well as the:
 - i. Acquisition leadership
 - ii. Disciplined processes &
 - iii. Workforce.
 - c. Acquisition morale is low
 - d. As we were briefed, the attrition process was further aggravated by a 50% decline in the acquisition work force in the early 1990's which the Personnel System did by the numbers, as opposed to retaining critical skills & experience. Over the 16 year period that followed, there has not been any AF leadership that understood what had happened & attempted to restore AF acquisition leadership as a competent part of the AF Mission.
2. The AF's main mission is to train & equip forces: Not viewed that way by the AF
 - a. Acquisition career field management is not an AF priority. Evidence:
 - i. Slow fills to existing vacancies
 - ii. Below the zone promotions to LTC & Colonel lag other fields
 - iii. Low retention among acquisition personnel
 - iv. Promotions to flag officer in acquisition lag other fields
- 3&4. AF leadership fails to enforce acquisition policies & procedures & hold subordinates accountable.
 - a. Unqualified people are being put into acquisition oversight positions & into SPOs
 - b. Training & experience criteria (DAWIA) are not rigorously enforced
 - c. Attendance at DAU is not timely
 - d. Recent AF Academy & ROTC graduates in engineering, who were serving in the acquisition work force, were separated to meet manpower reduction goals
 - e. The SAF/AQ Military Deputy & AFMC Commander were not qualified acquisition officers
 - f. There is no common understanding & implementation of accountability

Cultural issues - Recommendations

1. SECAF & CSAF take active/sustained role to re-energize AF acquisition corps.
2. SECAF & CSAF issue directive announcing AF will reprofessionalize the acquisition corps.
3. AFMC/CC & SAF/AQ track acquisition policy implementation & enforce compliance.



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- 1&2. The SECAF & the CSAF should issue a directive announcing the AF will reprofessionalize the acquisition corps..
 - a. Direct the A-1 to review the findings & to provide a detailed plan of corrective actions to provide full support to AFMC/CC In his managing all aspects of the AF acquisition workforce
 - b. The AFMC Commander must be responsible for the AFacquisition workforce, including:
 - i. acquisition training,
 - ii. acquisition education, &
 - iii. acquisition career progression of all functional disciplines (Program Management, System Engineering, Finance, Contracting, Program Control, Configuration Management, testing etc.)
3. AFMC/CC & SAF/AQ should establish procedures to track acquisition policy implementation & enforce compliance
 - a. The IG may play a role in this.

Senior Leadership - Findings

1. AF leadership not focused on acquisition.
2. AF not nurturing senior officers to lead acquisition.
3. Chain-of-command does not enforce accountability or process discipline
4. AFMC/CC not a coded (Key Leadership Position) acquisition position & his role in acquisition is unclear.
5. SAE & AFMC roles not effectively aligned: policy development, program review, workforce management & compliance.
6. SAF /AQ MilDep's role unclear.
7. AF leaders not accountable for doable, evaluable reqmts.
8. Leadership not regularly engaged in review of programs.



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- Leadership does not value the AF acquisition corps. The leadership:
 - a. has not focused on acquisition,
 - b. & has not nurtured senior officers to lead this critical career field.
 - c. Senior leadership involvement has been inappropriately focused on advocacy, bordering on meddling.
- AF assigns unqualified officers to acquisition positions. Senior Commanders in acquisition:
 - a. are not DAWIA qualified,
 - b. have no experience in the field,
 - c. & cannot constructively contribute to the solution of problems that the AF faces in acquisition.
- The AF does not track process discipline & enforce accountability. The AF has not:
 - a. demanded accountability from those in the acquisition profession & insured that the AFMC & AFSPC chains of command clearly promote accountability
 - b. We devalued the acquisition corps & nuclear surety & got the same result.
- AFMC Commander is not a coded (Key Leadership Position) acquisition position & his role in acquisition is unclear.
 - a. SAE & AFMC roles not effectively aligned
- SAF /AQ MilDep's role in acquisition is unclear . SAF /AQ MilDep is:
 - a. not a key player in the acquisition process &
 - b. is removed from key decisions in the AF that have acquisition implications
- Senior AF leadership not held accountable for doable, evaluable requirements. Senior AF leadership has:
 - a. not accepted accountability for requirements &
 - b. is not involved in balancing requirements, resources & acquisition program issues on key AF programs

