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**NAVAL POSTGRADUATE SCHOOL
Monterey, California**



THESIS

**A CASE STUDY: ACQUISITION REFORM AND THE
JOINT PRIMARY AIRCRAFT TRAINING SYSTEM
(JPATS) PROGRAM**

by

Kenneth W. McKinley

June 2000

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JOINT PRIMARY AIRCRAFT TRAINING SYSTEM
(JPATS) PROGRAM**

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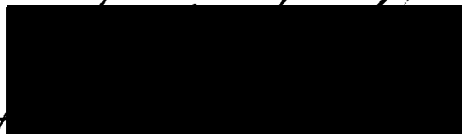
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ABSTRACT

Defense Acquisition Pilot Programs (DAPPs) were established to jump-start the initiatives outlined in the Federal Acquisition Streamlining Act (FASA) of 1994. DAPPs were provided legislative authority to implement the provisions of FASA before they were published in regulations, authority to use the commercial item exemptions for non-commercial items and were also given expedited deviation authority from the FAR/DFARS and the DOD 5000 series regulations.

The Joint Primary Aircraft Training System (JPATS) was designated a pilot program by the Deputy Under Secretary of Defense for Acquisition Reform. The purpose of this paper is to provide insight into the Joint Primary Aircraft Training System (JPATS) acquisition and describe, if any, the results of acquisition reform on program effectiveness, cost, schedule, and performance.

Eleven metrics were established by the JPATS program and then measured against established baseline programs to derive quantitative savings attributed to implementing acquisition reform. An analysis of those metrics concludes acquisition reform is having mixed results on this program. Only two measures seem successful indicators of acquisition reform, while the remaining nine seem to indicate more success is being realized from applying acquisition program management reform efforts highlighted in DOD directives than statutory and regulatory relief provided DAPPs.

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I. INTRODUCTION

A. BACKGROUND

Acquisition reform efforts continue to transform Department of Defense (DOD) processes and procedures into world-class operations. These revolutionary changes are making great strides in reducing acquisition cycle times from new product development to production, through spare part delivery. Improved cycle times directly provide the warfighter faster access to new technologies, improved readiness, reduced logistics response times and savings associated with reduced inventory levels. As the rhetoric lauding acquisition reform continues, a logical follow-on process is to determine and quantify how much DOD saves from such practices.

The Under Secretary of Defense (Acquisition, Technology, and Logistics) [USD(AT&L)] designated the Joint Primary Aircraft Training System (JPATS) a Defense Acquisition Pilot Program (DAPP) pursuant to authority granted in Section 819 of the National Defense Authorization Act for Fiscal Year 1995, Public Law 103-337, and Section 5064 of the Federal Acquisition Streamlining Act (FASA) of 1994, Public Law 103-355. Pilot programs are an integral part of the Department's overall plan to reform the acquisition process and were selected to demonstrate new and innovative approaches in the use of commercial practices and the acquisition of commercial products. [Ref. 1]

In February 1989, the Department of Defense Trainer Masterplan was approved documenting joint U.S. Air Force and U.S. Navy near and long term primary aircraft training requirements. In December 1990, the Mission Need Statement documenting these requirements was validated by the Joint Requirements Oversight Council (JROC)

and the Joint Services Operational Requirements Document (ORD) was published. In January 1993, the Defense Acquisition Board conducted a Milestone 0/I review (Concept Exploration/Program Definition and Risk Reduction). [Ref. 2] The Joint Primary Aircraft Training System (JPATS) was born when Milestone 0 was approved and the U.S. Air Force was designated lead Service.

JPATS is a joint U.S. Air Force / U.S. Navy Acquisition Category (ACAT) 1C project to replace the Air Force T-37B and Navy T-34C aircraft and their related Ground Based Training Systems (GBTS). In addition to its primary mission of training entry-level student pilots, JPATS will also support undergraduate U.S. Naval Flight Officer and U.S. Air Force Navigator training. [Ref. 2]

The program includes the purchase of aircraft, simulators, associated ground-based training devices, training management systems, instructional courseware, and logistics support. The Air Force will have contractor logistics support (CLS) for the off-aircraft equipment maintenance and either a third party contractor will perform the on-equipment maintenance, or it will be organically supported. The Navy will employ total CLS for the entire aircraft and GBTS. The GBTS will be a total CLS effort. [Ref. 2]

The Air Force, as the Executive Service for JPATS, manages the program through the Flight Training System Program Director under a joint agreement with the Navy. The Program Director reports to the Air Force Program Executive Officer (AFPEO) for Airlift and Trainers (AFPEO/AT). The Milestone Decision Authority (MDA) is the Air Force Component Acquisition Executive (CAE).

Acquisition reform continues to stress commercial business practices, reduced procurement cycle times, and overall savings in procurement costs. As with any organization undergoing massive reform in terms of practices and procedures, metrics should exist to quantify and determine the extent of success, or failure these changes may produce. To answer the question, "What are the effects of acquisition reform on the execution and delivery of the Joint Primary Aircraft Training System (JPATS)," metrics must be derived and then applied to established baselines to determine the depth and breadth acquisition reform has made in terms of cost, schedule and performance.

The purpose of this research is to determine the impact, if any, acquisition reform has had on the JPATS program's effectiveness, cost, schedule, and performance.

B. AREA OF RESEARCH

The nation's Federal procurement process has evolved from a parochial, bureaucratic and paper intensive process to the present system structured under acquisition reform. The objective of this research is to determine and quantify the impact acquisition reform has had on a Major Defense Acquisition Program (MDAP), which has evolved with the process and make recommendations based on lessons learned.

C. RESEARCH QUESTIONS

1. Primary Research Question

What are the effects of acquisition reform on the execution and delivery of the Joint Primary Aircraft Training System (JPATS)?

2. Secondary Research Questions

1. What is the background and history of the JPATS program?
2. What is the overall acquisition plan (including milestones) for this program and to what extent did execution of the program meet the plan?
3. What have been the contract vehicles used in the JPATS program and how effective have they been?
4. How has the JPATS Program Office and Prime Contractor applied acquisition reform to the JPATS program?
5. How are the effects of acquisition reform measured in the JPATS program?

D. SCOPE OF THE THESIS

The scope will include: (1) a review of acquisition reform change elements and Defense Acquisition Pilot Programs (DAPPs), (2) discussion of the JPATS acquisition plan and the extent program objectives have been met to date, (3) review of the contracting vehicles used in the JPATS program, (4) discussion of how program offices and contractors apply acquisition reform initiatives to major defense programs, and (5) an evaluation of effects attributable to acquisition reform on the JPATS program.

E. METHODOLOGY

The methodology used in this thesis consisted of the following steps.

1. Conducted a literature review of books, magazine articles, CD-ROM systems, Internet based materials and other library information resources.
2. Obtained and reviewed the Department of Defense 1989 Trainer Aircraft Masterplan, JPATS Operational Requirements Document (ORD), Single Acquisition Management Plan (SAMP) for JPATS, and extracts from the JPATS Request for Proposal (RFP).
3. Conducted interviews either in person, or by telephone, with members of the Government program office and prime contractor.

F. ORGANIZATION OF THE STUDY

There are five chapters in this thesis. The chapters will lead the reader through the sequence of events that took place in the JPATS procurement. Historic programmatic facts are presented and developed, along with the acquisition reform change elements, detailing reform initiatives which have occurred as a result of acquisition reform.

Chapter I is the thesis introduction.

Chapter II will present a brief background of the events leading to the joint acquisition for a trainer aircraft. The T-6A Texan II Training System will be introduced and appropriate aircraft specifications provided.

Chapter III will present acquisition reform change elements as they relate to the JPATS acquisition. The acquisition plan, strategy, and contract methodologies will be explored and discussed.

Chapter IV will introduce the Pilot Program Consulting Group (PPCG) and discuss its role in the reform process. Metrics to evaluate acquisition reform against baseline programs will be used to assess the effectiveness of acquisition reform on the JPATS program. Finally, joint and programmatic issues will be discussed and analyzed.

Chapter V is the researcher's conclusions, recommendations, and suggested areas for further study and discussion.

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II. PROGRAM HISTORY

A. INTRODUCTION

The purpose of this chapter is to establish a historical perspective of the JPATS acquisition. The Department of Defense Trainer Masterplan is described and will provide the rationale behind designating JPATS a joint program acquisition. Excerpts from the Joint Services Operational Requirements Document (ORD) will briefly explain the mission area, operational concept, and shortcomings of existing systems. Finally, JPATS – the T-6A Texan II Training System is introduced and each of the three main elements comprising the system are discussed.

B. DEPARTMENT OF DEFENSE TRAINER MASTERPLAN

By act of Congress, National Defense Authorization Act, Fiscal Year 1989, the conferees of the Committees on the Armed Services of the United States Senate and House of Representatives directed the Secretary of Defense to submit a report which outlined DOD plans for future Navy and Air Force training aircraft. The 1989 DOD Trainer Aircraft Masterplan examined the requirements of the two Services over the next 30 years and formulated a strategy for joint-Service acquisition of fixed-wing aircraft training systems into the second decade of the 21st century. The Masterplan consolidated issues, concepts and requirements of USN and USAF undergraduate pilot training into a single reference and planning document, structured to provide a basis for long range planning. [Ref. 3]

The Trainer Aircraft Masterplan described Navy and Air Force undergraduate pilot training systems, trainer replacement forecasts for both Services, possible funding strategies, and relevant peripheral issues such as aircraft modification and life sustainment programs. Imbedded in the discussions throughout the report are descriptions of a number of joint procurement opportunities. [Ref. 3]

The most significant opportunity was found to be the acquisition of a common primary trainer for use by both Services. There exists, however, one overriding characteristic in joint programs. The equipment shared and planned for joint use must conform to requirements of both using Services at the time of the expressed need. The key to joint-Service acquisition, then, is joint specification of requirements far enough in advance to meet the projected needs of the parties involved. Joint specification of requirements and timing are key to the process. [Ref. 3:p. 4-1]

C. JOINT SERVICES OPERATIONAL REQUIREMENTS DOCUMENT

1. Mission Area

The principal mission of the JPATS is to train entry-level USN and USAF student pilots in primary flying skills. JPATS also provides primary and intermediate training to entry-level USN Student Naval Flight Officers (SNFOs). Additionally, JPATS provides entry-level USAF student navigators with a basic understanding of airmanship prior to their designation as USAF Navigators. [Ref. 4]

2. Operational Concept

The JPATS shall replace the T-37B and at least the T-34C aircraft and their associated ground-based systems in support of joint USAF and USN flying training

programs. The JPATS will have common components meeting common USAF and USN requirements. The system procured shall bring entry-level flight students to a level of proficiency where they can transition to advanced USN and USAF flight training systems. Elements of the system are the air vehicle, the Ground Based Training System (GBTS) necessary to perform operational flight instruction, instrument flight instruction, and pre-flight instruction as required. The system shall also include an integrated package of courseware, syllabi, academic training courses, and a computerized data management system. The JPATS shall support a daily student activity rate, meeting the aviator production requirements of both Services, providing training continuity, and enabling development of basic aviation skills necessary for military aviators. [Ref. 5]

3. Shortcomings of Existing System

The basis of need for JPATS is four-fold:

a. Training Effectiveness

The T-37B and T-34C are equipped with analog systems and are not representative of any current operational aircraft cockpits. Both aircraft are low-powered and capable of providing only the most basic flight training. [Ref. 5:p. 2]

b. Safety

The T-37B and T-34C are substandard in the areas of crew egress, pressurization, seating geometry, and G-induced loss of consciousness protection. [Ref. 5:p. 2]

c. Performance/Design

The T-37B and T-34C are substandard in high altitude performance, crosswind landing capability, and noise abatement. [Ref. 5:p. 2]

d. Supportability Of Existing System

Supporting the existing T-37B and T-34C airframes and individual components is becoming increasingly difficult. This results in the requirement for specialized procurement of spares at much higher cost. [Ref. 5:p. 2]

D. JPATS – THE T-6A TEXAN II TRAINING SYSTEM

1. System Description

JPATS consists of three main elements, which include the aircraft, the GBTS, and Contractor Logistics Support (CLS).

2. Aircraft Description

The Beech T-6A Texan II was selected as the JPATS aircraft. The T-6A Texan II offers better performance and significant improvements in training effectiveness, safety, cockpit accommodations and operational capabilities than present aircraft. Powered by a single, Pratt & Whitney PT6A-68 turboprop engine with a four-blade propeller, it features a stepped-tandem, cockpit configuration, with the instructor's rear seat raised slightly to improve visibility from the rear cockpit; modern avionics; and improved egress systems features zero altitude/zero knot capable ejection seats. A single, side-opening, non-jettisoned canopy covers both T-6A cockpits and offers increased birdstrike protection, withstanding the impact of a four-pound bird without catastrophic damage at 270 Knots True Airspeed (KTAS). It has a pressurized cockpit to permit training at

higher, less-congested altitudes and reduce the stress on student pilots. The aircraft is equipped with an onboard oxygen-generating system that reduces the time needed to service the aircraft between flights. The T-6A's tricycle-type landing gear is hydraulically retracted through electric controls and is equipped with both differential brakes and nosewheel steering. The aircraft is fitted with electrically controlled, hydraulically operated, split flaps, used for takeoff and landing. It also has a single, ventral-plate, speed brake located between the flaps. All flight controls are manually activated, with electrically activated trim controls. Flight controls and avionics can be operated from both cockpits. For single-pilot operations, the pilot will fly in the front cockpit. [Ref. 7]

An Instrument Flight Rule (IFR) certified avionics instrumentation package will be included. Avionics systems will include an Angle of Attack (AOA) system, Electronic Attitude Director Indicator (EADI), Electronic Horizontal Situation Indicator (EHSI), UHF communications, VOR/DME, Integrated Landing System (ILS), Airborne Traffic Collision Warning System, and a system to record data for an Aircraft Structural Integrity Program (ASIP), Engine Structural Integrity Program (ENSIP) and crash investigations. Even though a Global Positioning System (GPS) waiver was granted, the contractor proposed and is including a GPS with the aircraft (ORD II Rev 1 specifies a requirement for GPS). The program has included VHF radio capability as well. [Ref. 6:pp. 9-10]

The aircraft specification recognizes the aircraft is largely non-developmental with missionization required to satisfy the needs of the Services. The basic aircraft has

been missionized to incorporate JPATS specific functional and performance requirements in the Prime Item Product Functional Specification (PIPFS) into the aircraft.

Missionization of the basic aircraft includes anthropometric changes to the cockpit to permit the accommodation of a minimum of 80 percent of the eligible female population as defined by the OSD Cockpit Working Group's standard derivation from the Natick 1988 Anthropometric Survey of US Army Personnel, an escape system capable of handling a range of pilots from 116 to 245 pounds (nude weight), new avionics displays and improved bird strike protection. [Ref. 6:p. 10]

The T-6A Texan II is derived from an existing commercial aircraft. The production aircraft will have a Type Certification (TC) from the U.S. Federal Aviation Administration (FAA). The aircraft certification basis is in accordance with the U.S. Federal Aviation Regulation (FAR) Part 23 Acrobatic Category, FAR Part 33 standard for the engine, and FAR Part 35 standard for the propeller. All deviations from the FAA certified type design must have a military qualification. [Ref. 6:p. 10]

Table 2.1 lists the performance characteristics of the T-6A Texan II aircraft and Figure 2.1 is a computer generated picture of the aircraft.

