



Owning the

TECHNICAL BASELINE

for Acquisition Programs in the
U.S. Air Force

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Background

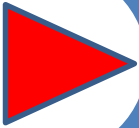
Beginning in the mid-1990s, the USAF began to lose its acquisition excellence.

- Entering the 1990s, the USAF was widely recognized as being a premier technical acquisition enterprise.
- It maintained a cadre of technical experts that were well respected by industry due to their extensive experience with weapons systems and how new products would integrate into existing systems.
- USAF technical experts were respected for their authority to make adjustments to optimize the product within cost and schedule constraints.

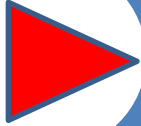
- **Reductions in technical staff**
- **Emphasis on contract price as determining factor**
- **Overuse of TSPR**
- **Ethics Violations**
- **Etc.**

The result was a loss of the “technical baseline” – the loss of the USAF’s ability to make *informed, timely, and independent decisions* to manage cost, schedule, and performance risk.

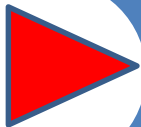
Statement of Task



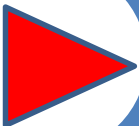
Identify the strategic value to the U.S. Air Force in properly controlling, as well as the risk of not controlling, the technical baselines of its programs.



Investigate how others (e.g., services, government agencies, and commercial industry) control technical baselines and provide an assessment on the most promising mechanisms for potential application within the U.S. Air Force.



Recommend ways to remove or remediate barriers across the U.S. Air Force, such as barriers identified in *Owning the Technical Baseline for Acquisition Programs in the U.S. Air Force: A Workshop*, to properly control the technical baselines of future programs.



Recommend ways for the U.S. Air Force to assess and adopt any identified methods for controlling the technical baselines across its acquisition programs.

Workshop Participants

Meeting 1 – D.C.

David Walker (SES), Deputy Assistant Secretary of the Air Force (Science, Technology, and Engineering)
Jeff Stanley (SES), Deputy Director, Intelligence, Surveillance, Reconnaissance, and Requirements Directorate
Bud Boulter, Office of the Deputy Assistant Secretary of the Air Force (Science, Technology, and Engineering)
David Crawford, Principal Engineer, MITRE
Kevin Buckley (SES), PEO, Air Force Mobility Programs, AFLCMC
Col Peter Eide, Program Manager, AFLCMC

Col Michael Meyer, Deputy Director for Engineering, AFLCMC
Ken Lockwood, Director of Engineering, Strategic Systems Division (AFLCMC/EBB)
Thomas Kobylarz, Chief Engineer
David Genovese, Director of Engineering, JSTARS Recap Program, Airworthiness Designated Technical Authority (AFLCMC/HBR)
HON William LaPlante, Assistant Secretary of the Air Force (Acquisition)
HON Katrina McFarland, Assistant Secretary of Defense (Acquisition)
Naim Awwad, Space and Missile Systems Center, Directorate of Engineering
Cynthia L. Schurr, SAF/AQRE

Meeting 2 – Dayton

Susan Thornton (SES), Director of Engineering and Technical Management, Air Force Materiel Command
Jorge Gonzales, (SES), Engineering and Technical Management/Services Directorate, Air Force Life Cycle Management Center
Steven Zamparelli (SES) (AFMC/PK), Director of Contracting
Tom Robinson (SES) (AFLCMC/PK)
Tom Doyon (SES), Director of AFMC Law Office
Brig Gen Duke Richardson, Tanker Directorate (AFLCMC/WK)
Col Robert Strasser, System Program Manager, B-2 Division
Doug Atkinson, Chief Engineer, AFLCMC/WI
Dave Schairbaum, System Program Director, Combat Rescue Helicopter
Lt Gen John Thompson, Commander, Air Force Life Cycle Management Center
Col Raymond Wier, Chief, C2ISR Division
Col Chris Coombs, KC-46 System Program Manager, USAF
Col Douglas S. Martin, Reserve Adviser, DAS ST&E, SAF/AQR
Col Chip Mosle, Chief, KC-46 Development and Production, USAF
Maj Brian Scozzaro, Tanker Directorate Executive Officer, USAF
Cap Jennifer Condon-Pracht, Chief, Tanker Program Execution Group, USAF
Joe Baker, KC-46 Development Chief Engineer, USAF
Dr. Kenneth Barker, Senior Leader, Air Force Life Cycle Management Center/EN-EZ
Luke Burke, Director of Engineering, USAF
Chris Fall, National Security and International Affairs, White House OSTP
Mary Beth Kundert, Chief, Configuration Management, USAF
Don Thompson, Deputy Air Force Program Executive Officer for Tankers, USAF
Larry Rogers, KC-46 Chief Engineer, USAF
Duane L. Sevey, AFLCMC/WIH, Combat Rescue Helicopter
John Slye, Tanker Directorate Chief Engineer, USAF
Bert Turner, Deputy, KC-46 System Program Manager, USAF
Philomena M. Zimmerman, Deputy Director, Engineering Tools and Environments, OSD (AT&L)/OASD (R&E)/ODASD (SE)