Senior Leadership - Recommendations

1. CSAF, AFMC/CC, & using commander take more active role in acquisition (e.g. reinstitute the “Summit” process).
2. AF commit to man acquisition corps with sufficient qualified acquisition General Officers; Define a pyramid structure to support GOs (e.g.,25)
3. Establish equitable BTZ promotion quotas for acquisition IAW DAWIA
4. Code AFMC center Commanders & 3/4-stars DAWIA Level III
5. Provide AFMC/CC two Three-Star deputies (acquisition & logistics); establish acquisition center Commanders as 2 stars & no longer PEOs.



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1. Reinstitute the “Summit” process where major weapons system **requirements** are reviewed & iterated by the Commanders of AFMC & the Using Command
 - a. This review must be chaired by the Chief of Staff, &
 - b. he must hold the Commanders responsible for the **validity** & prioritization of requirements.
 - c. Do a Summit: before release of an RFP & before all MS decisions on ACAT I programs & other major programs of high level interest.
2. CSAF should commit to man the acquisition corps with:
 - a. sufficient experienced acquisition General Officers to provide Program Directors for major AF programs,
 - b. PEO’s with a reasonable span of control, &
 - c. General Officers for all senior acquisition leadership positions 25 General Officers.
3. AF should establish equitable BTZ promotion quotas for acquisition officers.
4. AFMC center Commanders & 3-stars & above should be coded as DAWIA Level III Key Leadership Positions.
5. Provide AFMC/CC with two Three-Star deputies...one for acquisition & one for logistics; acquisition center Commanders should be 2 stars & no longer PEOs.
 - a. These positions demand an experienced acquisition officer in order to be effective.
 - b. “Parachuting in” an operational officer to fill these positions sends the wrong signals to the AF& to senior civilian leaders in the Pentagon.

Senior Leadership - Recommendations

6. Establish collaborative/consultative relationship between AFMC /CC & SAF/AQ: policy, program reviews, workforce management & compliance.
7. Reinstitute PAR process to SECAF & CSAF.
8. SAF/AQ MilDep should provide accurate, timely, information regarding major acquisition programs from SAF/AQ to AF leadership.
9. CSAF & SECAF hold AFMC/CC & operational Commanders accountable for doable, “evaluable” requirements.



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- 6&7. Establish a collaborative & consultative relationship between the AFMC Commander & SAF/AQ on acquisition matters:
- a. AFMC/CC assists SAF/AQ in developing acquisition policy &
 - b. Conducting program reviews.
 - c. reestablish the PAR.
8. SECAF /CSAF /SAE /AFMC - CC should receive accurate, timely, information regarding major acquisition programs from SAF/AQ.
9. CSAF & SECAF hold AFMC/CC & operational Commanders accountable for doable, “evaluable” requirements

Acquisition process & policy - Findings

1. No clear, concise, expression of acquisition policy.
2. Difficult to fix accountability for AF acquisition.
3. Rationalizing requirements in the RFP & source selection processes is not effective.
4. Limited & ineffective use of key processes.
5. No follow-up to ensure implementation of processes.
6. Effective “root cause” analysis not routinely performed.
7. CPARs do not correlate to award fee percentages.



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1. There is no clear, concise, centralized expression of acquisition policy in the AF.
2. Difficult to fix accountability for AF acquisition.
3. Process of rationalizing & resolving warfighter requirements in the RFP & source selection evaluation processes is not effective.
 - a. No process which showed how warfighter requirements were vetted/coordinated between the requirements community & the acquisition community once the requirements had been approved by the JROC
 - b. There appeared to be little effective discussion of the requirements as the source selection process & its evaluation methodology were develop
 - c. The AF needs to review the ASP process
 - d. Need to insist on CONOPS
 - e. Excessive number of KPPs/KSAs & requirements cannot be evaluated effectively by the SSEB
 - i. KC-X: 37 KPPs/KSAs & 808 requirements
4. There is limited use of key processes:
 - a. EVMS/ IBR
 - b. Configuration Control;
 - c. Integrated Master Plans & Schedules.
 - d. Cost estimation
 - e. MPLCC is done poorly
5. No scheme to ensure effective implementation of processes.
6. The Air Force’s ability to do “root cause” analysis appears to be non-existent. What was presented instead of root cause was often a list of “what” happened. There is no list of “why” the “what” had occurred. Without knowing why something occurred, in this cause the KC-X & CSAR-X source selection failures, it is very doubtful the proposed “fixes” will have any long term positive affect.
7. Award fees appear to be independent of CPARs. In other words, contracts often get high award fees percentage while performing badly as indicated by their CPARs. The AF past mandate (mid-1990’s) was that both needed to correlate very closely.