3. GBTS Description

The GBTS consists of an integrated collection of training components and their support infrastructure. The GBTS will fulfill the training requirements for all Air Education and Training Command (AETC) and Chief of Naval Air Training (CNATRA) JPPT and JNNT that will use the T-6A Texan II and the management, computer aided instruction, courseware support for undergraduate flying training. The GBTS

Table 2.1. T-6A Texan II Aircraft Specifications [After Ref. 8]

PERFORMANCE (at sea level)	U.S.	METRIC
Maximum Cruise Speed	270 KTAS	500 kph
Certified Ceiling	31,000 ft	9,338 m
Maximum Range	900+ nm	1,667+ km
Maximum Internal Fuel	149.0 gal	677.5 lt
Engines		
Pratt & Whitney PT6A-68	1,100 shp	
WEIGHTS		
Basic Empty Weight	4,707 lbs	2,135 kg
Maximum Takeoff Weight	6,500 lbs	2,948 kg
DIMENSIONS		
Wingspan	33.4 ft	10.18 m
Wing Aspect Ratio	6.29	
Maximum Airplane Length	33.3 ft	10.16 m
Maximum Tail Height	10.6 ft	3.25 m

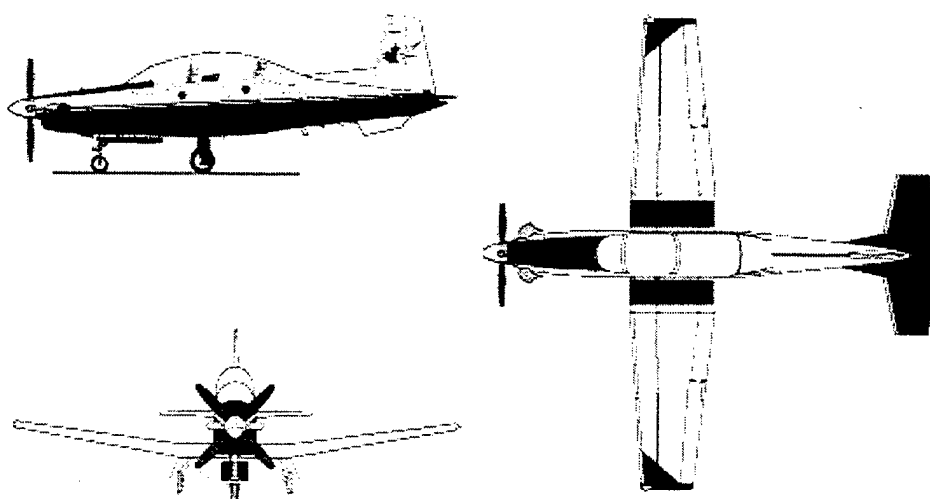


Figure 2.1. T-6A Texan II Aircraft [Ref. 7]

development and production will be synchronized with the aircraft activities. The GBTS segments are Aircrew Training Devices (ATDs), Development Courses, Conversion Courses, and Operational Support. [Ref. 6:p. 10]

The ATD includes Flight Training Devices (FTDs) and Procedural Training Devices (PTDs). The FTD components are the Operational Flight Trainer (OFT), the Instrument Flight Trainer (IFT), and the Unit Training Device (UTD). The PTD components are the Ejection Seat Trainer (EST), the Egress Procedures Trainer (EPT), and the Parachute Procedures Trainer (PPT). [Ref. 6:p. 10]

Development Courses include Administrative Courses, Principal Courses, and Secondary Courses. The components of the Principal Courses are the JPPT Student Course and the JPPT Instructor Course. These two components will require the bulk of the courseware development effort and are the cost drivers for Development Courses. [Ref. 6:p. 11]

Conversion Course sub-segments are "Existing Computer Aided Instruction (CAI) to New Computer Based Training System (CBTS)" and "Existing Management to Training Integration Management System (TIMS) Management." "Existing CAI to New CBTS" are those courses which must be converted from their existing media to the new JPATS CBTS. "Existing Management to TIMS Management" are those courses that must be converted from the existing management systems to the new TIMS. [Ref. 6:p. 11]

The Operational Support Segment is composed of three components -- the TIMS, CBTS, and Modification and Update Support System (MUSS). The TIMS will replace

training management systems currently in use for undergraduate aviation training at Air Education Training Command (AETC) and Chief of Naval Air Training (CNATRA), such as Time Related Instruction Management (TRIM), T-45 Training System (T45TS) Training Integration System (TIS), T-1A Training Management System (TMS), and Standard Training Activity Support System Flight (STASS-FLT). The MUSS is composed of the ATD Support System (ATDSS), the Curriculum Support System (CSS), and the TIMS Support System (TIMS-SS). [Ref. 6:p. 11]

4. Contractor Logistics Support

Concurrent with the aircraft acquisition contract award, the Government will employ the aircraft contractor to provide logistics support. An initial support structure will provide logistics support for both USAF and USN aircraft. Initial tasks include logistics and maintenance planning to support JPATS aircraft at each main operating base, Interim Contractor Support (on-equipment and selected off-equipment maintenance) for Randolph AFB (first base to receive the T-6A Texan II), and CLS for the other USAF and USN locations receiving JPATS. The CLS concept provides for total contractor logistics support to USN aircraft at USN locations and supply support at USAF bases. The CLS includes provisions for technical support, data, and buyout of contractor spare parts. [Ref. 6:p. 13]

E. CHAPTER SUMMARY

This chapter provided a brief history of the JPATS program. The DOD Trainer Masterplan described the Service's respective pilot training programs and outlined JPATS as the most significant alternative for maintaining the ability to conduct primary

undergraduate flight training. The Joint ORD described the mission area, operational concept, and listed training effectiveness, safety, performance/design, and supportability of the existing system as the four primary shortcomings of the existing system. Lastly, the T-6A Texan II training system was introduced and its three main elements, which include the aircraft, the GBTS, and Contractor Logistics Support (CLS) were discussed.

III. ACQUISITION REFORM AND JPATS

Nothing is more difficult to carry out, nor more doubtful of success, nor more dangerous to handle, than to initiate a new order of things.

- Niccolo Machiavelli
(1469-1527)

A. INTRODUCTION

The purpose of this chapter is to relate acquisition reform principles and ideals to the JPATS acquisition. An industry perspective will highlight what defense contractors see as challenging elements of military procurement. The acquisition process in transformation will be discussed in terms of implementing acquisition reform and maturing many reform initiatives. A review of Defense Acquisition Pilot Programs (DAPPs) will introduce how DOD is using acquisition reform in specific programs to champion and expedite reform initiatives. A brief discussion of the JPATS acquisition strategy will provide a broad background of how the program is using broad powers afforded DAPPs. Lastly, a discussion of the JPATS contracting strategy will tie military acquisition, best business practices, and reform initiatives together.

B. ACQUISITION REFORM CHANGE ELEMENTS

Mr. Norm Augustine, citing budget pressures, the technology revolution, numerous world commitments and a reform focused Secretary of Defense, stated the opportunity to reform the acquisition system has never been better. [Ref. 9]

Further,

The solution to acquisition problems encountered in the past has too often been simply to promulgate regulations insisting that whatever problem has occurred never ever occur again. The resulting body of procurement

“law” has therefore been evolutionary—rather than the product of carefully considered, “zero-based” effort to determine how best to manage military research, development, procurement, and support successfully. [Ref. 10:p. 1.9]

Two challenges of military project management have been cited as particularly noteworthy.

The first challenge is inherent in technology itself. In the effort to obtain the maximum possible advantages over an adversary, military equipment is generally designed at the very edge of the state of the art. [Ref. 10]

The second challenge rests in the military acquisition environment, which should never be confused with the free-enterprise system. Most aspects of a multi-buyer, multi-seller marketplace, which has made the free-enterprise system so enormously successful, are simply not present in defense acquisition. Not only is there a single buyer (or at least a single buyer with the authority to approve or disapprove sales to other potential buyers), but in many cases there is also a single seller. The latter is likely to become increasingly the case in the years ahead as the defense industry drastically consolidates and downsizes. The normal incentives of the free market are; therefore, not always present in defense procurement. Thus, the essence of project management is to find synthetic substitutes for the market forces, which exist naturally, in the commercial free-enterprise system. [Ref. 10]

The 1996 update to the DOD Directives 5000 series accomplished four important objectives. It incorporated Federal Acquisition Streamlining Act (FASA) provisions and developed Integrated Product Teams (IPTs). Secondly, it differentiated between mandatory and discretionary procedures. This increased flexibility provided incentives to

initiate new and creative procurement methods. The third objective made the updates “user friendly” in that the guidance was shortened and made available “on-line.” Lastly, it integrated procurement policies for weapon systems and automated information systems. The four objectives were accomplished using a relationship of the six themes of acquisition reform and enabling reform initiatives. [Ref. 11]

The major themes presented in this revision include:

1. Teamwork

An acquisition system must capitalize on the strengths of *all* participants in the acquisition process. We must work together as a team to build successful programs, identify problems early, and maintain a cooperative spirit of resolution. DOD 5000.2-R was reorganized to reflect the importance of working as cross-functional teams.

Teamwork will maximize overall performance, not just the performance of individual functional areas.

2. Tailoring

From a management standpoint, there is no reason to expect each program to be treated identically. While all programs must accomplish certain core activities, the appropriate Milestone Decision Authority (MDA) should promote flexible, tailored approaches to oversight and review based on mutual trust and the program’s size, risk, and complexity.

3. Empowerment

Program managers do not have to ask permission to take actions that are otherwise permitted by law and are within the scope of their charters. DOD 5000.1 and DOD 5000.2-R emphasize balancing responsibility with authority and the documents reduce

the burden of mandatory procedures and specifications, and encourage prudent risk management.

4. Cost as an Independent Variable

The acquisition process must consider performance requirements and fiscal constraints. Accordingly, cost must also be an independent variable in programmatic decisions, with responsible cost objectives set for each program phase.

5. Commercial Products

Integrating a constricting industrial base and a fast-paced technology sector mandates DOD fully implement the statutory preference for the acquisition of commercial items. Acquisition of commercial items, components, processes, and practices provides rapid and affordable applications of these technologies to validated DOD mission needs.

6. Best Practices

Acquisitions of the future must take into account customary commercial practices in developing acquisition strategies and contracting arrangements, basing future courses of action on simplified, flexible management processes, modeled on sound business practices. [Ref. 11]

The acquisition process is one in transition as we implement and mature acquisition reform initiatives. The DON has embraced the use of teams and integrated product and process development, and is focusing on total ownership cost, which includes designing platform systems using open system architecture allowing for follow-on technology insertion. The DON is partnering with industry to develop, acquire and

support technologically superior and affordable systems. The successful acquisition team must spread across functional and Government-industry boundaries. [Ref. 12]

Changes to legislation and the way we do business fall into seven areas:

Commercial Practices, Processes and Products; Open Communications; Performance Based Business Environment; Electronic Commerce, Electronic Data Interchange; Risk Management; Teaming/Partnering; and Affordability. These areas are broadly defined as follows. [Ref. 12]

1. Commercial Practices, Processes and Products

Utilize the practices and methods of industry to include the use of commercial practices, processes, and products in the Government acquisition system to the maximum extent practicable.

2. Open Communications

Agencies must improve communication in the traditional “arm’s length” Government-contractor relationship of years past to that of a free flow of information to maximize the opportunities of meeting the warfighter’s needs on schedule and budget, while maintaining the public trust. This will foster a culture, technology and leadership, which support rapid, free, accurate and honest communications among all individuals and organizations necessary for maximum performance of the enterprise.

3. Performance Based Business Environment

Create a performance based environment “state of being” where Government/contractor relationships capitalize on commercial practice efficiencies to improve the military acquisition and sustainment environment. In this new environment, solicitations

and contracts describe system performance requirements, permitting contractors greater latitude to use their own design and manufacturing ingenuity to meet mission needs.

4. Electronic Commerce/Electronic Data Interchange

Government agencies must utilize electronic systems and protocols to allow electronic exchange of information across a wide spectrum of interactions between Government and industry. Facilitating paperless contracting and electronic payments are key issues.

5. Risk Management

Deliberate and conscious identification and management of various risks inherent in an acquisition program fosters program success by meeting all goals of performance, cost, schedule and flexibility. It includes the process of identifying, analyzing, and tracking risk drivers, assessing the likelihood of their occurrence and their consequences, defining risk-handling plans, and performing continuous assessments to determine how risks change during program life.

6. Teaming/Partnering

Utilization of teams improves decisions, program execution and organizational effectiveness. Organizations working together in a collaborative, cooperative manner, develop a trust-based relationship to achieve mutual and disparate objectives.

7. Affordability

A philosophical change to the acquisition approach is required to use total budgets and requirement trade-offs, making decisions on acquisition program prices in which acquisition managers strive to achieve target prices by world class techniques.

C. DEFENSE ACQUISITION PILOT PROGRAM (DAPP)

The Pentagon's acquisition reform office believed it needed successful Defense Acquisition Pilot Programs (DAPPs) to jump-start the initiatives outlined in FASA and to persuade the DOD bureaucracy to 'buy-in' to the change. Advocates for the reform movement wanted highly visible wins and wanted them quickly. The DAPP programs were provided legislative authority to implement the provisions of FASA before they were published in regulations, and authority to use the commercial item exemptions for non-commercial items. They were also given expedited deviation authority from the FAR/DFARS and the DOD 5000 series regulations. This would allow the DAPPs to issue "commercial-like" contracts and authority to streamline the milestone review process and reporting procedures through expedited waivers. [Ref. 15] Appendix A lists commercial item exceptions in the Federal Acquisition Streamlining Act of 1994.

Because of the pressure to succeed, there was considerable debate about which projects to designate as DAPPs. Colleen Preston, the Deputy Under Secretary of Defense (Acquisition Reform), was charged with recommending DAPP candidates to the Under Secretary of Defense at the time, Mr. John Deutch. [Ref. 15]

The pilot programs are an integral part of the Department's overall plan to reform the acquisition process. Pilot programs were selected to demonstrate new and innovative approaches in the use of commercial practices and the acquisition of commercial products. [Ref. 14]

JPATS was one of the programs designated a DAPP pursuant to the authority granted to the Secretary of Defense in Section 819 of the National Defense Authorization

Act for Fiscal Year 1995, Public Law 103-337, and Section 5064 of the Federal Acquisition Streamlining Act (FASA) of 1994, Public Law 103-355. [Ref. 14]

D. ACQUISITION PLAN BACKGROUND AND STRATEGY

On 19 January 1993, USD (A,T&L) conducted a Milestone 0/I review. In the resulting Acquisition Decision Memorandum (ADM), the USD (A,T&L) approved Milestone 0 and the Acquisition Program Baseline (APB). The ADM stated the source selection criteria must clearly favor proposals involving the lowest development risk and the lowest total system cost to the Government. The ADM also directed the Air Force to obtain USD (A,T&L) approval of the Request for Proposal (RFP) and resulting contracts and to schedule a Milestone II review before contract award. USD (A,T&L) designated the Air Force as the lead Service and gave conditional approval to Milestone I contingent on the Air Force completing several actions before formal RFP release. These actions included: (a) obtaining OSD staff approval of the Test and Evaluation Master Plan (TEMP); (b) submitting a Cost and Operational Effectiveness Analysis (COEA); (c) submitting a finalized Integrated Program Summary; (d) submitting a finalized, updated Trainer Aircraft Masterplan; and (e) obtaining approval of the Acquisition Strategy Report (ASR) documenting a two-contract approach with sequential aircraft and GBTS competitions and awards. [Ref. 6]

The Chairman of the OSD Conventional Systems Committee (CSC) held a program review on 28 April 1993. Responding to the chairman's request, the Air Force briefed two items: progress on satisfying the 19 January 1993 ADM action items and a review of the acquisition strategy. The strategy review addressed the ADM-directed two-

contract approach and the Air Force's preferred single contract approach with the Government selecting the GBTS subcontractor. [Ref. 6]

JPATS acquisition officials preferred to have a two-contract approach, one for each the aircraft and GBTS as a risk reduction strategy. The risk, primarily being the possible lack of expertise in GBTS development and experience by the winning offeror. AETC, on the other hand, sought a single contract approach so a single point of reference would yield problem resolution, etc. [Ref. 18]

On 19 May 1993, the USD (A,T&L) convened a second Milestone I review, this time with all new participants, as the entire administration had been re-appointed by a new Presidential administration. Addressing the ADM action items, the CSC chairman recommended: (a) the USD (A,T&L) approve the Air Force's one-contract strategy with the Government selecting the GBTS subcontractor; (b) the USD (A,T&L) change the program designation from ACAT ID to IC upon USD (A,T&L) approval of the ASR, APB, and final RFP; (c) the Air Force improve the accessibility of the JPATS aircraft to women by adjusting the anthropometric thresholds; and (d) the USD (A,T&L) form a task force to identify impediments to making the JPATS acquisition more like commercial acquisition programs. [Ref. 6]

The ADM approved the single contract strategy on 7 July 1993 with two stipulations. The first stipulation was to limit the acquisition costs to the greatest extent possible and the second was to ensure JPATS is fully consistent with DOD's policies on women in combat. The Air Force would attempt to ensure equal percentages of the eligible population of men and women, but not less than 80 percent of population of

eligible women are accommodated by JPATS. The USD (A,T&L) stated his intention to delegate milestone decision authority to the Air Force once the ADM requirements were satisfied. The ADM also: (a) required the RFP contain source selection criteria clearly favoring lowest developmental risk and lowest total system cost to the Government; (b) deleted the requirement for a COEA; (c) directed the Air Force to resolve all TEMP issues prior to RFP release; (d) directed the JROC to review and validate any revised performance parameters in the APB prior to RFP release; (e) directed USD (A,T&L) approval of any revised APB before RFP release; (f) directed USD(A,T&L) review and approval of the ASR and final RFP before RFP release; (g) directed the program office to solicit contractor recommendations for further streamlining actions (within existing legislative authority), which would reduce cost; and (h) directed the Director of Tactical Systems to make recommendations on initiatives to reduce costs and streamline the program. [Ref. 6]

As a result of a March 1994 Assistant Secretary of the Air Force for Acquisition (SAF/AQ) review, the contract strategy was changed to require the prime contractor to select the GBTS subcontractor(s) following full and open competition procedures. This differed from the contract strategy contained in the July 1993 ADM; however, the Defense Acquisition Executive (DAE) concurred with this approach and signed the Acquisition Strategy Report on 17 May 1994. [Ref. 6]

The JPATS program uses Non-Developmental Items (NDI) or commercially available items to meet most equipment requirements.