Meeting 3 – D.C.

RADM Kathleen Paige (USN, Ret.), Former Director, AEGIS Ballistic Missile Defense
Don Mitchell, Member of the Principal Professional Staff, Johns Hopkins University Applied Physics Laboratory
Lorraine Martin, F-35 Executive Vice President and General Manager, Lockheed Martin
Tina Harrington, Director, SIGINT Directorate, NRO
HON Stan Soloway, President and Chief Executive Officer
COL John Cavedo, Jr., Program Manager, Combat Support and Combat Service Support, U.S. Army
Robert Clarke, Deputy Program Executive Officer, Office of the Assistant Secretary of the Air Force (Acquisition)
Col Janet Grondin, Chief, Range and Network Division (SMC/RN), Air Force Space and Missile Systems Center
John Morris, Chief Engineer, MILSTATCOM Systems Directorate, Air Force Space and Missile Systems Center
Lt Gen Christopher Bogdan, U.S. Air Force, Program Executive Officer
RADM Dave Johnson, PEO Submarines
VADM Terry Benedict, Director
Lt Col David Buchanan, Executive Officer, F-35 Joint Program Office
Capt Adam Brown, Executive Officer to Director, SIGINT Systems Acquisition, National Reconnaissance Office
Kevin Keck, AZS Division Chief, USAF
Lynn Eviston, Director, Plans and Programs Directorate, USAF
Brian Laird, Chief Engineer, Launch Test Range System (SMC/RNSE), USAF
Peter Manternach, Deputy Chief Engineer, Joint Program Office, Joint Light Tactical Vehicles
First Lt Rachel Milliron, Aide-de-Camp to the AFLCMC Commander, USAF
Rocky Reiners, SAF/AQR
Lt Col Mike Taraborelli, Chief, Range Modernization Branch (SMC/RNG), USAF

*Titles listed reflect positions at the time of meeting.

Study Interviews

Meeting 1 – D.C.

Gordon England, former Deputy Secretary of Defense and former Secretary of the Navy
William H. Gerstenmaier, SES, Associate Administrator for Human Exploration and Operations, NASA
Lee Buchanan, President and CEO, Arete Associates
Vice Admiral James D. Syring, Director, Missile Defense Agency
Robert B. Raines, SES, Associate Administrator for Acquisition and Project Management, NNSA
Jaiwon Shin, SES, Associate Administrator for Aeronautics, NASA
Stan Soloway, President and CEO, Professional Services Council
Edward J. Hoffman, Chief Knowledge Officer, NASA
Lt Gen Ron Kadish (USAF, retired), former Director, Missile Defense Agency

Meeting 2 – D.C.

Vice Admiral David A. Dunaway (USN, retired), former Commander of Naval Air Systems Command (NAVAIR)
Jack Gansler, professor emeritus, School of Public Policy, Univ. of Maryland; former Under Secretary of Defense for AT&L
Lt Gen Charles R. “CR” Davis (USAF, retired), President & CEO, Seabury Global Aerospace and Defense
Richard B. Clifford Jr., SES, Deputy General Counsel for Acquisition, Headquarters U.S. Air Force
James P. Woolsey, SES, President, Defense Acquisition University
Blaise J. Durante, Director, Blaise J. Durante & Associates, Inc.
Ronald Poussard, Executive VP for business development and contracts, Advanced Concepts and Technologies International
Col George N. Schwartz, 645 AESG/CC
John Weiler, Vice Chair, Interoperability Clearinghouse and IT Acquisition Advisory Council