Acquisition process & policy - Recommendations

1. Create clear policy on program accountability.
2. Establish standing team of experts for ASPs & SSEB.
 - a. Create Teams of Acquisition Experts at Centers (15-25)
 - b. Teams replace ACE (augment with outside experts, e.g. legal).
3. Establish effective “requirement → source-selection process: acquisition, resource, requirements, & test.
4. No ASP approved without CONOPS.
5. Create template for model AF program office & matrix.
6. Re-establish “root cause” analysis expertise.
7. AFMC/CC & SAF/AQ establish procedures to track acquisition policy implementation & enforce compliance.
8. Relate new DoD award fee policy to CPAR ratings.



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1. Create clear policy on process & accountability.
2. Establish & use a core of recognized experts for contract formation & source selection.
 - a. Create Teams of Acquisition Excellence at Centers (15-25)
3. Establish an effective “requirement → source-selection process” composed of acquisition, resource, requirements, & testing community membership.
4. No ASP is approved without a CONOPS.
5. Create a template for a model AF program office & matrix organizations.
 - a. Form a team of highly competent acquisition professionals from within & outside the Air Force.
 - i. Consider using retired program managers (HQEs) to augment this team.
 - ii. Use DAU expertise to provide exemplary processes to the model office, &
 - iii. insure that the template program office contains the expertise to execute the processes. Insure that the software systems adequately support the processes.
 - iv. This top to bottom review should establish
 - what we want program offices to do &
 - how we want them to be organized, trained, & equipped to do that job.
6. Re-establish “root cause” analysis expertise.
 - a. Conduct root cause analyses for the KC-X & CSAR-X source selections.
 - b. root cause analysis must include not only “what” happened but more importantly
 - c. “why” it happened. Without identifying why the acquisition failures happened, it is doubtful the current failure trend will be reversed.
7. AFMC & SAF/AQ should establish procedures to track acquisition policy implementation & enforce compliance.
 - a. IG may play a role.
8. AF issue directive implementing new DoD policy on award fees relationship to CPAR ratings.

Workforce & Structure - Findings

1. WG/GP/SQ Structure inefficient & dysfunctional
2. AF acquisition manpower insufficient to task.
 - a. PMs rank/skill/expertise has receded
 - b. AF functional skills have atrophied
 - c. PEO program span too broad
 - d. Acquisition workforce not fully qualified
 - e. Personnel shortages exist
3. Acquisition corps not managed for growth/succession/upward paths.
4. Funding civilian acquisition workforce through OMA results in personnel turbulence.



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1. WG/GP/SQ Structure in Inefficient & Dysfunctional
 - a. Peanut Butter spreads skilled manpower
 - b. Brings less than adequate skills to acquisition programs
 - c. Brings unacceptable overhead
 - d. Under employs skilled manpower
 - e. Imprisons skills in an inflexible structure
 - f. Major inhibitor to efficient utilization of resources
 - g. Managers unwilling/unable to operate efficiently across structure
 - h. Impedes functional training, mentoring, career management of PMs & functional manpower skills
2. AF acquisition manning insufficient to task
 - a. Programs up; manning down
 - b. AF slow to fill existing vacancies
 - c. AF slow to train/qualify existing force
 - d. AF fails to acknowledge problem; no commitment to fix
 - e. Personnel shortages exist
3. Acquisition Corps not managed for Growth/Succession/Upward Paths
 - a. No clear program to recruit, manage, train, sustain (right numbers, levels, skills)
 - b. No pyramid design to size numbers, levels, skills
 - c. Organizational mechanism lacking
4. Civilian acquisition workforce funded through OMA.
 - a. OMA demands & instability exert untoward pressure on acquisition workforce
 - b. Existing structure result of “dollar drill” management