The JPATS program capitalizes on the existence of production prototype aircraft and commercial components such as avionics systems and engines. The program also takes advantage of the certification efforts accomplished by other Government agencies. The Government flight evaluation of production prototype aircraft during source selection greatly reduced program risk. GBTS, although a development effort, also capitalizes on existing commercial components (computers, visual systems, ancillary devices, etc.) in the design of the ATDs, TIMS, CBTS, and MUSS. [Ref. 6]

The JPATS Program Office conducted a best value competitive source selection in accordance with FAR Part 15 and Air Force FAR Supplement (AFFARS) Appendix AA for the JPATS aircraft acquisition and logistics support contract. The Source Selection Authority awarded the contract based on the best value determined by an integrated assessment of the proposals. This assessment favored proposals which offered the best value acquisition to the Government considering development risk and total system life cycle cost. Excerpts from Section M of the RFP highlight evaluation criteria used. [Ref. 13]

1. Basis for Contract Award

The JPATS contract was a “best value” competitive source selection conducted in accordance with the AFFARS Appendix AA, Formal Source Selection for Major Acquisition Systems, and applicable supplements. The assessment favored proposals which clearly offered the Government the best value acquisition considering development risk and total system life cycle cost [Most Probable Life Cycle Cost (MPLCC) for JPATS Acquisition and Aircraft Contractor Logistics Support (CLS)].

2. Evaluation Criteria

There are three types of evaluation criteria: specific criteria (also referred to as areas and factors) relate to important program characteristics; assessment criteria relate to an offeror's proposal and his ability to perform if awarded a contract; and Cost/Price and Schedule evaluation criteria are based upon the descriptions of their respective areas in Scope of Evaluation.

3. Specific Criteria

Each offeror's proposal will be evaluated against the areas listed below in descending order of relative importance with Manufacturing and Quality Assurance slightly more important than Cost/Price. Factors O.1 and O.2 under Operational Utility/Technical are of equal importance. Factors O.3 through O.6 under Operational Utility/Technical are of equal importance. Factors O.1 and O.2 are each individually of greater importance than any one of factors O.3 through O.6. The factors under Manufacturing and Quality Assurance are of equal importance. The factors under Logistics Support are of equal importance. The factors under Management are of equal importance.

a. Operational Utility/Technical

- (1) O.1 Operational Capability
- (2) O.2 Crew Accommodations
- (3) O.3 Structural Integrity (Service Life)
- (4) O.4 Certification/Qualification
- (5) O.5 Aircraft Missionization
- (6) O.6 Systems Safety

b. Manufacturing and Quality Assurance

- (1) P.1 Manufacturing
- (2) P.2 Production Control and Quality Assurance

c. Cost/Price

d. Logistics Support

- (1) L.1 Acquisition Logistics
- (2) L.2 Contractor Logistics Support (CLS)

e. Management

- (1) M.1 Aircraft Management
- (2) M.2 GBTS Support and GBTS Management

f. Schedule

Risk was assessed in two specific areas. A Proposal Risk assessment reviewed the offeror's proposed approach to accomplish the requirements of the solicitation. A Performance Risk assessment evaluated the offeror's relevant present and past performance. In assessing this risk, the Government used performance data to evaluate the areas and factors listed as Specific Criteria. The Government used both data provided by the offeror, as well as data obtained through outside sources. [Ref. 13]

Follow-on aircraft production contracts will be sole source contracts awarded under other than full and open competition as authorized by 10 U.S.C. 2304 (c) (1). [Ref. 6]

In the interest of streamlining, offerors were encouraged to submit alternate business proposals to further streamline the acquisition and identify standard commercial

practices. The alternate business proposals were evaluated as part of the source selection process. [Ref. 6]

Raytheon Aircraft Company (RAC) submitted several initiatives, all of which were aimed at total ownership and life-cycle cost reductions. One example of an alternate business proposal is the awardee's use of a wholly contractor certified Earned Value Management System (EVMS). This EVMS approach streamlined the process and provided cost savings by reducing the amount of Government oversight and contract management necessary to validate the contractor's methods of tracking cost, schedule, and performance.

RAC also submitted initiatives concerning the color scheme and painting of the aircraft. A proposal to change the paint scheme was submitted to minimize the number of colors.

Additionally, something as simple as the color of "white" to be used in the paint scheme came under question. The color of white AETC originally prescribed required 5 coats to cover the primer coat. RAC recommended a different color of white, which required only two coats. Finally, RAC recommended primer be applied to individual parts prior to, vice after, assembly to ensure the entire aircraft was coated, including those areas in and around rivet points, thereby improving corrosion control. [Ref. 18] These changes had the net effect of reducing overall aircraft weight, manufacturing and life cycle costs.

RAC also included provisions, which flowed down requirements to subcontractors to minimize life cycle costs. RAC forced subcontractors to use self-

locking screws and eliminated safety wire. This change not only eliminated the cost of safety wire; it reduced manufacturing and life-cycle costs, as well as eliminating a major Foreign Object Damage (FOD) hazard. Finally, Pratt and Whitney equipped the engine with a wash ring tube located in the intake duct, which allowed maintenance personnel to attach a water hose and flush the engine with fresh water. [Ref. 18] The wash ring effort is a significant corrosion control tool, as the Navy's primary training facility is located near the Gulf of Mexico.

In addition to the written proposal, the offerors supplied a flight evaluation aircraft and a full-scale production mock-up of the JPATS cockpits. The flight evaluation was used to assess the suitability of the offeror's aircraft performance, flying qualities, and training mission accomplishment to perform the primary training mission. The mockup was used to assess the crew member accommodation characteristics including the anthropometric range capability, as well as lighting checks and other engineering evaluations. [Ref. 13:p. 96]

The GBTS was acquired through two Contract Change Proposals (CCPs) to the aircraft contract using a Two-step source selection approach.

Raytheon Aircraft Corporation (RAC) first downselected from four competitors to two and transmitted CCP#1 to the Government for a seven-month risk reduction phase (Step 1). Following this phase, RAC then selected FlightSafety Services Corporation (FSSC) as their subcontractor and submitted CCP#2 for the remaining effort (Step 2).

Prior to notifying the winning subcontractor, Raytheon submitted the source selection decision for contracting officer consent to subcontract. This insured the GBTS

source selection was conducted in accordance with the approved source selection plan and criteria. After Government receipt of the CCP, and to insure the GBTS development is synchronized with the aircraft activities, the Program Executive Officer (PEO) authorized the issuance of an Undefined Contractual Action (UCA) for incorporation of the GBTS EMD into the contract under modification number P00031. The definitization of the UCA and incorporation of production/CLS options was completed on 25 September 1997 under modification number P00035. The acquisition strategy allows direct contracting for follow-on GBTS production and support activities. [Ref. 6]

E. CONTRACT METHODOLOGY

The JPATS acquisition strategy was to competitively award two contracts: one contract (acquisition contract) to manufacture, test, and acquire JPATS configured aircraft and to provide GBTS management, and a second contract (CLS contract) to provide aircraft and GBTS logistics support.

The JPATS program released four draft RFPs and held pre-solicitation discussions with the potential JPATS offerors twice. The draft RFPs were released in February 1993, May 1993, July 1993, and February 1994. Before the release of the July 1993 draft RFP, the Air Force complied with the pre-draft release direction contained in the July 1993 ADM. In total, the Air Force answered over 1800 pre-solicitation release questions as a result of the draft RFPs. Pre-solicitation discussions with potential offerors were held in October-November 1993 and again in April 1994. [Ref. 6]

The solicitation contained all USAF and USN requirements for the aircraft and aircraft support. The final, formal RFP was released on 18 May 1994 and proposals were

received by 18 July 1994. Source selection activities culminated in an announcement on 22 June 1995 that Beech Aircraft Company, later acquired by RAC, had won the competition and would be awarded the JPATS contract. Prior to contract award and Milestone II approval, protests by two unsuccessful offerors were filed with the General Accounting Office (GAO). The GAO denied the first protest on 22 November 1995 and the second on 5 February 1996. The JPATS contract was awarded to RAC on 5 February 1996. This best value award is consistent with the July 1993 ADM direction for lowest development risks and lowest total system cost. [Ref. 6]

The aircraft acquisition contract covers aircraft acquisition and GBTS management. The contractual arrangement for this effort is Fixed-Price-Incentive-Firm (FPIF) with an Award Fee (AF) for the manufacturing development (MD) effort.

The production aircraft options starting in FY96 through FY97 are FPIF with AF. The production options for FY98 and FY99 are FPIF/AF and Economic Price Adjustment (EPA). The remaining production options for FY00 and FY01 are priced on a Not-to-Exceed (NTE) basis and will be definitized under a Firm Fixed-Price (FFP) arrangement. The contract follows streamlined acquisition procedures permitted under the FASA of 1994. [Ref. 6]

Concurrent with contract award, RAC was also provided the GBTS Request for Contract Change Proposal (CCP). Subsequently, RAC provided an unsolicited proposal to the Government to incorporate a two-step GBTS source selection process as a method to reduce overall program risk and provide for acquisition of the GBTS through two-contract change proposals (CCPs). The two-step strategy was approved for

implementation by SAF/AQ in May 1996 and the CCP for the first step was signed on 13 September 1996. RAC announced FSSC as the GBTS subcontractor on 21 April 1997.

[Ref. 6]

The execution of the second GBTS change proposal occurred on 25 September 1997. The development of the GBTS components is FPIF/AF except for Development Courses and TIMS development which are CPAF efforts, Conversion Courses which are FFP/AF, and Modification and Update Support System which are CPFF. The GBTS production effort is FPIF with EPA. [Ref. 6]

The MD phase (Lot 1 procurement) missionizes and manufactures the first T-6A Texan II, a production-configured, instrumented aircraft to be used for Qualification Test and Evaluation (QT&E). [Ref. 6]

Initial production began with the exercise of Lot 2, the first of seven production option lots. The seven production option lots provide for a total target of 140 aircraft. This was done to maximize the number of aircraft bid under competition and permit an orderly ramp-up of the production line. [Ref. 6]

Concurrent with the aircraft acquisition contract award, the Government awarded a logistics support contract to the aircraft contractor. This one-year FFP contract with eight one-year options provides logistics support for both USAF and USN aircraft. [Ref. 6] The use of incentive type contracts or award fees was not considered as the contractor had already been incentivized by reliability and maintainability parameters. Furthermore, recommendations from the contractor to reduce overall life-cycle cost had been implemented as the contractor recognized early on an FFP arrangement for logistics

support would be utilized and it was to the contractor's advantage to seek out all life-cycle cost reductions possible. [Ref. 18] Initial tasks include logistics and maintenance planning to support JPATS aircraft at each main operating base, Interim Contractor Support (on-equipment and selected off-equipment maintenance) for Randolph AFB (first base to receive the T-6A Texan II), and CLS for the other USAF and USN locations receiving JPATS for the duration of the CLS contract. The CLS contract provides total contractor logistics support to USN aircraft at USN locations and supply support at USAF bases. The CLS contract also includes provisions for technical support, data, and buyout of contractor spare parts. [Ref. 6]

Contractor logistics support for the GBTS is included in the GBTS statement of objectives and was included in the GBTS CCP #2 to the aircraft acquisition contract. Consequently, the GBTS CLS is part of the aircraft acquisition contract rather than part of the aircraft CLS contract. [Ref. 6]

F. CHAPTER SUMMARY

This chapter provided a brief overview of how JPATS has taken advantage of acquisition reform initiatives and commercial best business practices. The transformation and maturation of acquisition reform issues was highlighted with acquisition reform change elements. Defense Acquisition Pilot Programs (DAPPs) were introduced as a tool DOD uses to champion and expedite reform initiatives within specific programs. The JPATS acquisition strategy provided a broad background of how the program management office uses the broad powers afforded DAPPs. Finally, the JPATS

contracting strategy illustrated how the program management office is coupling military acquisition, best business practices, and reform initiatives together.

IV. ACQUISITION REFORM EVALUATION

A. INTRODUCTION

The purpose of this chapter is to present metrics established by the JPATS program and then quantify those metrics against established baseline programs to derive quantitative savings attributed to implementing acquisition reform. The Pilot Program Consulting Group (PPCG) will be introduced as the agency established to monitor Defense Acquisition Pilot Programs (DAPPs) in terms of acquisition reform results. Co-authored metrics derived by the program office and the PPCG will be presented and described, reporting results to date. A Bridge Metric will summarize the JPATS program results attributed to implementing acquisition reform compared to baseline programs. Finally, opposing viewpoints to established metrics will be presented and issues raised, which possibly counter acquisition reform success.

B. PILOT PROGRAM CONSULTING GROUP (PPCG)

The Deputy Under Secretary of Defense for Acquisition Reform [DUSD(AR)] established the Pilot Program Consulting Group (PPCG) as part of the Defense Acquisition Pilot Program. The PPCG was designed to provide advice and resolve issues on each of the seven candidate programs concerning baselines for program measurement criteria and the methodology for measuring pilot program performance against each baseline. The consulting group was to continue the previous efforts of an ad hoc group formed during the pilot program candidate nomination process. [Ref. 14]

The consulting group, chaired by DUSD(AR), consists of members from the offices of DOD Comptroller, DOD Inspector General (DODIG), Defense Contract Audit

Agency (DCAA), Defense Contract Management Command (DCMC), and Defense Systems Management College (DSMC), supplemented with other representation from the Office of the Secretary of Defense, other defense agencies and components as required. The pilot program candidates added an independent consultant from the private sector to the group to support the methodology and analysis of commercial item acquisitions or components and the use of commercial practices. [Ref. 14]

1. PPCG Objectives

The major objective of the group was to validate evaluation baseline criteria and metrics relating to the seven programs selected as pilot programs. [Ref. 14]

Additional Objectives were developed and implemented by the PPCG. [Ref. 15] These were:

1. Define and document evaluation baselines, metrics, and measurement methodologies in enough detail to objectively assess their validity.
2. Define at least one metric to measure the performance of each instance of regulatory or statutory relief granted to each DAPP.
3. Ensure the regulatory and statutory relief were segregated to the extent each could be separately evaluated.
4. Store and track DAPP regulatory and statutory relief evaluation baselines and metrics in a database management system capable of supporting PPCG objectives.

Specifically the group was to:

1. Review baseline criteria and metrics submitted by program offices cognizant of each of the seven pilot programs for (1) conceptual soundness, and (2) adequacy of supporting data and information.
2. Work directly with program office personnel, either in the Pentagon or at program office locations, to provide advice and resolve potential problems

concerning the adequacy of data and information supporting baseline criteria and metrics for overall pilot program evaluation.