Meeting 3 – Dayton

General Ellen Pawlikowski, Commander, Air Force Materiel Command (AFMC)
Douglas L. Loverro, SES, Deputy Assistant Secretary of Defense for Space Policy
Thomas D. Robinson, SES, Director of Contracting, AFLCMC
Jorge F. Gonzalez, SES, Director, Engineering and Technical Management/Services Directorate, AFLCMC
Col Keith L. Bearden, Deputy Director, Engineering and Technical Management, AFMC
Col Steven J. Butow, Defense Innovation Unit Experimental (DIUx)
Kevin W. Buckley, SES, PEO of Air Force Mobility Programs, AFLCMC
Brig Gen Eric T. Fick, PEO for Fighters and Bombers, AFLCMC
Gary L. Poleskey, Vice President, Dayton Aerospace, Inc.
Kathy L. Watern, SES, Deputy Assistant Secretary for Cost and Economics, SAF/FMC
Lt Gen Samuel A. Greaves, Commander, Space and Missile Systems Center, Air Force Space Command
Gwynne Shotwell, President and COO, SpaceX
Lynn M. Eviston, Director, Plans and Programs, AFLCMC
Brig Gen Duke Z. Richardson, PEO for Tankers, AFLCMC
Lynda T. Rutledge, SES, PEO and Director for the Agile Combat Support Directorate, AFLCMC
Christine H. Fox, Senior Advisor, Johns Hopkins Applied Physics Laboratory; former Acting Deputy Secretary of Defense and former Director of Cost Assessment and Program Evaluation (CAPE)

*Some interviews were conducted via phone

Current State of Acquisition in the USAF

Leadership & Culture

- The leadership and overall acquisition culture within the USAF do not appear to appropriately value technically trained and competent acquisition and engineering personnel.

Workforce Management

- The USAF is “over-programmed”, understaffed, and there is a lack of personnel stability. Continuity, longevity, and mentoring in the engineering and technical fields, including a succession pipeline, are crucial for program success.

Contracting Support

- A lack of an adequate program management governance structure has created an environment where not all acquisition team members are currently accountable. This, in cases, has led to confusion, frustration, miscommunication, & mistrust between COs and the PMs/PEOs.

Funding

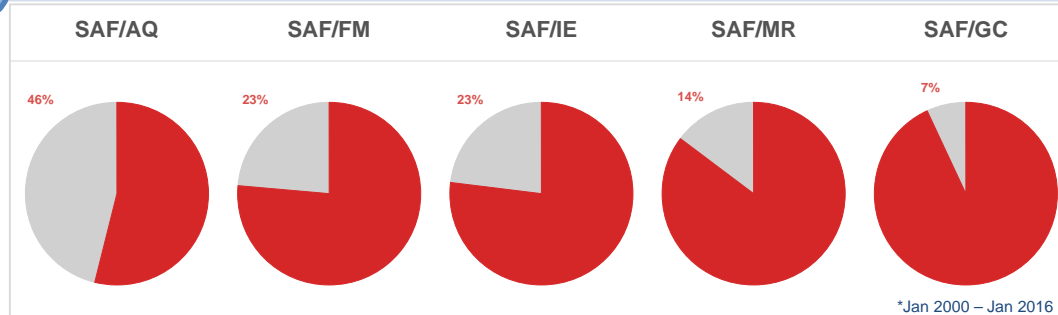
- A lack of adequate and timely funding is limiting the USAF’s ability to shape its workforce.

Leadership & Culture

- There is a lack of consistent tenancy in the SAF/AQ position
- The current risk-averse culture is hindering program management

Recommendation 1

- **The SecAF should investigate the high frequency of an acting or vacant status for the SAF/AQ position and work to minimize those vacancies.**



Recommendation 2

- **USAF Senior Leadership should work to rebuild a risk-tolerant ACQ culture through education, training, and mentorship: encouraging more reasonable interpretations of policy; and assuring that needed deviations can be expeditiously pursued.**

- Current culture emphasizes process and cost reduction – compliance governs Air Force acquisition and is estimated to consume nearly 25% of every dollar spent.
- The extensive oversight for military programs constrains both programs and staff.