Workforce & Structure – Recommendations

1. Disestablish WG/GP/SQ structure — return to matrix
2. Reestablish functional expertise and program control
3. Fill existing vacancies; add additional acquisition slots.
4. Create career paths for military & civilian professionals
 - a. Senior officers/civilians DAWIA level III (SECAF waiver)
 - b. Define a pyramid structure to manage senior officer/ GOs (25)
 - c. Reestablish Education with Industry (EWI)
5. Reestablish GO position in AQC
6. Fund workforce through program funding vice OMA
7. Formally establish acquisition corps IAW NDAA 2007
8. Delegate workforce management to AFMC



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- 1&2. Disestablish WG/GP/SQ structure — return to matrix management
 1. Assign skilled mentors to key acquisition positions & teams
 2. Reestablish functional expertise in systems engineering, cost-estimating, contracting, developmental planning, EVMS
 3. Reestablish “program control” function in SPOs
3. Rapidly fill existing vacancies; add additional acquisition slots
 3. Concentrate on missing/insufficient skills
- 4&5. Create career paths for military & civilian professionals
 3. Senior officers/civilians must be acquisition DAWIA level III to be assigned to senior acquisition workforce positions (SECAF waiver)
 4. Define a pyramid structure to support military senior officer/ GOs (25)
 5. Reestablish Education with Industry (EWI)
 6. Reestablish GO position in AQC
6. Formally establish acquisition corps IAW NDAA 2007
7. Fund workforce through program funding vice OMA
8. Delegate workforce management to AFMC

Requirements – Findings

1. Requirements development process seriously flawed
 - a. Excessive number of KPPs
 - b. CONOPS often missing
 - c. Evaluability & testability often neglected
 - d. Technical feasibility often overestimated
 - e. Requirements change process excessively lengthy & rigid
 - f. Performance trades not emphasized in requirements generation
2. Disconnects between requirements, acquisition, & resource communities.
 - a. Communities work in stovepipe fashion resulting in lack of healthy tension between acquisition & user communities
 - b. Inadequate prioritization & trades
3. Inadequate stratification of requirements to institutionalize block acquisition



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1. The requirements development process is seriously flawed
 - a. Excessive number of KPPs
 - b. CONOPS often missing
 - c. Evaluability & testability is often neglected
 - d. Technical feasibility often overestimated
 - e. Requirements change process excessively lengthy & rigid
2. There are disconnects between requirements, acquisition, & resource communities.
 - a. Communities work in a stovepipe fashion resulting in lack of healthy tension between acquisition & user communities
 - b. Requirements responsibility tilted toward A5R; inadequate dialogue between A5R & using command (Verify with Tofie Owen)
 - c. Inadequate prioritization & trade-offs
3. Inadequate stratification of requirements to support block acquisition

Requirements – Recommendations

1. Issue policy to enforce the intent of KPPs
 - a. Kill the program if KPP is not met
 - b. Limit KPPs to a small number [e.g.<10]
2. Institutionalize SAF/AQ-led process for trading & prioritizing performance with cost & schedule risk:
 - a. Ensure acquisition-qualified senior military officers (AFMC/CC & SAF/AQ MilDep) collaborate with the SAE on requirements
 - b. Ensure that the CONOPS & associated models that are used to develop the requirements are also used in proposal evaluation
3. Establish core of experts for ASPs & source selection
 - a. Ensure KPPs & derived requirements reflected in RFPs are prioritized & can be evaluated & tested
4. Enforce the structure of programs into evolutionary blocks tied to well defined & controlled requirements blocks with associated cost & schedule increments