3. Prepare an analysis containing the opinion and recommendations of the group concerning baseline criteria and metrics of each pilot program in terms of (1) conceptual soundness, and (2) adequacy of supporting data and information. [Ref. 14]

2. Methodology

A carefully structured methodology has been implemented by the PPCG to meet the objectives of its Charter. It began with a detailed review of the baseline criteria and metrics of each of the DAPPs for conceptual soundness, intended metrics, and adequacy of supporting data and information. The result was documented so objective metrics, capable of measuring the specific impacts of acquisition reform, could be applied consistently across as many DAPPs as possible. Methodology and details are provided in the following paragraphs:

1. A meeting or site visit was conducted with each DAPP program office to discuss evaluation baselines and metrics. The meetings provided a forum for understanding the program and an opportunity to surface any immediate evaluation baseline or metrics issues.
2. Obtain written meeting or trip reports with comments and recommendations from each attending PPCG member.
3. Member comments and recommendations were compiled along with originally proposed DAPP evaluation baselines in a single PPCG summary document to be used for detailed analysis and support development of PPCG issues and/or recommendations.
4. Prepare and distribute draft issues and recommendations for each DAPP to the PPCG membership. Obtain comments and recommendations.
5. Complete a final draft of any issues and/or recommendations for each DAPP with the support of the PPCG membership. Provide the final draft to the DAPP Program Manager.

6. Negotiate the draft with the DAPP Program Manager and come to an initial agreement with the PPCG on the resolution of issues and recommendations. Execute the Initial Metrics Agreement between the Program Manager and the PPCG.
7. Review each DAPP plan for reporting metrics. Where necessary, develop and assist in resolving metrics issues arising from these plans. Prepare and assist in implementing recommendations that, insofar as possible will ensure consistent, objective metrics, some of, which may be common to all the DAPPs.
8. Review and, as appropriate, provide comments and recommendations on specific evaluation baselines and metrics when they have been prepared and documented by each DAPP. [Ref. 15]

The major advantages of the PPCG methodology approach were to ensure all PPCG member comments were considered, to ensure the issues and recommendations for each DAPP were consistent and reflect a broad consensus of PPCG views, to reach a common understanding between the PPCG and each DAPP Program Manager on the resolution of issues, and to share ideas and approaches to metrics among the DAPPs. [Ref. 15]

C. METRICS APPLIED TO BASELINES

The PPCG reviewed the JPATS program in December 1994 and numerous subsequent meetings were held between the parties to work out details. The JPATS Program Office hosted a Defense Acquisition Pilot Program Round Table Conference in February 1995 to jointly develop metrics "agreements" among the different streamlining programs. A draft JPATS Metrics Implementation Plan (MIP) was transmitted to the PPCG in May 1995 and final agreement was reached by signing a formal MIP "Agreements" letter on 5 June 1995 by both the PPCG Chairman and the Flight Training System Program Office (SPO) Director. The MIP discussed 11 separate agreements

containing baselines for each agreement as well as proposed methodology for collecting the data. The JPATS Program Office updated MIP was released to the PPCG for comments in October 1995. PPCG comments were received on 2 December 1995. [Ref. 19]

The JPATS Program Office carefully considered each of the 11 agreement items and the metrics or measures to be used by the JPATS Program Office. [Ref. 19]

- Regulatory and statutory relief,
- RFP Preparation and Content,
- Ground Based Training System Acquisition Impacts,
- Program Office Manning Levels,
- Contract Administration Services Impacts,
- Baseline Cost Metrics,
- Program Costs Comparison,
- Program Funding Stability,
- Would Cost Analysis,
- Earned Value Reporting System vs. Cost/Schedule Control Systems Criteria,
- Contractor Team Composition.

1. Regulatory and Statutory Relief

Separate metrics should be established for each pilot program regulatory and statutory waiver. Metrics must be capable of measuring the required performance and must be exclusively and objectively related to pilot program acquisition reform.

A metric baseline was established from existing data from the T-1A, T-45, and/or T-46 and used when such a baseline could be identified and verified. Each JPATS regulatory and statutory waiver or group of waivers would be addressed. In specific justified circumstances, a would-cost projection for those individual waivers or groupings of waivers would be used where no existing baseline could be identified or otherwise established. [Ref. 19]

The JPATS metric team compiled a list of statutory and regulatory relief items applicable to JPATS, based on applicable acquisition reform relief items in the Dr. Longuemare letter, dated 28 February 1994, and Dr. Kaminski letter, dated 15 December 1994. Appendix B details a list of waivers, deviations, and certifications granted the JPATS program. Using these letters, the JPATS metric team then established a baseline in terms of cost, schedule, and performance for these statutory and regulatory items based on their use in the T-1A and T-45 programs. Where no existing baseline could be identified, the team worked with JPATS Program Office functionals and the contractor to establish a "would-cost" projection for individual waivers or grouping of waivers. The team then assessed the impact of the waivers on the program. [Ref. 19] Tables 4.1 and 4.2 document the findings.

This metric has been completed using a scale to better estimate the savings experienced due to statutory and regulatory waivers. This scale shows whether the program incurred low-, medium-, or high- savings (defined in dollars). These values were defined as:

- L (low) \$1,000 - 100,000
- M (medium) \$100,001 - 500,000
- H (high) \$500,001 - 1,000,000

Overall savings for the entire statutory and regulatory relief provision were estimated between \$18,000 to \$1.8M for both the Government and Contractor and small schedule savings were estimated overall.

Table 4.1. JPATS Statutory Relief [After Ref. 16]

ITEM	DESCRIPTION	\$ SAVED		TIME SAVED		PERFORMANCE DELTA	
		GOV'T	CONTR	GOV'T	CONTR	GOV'T	CONTR
FAR 52.203.4	Contingent fee representation and agreement	L	L	L	L	none	none
FAR 52.203-5	Covenant against contingent fees						
FAR 52.209-6	Protecting Gov't interest when subcontracting w/ KTRs debarred, suspended, or proposed for debarment	L	L	L	L	none	none
DFARS 252.203-7001	Special prohibition on employment	L	L	L	L	none	none
DFARS 252.242-7004	Material management and accounting system	L	L	L	L	none	none
FAR 52.203-7	Anti-kickback procedures	L	L	L	L	none	none
FAR 52.223-5	Certificate for drug-free workplace	L	L	L	L	none	none
FAR 52.223-6	Drug-free workplace						

Table 4.2. JPATS Regulatory Relief [After Ref. 16]

ITEM	DESCRIPTION	\$ SAVED		TIME SAVED		PERFORMANCE DELTA	
		GOV'T	CONTR	GOV'T	CONTR	GOV'T	CONTR
FAR 52.212-9	Variation in QTY	L	L	L	L	None	None
FAR 52.229-5	Taxes-contracts performed in US possessions or Puerto Rico	L	L	L	L	None	None

Table 4.2 (Continued)

ITEM	DESCRIPTION	S SAVED		TIME SAVED		PERFORMANCE DELTA	
		GOV'T	CONTR	GOV'T	CONTR	GOV'T	CONTR
FAR 52.232-1	Payments						
FAR 52.232-2	Payments under fixed-price R&D Ks	L	See perf delta	L	L	None	Could be a moderate cost to contractor
FAR 52.232-9	Limitations on withholding of payments						
FAR 52.232-11	Extras						
FAR 52.245-18	Special test equip	L	L	L	L	None	None
FAR 52.246-11	Higher-level contract quality requirement (Gov't spec)	L	L	L	L	None	None
FAR 52.247-1	Commercial Bill of Lading	L	L	L	L	none	None
FAR 52.247-65	FOB origin prepaid freight-small pkgs.						
DFARS 252.242-7003	Application for US Gov't Shipping Docs/Instructions						
FAR 52.222-1	Notice to Gov't of labor disputes	L	L	L	L	none	None
FAR 52.248-1	Value engineering						
DFARS 252.203-7002	Display of DOD hotline poster	L	L	L	L	none	None
DFARS 252.242-7000	Postaward conference	L	L	L	L	none	None
DFARS 252.208-7000	Intent to furnish precious metals as GFM	L	L	L	L	none	None
FAR 52.244-1	Subcontracts(fixed price contracts)						
DFARS 252.209-7000	Acquisition from sub-KTRs subject to on-site inspection under INF treaty						
DFARS 252.210-7003	Acquisition streamlining	L	L	L	L	none	None
DFARS 252.234-7000	Notice of Cost/Sched Control systems	L	L	L	L	none	None

After working with five of the regulatory and statutory DAPPs, it became clear to the PPCG while objective metrics capable of meeting Charter objectives could be developed, there were still many difficult issues to be resolved to meet all objectives. One of the most difficult issues arose from the requirement to relate at least one metric to

each instance of regulatory and statutory relief, and to ensure the collection of related objective metric data. There was a significant degree of difficulty associated with developing and implementing evaluation baselines and metrics, which would objectively and independently measure the impact of each instance of relief granted. The PPCG believed carefully constructed compromises, such as grouping the effects of several instances of regulatory or statutory relief with common areas of impact was achievable and would be effective in measuring the results of reform. [Ref. 15]

A dichotomy exists between the data presented in Tables 4.1 and 4.2 and the estimated savings of \$18,000 to \$1.8M; however, as based upon reported results-to-date for all DAPPs, the PPCG noted *significant* cost reductions could be achieved through regulatory reform in those circumstances where contractors are competing for new programs (or competitive procurements) and the competitive pressure drives industry to capitalize on reform to reengineer processes. In those cases, where captive, single source suppliers are provided regulatory relief, it appeared more difficult to negotiate process improvements; however, substantial benefits are being realized. [Ref. 17]

One reason attributable for the savings disparity seen in JPATS as opposed to other DAPPs may lie in industry participation. The PPCG believes the removal of regulatory burdens enables reengineering of contractor processes, thereby enhancing productivity. They also recognized increased commercial content also contributed to reduced contract costs and greater commercial participation at the subcontract level could yield additional potential benefits. The group observed JPATS was unable to capitalize as much on increasing commercial subtier participation as other DAPPs and attributed

this to be a function of source selection methods and flow-down provisions implemented by prime contractors. A primary reason for the lack of commercial subtier participation was the lack of expertise in GBTS development and experience by RAC. While nineteen additional clauses were added to the aircraft contract by the GBTS RFCCP for additional base support and cost reimbursement, the prime contractor flowed down 15 additional clauses to ensure design and delivery of the GBTS. The PPCG suggested additional cultural change within industry is required to further enhance commercial participation at the subcontractor level.

A brief look at the specific statutory and regulatory relief items provided JPATS warrants comment. It is not hard to understand why the PPCG found it difficult to relate at least one metric to each instance of regulatory and statutory relief and why they had significant difficulty developing and implementing evaluation baselines and metrics to measure each instance of relief granted. Statutory items such as Anti-kickback procedures (FAR 52.203-7) and Drug-free Workplace (FAR 52.223-6) serve as examples of seemingly mandatory safeguards and commonplace examples of routine commercial business operations. This reduction of statutory requirements could serve as a better illustration of how DOD is adopting best commercial business practices rather than how statutory relief has generated reform savings. Regulatory item Display of DOD hotline poster (DFARS 252.203-7002) seems inconsequential to any type of substantial acquisition reform.

Furthermore, it would be an interesting point of further research to determine if defense contractors, in general, charge commercial customers for these same types of

“relief” items or would it represent a commercial business moral and ethical position required by all contractors in today’s operating environment.

A Coopers & Lybrand/TASC study identified the Cost Accounting Standards (CAS), Materials Management Accounting System (MMAS), and the Truth in Negotiations Act (TINA) as three of the top ten areas where DOD paid a premium over comparable civil systems. [Ref. 21] A cost is incurred by industry to submit certified cost and pricing data and the premium associated with preparing certified cost and pricing data has been estimated to range from .34% to 13.5% of contract values (the savings calculation included only the contracting strategies where competition existed, or in the case of a follow-on acquisition where adequate historical data would be able to determine a fair and reasonable price). [Ref. 22]

CAS and TINA requirements were listed as commercial item exemptions in the FASA of 1994 provided to DAPPs. [Ref. 1] However, while the TINA requirement was granted as a relief item to DAPPs, the relief never made it to the JPATS program. Furthermore, CAS requirements were only waived if the contract price was based on established catalog, or market prices sold in substantial quantities to the general public; the contract price was based on prices set by law or regulation; or the contract was FFP (without cost incentives) for commercial items. [Ref. 1]

Since DOD’s primary focus for DAPPs was to demonstrate new and innovative approaches in the use of commercial practices and the acquisition of commercial products, the researcher concludes DAPPs failed to actually eliminate two major areas where DOD pays a premium over comparable civil systems.

2. RFP Preparation and Content

The JPATS metric team compared the final RFP of the JPATS program with the baseline programs identified in Table 4.3. The team focused on page count, contract clauses, MIL SPEC/STDs, and RFP preparation time in days. Differences in each category were attributed to acquisition reform. This was a one-time measure, which reflects progress in streamlining RFP contents. [Ref. 16]

Table 4.3. JPATS RFP Content [After Ref. 16]

RFP	RFP PREP TIME	PAGE COUNT	CONTRACT CLAUSES	MIL-SPEC/STD'S
JPATS	220,800 hrs	674	262	42
T-45	Cannot Provide	Cannot Provide	56	322
T-1A	48,000 hrs	1217	578	43

JPATS experience demonstrates the potential cost (in both dollars and time) of infusing acquisition reform principles into an ongoing solicitation. The JPATS RFP was delayed twice to incorporate aspects of acquisition reform, specifically reductions in the RFP size, reductions in the number of referenced documents, and reductions in the number of contract data requirements. The JPATS source selection was also disturbed in source selection by directed program changes. Table 4.3 demonstrates disturbances such as those in JPATS source selection can greatly impact efficiency at this critical stage.

Although not the most efficient mechanism for implementation of changes, the revised RFP incorporated value-added changes, which ultimately resulted in program savings.

[Ref. 16]

The reduction of contract clauses may not be the result of acquisition reform as much as it was from “CDRL Drills” ordered by agency officials as a mandatory reduction of Contract Data Requirements List (CDRLs) applied to the JPATS RFP. The issue was not that the information the CDRL would provide was actually deleted, but the CDRL itself, which contained the info, was deleted to show evidence of reform success. The process then became academic as CDRLs were prioritized, retaining those of greatest importance. [Ref. 18]

JPATS helped pave the way for rapid specification/standards reform by capitalizing on early statutory and regulatory relief to streamline the application of Government unique specifications and demonstrate the efficacy of commercial practices. The PPCG reported statutory and regulatory relief helped enable the JPATS program to realize a reduction of 188 specifications/standards (82%) as compared to a baseline of 230 specifications/standards contrasted to traditional defense programs within the same commodity group. [Ref. 17] The researcher could neither find a reference concerning the program, which served as the baseline, nor verify whether the specifications/standards reduction was a direct result of statutory and regulatory relief or merely the result of adopting best commercial business tactics.

Another dichotomy surfaces as a careful look at the MIL SPEC/STDs category yields an interesting observation. According to Table 4.3, the JPATS program utilized one less MIL SPEC/STD than the T-1A program. Yet the PPCG reports the JPATS program realized a reduction of 188 specifications/standards (82%) as compared to a baseline of 230 specifications/standards contrasted to traditional defense programs within

the same commodity group. It is unknown how the PPCG reported such dramatic results when the metric tailored for the JPATS program in Table 4.3 neither uses the baseline referenced by the PPCG, nor substantiates the findings.

3. Commercial Acquisition of the Ground Based Training System (GBTS) by the Prime Contractor

The prime contractor initially established two metrics to measure success of commercial acquisition of the GBTS. The first metric concentrated on measures such as actual acquisition cost savings, manning levels, and oversight requirements gained by the prime contractor conducting the GBTS acquisition. The second metric dealt with clauses and requirements in the prime contract compared with statutory and regulatory requirements in the prime contractor's GBTS solicitation.