Workforce Management

- The USAF is “over-programmed” and understaffed
- A lack of personnel stability is driven by rotations and short assignments

Recommendation 3

- **The USAF should establish criteria for when it should own the technical baseline of a program, develop staffing standards for owning the technical baseline, and determine which existing programs must do so.**

- The AF has gradually reduced its organic technical workforce through a combination of service downsizing, devaluing technically trained personnel, cost-cutting measures, and attrition.
- FY20 authorizations for the acquisition workforce in AFLCMC are projected to be 47% below FY95 levels while there is a projected 50% increase in program dollars for this same period.
- The ratio of program engineers to program managers has dropped from 10:1 to 4:1.

Recommendation 4

- **The USAF should review and make appropriate changes to assignment policies in the ACQ workforce to reduce turnover and attrition and increase succession and transition planning.**

- Short assignments hinder and are detrimental to the management of the technical workforce.
- Even the most highly capable leaders grapple with a demanding learning curve for highly complex programs...and often there is not a significant transition period involved.
- Funding for retention incentives appears to have been realigned to higher priorities, however, the first overrun of a MDAP would more than pay for these types of incentives.

Workforce Management

- Lack of emphasis on PM qualifications (STEM degree, experience with industry, etc.)
- Technical capabilities of contract personnel aren't meeting program requirements

Recommendation 5

- **USAF leadership should ensure necessary guidance and governance that emphasizes the need for technically educated and experienced program managers.**

- AF acquisition leaders and personnel system appear to often allow new entrants into the acquisition career field without adhering to the prerequisite of technical experience.
- Successful PMs have commonly held technical degrees in a STEM field; operational assignments; education on business management, experience with industry; and experiences a transition to the acquisition field not later than mid-career.

Recommendation 6

- **The USAF should establish, select, and equip a dedicated line of program acquisition officers selected from a defined STEM intensive career path in the uniformed services.**

- Would be similar in intent, education, and experience to the Navy's engineering and aeronautical engineering duty officers and would help ensure education, training, experience, and succession planning for successful technology acquisition.

Recommendation 7

- **AFLCMC leaders should work with EPASS to establish a rigorous requirements definition process such that that contractor personnel align with PM requirements to meet program needs.**

- Due to the combination of labor codes/categories and the use of TA/LEP approach, contract personnel don't align to specific requisite skills needed to meet program requirements.

Contracting Support

- No current adequate program management governance structure
- Not all acquisition team members are currently accountable for program success
- Inappropriate use of LPTA is resulting in a lack of appropriate technical expertise

Recommendation 8

- **The Air Force should issue a guidance memorandum that clearly specifies the lines of authority and accountability of all members of the government acquisition team and reinforce the PM authorities and PM and CO responsibilities.**

- In many cases there is confusion, frustration, miscommunication, and mistrust in the relationship among contracting officers and program executive officers and program managers.

Recommendation 9

- **Contracting professionals' appraisals should have appropriate objectives and metrics tied directly to the program office's success and the PEO, PM, or designee should provide performance input to the contracting professionals' annual appraisals.**

- While not held accountable for program success, COs have the authority to constrain the PM from hiring the best engineering talent to support the program, often using cost-control as the paramount metric.

Recommendation 10

- **SAF/AQ should clarify the criteria for the use of LPTA and ensure avenues for the government ACQ team to determine its appropriateness for meeting mission requirements.**

- LPTA contract type was not intended to be mandatory or for the acquisition of all technical products and systems but it has evolved in that direction in the current acquisition climate.

Funding

- Lack of adequate and timely funding is limiting ability to shape the acquisition workforce

Recommendation 11

- **The USAF should complete the shift from O&M funds to RDT&E funds for funding ACQ staff and require PMs to include full funding for in-house technical staff in their program financial plan.**
- Will allow greater flexibility in the hiring and training of the organic engineering workforce and allow civil service engineers to be secured, trained, and employed in support of program office needs and to fill necessary gaps.

Bottom Line

“We are fighting tomorrow’s wars in today’s program development offices.”

- Lt. Gen. (USAF, ret.) Henry A. “Trey” Obering III

In order to win these wars and regain ownership of the technical baseline the Air Force should...

- Ensure sustained leadership within the acquisition community.
- Emphasize the value of USAF acquisition professionals.
- Reinforce program managers’ authority and accountability.
- Clarify the role of the contracting officer in relation to the program manager.
- Strengthen and expand the technical knowledge-base and expertise of the acquisition workforce.
- Continue to eliminate barriers to success and avoid creating new ones.

Contact Information and Study Report Link

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