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1. Issue a policy to enforce the intent of KPPs
 - a. Kill the program if KPP is not met
 - b. Limit KPPs a small number [e.g.<10]
2. Institutionalize a SAF/AQ-led process for trading & prioritizing performance requirements with cost & schedule risk:
 - a. Ensure an acquisition-qualified senior military officer available to advise the SAE on requirements realism
 - b. Ensure that the CONOPS & associated models that are used to develop the requirements are also used in the evaluation of proposals
3. Establish & use a core of recognized experts for contract formation & source selection that
 - a. Materially participate in the formation of all major RFPs, Acquisition Strategy Plans (ASPs) & in source selections
 - b. Ensures KPPs & derived requirements reflected in RFPs are prioritized & can be evaluated & tested
4. Enforce the structure of programs into evolutionary blocks tied to well defined & controlled requirement blocks with associated cost & schedule increments permitting:
 - a. Faster fielding
 - b. Lower risk with well defined costs
 - c. Adaptability to changing needs within a disciplined process

Budget Discipline - Findings

1. Resources, requirements, acquisition not integrated
2. Too many programs chasing too few dollars
 - a. Programs are systematically underfunded
 - b. No process in place to kill programs
3. There is a lack of budget discipline
 - a. Program adjustments result of dollar drills
 - b. Little to no acquisition management input
4. Programs discouraged from programming reserves
5. AF has lost the concept of “roadmaps”
6. No capital budgeting process for modernization



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1. The resources, requirements, & acquisition processes are not integrated
 - a. Acquisition community needs a stronger voice in POM process
 - b. Under-budgeting programs affects program success
2. There are “too many programs chasing too few dollars”
 - a. Programs are systematically underfunded
 - b. No process in place to kill programs
3. There is a “lack of budget discipline”
 - a. Program adjustments result of dollar drills
 - b. Little to no acquisition management input
4. Programs are prohibited from programming reserves
5. The AF has lost the concept of “roadmaps”
6. There is no capital budgeting process for modernization

Budget Discipline - Recommendations

1. Increase acquisition involvement in POM
 - a. Involve acquisition 4-star
2. Terminate programs that:
 - a. Underperform;
 - b. Do not contribute to the AF's warfighting capability
 - c. Are unaffordable
3. Insure adequate funding programmed for risks
4. Reestablish "Roadmap" process
5. Establish capital budgeting process



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1. Involve the acquisition community more in the POM process
 - a. Involve the acquisition 4-star
2. Terminate programs that are either underperforming or do not contribute to the AF's warfighting capability or are unaffordable
 - a. This should be done in conjunction with the using command, AFMC, & the appropriate Air Staff agency e.g.. A-6 for IT, A-4 for Logistics, A-3 for Mission Systems. Contractual implications as well as operational implications needs to be considered.
 - b. Need to right-size the budgets
3. Insure adequate funding is programmed for risks
4. Reestablish the roadmap process.
 - a. To enable a better understanding of how programs fit together &
 - b. To better program the required dollars.
 - c. This should be coordinated with the developmental planning required of AFMC.
 - d. The roadmap ties requirements to resources.
5. Establish capital budgeting process.
 - a. To insure a long term & more coherent modernization process, a process for capital budgeting needs to be created.
 - b. The objective to insure adequate long term funding to support the modernization initiatives.

Summary: Some Things You Can Do Now

- Senior Leadership communicate intent to Air Force
- Fill existing vacancies; add additional acquisition slots
- Immediately address training and management needs of the acquisition workforce
- Disestablish WG/GP/SQ-Return to matrix management
- Put Program Control back into program offices
- SECAF/CSAF hold AFMC responsible to represent acquisition in requirements push-pull
- SECAF/CSAF hold user Commands responsible for doable, “evaluable” requirements
- Realign/rationalize AFMC/SAE responsibilities
- Create teams of acquisition experts ASP/SSEB

Appendix D: 10 USC 8014, Office of the Secretary of the Air Force

Note: Italics added for emphasis.

(a) There is in the Department of the Air Force an Office of the Secretary of the Air Force.