The purpose of the first metric was to measure the impact of pilot program regulatory and statutory relief on the commercial acquisition of the GBTS by comparing a contractor-managed commercial competition under acquisition reform rules with a contractor-managed competition conducted prior to acquisition reform. [Ref. 19]

The prime contractor was to generate a baseline based on a competition of a similar subcontract without regulatory or statutory relief. Consideration would be given to soliciting assistance from an independent concern in arriving at the baseline. It was also envisioned a metric baseline would be established prior to release of the GBTS solicitation. [Ref. 19]

The JPATS metrics team would then task the contractor to compare the post-reform GBTS source selection to a pre-reform acquisition similar to the GBTS effort. This could include a comparison of required clauses, flow-through requirements, possible

cost savings, oversight requirements, source selection manning levels, and schedule and competitive field impacts. DCMC would review the findings. This was to be a one-time measure. [Ref. 19]

RAC and DCMC investigated this metric and had difficulty obtaining any comparable data. The lack of experience of GBTS development and procurements has been a unique experience for RAC. As a result, the program office recommended closure of this metric. [Ref. 19]

The second metric compared the prime contractor's GBTS RFPs to the prime contract, as shown in Table 4.4. The team identified pilot program relief and reform items granted to the program office and applied to the prime contract, then determined whether the prime contractor flowed down the relief to the subcontractors. Nineteen additional clauses were added to the aircraft contract by the GBTS RFCCP for additional base support and cost reimbursement. However, the prime contractor flowed down 15 additional clauses to ensure design and delivery of the GBTS. [Ref. 16]

Table 4.4. Prime vs. Sub GBTS Contract Comparison [After Ref. 16]

Prime contract clauses and MIL-SPEC/STDS	Additional GBTS Sub-Contract clauses and MIL-SPEC/STDS
AFFARS----- 1	AFFARS----- 4
AFMCFARS ----- 8	AFMCFARS ----- 1
ASCFARS-----19	ASCFARS----- 3
FAR-----84	FAR-----11
DFARS-----68	DFARS----- 1
TOTAL 180	TOTAL 19
Clauses and specs flowed down by contractor (from 199 listed above)	Clauses and specs found only in RAC GBTS Sub-Contracts

Table 4.4 (Continued)

Prime contract clauses and MIL-SPEC/STDS	Additional GBTS Sub-Contract clauses and MIL-SPEC/STDS
AFFARS----- 2	ASCFARS
AFMCFARS ----- 7	H-G01 Limited data rights
ASCFARS-----31	H-B01 Key personnel clause
FAR-----50	H-B02 RAC access to sub data & facilities
DFARS-----25	H-B03 On-site personnel support
	H-B04 Aircraft components for GBTS
	H-B05 News releases and public announcements
	H-B07 Warranty- RAC fabricated parts
	H-B09 Contractor furnished parts
	H-B10 Rights in sub generated tech data
	H-B11 Cost-Plus-Award-Fee with share ratios
	FAR clauses
	52.215-24 Sub cost or pricing data (over \$500,000)
	52.246-4 Inspection services
	52.246-Inspection of services Fixed-Price
	DFAR clauses
	216.404-2 Cost-Plus-Award-Fee contracts
	252.223-7006 Prohibition on storage and disposal of toxic and hazardous materials
Total 115	Total 15

4. Program Office Staffing Support

The purpose of this metric was to measure the impact of pilot program regulatory and statutory relief on manning levels required for program support.

DAPPs have demonstrated significant reductions in program office size and contract administration services. The fundamental question is: are those reductions one-time cuts, or are the reductions driven by improved efficiencies and thus sustainable? To the extent workload is reduced through acquisition reform initiatives such as elimination of regulatory and statutory requirements or shifts in design and performance responsibility to the contractor (commercial specifications and quality assurance), the PPCG believes reductions in program office, contract administration staffing and DCAA audit hours are sustainable. As long as the program office employs acquisition reform initiatives and strategies, the level of such staffing must be commensurate with the risks the Government assumes and the contractor's ability to meet cost, schedule and performance goals. Overruns, schedule slippage and non-performing products will always necessitate a higher level of program office and contract administration staffing. [Ref. 17]

The JPATS program functionals assisted the metrics team in determining any manning level reductions or increases attributable to the pilot program relief and reform items. This was accomplished by creating a manning level baseline based on analysis of the program's "business as usual" functions and processes without the regulatory and statutory relief items. This baseline was then compared to the current manning levels and will encompass the first five fiscal years of the program as shown in Table 4.5. The

difference in current manpower levels versus estimates for pre-reform could not be directly attributed to acquisition reform. Subsequent to reform, across the command manpower reductions caused program office cuts unrelated to reform efforts. The JPATS program office was never manned to the pre-reform levels. [Ref. 16]

The use of a Program Office Manning Level metric to measure a program's "business as usual" functions compared to processes without regulatory and statutory relief items seems highly questionable at best. The substantive nature of regulatory and statutory relief items listed in Tables 4.1 and 4.2 of this section play a key role in this determination.

A review of magazine articles, Internet based materials and other references obtained through research for this thesis continuously referenced processes, documents and milestone decisions required of "business as usual" programs, as well as, the JPATS program. Omission of relief to eliminate items such as a DAB milestone reviews, Selected Acquisition Report (SAR) and Defense Acquisition Executive Summary (DAES) reporting, and other major acquisition program attributes for a commercial acquisition seemed glaringly apparent. While the program office plainly reports manning reductions could not be directly attributed to acquisition reform, the PPCG continues to publish the reduction in manning was due to success of acquisition reform initiatives and relief measures afforded DAPPs.

Section 906 of the National Defense Authorization Act of 1996, enacted 10 February 1996, established a plan for a 25 percent smaller acquisition workforce over the period 1996 to FY 2000. Section 916(a) of the National Defense Authorization Act for

1998 directed a reduction of between 10,000 and 25,000 defense acquisition personnel during FY 1998. [Ref. 23] Actions such as these may seem almost anti-reform, as mandates to reduce management costs prior to establishing the feasibility of goal attainment may simply lead to baseless program office reductions in funding and manpower. DOD often marks program funding profiles once savings estimates are generated, whether founded in fact or fiction, leaving itself vulnerable when such savings estimates do not materialize.

A reduction in manning and staffing levels is only reform when it is accompanied by a commensurate reduction in reform of program management requirements. Applying artificial reform "success" measures such as manning reductions to a program whose management requirements have remained constant over time may fuel skepticism of the entire reform initiative.

Furthermore, acquisition reform has not only failed to reduce program management requirements; it has added a few. The main focus of this chapter is to review metrics established to track and compare JPATS as a pilot program to baseline programs. The JPATS program office has been responsible for not only establishing program reform metrics, but reporting results on a monthly basis as well. The manpower used for this effort within the program office was neither planned, nor budgeted. Therefore, the conclusion indicates acquisition reform is not as responsible for program office manning reductions as much as manning reductions brought about by the National Defense Authorization Act (Section 906 of the 1996 Act and Section 916(a) of the 1998 Act) make the appearance of reform success. Independent sources have verified this

conclusion and Table 4.5 indicates no relief items were attributed to manning reductions.
[Ref. 18]

JPATS also used Integrated Product Teams (IPTs) to bring review organizations into the acquisition process early, making these organizations partners in the acquisition process. The IPTs provide a forum to cover product and process functions, enable concurrent development with full Government participation and foster joint team building with industry. JPATS used an IPT approach with the contractor for design development. Teams worked individual design details and implemented changes/recommendations during a two-month period prior to the scheduled Critical Design Review (CDR). This effort resulted in an unprecedented one day CDR outbrief to senior level management.
[Ref. 17]

The use of IPTs does have its limitations on program success and acquisition reform efforts. The reduction of CDRLs has been a goal of most acquisition programs, including the JPATS program. The issue, in many cases, is not the fact the information the CDRL would provide was not required, but that the CDRL would be eliminated as a reform and streamlining effort and the information would be obtained through the use of IPTs with the contractor.

The IPT approach works great when the contractor is making money. But as soon as the contractor starts losing money, they quit playing in the IPT and the Government doesn't get the information they originally wanted.
[Ref. 18]

RAC began absorbing cost overruns on its existing four contracts to develop and build the first 24 prototype aircraft. The overruns were a consequence of several factors: Raytheon isn't getting enough foreign orders for the trainers, which is driving up program

costs, and the costs of material, engineering, manufacturing and quality assurance have been greater than expected. The largest overrun - \$25 million, or 17 percent – is on a \$155 million manufacturing and development contract. RAC is absorbing as much as \$9 million on a second fixed-price contract for three prototypes worth \$36 million, and will absorb another \$7 million on a third firm-fixed-price contract for six aircraft. [Ref. 20]

The IPT approach for information sharing disappeared as RAC began absorbing these losses. The contractor greeted information requests originally agreed to be shared through the use of IPTs, with demands for letter requests for the information requested accompanied by additional funding from the Government contracting officer. [Ref. 18]

Table 4.5. Annual SPO Staffing Level Comparison [After Ref. 16]

FUNCTIONAL AREA	PRE-REFORM LEVELS ¹	CURRENT REFORM LEVELS (First Five Years)	ATTRIBUTE TO PILOT PGM OR COMMAND REDUCTIONS	RELIEF ITEM(S) ATTRIBUTED
LOGISTICS	20	5	16	0
PROGRAM MGMT/TEST	36	26	9	0
ENGINEERING/MANUFACTURING	56	28	30	0
FINANCIAL MGMT	6	9	-1	0
CONTRACTS	20	7	14	0
SAFETY	2	0	2	0
TOTAL	140	75	70	0

¹ Based on the "Cranston Model" - A program office staffing model for Air Force programs that Brig. Gen. Cranston, former ASC Vice Commander, created in early 1990s. The model was designed to project program office staffing over time - intended, as a "glide slope" program offices would follow to meet anticipated staffing decrements. This model was used as the point of departure for initial JPATS program office staffing and is no longer in use. [Ref. 16]

5. Contract Administration Services (CAS) Impacts

The purpose of this metric was to measure the impact of pilot program regulatory and statutory relief on each CAS contract monitoring area. While the actual name of the metric was termed Contract Administrative Service Impacts, the name has been changed to reflect the term acknowledged by DCMC.

The program office initiated a study, with DCMC support, to determine the amount of DCMC and other Government effort that could be eliminated by reduced monitoring of the JPATS contract as a result of reform. Each regulatory and statutory waiver, which affects contract monitoring, was addressed. [Ref. 19]

DCMC agreed to conduct this metric. They provided a list of all relief and reform items and other pertinent information required from the program office to conduct this metric. DCMC compared the CAS functions in the JPATS contract with those in a "traditional" acquisition (no reference was provided for the definition of "traditional" acquisition). DCMC evaluated the impact of reform in terms of manpower impacts and provided the results to the program office. Estimated and delta hours were based on traditional full CAS delegation for a basic 36 month effort extrapolated from actual T-45 data and applied to current JPATS program. Negative deltas equal manpower savings (less time will be spent on the contract). [Ref. 16] The results are depicted in Table 4.6.

Overall, DAPPs were projected to be managed with substantially fewer organic resources than expended on similar historic programs. Table 4.6 illustrates JPATS realizes greater personnel reductions than the overall statutory goal of 25 percent reduction in acquisition management costs. These results indicate that by removing traditional Government oversight (where assessed risk is low) and by working "smarter"

(via IPTs) on value-added efforts, major defense programs can be effectively managed by smaller, better integrated project offices. [Ref. 17]

Table 4.6. Pre vs. Post Reform CAS Functions [After Ref. 16]

FUNCTION	TRADITIONAL CONTRACT	CURRENT (ACQ. STREAMLINING INITIATIVE)	DELTA +/-
QUALITY ASSURANCE	14,068 hrs	6,933 hrs	-7,135 hrs
MANUFACTURING	35,439 hrs	25,595 hrs	-9,844 hrs
CONTRACT MANAGEMENT	18,543 hrs	10,566 hrs	-7,977 hrs
SHIPPING & RECEIVING	998 hrs	82 hrs	-916 hrs
TOTAL	69,048 hrs	43,176 hrs	-25,872 hrs

6. Baseline Cost Metrics

The purpose of this metric was to establish a baseline cost estimate before contract award, to include total acquisition cost, using the 1992 Cost Analysis Improvement Group (CAIG) validated estimate along with the Acquisition Program Baseline (APB). It was also to establish a method to objectively update and document changes to this baseline cost estimate as program conditions warrant over time.

The JPATS FY92 Independent Cost Estimate (ICE) was updated to account for program changes since that time. The updated FY 92 ICE, completed under “business as usual” conditions, was then compared to the ICE developed for the JPATS Milestone II decision. Differences were reviewed by the metrics team to separate possible acquisition reform impacts from other factors before the measurements are finalized. [Ref. 19]

Table 4.7 documents baseline costs and program office and CAIG cost estimating assumptions supporting the estimates are defined in Appendix C.

One measurable item absent from any type of cost metric established is the initial and recurring cost of establishing and tracking reform metrics for the PPCG. These costs could be accrued in actual dollars, as well as losses in program office productivity, which was almost certainly not a budgeted line item. The program office is, therefore, absorbing these costs in an already austere and financially constrained environment.

Table 4.7. Baseline Costs [After Ref. 16]

FY ESTIMATE	MFG DEVELOP.	PROD.	O&M (PARTIAL CLS)	TOTAL	REMARKS
FY92 POE to CAIG: 417 USAF A/C 348 USN A/C 765 A/C Total	Low-\$96.4M High-\$96.4M Low-\$36.5M High-\$36.5M Low-\$132.9M High-\$132.9M	L-\$2,187.7M H-\$2,770.8M L-\$1,530.1M H-\$1,822.9M L-\$3,717.8M H-\$4,593.7M	L-\$9,072.0M H-\$9,461.0M L-\$5,462.0M H-\$6,330.1M L-\$14,534.0M H-\$15,791.1M	L-\$11,356.1M H-\$12,328.2M L-\$7,028.6M H-\$8,189.5M L-\$18,384.7M H-\$20,517.7M	FY92\$M JPATS POE to OSD CAIG 4/16/92
FY95 POE 711 USAF & USN A/C	\$293.5M	\$2,130.8M	\$11,689.07M	\$14,113.37M	BY93\$M 7/25/95 Blue Book
FY97 POE 711 USAF & USN A/C	\$263.4M	\$2,802.1M	\$8,820.9M	\$11,886.4M	BY95\$M 9/30/97 SAMP Update

7. Program Cost Comparison

The purpose of this metric was to establish a comparison of program costs to the baseline cost estimate (see Table 4.7 above). Additionally, it was to ensure differences attributable to regulatory and statutory reform were separated from other factors such as changing program requirements. The approach would ensure all relevant known or anticipated factors, such as changing program requirements, were considered, documented, and tracked for each evaluation baseline so effective reform comparisons could be made. [Ref. 19]

The updated FY92 ICE estimate was compared to the ICE developed by the CAIG for the JPATS Milestone II decision. The differences were reviewed by the metrics team to separate acquisition reform impacts from competition and programmatic impacts and would be a one-time measurement.

However, JPATS rebaselined the FY92 ICE estimate to FY95 base year and differences in cost estimates; therefore, could not be attributed solely to acquisition reform initiatives. The reason for the rebaselining effort lies in the fact the FY92 Program Office Estimate (POE) was assumed to be a non-developmental effort and included the selection possibility of a jet aircraft. The actual JPATS contract award was for a commercial derivative, propeller driven aircraft and required development efforts in the canopy, flight controls, ejection seat, etc. and, therefore, had attendant lower life cycle costs. [Ref. 16] Table 4.8 illustrates.

Table 4.8. Cost Estimate Comparison [After Ref. 16]

FY92 POE (Low)	\$139.14M	\$4,094.6M	\$15,297.1M	\$19,530.8M	BY95\$M
(High)	\$139.14M	\$5,059.2M	\$16,620.3M	\$21,818.6M	
FY95 POE	\$304.9M	\$2213.9M	\$12,144.9M	\$14,663.7M	BY95\$M

8. Program Funding Stability

The purpose of this metric was to establish a method to measure JPATS program funding stability over the period of acquisition reform performance measurement. The baseline and methodology for this metric was changed to provide a better tracking mechanism. [Ref. 19]

The baseline for funding stability would be the funding and procurement buy profile, which is contained in the MS II Approved Program Baseline, established prior to contract award.

The JPATS program is unique in its approach to establishing a contract with RAC for eight lots of aircraft. A target quantity of aircraft was established as a baseline for each lot, along with minimum and maximum quantities priced out in a Variation in Quantity (VIQ) matrix. This allows the decision-makers some flexibility in each year's procurement; however, program stability and affordability inherently depends on stable funding of the baseline quantity. The Under Secretary of Defense for Acquisition and Technology signed an action memorandum after MS II in August 1995 stating his intent for program stability and requested notification if direction or funding forced buy profiles below the minimum allowed on contract. [Ref. 16]

The metric used to track program funding stability is a color rating (green, yellow, or red) tracked by quarter and illustrated in Table 4.9. This program manager's assessment uses the rating criteria listed in Table 4.10. An "Advisory (A)" modifier is added to color ratings to provide further explanation if conditions warrant. The number of "what-if" cost exercises performed during the quarter is also provided, as this number indicates the amount of potential disruptions to the baseline program. [Ref. 16]

Table 4.9. Funding Track for JPATS Program [After Ref. 19]

TIME PERIOD (QUARTERS)	RATING	COMMENTS
4th Qtr FY95 (MS II Baseline)	GREEN	What-ifs performed: 1
1 st Qtr FY96	GREEN	What-ifs performed: 0
2 nd Qtr FY96	GREEN ADVISORY	What-ifs performed: 13 Baseline program no longer funded (AF FY98 POM submission reduced) Navy has funding shortfall in procurement funding in FY00/01

Table 4.9 (Continued)

TIME PERIOD (QUARTERS)	RATING	COMMENTS
3 rd Qtr FY96	GREEN ADVISORY	What-ifs performed: 11 Baseline program no longer funded (AF FY98 POM submission reduced) Navy has funding shortfall in procurement funding in FY00/01
4 th Qtr FY96	GREEN ADVISORY	What-ifs performed: 5 FY98 AF BES reduced FY98-00 procurement quantities to VIQ minimum. Navy FY00/01 funding shortfall addressed by reallocation of resources. Navy BES reflects funding shortfall for GBTS in FY02/03.
1 st Qtr FY97	GREEN ADVISORY	What-ifs performed: 12 FY98 AF PB restored target quantity funding in FY98. FY99/00 allows procurement at minimum contract quantities. Navy funding still reflects FY02/03 GBTS funding shortfall.
2 nd Qtr FY97	GREEN ADVISORY	What-ifs performed: 14 FY98 AF PB restored target quantity funding in FY98. FY99/00 allows procurement at minimum contract quantities. Navy funding still reflects FY00/03 GBTS funding shortfall.
4 th Qtr FY97	GREEN ADVISORY	What-ifs performed: 12 Navy funding still reflects FY00/03 GBTS funding shortfall.
1 st Qtr FY98	GREEN ADVISORY	What-ifs performed: 12 Navy funding still reflects FY00/03 GBTS funding shortfall.
2 nd Qtr FY98	GREEN ADVISORY	What-ifs performed: 14 Navy funding still reflects FY00/03 GBTS funding shortfall.
3 rd Qtr FY98	GREEN ADVISORY	What-ifs performed: 10
1 st Qtr FY99	GREEN ADVISORY	What-ifs performed: 6 GBTS FY99 funding cut of \$10M

Table 4.9 (Continued)

TIME PERIOD (QUARTERS)	RATING	COMMENTS
2 nd Qtr FY99	GREEN ADVISORY	What-ifs performed: 11 GBTS FY99 funding cut of \$10M
3 rd Qtr FY99	GREEN ADVISORY	What-ifs performed: 6 GBTS FY99 funding cut of \$10M; Outyear shortfall of \$24M.
4 th Qtr FY99	GREEN ADVISORY	What-ifs performed: 7 GBTS FY99 funding cut of \$10M; Outyear shortfall of \$24M.
1 st Qtr FY00	GREEN ADVISORY	What-ifs performed: 5 GBTS FY99 funding cut of \$10M; Outyear shortfall of \$24M.

Table 4.10. Assessment Definitions [Ref. 19]

Green	Program is on track. All aspects of the program are progressing satisfactorily. Some minor problems may exist, but appropriate solutions are available. Costs are not expected to exceed approved funding levels or contract targets.
Green Advisory	Program is generally progressing satisfactorily, but some event has occurred or is anticipated that will require additional effort and emphasis by the Program Manager and/or contractor. No major setback is anticipated and no action or decision is required by higher authority.
Yellow	Potential or actual problems have been detected. Program is generally progressing satisfactorily, but some event has occurred or is anticipated that is expected to impair progress against major objectives of the program. Timely action by the PEO, CAE, or OUSD(A,T&L) may be required.
Yellow Advisory	Program is generally progressing satisfactorily, but some event has occurred or is anticipated that is expected to impair progress against one or more major segments of the program. Early reporting is encouraged.
Red	Some event has occurred that seriously impedes successful accomplishment of one or more major program objectives so that reorientation or reprogramming of the program effort is required. Major weakness includes a cost breach.

Table 4.9 indicates the Air Force baseline program became unfunded in second quarter FY 1996 after the FY 1998 POM submission was reduced, but was restored in first quarter FY 1997. The Air Force FY 1999/2000 funding profile allowed procurement at minimum VIQ quantities. Additionally, the GBTS suffered a funding cut of \$10 million in first quarter FY 1999. However, sources state the fencing action provided stability and JPATS has not suffered problems caused by reprogrammings out of funding lines. [Ref. 18]

The JPATS Program Office fielded 24 “what-if” drills in FY 1996, 38 in FY 1997, 36 in FY 1998, and 30 in FY 1999. The analysis indicates the Program Office spent considerable effort conducting “what-if” drills, trying to defend a funding profile the USD (AT&L) supposedly fenced when the DAPPs were established.

Furthermore, the researcher questions whether program funding stability should be used as an effective tool to measure acquisition reform success. The USD (AT&L) intended to provide funding stability for the pilot programs within DOD during the year of execution by stating:

Effective immediately, no funds may be programmed out of the funding lines for these pilot programs without my prior written approval. [Ref. 1]

Metrics established thus far, have measured acquisition reform against baseline programs. This metric was not established to measure success against baseline programs; therefore, no analysis can be made to determine if levels of funding stability provided DAPPs could actually be attributed to acquisition reform. As the baseline programs used in metric analyses have not enjoyed the same level of funding protection, any type of funding stability measurement in the JPATS program would seem misleading at best.

9. Would-Cost Analysis

The purpose of this metric was to use "would-cost" analyses, where appropriate, as part of evaluation baselines and in establishing metrics in areas where acquisition reform had been granted. Would-cost analyses would be performed when other comparative baselines were not available to ensure JPATS acquisition reform is fully covered. [Ref. 19] The use of would-cost analysis has not been used as information for baselines have, for the most part, been obtained through the T-45 and T-1A programs.

10. Earned Value Reporting System (EVMS) Versus Cost/Schedule Control Systems Criteria (C/SCSC)

The purpose of this metric is to measure the comparative effect of using the EVMS approved for JPATS versus meeting the traditionally required C/SCSC.

The metric baseline was the effort and costs required of demonstrating and using a contractor's C/SCSC system on a similar size and type of program as JPATS to include consideration of all pertinent reviews and reporting. This would be compared to the actual circumstances leading to the contractor's self-certification and the actual reporting performed by the contractor. [Ref. 19]

The metrics team generated an estimate of the staffing needed to perform a Demonstration Review necessary to accept a contractor's C/SCSC system. The team then obtained support from JPATS financial managers, Air Force Material Command staff and Defense Contract Management Command analysts and sought to base the estimate on programs with large production efforts similar to JPATS. This estimate was compared to the contractor's actual efforts to arrive at self-certification of an EVMS. The efforts of the Government and the contractor were considered in arriving at a baseline estimate and

in measuring actual costs. The team also looked at C/SCSC reporting requirements versus the actual contractor provided reports. Approximately 11,448 hours were estimated to be saved during the initial eight year JPATS contractual effort and are shown in Table 4.11. [Ref. 16]

The JPATS program was one of the first major system acquisitions to employ a commercial-like earned value-reporting system. This system is intended to enhance management visibility and control of cost/schedule performance while eliminating non-value added, detailed reporting. [Ref. 17]

The dramatic manpower deductions realized on the JPATS program highlight the continued benefits associated with commercial practices such as EVMS.

**Table 4.11. EVMS vs. C/SCSC Tasks for Government and Contractor
[After Ref. 16]**

C/SCSC Task	Staffing Estimates		EVMS Task	Staffing Estimates	
	GOV'T	CONTR		GOV'T	CONTR
Certification	2,624 hrs	19,600 hrs	Self Certification	0 hrs	12,600 hrs
Reporting	3,072 hrs	8,160 hrs	Reporting	2,688 hrs	6,720 hrs
TOTAL	5,696 hrs	27,760 hrs	TOTAL	2,688 hrs	19,320 hrs

11. Contractor Team Composition

The purpose of this metric is to measure the effect of pilot program acquisition reform on the composition of contractor teams submitting proposals to identify any change in focus from military to commercial lines.

The metric baseline was to be established by a PPCG survey designed and conducted by an independent agent. Their survey would be conducted after contract

award among the contractors who submitted proposals seeking their experience in assembling their team of subcontractors and suppliers. The program office assisted the independent agent as necessary to establish the specific items of JPATS acquisition reform to be baselined by the survey. [Ref. 19]

The JPATS Program Office discussed this agreement at length and could not address this metric. The decision was based on the following: (1) the JPATS Program survived six months of protests with three losing contractors who are unwilling to assist, and (2) PPCG or JPATS Program funding was not budgeted to contract for independent studies and collection of these data. Originally, the JPATS Program Office expected this study would be performed by an agent of the PPCG and funded by the PPCG, but were since informed this cost must be borne by the Program Office. No program funds are available for this task. Therefore, no program expenditure of funds will be accrued to collect these data. [Ref. 19]

12. Bridge Metrics

The JPATS Program Office is reporting Generic "Bridge" Reform Metrics, summarized in Table 4.12, and attempts to measure and display effects of acquisition reform changes on various program parameters. From this information, general observations regarding acquisition reform will be prepared and reported outside the DOD. Some data are one-time measurements and are annotated as such.

The results indicate a substantial reduction in CDRLs, military standards, program office staffing and the size of the RFP. The reported results also demonstrate the cost of protests, in terms of Government and contractor staffing, filed by those contractors who lost the JPATS bid. [Ref. 16]

Table 4.12. JPATS Bridge Metrics [After Ref. 16]

Bridge Metric	T-45	T-1A	JPATS Realized
Number of Mil Spec/Standards in RFP	230	43	42
Number of CDRLs in RFP	530	119	81
RFP Preparation Workhours		48,000	220,800
DCAA Audit Hours/Quarter		159	146
Proposal Evaluation Time (Workhours)		16,800	163,200 ¹
Number of Pages in Proposal		1217	674
Winning Contractor B&P		\$5.4M*	\$13.7M
CAS Hours – Quarterly	5,754 Oct-Dec 95	3,728 Apr-Jun 96	4,352 Oct-Dec 99
Program Office Staffing – Full-Time Equivalent (FTEs)	140		75
Contract Cost (Estimated vs. Award) FY95 through FY01 Profile	MD=\$90.3M Prod=\$694.3M**		MD=\$84.8M Prod=\$312.8M**
Contract Cost Variance (As of 11/99)	\$153.8M		MD=-\$23.1M Prod=-\$44.7M
Contract Schedule Variance (As of 11/99)	\$154.1M 70 Mos.		MD=-\$1.6M Prod=-\$19.1M

¹ JPATS experience demonstrates the potential cost (in both dollars and time) of infusing acquisition reform principles into an ongoing solicitation. The JPATS RFP was delayed twice to incorporate aspects of acquisition reform, specifically reductions in the RFP size, reductions in the number of referenced documents, and reductions in the number of contract data requirements. The JPATS source selection was also disturbed by directed program changes while in source selection and demonstrates those disturbances can greatly impact efficiency.

* Less McDonnell Douglas B&P costs

** Estimate included a \$200k base year risk factor per aircraft to account for constantly changing funding and procurement profiles. Basis of estimate was average of three high-end jets (selected design is propeller driven). Differences in estimated versus actual contract cost include impacts of competition and acquisition reform. [Ref. 16]

D. ANALYSIS OF JOINT AND PROGRAMMATIC ISSUES

This chapter has; thus far, presented program metrics, derived to compare and contrast the JPATS procurement to baseline aircraft procurement programs and quantify savings attributed to implementing acquisition reform initiatives to a current procurement. These savings receive great press and are published extensively, touting acquisition reform success. But what we don't hear much about are the contrasting issues of how acquisition reform efforts may hinder a program's ability to acquire items to meet mission requirements.

Joint programs have the surface appeal of streamlining efforts and reducing infrastructure by combining efforts to obtain a product meeting mission needs for each military Service. A deeper, behind the scene issue arises; however, as the structure and chain of command different military Services operate within can actually hinder joint procurements.

The first issue revolves around the differences between respective Air Force and Navy requirements generation and resourcing processes.

The Air Education and Training Command (AETC) handles both requirements and resourcing for the Air Force. Changes to training doctrines and aircraft modification requests are generated by the same command, which also authorizes funding for those changes. The result of this process prioritizes, concentrates and integrates requirements and funding issues.

The Navy handles user requirements through the Chief of Naval Air Training (CNATRA) and funding requirements through OPNAV (N88), the resource sponsor

located in the Pentagon. The two Navy offices operate in two distinct environments with separate processes. CNATRA convenes a Naval Air Training and Operating Procedures Standardization Program (NATOPS) user conference, where an Operations Advisory Group (OAG) determines and prioritizes required aircraft and training modifications. The modified requirements are then sent to N88 for funding assignment. At the N88 level, user requirements are competing not only for other requirements within the aviation community, but the aviation community as an entity is competing against surface and sub-surface requirements. The resourcing process may take up to 2-3 years if funding requests are initiated through the Program Objective Memorandum (POM) process.

The inherent danger of having two different requirements and resourcing processes is it could potentially result in an aircraft with two different configurations. For example, if the Air Force felt strongly about JPATS modifications, which would increase required funding profiles, while CNATRA agreed with the modification, but could not obtain the funding from the resource sponsor, two configurations of the same aircraft could possibly be produced. The overall effect could have a devastating effect on unit cost and logistics support throughout the life cycle.

The Air Force is the executive Service in this procurement and maintains configuration control over JPATS. The Air Force is keenly aware of resourcing differences between the two Services and maintains close liaison with the Navy resource sponsor, coordinating all aircraft modifications and change issues to maintain a single aircraft configuration. [Ref. 18]

An unanswered question; however, looms in the horizon as to which Service will assume configuration control over JPATS once the Air Force's aircraft procurement profile is complete. The Air Force expects to complete their aircraft buy profile in FY 2008/2009, while the Navy aircraft buy profile extends through FY 2014/2015. It is not known whether the Air Force will maintain configuration control over the JPATS program once the Navy is the only Service procuring actual aircraft. [Ref. 18] Adequate measures should be established well in advance to coordinate configuration changes to aircraft still in production, which could affect operational aircraft.

A second issue centers on Flight Clearance procedures within the Air Force and Navy. Flight Clearance deals with the process of certifying aircraft safe for flight.

The Air Force employs engineers assigned to the program office, who monitor processes by means of verifying and validating reports and other engineering data. The Flight Clearance process for the Air Force is a signature certifying an aircraft is safe for flight, based on data and report verification. [Ref. 18]

The Navy's Flight Clearance process is different and uses engineers assigned in an IPT approach within a competency aligned organization. The Chief of Naval Operations (CNO) mandates an extensive checklist be completed on each individual aircraft and flight clearances are required by OPNAV 3710 for Navy owned aircraft. [Ref. 18]

The issue at stake is while acquisition reform initiatives have streamlined the procurement process; Service unique procedural requirements have remained intact and solidifies Service boundaries joint programs were designed to dissolve. Acquisition

reform may remedy a segment of the procurement process, but officials in joint programs should address aspects outside the actual acquisition process and review existing, or establish new acquisition process management procedures to unify Service unique processes and procedural requirements.

Service unique requirements duplicate efforts and increase program costs in an already austere fiscal environment. Single Process Initiatives (SPI) should be applied to these unique requirements, which would allow the Services to initially agree on a specific process and eliminate redundancies and procedural differences.

A final issue illustrates how acquisition reform initiatives have impacted the JPATS program and strikes at the heart of a seemingly common sense approach of applying commercial concepts to military purchases.