The function of the Office is to assist the Secretary of the Air Force in carrying out his responsibilities. (b) The Office of the Secretary of the Air Force is composed of the following: (1) The Under Secretary of the Air Force. (2) The Assistant Secretaries of the Air Force. (3) The General Counsel of the Department of the Air Force. (4) The Inspector General of the Air Force. (5) The Chief of Legislative Liaison. (6) The Air Reserve Forces Policy Committee. (7) Such other offices and officials as may be established by law or as the Secretary of the Air Force may establish or designate. (c) (1) *The Office of the Secretary of the Air Force shall have sole responsibility within the Office of the Secretary and the Air Staff for the following functions: (A) Acquisition. (B) Auditing. (C) Comptroller (including financial management). (D) Information management. (E) Inspector General. (F) Legislative affairs. (G) Public affairs.* (2) The Secretary of the Air Force shall establish or designate a single office or other entity within the Office of the Secretary of the Air Force to conduct each function specified in paragraph (1). *No office or other entity may be established or designated within the Air Staff to conduct any of the functions specified in paragraph (1).* (3) The Secretary shall prescribe the relationship of each office or other entity established or designated under paragraph (2) to the Chief of Staff and to the Air Staff and shall ensure that each such office or entity provides the Chief of Staff such staff support as the Chief of Staff considers necessary to perform his duties and responsibilities. (4) The vesting in the Office of the Secretary of the Air Force of the responsibility for the conduct of a function specified in paragraph (1) does not preclude other elements of the executive part of the Department of the Air Force (*including the Air Staff*) from providing advice or assistance to the Chief

of Staff or otherwise participating in that function within the executive part of the Department under the direction of the office assigned responsibility for that function in the Office of the Secretary of the Air Force.

Glossary

ACAT	Acquisition category (usually I, II, or III)
ACE	Acquisition Center of Excellence
ACC	Air Combat Command
ACE	Acquisition Center of Excellence
AF	Air Force
AFMC	Air Force Materiel Command
AFSPC	Air Force Space Command
AMC	Air Mobility Command
AMRAAM	Advanced medium-range air-to-air missile
ASC	Aeronautical Systems Center
BCEFM	Budget Cost Estimating and Financial Management
CAIG	Cost Analysis Improvement Group
CAP	Critical Acquisition Positions
CDD	Capability Development Document
CEO	Chief Executive Officer
COCOM	Combatant Command
CONOPS	Concept of Operations
CPARS	Contractor Performance Assessment Reporting System
CDR	Critical Design Review

CPD	Capability Production Document
CSAR-X	Combat search and rescue helicopter
CPAR	Contractor Performance Assessment Report
DAMIR	Defense Acquisition Management Information retrieval
DAU	Defense Acquisition University
DCMA	Defense Contract Management Agency
DOD	Department of Defense
EELV	Evolved Expendable Launch Vehicle
EMA	Expectations management agreement
EN	Evaluation notice
ESC	Electronic Systems Command
EVMS	Earned value management system
FFRDC	Fully Funded Research and Development Center
FM	Financial Management
FMS	Foreign Military Sales
FSD	Full-scale development
GAO	Government Accountability Office
HPT	High Performance Team
IBR	Integrated Baseline Review
ICE	Independent cost estimate
IG	Inspector General
IMS	Integrated master schedule
JCC-I/A	Joint Contracting Command-Iraq/Afghanistan

KLP	Key Leadership Position
KPP	Key performance parameter
JCIDS	Joint Capabilities Integration and Development System
JROC	Joint Requirements Oversight Council
KC-X	Aerial tanker replacement aircraft.
MAJCOM	Major Command
MDA	Milestone Decision Authority
MilDep	Military Deputy
MS	Milestone
NAVAIR	Naval Air Systems Command
PAR	Program Assessment Review
PCO	Principal Contracting Officer
PDR	Preliminary Design Review
PEO	Program Executive Officer
PM	Program manager
POM	Program Objective Memorandum
RFP	Request for Proposal
SAE	Service acquisition executive
SAF/FMC	Air Force Cost Center, Assistant Secretary of the Air Force for Financial Management
SBIRS	Space-based Infrared Radar
SPO	System Program Office
SRD	System requirements document

SSA	Source Selection Authority
SSAC	Source Selection Advisory Council
SSEB	Source Selection Evaluation Board
SSET	Source Selection Evaluation Team
TRL	Technical readiness level
UCA	Undefinitized contract award
V&V	Verification and Validation

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