The T-6A Texan II is derived from an existing commercial aircraft and will have a Type Certification (TC) from the U.S. Federal Aviation Administration (FAA). The aircraft certification basis is in accordance with the U.S. Federal Aviation Regulation (FAR) Part 23 Acrobatic Category, FAR Part 33 standard for the engine, and FAR Part 35 standard for the propeller. All deviations from the FAA certified type design must have a military qualification. [Ref. 6]

The requirement for a FAA Certification was a strategy to enhance Foreign Military Sales (FMS) since foreign aviation boards would easily recognize an FAA Part 23 certificate. [Ref. 18]

The program office established an on-site, joint integrated test team. USAF and USN test pilots, permanently assigned at RAC, and test pilots from Edwards AFB and the

Navy's Patuxent River, Maryland testing center worked a port/starboard rotation schedule with RAC to form a single military/contractor test team designed to share flight time (in a 50/50 arrangement) and share flight data. [Ref. 18]

A problem surfaced when it was determined only FAA certified pilots, or FAA approved Designated Option Authority (DOA) pilots could fly the aircraft for data and specific findings since the aircraft was to hold an FAA Type Certification. The integrated test team started to dissolve as RAC pilots began flying all flights for data collection and specific findings, leaving Air Force and Navy pilots to rely solely on the contractor's data, rarely having the chance to validate findings. (Pundits could make an argument program management didn't foresee the need for military pilots to become DOA pilots and obtain the required training to participate in the certification process. The same pundits could argue this has nothing to do with acquisition reform and is a management problem). [Ref. 18]

The certification issue transcends deeper boundaries though as definitions of civilian flight and military flight testing differ.

The FAA defines a stall as a roll-off of 30° or more, while the military defines it as a departure on any axis. Another difference was in the spin resistance departure phase, where 2-3 turns of the aircraft is defined as a fully developed spin. The military has no such definition. [Ref. 18] Modifications needed to incorporate FAA certifications were in excess of military requirements.

Another example is the requirement for hot fuel testing, normally performed on reciprocating engines. Although, the JPATS' Pratt and Whitney powerplant is a turbo-

prop engine, the FAA certification drove the requirement for hot fueling capability. [Ref. 18]

The fundamental issue is the common sense approach to purchasing an FAA Type Certified commercial aircraft drove requirements the military neither needed, nor required. Additional time and funds were expended adding capabilities to the aircraft, complying with FAA standards above and beyond military requirement specifications. Furthermore, still additional resources were required to accomplish testing required of the military, but not the FAA.

One source states:

From what I've seen, it's (FAA Type Certification) a misguided attempt to substitute one set of Government regs for another. NONE of the airplanes rolling off the assembly line meets the Type Certificate due to numerous "military deviations" and it would be extremely costly to bring any of these airplanes into conformance with the Type Design (installing gaseous oxygen systems, changing emergency control colors from yellow to black, et al). The FAA type cert is really a disguise so the acquisition streamlining folks can circumvent an admittedly cumbersome military process. The question you have to ask yourself is whether the FAA process is cheaper in the long run than the military certification process. If our process is too cumbersome, then let's reform it rather than totally cast it aside in favor of another bureaucracy. [Ref. 18]

On a contrasting note however, the Navy's T-34 was also procured with an FAA TC and the military also re-tested several areas including spins. The T-34 acquisition took place long before acquisition reform became an issue.

One final note worthy of mention concerns whom the FAA's actual customer is. The FAA's "customer" for FAA type certification is the contractor, not the person buying the aircraft. The FAA only considers airworthiness and does not consider the aircraft's military mission. For example, the FAA will not field a call from John Doe who is

inquiring about an aircraft's flying qualities/performance he is about to purchase from a manufacturer and will refer him to the seller. Why should the FAA give the military (the customer in this case) any different treatment? They only respond to inquires as a professional courtesy between two Government entities, and then only rarely. [Ref. 18] The key to success is; therefore, proactive discussions and agreements between agencies, customers, and ultimate users to ensure the warfighter's inputs and recommendations are incorporated early in the program.

E. CHAPTER SUMMARY

This chapter presented metrics established by the JPATS program and quantified them against established baseline programs to derive quantitative savings attributed to implementing acquisition reform. The Pilot Program Consulting Group (PPCG) was introduced as the agency established to monitor DAPPs in terms of success due to acquisition reform efforts. Metrics derived by the program office and the PPCG were presented, described, and documented with results to date. A table depicting Bridge Metrics summarized results attributed to acquisition reform measures implemented by the JPATS program. Finally, acquisition reform issues and joint program management challenges were discussed to present a more rounded view of acquisition reform.

V. CONCLUSIONS AND RECOMMENDATIONS

A. INTRODUCTION

The focus of this research was to examine how acquisition reform has effected a major weapon system acquisition. The JPATS program was traced from the study documented in the DOD 1989 Aircraft Trainer Masterplan, through the inception of the requirement, acquisition strategy and contracting methodology. Metrics were then formed and analysis made to determine the success of various acquisition reform initiatives applied to the JPATS program. This chapter will draw conclusions from the research effort and subsequent analysis presented. Recommendations will then be made as to how lessons learned from the JPATS program may be applied to other acquisition programs. Finally, areas for further research will be presented.

B. CONCLUSIONS

This research effort provides background information on the Joint Primary Aircraft Training System (JPATS) and acquisition reform and then examines the impact of the latter on the former. The effort analyzed JPATS using metrics established to measure the effects of acquisition reform and concludes acquisition reform is having mixed results on this major defense acquisition program.

The office of the Deputy Under Secretary of Defense for Acquisition Reform [DUSD(AR)] felt it needed successful Defense Acquisition Pilot Programs (DAPPs) to jump-start the initiatives outlined in the Federal Acquisition Streamlining Act (FASA) of 1994 and to persuade the DOD bureaucracy to 'buy-in' to the change. Advocates for the reform movement wanted highly visible wins and wanted them quickly.

It is evident much is being accomplished with acquisition reform in the JPATS program. However, the hastened approach to bolster and tout the success of pilot programs by trying to quantify efficiencies gained by statutory and regulatory reform efforts may have been premature. Unfortunately, many results from these acquisition reform initiatives, while initially measured today, may not actually be sustainable, or even materialize until much later in the acquisition and life cycle, if at all.

It may seem the statutory mandated overall goal of 25 percent reduction in acquisition management costs by acquisition reform agency officials represents nothing more than a budget axe applied to acquisition programs. The fact reductions were mandated lends itself more to programmatic reductions made to satisfy the mandate in the appearance of acquisition reform, rather than acquisition reform measures yielding actual savings.

Of the eleven metrics designed to measure and quantify reform success on the JPATS program, only two measures seem to be successful indicators. First, the Contract Administration Services Impact metric reflects a reduction of 25,872 hours and indicates major defense programs can be effectively managed by smaller, better integrated project offices by removing traditional Government oversight (where assessed risk is low) and working "smarter" (via IPTs) on value-added efforts. Second, the contractor certified Earned Value Management System (EVMS) reflects a manpower reduction of 11,448 hours and highlights the benefits associated with utilizing commercial practices.

The remaining nine metrics used to measure the effects of acquisition reform on the JPATS program seem to indicate more success is being realized from applying

acquisition reform efforts highlighted in DOD directives than statutory and regulatory relief provided DAPPs.

The Air Force has done an excellent job in applying the six themes of acquisition reform outlined in the DOD Directives 5000 series to JPATS. For example, the JPATS program uses Non-Developmental Item (NDI) or commercially available items to meet most equipment requirements. Additionally, the program capitalizes on the existence of production prototype aircraft and commercial components such as avionics systems and engines. The program also takes advantage of certification efforts accomplished by other Government agencies. Finally, Integrated Process and Product Teams enabled dramatic reductions in contract administration services efforts.

The use of the contractor certified EVMS further champions reform efforts and results in infrastructure reductions which translates into fewer personnel required to administer the contract and cost reductions. The contractor certified EVMS also demonstrates a cooperative trust and break in the adversarial roles Government and contractors have traditionally held. Furthermore, the EVMS adoption demonstrates the Government's acceptance of best business practices applied to military procurements.

The use of commercial products and practices has limitations in major weapon system acquisitions. While the decision to purchase an existing commercial aircraft, holding a Type Certification (TC) by the U.S. Federal Aviation Administration (FAA) certainly made "good business sense" on the surface, the selection decision drove requirements the program office neither needed, nor required. Furthermore, additional

manufacturing and maintenance costs required of FAA certified aircraft might prove more costly than originally anticipated.

C. ANSWERS TO RESEARCH QUESTIONS

1. What are the effects of acquisition reform on the execution and delivery of the Joint Primary Aircraft Training System (JPATS)?

The effects of acquisition reform on JPATS are summarized in the conclusion section of this chapter and are covered in detail in Chapter IV. The acquisition reform effort has directly contributed to cost reductions in the areas of Contract Administration Services (CAS) and the Earned Value Management System (EVMS). Regulatory and statutory relief, program office manning levels, and program funding stability, appear to have little effect on acquisition reform.

2. What is the background and history of the JPATS program?

The background and history of the JPATS program is addressed in detail in Chapter II.

The 1989 DOD Trainer Aircraft Masterplan examined USN and USAF requirements over the next 30 years and formulated a strategy for joint-service acquisition of fixed-wing aircraft training systems into the second decade of the 21st century. [Ref. 3]

The principal mission of the JPATS is to train entry-level USN and USAF student pilots in primary flying skills. JPATS also provides primary and intermediate training to entry-level USN Student Naval Flight Officers (SNFOs) and provides entry-level USAF student navigators with a basic understanding of airmanship prior to their designation as USAF Navigators. [Ref. 4]

The JPATS replaces the T-37B and at least the T-34C aircraft and their associated ground-based systems in support of joint USAF and USN flying training programs. The JPATS will have common components meeting common USAF and USN requirements and would train entry-level flight students to a level of proficiency where they can transition to advanced USN and USAF flight training systems. Elements of the system are the air vehicle, the GBTS necessary to perform operational flight instruction, instrument flight instruction, and pre-flight instruction as required. Finally, the system includes an integrated package of courseware, syllabi, academic training courses, and a computerized data management system.

3. What is the overall acquisition plan (including milestones) for this program and to what extent did execution of the program meet the plan?

The overall acquisition approach to the JPATS program is to use Non-Developmental Items (NDI) or commercially available items to meet most equipment requirements. The program also capitalizes on the existence of production prototype aircraft and commercial components such as avionics systems and engines. JPATS also takes advantage of the certification efforts accomplished by other Government agencies to reduce program costs and cycle time. Finally, JPATS utilizes Integrated Product Teams (IPTs) and teams with the contractor, where possible, to share data and resolve programmatic issues.

Program execution was delayed by six months while the General Accounting Office (GAO) investigated two protests filed in July 1995. The GAO denied the first

protest on 22 November 1995 and the second on 5 February 1996. The JPATS contract was awarded to Raytheon Aircraft Company (RAC) on 5 February 1996. [Ref. 6]

4. What have been the contract vehicles used in the JPATS program and how effective have they been?

The aircraft acquisition contract covers aircraft acquisition and GBTS management. The contractual arrangement for this effort is Fixed-Price-Incentive-Firm (FPIF) with an Award Fee (AF) for the manufacturing development (MD) effort. [Ref. 6]

The production aircraft options starting in FY96 through FY97 are FPIF with AF. The production options for FY98 and FY99 are FPIF/AF and Economic Price Adjustment (EPA). The remaining production options for FY00 and FY01 are priced on a Not-to-Exceed (NTE) basis and will be definitized under Firm Fixed-Price (FFP) arrangement. The contract follows streamlined acquisition procedures permitted under the FASA of 1994. [Ref. 6]

Concurrent with the aircraft acquisition contract award, the Government awarded a logistics support contract to the aircraft contractor. This one-year FFP contract with eight one-year options provides logistics support for both USAF and USN aircraft. [Ref. 6]

The contract vehicles used have proved very effective to date. RAC began absorbing cost overruns on its existing four contracts to develop and build the first 24 prototype aircraft as a consequence of several factors: Raytheon isn't getting enough foreign orders for the trainers, which is driving up program costs, and the costs of material, engineering, manufacturing and quality assurance have been greater than expected. The largest overrun - \$25 million, or 17 percent - is on a \$155 million

manufacturing and development contract. RAC is absorbing as much as \$9 million on a second fixed-price contract for three prototypes worth \$36 million, and will absorb another \$7 million on a third firm-fixed-price contract for six aircraft. [Ref. 20] The FFP contracts have shielded the Government from overhead increases for the term of the present contract. The Government is currently working affordability issues for the next production contract.

The FFP logistics support contract shelters the Government from maintenance cost increases and also acted as a contractor incentive to build efficiencies in the aircraft development phases.

5. How has the JPATS Program Office and Prime Contractor applied acquisition reform to the JPATS program?

The methods in which JPATS and the Prime Contractor applied acquisition reform are summarized in the conclusion section of this chapter.

Elements of acquisition reform have been applied and directly attributed to cost reductions in the areas of Contract Administration Services (CAS) and the Earned Value Management System (EVMS).

The JPATS team has also applied the six themes of acquisition reform outlined in the DOD Directives 5000. For example, the JPATS program uses Non-Developmental Item (NDI) or commercially available items to meet most equipment requirements. Additionally, the program capitalizes on the existence of production prototype aircraft and commercial components such as avionics systems and engines. The program also takes advantage of certification efforts accomplished by other Government agencies.

Finally, Integrated Process and Product Teams enabled dramatic reductions in Contract Data Requirements Lists (CDRL) and contract administrative service efforts.

The use of the contractor certified EVMS further champions reform efforts and results in infrastructure reductions which translates into fewer personnel required to administer the contract and cost reductions. Furthermore, the EVMS adoption demonstrates the Government's acceptance of best business practices applied to military procurements.

6. How are the effects of acquisition reform measured in the JPATS program?

The JPATS Program Office, in conjunction with the Pilot Program Consulting Group (PPCG), used the following 11 metrics to measure the effects of acquisition reform:

- Regulatory and statutory relief ;
- RFP Preparation and Content;
- Ground Based Training System Acquisition Impacts;
- Program Office Manning Levels;
- Contract Administration Services Impacts;
- Baseline Cost Metrics;
- Program Costs Comparison;
- Program Funding Stability;
- Would Cost Analysis;

- Earned Value Reporting System vs. Cost/Schedule Control Systems Criteria;
- Contractor Team Composition.

The metrics designed to measure Ground Based Training System Acquisition Impacts and Contractor Team Composition were abandoned when the program office determined the information was not attainable.

D. RECOMMENDATIONS

Realistic acquisition reform comes only when changes in processes are accompanied by a commensurate reduction in reform of program and process management requirements. Agency officials should tailor program requirements to accompany acquisition reform efforts. Examples in the JPATS case include items such as DAB milestone reviews, Selected Acquisition Report (SAR) and Defense Acquisition Executive Summary (DAES) reporting, and other major acquisition program attributes used for a Non-Developmental Item (NDI) and commercial acquisition. Additionally, program office manning reductions seem contrary to acquisition reform in light of acquisition management requirements imposed on JPATS.

Acquisition reform may remedy a segment of the procurement process, but officials in joint programs should address aspects outside the actual acquisition process and review existing, or establish new acquisition process management procedures to unify service unique processes and procedural requirements. Single Process Initiatives (SPI) should be emphasized early in the acquisition strategy to eliminate redundancies such as differences in Flight Clearance procedures.

Furthermore, Service unique requirements generation and resourcing processes create redundancies and uncertainties as each Service competes for funding within unique boundaries. DOD should prescribe to a model requiring the establishment of a pure, joint program office, with centralized funding and management processes to unify two Services as a single voice to DOD.

The purchase of commercial products should be scrutinized and investigated to ensure the implications of purchase and ownership satisfy mission requirements without adding additional certification or maintenance requirements.

Application of the six themes of acquisition reform outlined in the DOD Directives 5000 series can be effective reform tools when put into practice. JPATS has demonstrated great success in the areas of Contract Administration Services (CAS) and the Earned Value Management System (EVMS). Integrated Process and Product Teams consisting of Government and contractor personnel have also attributed to program savings. However, agreements should be established to outline and document procedures for either party to obtain information and conduct business should the other party choose to withdraw IPT support.

Finally, metrics used to measure acquisition reform should quantitatively support published successes. Metrics such as regulatory and statutory relief, program office manning levels, program cost comparisons, and program funding stability metrics established for JPATS do not reflect or substantiate acquisition reform success.

Acquisition reform opens numerous opportunities for new and innovative practices by Government as well as commercial businesses, and organizations should continue to seek ways to improve upon the acquisition process.

E. SUGGESTIONS FOR FURTHER RESEARCH

The following additional research is recommended:

1. The Defense Acquisition Pilot Programs (DAPPs) received considerable press detailing savings and measures of success supposedly due acquisition reform efforts. Considering the life span of a typical major weapon system acquisition, these savings and success measures have been presented in the early stages of the program's life cycle. What would these measures look like toward the end of the life cycle? Would the savings represent genuine savings, or up front cost reductions obtained early, but later obliterated by additional funds required in other program areas throughout the life cycle?

2. The DAPP programs were provided statutory and regulatory relief and expedited deviation authority from the FAR/DFARS and the DOD 5000 series regulations. The PPCG claims statutory and regulatory relief has generated substantial savings to the Government, but statutory items such as Anti-kickback procedures (FAR 52.203-7) and Drug-free Workplace (FAR 52.223-6) seem to be mandatory safeguards and commonplace examples of routine commercial business operations. Additionally, regulatory item Display of DOD Hotline Poster (DFARS 252.203-7002) seems almost inconsequential to any type of substantial reform. How do defense contractors conduct business and price items sold in the commercial sector? Are provisions similar to the

statutory and regulatory relief items provided DAPPs held in high regard when commercial entities conduct business and if so, what is the effect on the contract price?

**APPENDIX A. COMMERCIAL ITEM EXCEPTIONS IN THE FEDERAL
ACQUISITION STREAMLINING ACT OF 1994**

1. Prohibition on Contingent Fees, 10 USC 2306 (b) (authority: Section 8105)

FAR 52.203-4

FAR 52.203-5

2. Advance payments, 10 USC 2307 (authority: Section 2001)

The contracting officer is delegated the authority to make advance payments under such terms and conditions that the contracting officer determines are appropriate or customary in the commercial marketplace and are in the best interests of the United States. The contracting officer shall obtain adequate security for such payments. If the security is in the form of a lien in favor of the United States, such lien is paramount to all other liens and is effective immediately upon the first payment, without filing, notice, or other action by the United States. Advance payments may not exceed 15% of the contract price, in advance of any performance of work under the contract.

3. Supplies: Identification of Supplier and Source, 10 USC 2384 (b) (authority: Section 8105)

DFARS 252.217 7026

4. Prohibition against doing Business with Certain Offerors or Contractors, 10 USC 2393 (d) (authority: Section 8105)

FAR 52.209-6

5. Prohibition on persons convicted of defense-contract related felonies and related criminal penalty on defense contractors, 10 USC 2408 (a) (authority: Section 8105)

DFARS 252.203-7001

6. Contractor inventory accounting systems: standards, 10 USC 2410b (authority: Section 8105)

DFARS 252.242-7004

7. Contract Work Hours and Safety Standards Act, 40 USC 327-333 (authority: Section 8301)

FAR 52.222-4

NOTE: The contractor is still required to comply with the Act; however, the contract clause is not required.

8. Anti- Kickback Act of 1986, 41 USC 51-58 (authority: Section 8301)

FAR 52.203-7

9. Cost Accounting Standards, 41 USC 422 (f) (2) (authority: Section 8301)

The following provisions and clauses are not required in contracts and subcontracts if the contracting officer determines that:

- (1) the contract price is based on established catalog, or market prices sold in substantial quantities to the general public;
- (2) the contract price is based on prices set by law or regulation; or
- (3) the contract is a firm fixed-price contract or subcontract (without cost incentives) for commercial items.

FAR 52.230-1

FAR 52.230-2

FAR 52.230-3

FAR 52.230-4

FAR SS.230-5

10. Drug Free Work Place Act of 1988, 41 USC 701 (a) (1) (authority: Section 8301)

FAR 52.223-5

FAR 52.223-6

11. Fly American Act, 49 USC 40118 (authority: Section 8301)

FAR 52.247-63

12. Reports by Defense Contractors of Dealings with Terrorist Countries, PL 103-160, Sec. 843 (a) (authority: Section 8105)

DFARS 252.209-7003

DFARS 252.209-7004

13. Subcontractor Requests for Information, PL 102-190, Sec. 806 (authority: Section 8105)

DFARS 228.106-4-70

DFARS 232.970.2

DFARS 252.228-7006

**ADDITIONAL COMMERCIAL ITEM EXCEPTIONS IN THE
FEDERAL ACQUISITION
STREAMLINING ACT OF 1994 TO BE PROVIDED**

1. Cost or Pricing Data: Truth in Negotiations, 10 USC 2306a (authority: Section 1204)
2. Rights in Technical Data, 10 USC 2320 (authority: Section 8106)
3. Employees or Former Employees of Defense Contractors: Reports, 10 USC 2397 (a) (1) (authority: Section 8105)
4. Certain Former DoD Procurement Officials: Limitations on Employment by Contractors, 10 USC 2397b (f) (authority: Section 8105)
5. Defense Contractors: Requirements Concerning Former DoD Officials, 10 USC 2397c (authority: Section 8105)
6. Prohibition of Contractors Limiting Subcontractor Sales Directly to the United States, 10 USC 2402 (authority: Section 8105)
7. Water Pollution Control Act, 33 USC 1368 (authority: Section 8301)
8. OFPP Act Requirement Relating to Procurement Integrity Certifications, 41 USC 423 (authority: Section 8301)
9. Clean Air Act, 42 USC 7606 (authority: Section 8301)

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APPENDIX B. WAIVERS, DEVIATIONS, OR CERTIFICATIONS

The JPATS program was selected as a Pilot Program under the Federal Acquisition Streamlining Act (FASA) of 1994. Prior to FASA and in anticipation of passage of the act, the Under Secretary of Defense for Acquisition and Technology (USD(A&T)) granted regulatory relief waivers in a memorandum dated 28 February 1994 for the following items:

Clauses waived:

52.222-1	Notice to the Government of Labor Disputes
52.244-1	Subcontracts (Fixed Price Contracts)
252.203-7002	Display of DOD Hotline Poster
252.203-7003	
252.209-7000	Acquisition from Subcontractors Subject to On-site Inspection under the Intermediate Range Nuclear Force (INF) Treaty
252.210-7003	Acquisition Streamlining

Program and Business Relief:

- Waived requirement for Acquisition Plan
- Encouraged not using or tailoring MIL-SPECS
- Waived use of military Global Positioning System (GPS) receivers
- Waived requirement for use of Work Measurement
- Approved use of Earned Value Reporting (Waived 252.234-7000, Notice of Cost/Schedule Control Systems)
- Waived requirement for make or buy plans
- Waived Office of the Secretary of Defense (OSD) review of Request for Proposal (RFP)
- Approved use of a fixed-price contract for development
- Authorized flexibility in implementation of Work Breakdown Structure (WBS) requirement
- Waived submission of Certificate of Independent Price Determination

After enactment of FASA, DoD granted statutory waivers in a letter dated 15 December 1994 for the following:

Prohibition on Contingent Fees, 10 USC 2306(b)

52.203-4	Contingent Fee Representation and Agreement
52.203-5	Covenant Against Contingent Fees

Prohibition Against doing business with certain offerors or contractors, 10 USC 2393(d)

52.209-6 Protecting the Government's Interest when
Subcontracting with Contractors Debarred,
Suspended or Proposed for Debarment

Prohibition on Person Convicted of Defense-Contract Related Felonies and
Related Criminal Penalty on Defense Contractors, 10 USC 2408(a)
252.203-7001 Special Prohibition on Employment

Contractor Inventory Accounting Systems: Standards, 10 USC 2410(b)
252.242-7004 Material Management and Accounting System

Anti-Kickback Act of 1986, 41 USC 51-58
52.203-7 Anti-Kickback Procedures

Drug Free Workplace Act of 1988, 41 USC 701 (a)(1)
52.223-5 Certificate Regarding a Drug Free Workplace
52.223-6 Drug Free Workplace

Additionally, after enactment of FASA, DoD granted regulatory waivers in a letter dated
7 April 1995 for the following:

Clauses Waived:

52.219-9	Variation in Quantity (April 1984)
52.229-5	Taxes-Contracts Performed in US Possessions or Puerto Rico (April 1984)
52.232-1	Payments (April 1984)
52.232-2	Payments under Fixed Price Research and Development Contracts (April 1984)
52.232-9	Limitations on Withholding of Payments (April 1984)
52.232-11	Extras (April 1984)
52.245-18	Special Test Equipment (February 1993)
52.246-11	Higher level Contract Quality Requirement (Government Specification) (April 1984)
52.247-1	Commercial Bill of Lading Notations (April 1984)
52.247-65	FOB Origin Prepaid Freight-Small Package Shipments (January 1991)
52.248-1	Value Engineering (March 1989)
252.208-7000	Intent to Furnish Precious Metals as Government Furnished Material (December 1991)
252.242-7000	Post Award Conference (December 1991)
252.242-7003	Application for US Government shipping Documentation/Instructions (December 1991)

Also after enactment of FASA, a regulatory waiver was granted by Air Force Material Command (AFMC) in a letter dated 22 December 1994 for the following:

Clause Waived:

252.243-7000 Engineering Change Proposals (August 1992)

Live Fire Testing required by 10 USC 2366 is considered non-applicable legislation because JPATS is not a weapon system and will not be used in combat.

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APPENDIX C. PROGRAM OFFICE AND COST ANALYSIS IMPROVEMENT GROUP COST ESTIMATING ASSUMPTIONS

FY92POE to CAIG Assumptions

Program Description:

1. Acquire Primary Training Aircraft-non developmental
2. No prototypes/critical technologies--commercial avionics
3. Fly aircraft at source selection--baseline aircraft certified, aerodynamics and handling qualities, production engine
4. GBTS--AF/NAVY hardware expected to be identical
5. Winner-take-all proposal--single acquisition contract (aircraft--fixed price, first simulator/courseware development--cost plus); subsequent prod options--FP or NTE
6. Two logistics support contracts--aircraft: integrated ICS/CLS contract, initial effort--FP (12 one-year FP options or NTE ordering authority; GBTS--full CLS, structure similar to aircraft contract

Specifics:

1. MD--GBTS only. Includes mission support, curriculum, OFT, training support system, other GBTS devices, fee, and ECO.
2. Production--Aircraft: 417 USAF aircraft, 348 NAVY aircraft.
3. GBTS: 55 OFTs, 34 IFTs, 12 CPTs, 7 Egress, 6 Ejection, 6 TMS, 6 training aids
4. O&M--USAF basing at Randolph, Laughlin, Reese, Columbus, Vance, Sheppard Air Force Bases
5. USAF maintenance concept--On-equipment: contract, blue suit, government service
6. Off-equipment: contractor logistics support
7. NAVY basing at Corpus Christi, Whiting Field, Pensacola Naval Stations
8. NAVY maintenance concept--On-equipment/Off-equipment: full CLS, Aircraft and GBTS

FY95 & FY97 POE Assumptions

Program Description:

1. For FY95 POE, no FMS included in Contractor's Production Estimate
2. Ten years of CLS options w/EPA clause beginning in FY00. There are an additional 34 years of expected program life.
3. Government will provide four anthropometric mannequins and range-compatible instrumentation inside the mannequins.

4. MD includes effort required to develop JPATS Air Vehicle as well as to perform aircraft systems engineering/program management/integrated logistics support, aircraft system test & evaluation, training, data, PSE, common SE, op/site activation, and GBTS.
5. Production--Aircraft: 372 USAF aircraft; 339 NAVY aircraft
FY95 POE GBTS: 18 OFT, 37 IFT, 26 CPT, 7 Egress, 7 Ejection, 14 TMS, 9 training aids
FY97 POE GBTS: 28 OFT, 52 IFT, 26 CPT, 8 Egress, 8 Ejection, 12 TMS, 10 training aids
6. O&M--USAF basing at Randolph, Laughlin, Reese, Columbus, Vance, Sheppard Air Force Bases
USAF maintenance concept--On-equipment: contract, organic, off-equipment contractor logistics support NAVY basing at Corpus Christi, Whiting Field, Pensacola Naval Stations NAVY maintenance concept--On-equipment/Off-equipment: full CLS, aircraft and GBTS

APPENDIX D. ABBREVIATIONS AND ACRONYMS

ACAT	Acquisition Category
ADM	Acquisition Decision Memorandum
AETC	Air Education & Training Command
AF	Award Fee
AFFARS	Air Force Federal Acquisition Regulation Supplement
AFPEO/AT	Air Force Program Executive Officer for Airlift and Trainers
AOA	Angle of Attack
APB	Acquisition Program Baseline
ASIP	Aircraft Structural Integrity Program
ASR	Acquisition Strategy Report
ATD	Aircrew Training Device
ATDSS	Aircrew Training Device Support System
CAE	Component Acquisition Executive
CAI	Computer Aided Instruction
CAIG	Cost Analysis Improvement Group
CAS	Contract Administration Services
CAS	Cost Accounting Standards
CBTS	Computer Based Training System
CCP	Contract Change Proposal
CDR	Critical Design Review
CDRL	Contract Data Requirements List
CLS	Contractor Logistics Support
CNATRA	Chief of Naval Air Training
CNET	Chief of Naval Education and Training
CNO	Chief of Naval Operations
COEA	Cost and Operational Effectiveness Analysis
CSC	Conventional Systems Committee
C/SCSC	Cost/Schedule Control Systems Criteria
CSS	Curriculum Support System
DAE	Defense Acquisition Executive
DAPP	Defense Acquisition Pilot Program
DCAA	Defense Contract Audit Agency
DCMC	Defense Contract Management Command
DFARS	Defense Federal Acquisition Regulation Supplement
DOA	Designated Option Authority
DOD	Department of Defense
DODIG	Department of Defense Inspector General
DON	Department of the Navy
DSMC	Defense Systems Management College

DUSD (AR)	Deputy Under Secretary of Defense (Acquisition Reform)
EADI	Electronic Attitude Director Indicator
EHSI	Electronic Horizontal Situation Indicator
EPA	Economic Price Adjustment
EPT	Egress Procedures Trainer
ENSIP	Engine Structural Integrity Program
EST	Ejection Seat Trainer
EVMS	Earned Value Management System
FAA	Federal Aviation Administration
FAR	Federal Acquisition Regulation
FAR	Federal Aviation Regulation
FASA	Federal Acquisition Streamlining Act
FFP	Firm Fixed Price
FOD	Foreign Object damage
FPIF	Fixed Price Incentive Firm
FTD	Flight Training Device
FY	Fiscal Year
GBTS	Ground-Based Training System
GPS	Global Positioning System
IAW	In Accordance With
ICE	Independent Cost Estimate
IFR	Instrument Flight Rules
IFT	Instrument Flight Trainer
ILS	Integrated Logistics Support
IPT	Instructor Pilot Training
IPT	Integrated Product Teams
JNNT	Joint Navigator/Naval Flight Officer Training
JPATS	Joint Primary Aircraft Training System
JPPT	Joint Primary Pilot Training
JSORD	Joint System Operational Requirements Document
KTAS	Knots True Airspeed
MD	Manufacturing Development
MDA	Milestone Decision Authority
MDAP	Major Defense Acquisition Program
MIL-SPEC	Military Specification
MIL-STD	Military Standard
MIP	Metrics Implementation Plan

MPLCC	Most Probable Life Cycle Cost
MUSS	Modification and Update Support System
NDI	Non-Developmental Item
OAG	Operations Advisory Group
OFT	Operational Flight Trainer
ORD	Operational Requirements Document
OSD	Office of the Secretary of Defense
PEO	Program Executive Officer
PIPFS	Prime Item Product Functional Specifications
POE	Program Office Estimate
POM	Program Objective Memorandum
PPCG	Pilot Program Consulting Group
PPT	Parachute Procedures Trainer
PTD	Procedural Training Device
QT&E	Qualification Test and Evaluation
RAC	Raytheon Aircraft Corporation
RFP	Request for Proposal
SAF/AQ	Assistant Secretary of the Air Force for Acquisition
SAMP	Single Acquisition Management Plan
SNFO	Student Naval Flight Officer
SPI	Single Process Initiative
SPO	Systems Program Office
STASS-FLT	Standard Training Activity Support System Flight
TC	Type Certification
TEMP	Test and Evaluation Master Plan
TIMS	Training Integration Management System
TIMS-SS	Training Integration Management System Support System
TINA	Truth in Negotiation Act
TMS	Training Management System
TRIM	Time Related Instruction Management
UCA	Undefinitized Contractual Action
UNFOT	Undergraduate Naval Flight Officer Training
UNPT	Undergraduate Naval Pilot Training
USAF	United States Air Force
USD (AT&L)	Under Secretary of Defense (Acquisition, Technology, and Logistics)
USN	United States Navy

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